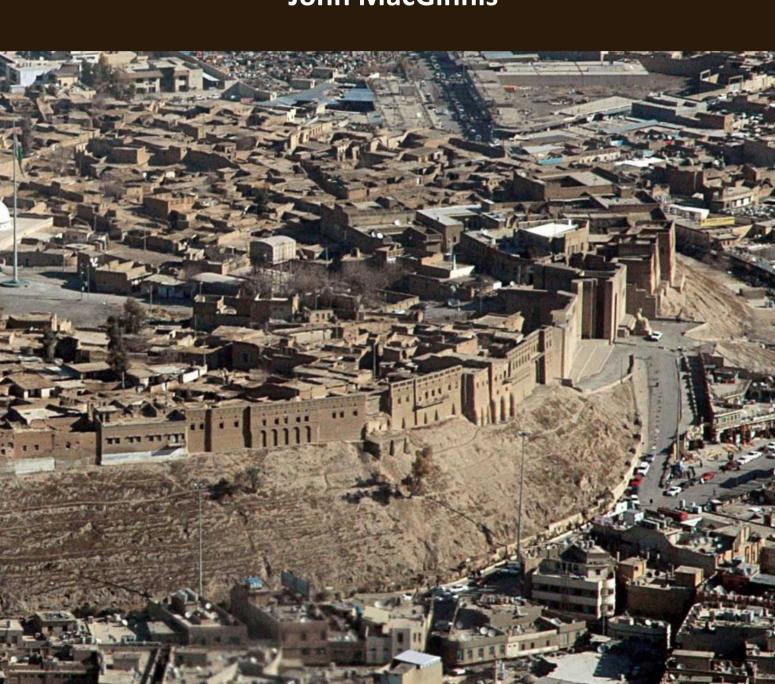
THE ARCHAEOLOGY OF THE KURDISTAN REGION OF IRAQ AND ADJACENT REGIONS

Edited by
Konstantinos Kopanias and
John MacGinnis



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Authors' details

ABDULMUTALB, DIshad

Directorate of Antiquities (Soran Province), Peshawa Street 13, 44008 Soran, Kurdistan, Iraq. dlshad505@yahoo.com

ABDULLAH, Sangar Mohammed

High Commission for Erbil Citadel Revitalisation, The Citadel, Erbil, Kurdistan, Iraq. sangarmuhammed@yahoo.com

ALI, Narmin Amin

- 1. Mission d'Archéologie Française à Bazyan, UMR 8167 Orient et Méditerranée, CNRS, Paris, France.
- 2. Department of Archaeology, Salahddin University, Erbil, Iraq.

narminaliamin@yahoo.fr

AL YAQOOBI, Dara

High Commission for Erbil Citadel Revitalisation, The Citadel, Erbil, Kurdistan, Iraq. dalyaqubi@yahoo.com

AR RAWI, Farouk

18 St. Edmunds Fields, Great Dunmow, Essex, CM6 2AL, England.

farouknha@yahoo.co.uk

AŠANDULESEI, Andrei

Alexandru Ioan Cuza University of Iași, Interdisciplinary Research Department – Field Science, Lascar Catargi Street 54, 700107 Iași, Romania. andrei.asandulesei@yahoo.com

BARKER, Graeme

St. John's College, Cambridge, CB2 1TP, UK. gb314@cam.ac.uk

BEUGER, Claudia

Institut für Altertumswissenschaften, Martin-Luther-Universität Halle-Wittenberg Philosophische Fakultät I, Seminar für Orientalische Archäologie und Kunstgeschichte, 06099 Halle (Saale), Germany. claudia.beuger@orientarch.uni-halle.de

BIGLARI, Fereidoun

Paleolithic Department, National Museum of Iran, 30 Tir St., Emam Khomaini Avenue, Tehran, Iran. fbiglari@gmail.com

BLAYLOCK, Stuart

1 Colebrooke Lane, Cullompton, Devon, EX15 1EB, UK.

stuart.blaylock@btinternet.com

BOISMIER, William

Cemetery Lodge, 93 Brackley Road, Towcester NN12 6HJ, UK.

w.boismier123@btinternet.com

CABRAL, Ricardo

Centro de Estudos em Arqueologia, Artes e Ciências do Património, Faculdade de Letras da Universidade de Coimbra, Largo da Porta Férrea, 3004-530 Coimbra, Portugal.

rdfcabral@uc.pt

CALINI, Ilaria

Ecole Pratique des Hautes Etudes, Sorbonne University, 30 rue Montmartre, F-75001 Paris, France. ilariacalini@hotmail.it

CASANA, Jesse

1. Department of Anthropology, Dartmouth College, Hanover, NH 03755, USA.

Jesse.J.Casana@dartmouth.edu

2. Department of Archaeology, University of Arkansas, Fayetteville, AR 72701, USA. jcasana@uark.edu

CERETI, Carlo Giovanni

Sapienza Università di Roma, Dipartimento di Scienze dell'Antichità, Piazzale Aldo Moro 5, 00185 Roma, Italy. carlogiovanni.cereti@uniroma1.it

COLANTONI, Carlo

School of Archaeology and Ancient History, University of Leicester, University Road, Leicester, LE1 7RH, UK. carlo.colantoni@cantab.net

COLLIVA, Luca

Sapienza Università di Roma, Dipartimento di Scienze dell'Antichità, Piazzale Aldo Moro 5, 00185 Roma, Italy. luca.colliva@gmail.com

CURTIS, John

Iran Heritage Foundation, Asia House, 63 New Cavendish Street, London, W1G 7LP, UK. john.curtis@iranheritage.org

DEL FABBRO, Roswitha

Freie Universität Berlin, Institut für Altorientalistik, Hüttenweg 7, 14195 Berlin, Germany. roswitha.del.fabbro@topoi.org

DEROCHE, Vincent

Mission d'Archéologie Française à Bazyan, UMR 8167 Orient et Méditerranée, CNRS, Paris, France. vincent.deroche@college-de-france.fr

FALES, Mario

Dipartimento di Studi Umanistici e del Patrimonio Culturale, Università di Udine, Palazzo Caiselli, Vicolo Florio 2B, 33100 Udine, Italy.

frederick.fales@uniud.it

FARR, Lucy

McDonald Institute for Archaeological Research, University of Cambridge, Downing Street, Cambridge, CB2 3ER, UK.

lrf24@cam.ac.uk

FASSBINDER, JÖRG

Department of Earth and Environmental Sciences, Geophysics, Ludwig-Maximilians-Universität München, Theresienstrasse 41, 80333 Munich, Germany. joerg.fassbinder@blfd.bayern.de

GAVAGNIN, Katia

Università Ca' Foscari, Dipartimento di Studi Umanistici, Dorsoduro 3484/D, 30123, Venezia, Italy. katia_gavagnin@hotmail.com

GLATZ. Claudia

School of Humanities, University of Glasgow, The Gregory Building, Lilybank Gardens, Glasgow G12 8QQ, UK.

claudia.glatz@glasgow.ac.uk

GREENFIELD, Tina

- 1. University of Manitoba, Department of Anthropology, St. Paul's College, Winnipeg, Manitoba, Canada.
- 2. McDonald Institute for Archaeological Research, Downing Street, Cambridge, CB2 3ER, UK.

Tina.Greenfield@umanitoba.ca; tlg26@cam.ac.uk

HADJIKOUMIS, Angelos

- 1. The Fitch Laboratory, The British School at Athens, Souedias 52, 10676 Athens, Greece.
- 2. 3 Sferou Street, Laiki Lefkothea, 3115 Lemesos, Cyprus.

angelos.hadjikoumis@gmail.com

HERR, Jean-Jacques

École Pratique des Hautes Études, Les Patios Saint-Jacques, 4-14 rue Ferrus, 75014 Paris, France.

herr.jeanjacques@gmail.com

HOZHABRI, Ali

Director of Archaeological Site of Ziviyeh and Karaftoo, Kurdistan, Iran.

Ali.hojabry2011@gmail.com

HUNT, Chris

School of Natural Sciences and Psychology, Liverpool John Moores University, Byrom Street, Liverpool L3 3LH, UK.

c.o.hunt@ljmu.ac.uk

HUSSEIN, Saber Hassan

Erbil Civilization Museum, Erbil, Kurdistan, Iraq. jwtyara@yahoo.com

IAMONI, Marco

Dipartimento di Studi Umanistici e del Patrimonio Culturale, Università di Udine, Palazzo Caiselli, Vicolo Florio 2B, 33100 Udine, Italy. marco.iamoni@uniud.it

Iтон, Shigeru

Paleo Labo Co. Ltd., Shimomae 1-13-22, Toda, Saitama 335-0016, Japan.

itoh@paleolabo.jp

JOHNSON, Jessie

Museum Conservation Institute, Smithsonian Institution, Museum Support Center, 4210 Silver Hill Road, Suitland, MD, USA. johnsonjs@si.edu

KEPINSKI, Christine

C.N.R.S., Maison René Ginouvès ArScAn boite 17 Maison René-Ginouvès, 21 allée de l'Université, F- 92023 Nanterre Cedex. France.

christine.kepinski@mae.u-paris10.fr

KHORSHEED, Abdullah

Iraqi Institute for the Conservation of Antiquities and Heritage, Erbil, Iraq.

abdull ahkhorsheed 69@gmail.com

Ковауаsні, Koichi

Paleo Labo Co. Ltd., Shimomae 1-13-22, Toda, Saitama 335-0016, Japan. kobak@paleolabo.jp

KOIZUMI, Tatsundo

Institute for Cultural Studies of Ancient Iraq, Kokushikan University, Japan. tatsundo.k@nifty.com

Koliński, Rafał

Institute of Prehistory, Adam Mickiewicz University, Umultowska Str. 89D, 61-614 Poznań, Poland. kolinski@amu.edu.pl

KOPANIAS, Konstantinos

Department of History and Archaeology, University of Athens, University Campus, 157 84 Athens, Greece. kkopanias@arch.uoa.gr

KREPPNER, Janoscha

Historisches Seminar, Alte Geschichte, Geschwister-Scholl-Platz, 180539 München, Germany. janoscha.kreppner@lrz.uni-muenchen.de

KURAPKAT, Dietmar

Ostbayerische Technische Hochschule Regensburg, Prüfeninger Straße 58, 93049 Regensburg, Germany. dietmar.kurapkat@oth-regensburg.de

ŁAWECKA, Dorota

Institute of Archaeology, Department of Near Eastern Archaeology, University of Warsaw, Krakowskie Przedmieście 26/28, 00-927 Warszawa, Poland. dorotalawecka@uw.edu.pl

LIONE, Brian

University of Delaware Institute for Global Studies Programs, Iraqi Institute for the Conservation of Antiquities and Heritage Erbil, Iraq. blione@udel.edu

MACGINNIS, John

McDonald Institute for Archaeological Research, Downing Street, Cambridge, CB2 3ER, UK. jm111@cam.ac.uk

MARF, DIshad

Department of Archaeology, Salahaddin University, Erbil, Kurdistan, Iraq. dlshadazamua@gmail.com

MARTI, Lionel

CNRS, UMR 7192, Institut du Proche-Orient Ancien, Collège de France, 52 rue du Cardinal Lemoine, 75005 Paris, France.

lionel.marti@college-de-france.fr

MASETTI-ROUAULT, Maria Grazia

Ecole Pratique des Hautes Etudes, Sorbonne University, 30 rue Montmartre, Paris, France. masetti.rouault@wanadoo.fr

MATTHEWS, Roger

Department of Archaeology, University of Reading, Whiteknights Box 226, Reading RG6 6AB, UK. r.j.matthews@reading.ac.uk

MATTHEWS, Wendy

Department of Archaeology, University of Reading, Whiteknights Box 226, Reading RG6 6AB, UK. w.matthews@reading.ac.uk

MIGLUS, Peter

Institut für Ur- und Frühgeschichte und Vorderasiatische Archäologie, Marstallhof 4,D-69117, Germany. peter.miglus@uni-heidelberg.de

MOLLENHAUER, Anne

TU Berlin FG Historische Bauforschung, Masterstudium Denkmalpflege, Strasse des 17. Juni 152, Sekr. A 58, Raum A 812, 10623 Berlin, Germany. annemollenhauer@yahoo.com

MUHAMMED HAYDAR, Shwkr

Garmian Department of Antiquities, Kalar, Kurdistan Autonomous Region, Iraq.

MÜHL, Simone

Institut für Vorderasiatische Archäologie, Ludwig-Maximilians-Universität München, Geschwister-Scholl-Platz 1, D-80539 München, Germany. Simone.Muehl@vaa.fak12.uni-muenchen.de

MÜLLER-WIENER, Martina

TU Berlin FG Historische Bauforschung, Masterstudium Denkmalpflege, Strasse des 17. Juni 152, Sekr. A 58, Raum A 812, 10623 Berlin, Germany. muewie@uni-bonn.de

NICOLLE, Christophe

CNRS, UMR 7192, Institut du Proche-Orient Ancien, Collège de France, 52 rue du Cardinal Lemoine, 75005 Paris, France.

christophe.nicolle@college-de-france.fr

NIEUWENHUYSE, Olivier

Faculty of Archaeology, Leiden University. postal address: Coornhertstraat 35, 2332AN, Leiden, The Netherlands. onieuw@xs4all.nl

Novaček, Karel

Palacký University Olomouc, Faculty of Arts, Department of History, Na Hradě 5, 77200 Olomouc, Czech Republic. karel.novacek@upol.cz

Орака, Takahiro

University Museum, University of Tokyo, 7-3-1 Hongo, Bunkyo-ku, Tokyo, 113-0033, Japan. odaka@um.u-tokyo.ac.jp

PALERMO, ROCCO

Università di Napoli Federico II, Dipartimento di Studi Umanistici, Room 815, Via Nuova Marina 33, 80133 Naples, Italy. roccoplrm@gmail.com

Pappi, Cinzia

Universität Innsbruck, Zentrum für Alte Kulture, Langer Weg 11, 6020 Innsbruck, Austria. Cinzia.Pappi@uibk.ac.at

PEYRONEL, Luca

University IULM, Department of Classics, Humanistic and Geographical Studies, Via Carlo Bo 1, 20143 Milan, Italy.

luca.peyronel@iulm.it

PFAELZNER, Peter

Institut für die Kulturen des Alten Orients, Institute for Ancient Near Eastern Studies (IANES), Universität

Tübingen Schloss Hohentübingen, D-72070 Tübingen, Germany.

peter.pfaelzner@uni-tuebingen.de

PULHAN, GÜl

1 Colebrooke Lane, Cullompton, Devon, EX15 1EB, UK. gulpulhan@gmail.com

RADNER, Karen

Historisches Seminar – Abteilung Alte Geschichte, Ludwig-Maximilians-Universität München, Geschwister-Scholl-Platz 1, D – 80539 München, Germany. karen.radner@lrz.uni-muenchen.de

RAHEEM, Kamal Rashid

Department of Antiquities, Sulaimaniya, Kurdistan, Iraq. kamal_zewe@yahoo.com

RENETTE, Steve

University of Pennsylvania, Jaffe History of Art Building, 3405 Woodland Walk, Philadelphia, PA 19104, USA. srenette@sas.upenn.edu

REYNOLDS, Tim

Department of History, Classics & Archaeology, Birkbeck College, University of London, Russell Square, London, WC1B 5DQ, UK.

te.reynolds@bbk.ac.uk

ROUAULT, Olivier

Lyon2 University, Maison de l'Orient et de la Méditerranée, 7 rue Raulin, Lyon F-69007, France. olivier.rouault@wanadoo.fr

SCHWARTZ, Glenn

Department of Near Eastern Studies, The Johns Hopkins University, Baltimore, MD 21218, USA. schwartz@jhu.edu

Sconzo, Paola

SFB 1070 'RessourcenKulturen', Tübingen University, Gartenstrasse 29, D-72074 Tübingen, Germany. paola.sconzo@uni-tuebingen.de

ŞERIFOĞLU, Tevfik Emre

Bitlis Eren Üniversitesi, Fen Edebiyat Fakültesi, Arkeoloji Bölümü, Rahva Yerleşkesi, 13000 Bitlis, Turkey. teserifoglu@beu.edu.tr

SHEPPERSON, Mary

67 Park Estate, Shavington, Crewe, Cheshire, CW2 5AW, UK.

m.shepperson@alumni.ucl.ac.uk

SHIDRANG, Sonia

PACEA-PPP-UMR CNRS 5199, Université de Bordeaux – Bât. B8, Allée Geoffroy Saint-Hilaire – CS 50023, 33615

PESSAC CEDEX, France. sshidrang@gmail.com

SKULDBØL, Tim

Department of Cross-Cultural and Regional Studies, University of Copenhagen, Karen Blixensvej 4, Building 10, DK-2300 Copenhagen S, Denmark. tbbs@hum.ku.dk

SQUITIERI, Andrea

Historisches Seminar – Abteilung Alte Geschichte, Ludwig-Maximilians-Universität München, Geschwister-Scholl-Platz 1, D – 80539 München, Germany. a.squitieri@lmu.de

TENU. Aline

C.N.R.S., Maison René Ginouvès ArScAn boite 17 Maison René-Ginouvès, 21 allée de l'Université, F-92023 Nanterre Cedex, France. aline.tenu@mae.cnrs.fr

TERRIBILI, Gianfilippo

Dipartimento di Scienze dell'Antichità, Sapienza – Università di Roma, Piazzale Aldo Moro 5, 00185 Roma, Italy.

gianfilippo.terribili@uniroma1.it

TILIA, Alessandro

Studio 3R Sas di Alessandro e Sven Stefano Tilia, Viale Marco Polo 80, 00154 Roma, Italy. altilia@tiscali.it

Томé, André

Centro de Estudos em Arqueologia, Artes e Ciências do Património, Faculdade de Letras da Universidade de Coimbra, Largo da Porta Férrea, 3004-530 Coimbra, Portugal.

andgtome@uc.pt

TSUNEKI, Akira

Faculty of Humanities and Social Sciences, University of Tsukuba, 1-1-1, Tennodai, Tsukuba, Ibaraki, 305-8571, Japan.

tsuneki.akira.gf@u.tsukuba.ac.jp

VACCA, Agnese

Sapienza University of Rome, Department of Antiquities, Ex Vetrerie Sciarra – Studio 121, Via dei Volsci, 122, 00185 Rome, Italy. agnese.vacca@gmail.com

WATANABE, Chikako

Osaka Gakuin University, 2-36-1 Kishibe-minami, Suitashi, Osaka 564-8511, Japan. chikako@ogu.ac.jp

YONEDA, Minoru

Laboratory of Radiocarbon Dating, The University

Museum, University of Tokyo, Hongo 7-3-1, Bunkyo, Tokyo 113-0033, Japan. myoneda@um.u-tokyo.ac.jp

ZENONI, Gioia University IULM, Department of Classics, Humanistic and Geographical Studies, Via Carlo Bo 1, 20143 Milan, Italy. gioia.zenoni@gmail.com ZOUBOULAKIS, Kleanthis
University of Athens, Department of History and
Archaeology, University Campus, GR-15784 Athens,
Greece.
freantlis@windowslive.com

Preface

The present volume is the outcome of a conference held at the University of Athens, November 1st-3rd 2013, under the title 'Archaeological Research in the Kurdistan Region of Iraq and the Adjacent Areas'. The aim of the conference was to bring together scholars working in all the countries of the region, an aim in the event achieved resoundingly, with more than 100 scholars from across the world participating in the first forum of its kind to be held outside of the region itself. While the greater part of presentations related to research in the Kurdish Region of Iraq, other contributions dealt with analysis of material from sites in Syria, Turkey and Iran.

Kurdistan is home to some of the most important archaeological sites in the world, ranging from the Stone Age to the most recent past. These include cave shelters, mounds and low sites, canals and rock reliefs, castles and bridges, mosques and bazaars. For many years political and other factors held back the exploration of this heritage. The last decade, however, has seen a resurgence of archaeological activity in Kurdistan to the extent that is has become one of the most vibrant areas of near eastern archaeological research. More than forty international projects have commenced work in the region and others are in the pipeline. A major part has been played by regional survey projects which are for the first time systematically documenting the archaeological inventory in order to produce an exhaustive record of the region. The maps generated will in their turn be

Dr. Konstantinos Kopanias University of Athens able to serve as the basis both for heritage management and for the study of settlement history. At the same the area has seen a flourishing of excavations investigating every phase of human occupation from the palaeolithic onwards. Together these endeavours are generating basic new data which is leading to a new understanding of the arrival of mankind, the development of agriculture, the emergence of cities, the evolution of complex societies and the forging of the great empires in this crucible of mankind. These field activities are complemented by epigraphic studies, numismatics and historical researches. There is a new focus on the conservation and preservation of both sites and finds, spearheaded by the Erbil based Iraqi Institute for the Conservation on Antiquities and Heritage.

We would like to express our deep thanks and appreciation to everyone who helped make this such a stimulating venture: to all who came to Athens to take part, to colleagues who while unable to attend nevertheless ensured that their work was represented, to everyone involved in researching and documenting this region's rich heritage, and last but not least, to Mr. Mala Awat, Head of the General Directorate of Antiquities of the Kurdistan Region of Iraq, and to all our colleagues from the Directorates and Universities of Kurdistan who have led the way and who have been so welcoming to the archaeologists and scholars from across the international community.

Dr. John MacGINNIS University of Cambridge

Archaeological investigations on the Citadel of Erbil: Background, Framework and Results

Dara AL YAQOOBI, Abdullah KHORSHEED KHADER, Sangar MOHAMMED, Saber HASSAN HUSSEIN, Mary SHEPPERSON and John MACGINNIS

The size, location and length of occupation of the citadel of Erbil mark it out as one of the most important sites in Mesopotamia with the potential to contribute fundamentally to the archaeological understanding of the area. Surface survey has already demonstrated that the mound has remains going back at least 6,000 years and the likelihood is that it will in fact be older than that, while recent work on the ancient cuneiform texts (MacGinnis 2014) has highlighted the exceptional status of the city in the history of Iraq and Kurdistan. In short, the citadel mound contains an unparalleled sequence of occupational layers accessible at no other site. There is no doubt of the calibre of the remains at Erbil. There is also no doubt that this could translate directly into a fundamental contribution to Mesopotamian archaeology. Scientific excavation of the citadel mound is certain to produce a sequence which will assume a central role in the archaeology of Iraq and Kurdistan.

Background

At this stage it is not known when an actual settlement was first founded in Erbil. In general terms the presence of mankind is documented in Kurdistan from the paleolithic, that is from around 70,000 years ago onwards. With respect to Erbil, attention is drawn more specifically to the evidence for a presence in the mesolithic period (ca. 13000-8500 BC) found near the foot of the citadel (Nováček et al. 2013, 2). The presence in the surrounding plains of sites with occupation of the Halaf period (5800-5300 BC) makes it highly likely that Erbil too will have been home to a Halaf settlement, though this remains to be actually demonstrated. Potsherds from the citadel mound do however show that there was a settlement at Erbil by the Ubaid period (5300-4500 BC) (Novácek et al. 2008, 276; Nováček et al. 2013, 2). The Uruk period (4500-3000 BC) is not yet directly attested on the citadel though mention should be made of the important Uruk remains found at the nearby mound of Qalinj Agha (al Soof 1966; 1969; al-Soof and es-Siwwani 1967; Hijara 1973). By the late Early Dynastic period, ca. 2300 BC, however the city was sufficiently important to be a destination for messengers from Ebla (MacGinnis 2014, 46). There is as yet no evidence as to whether Erbil was ever incorporated in the Akkadian empire but the city does feature as an objective of a military campaign of the Gutian king Erridu-Pizir. Thereafter the information from historical sources gradually increases. At the end of the third millennium Erbil was incorporated within the Ur III empire and surface survey has thrown up sherds which date to this period. In the early second millennium the city very likely regained its independence and was then caught up in the growth of Qabra and that city's downfall at the hands of Šamši-Adad and Daduša (MacGinnis 2013). There must then have followed a time when further periods of independence alternated with incorporation in the Mittanni and then Middle Assyrian states. The Neo-Assyrian period was certainly a highwater mark in the city's fortunes when it was famed for its temple of Ishtar and served as a terminal for military campaigns; in the reign of Sennacherib Erbil benefitted from a major canal project bringing water into the city from the mountains to the northeast. Following the fall of Nineveh in 612 BC it is not known for certain whether Erbil fell under the control of the Babylonians or the Medes, though the latter seems more likely (Curtis 2003, 166-7; Stronach 2012, 678). In the Achaemenid period Erbil will have been a thriving centre – direct evidence for this is surprising limited but the city does appear both in the Behistun inscription and in the Passport of Nehtihur. Alexander briefly stopped in Erbil before marching to Babylon but little else is know about the city's fortunes in the Hellenistic period. During the Parthian period Erbil was the capital of Adiabene, a client kingdom whose ruling family may have converted to Judaism, though this did not stop a large church being been built there in the mid second century. When the Sassanians came to power in 224 BC they replaced the local dynasty with a Persian governor and Erbil became the seat of a marzban; but the city continued as an important Christian centre and the cathedral was reconstructed between 450 and 498 AD. During the early Islamic period, Erbil appears to have been relatively unimportant, but its political and economic importance returned when it became the capital of an independent Kurdish emirate in the 12th century AD under the Kurdish Emir Zain al-Din Ali Kuchuk Begtegin. The appointment of Sultan Muzaffer Ed-Din Kokburi as ruler in 1190 ushered in a golden age, and the city developed a lower town, Al-Muzaffariyah. Erbil was the subject of repeated Mongol attacks but eventually fell under Mongol suzerainty by negotiation. In 1534 it was occupied by the Ottoman Sultan Suleyman the Magnificent and continued under Ottoman rule until 1918, albeit with some interruptions such as when the city was besieged and captured by the Persian ruler Nadir Shah in 1743.

Archaeological potential

With this long history of occupation there is no doubt that investigations of the citadel mound of Erbil have the potential to yield finds of major significance. For every period concerned there are major archaeological questions which excavation on the citadel mound would address. The lower town is important too. Important data on, inter alia, the lines of the fortification walls in both the Assyrian and medieval periods is preserved in both aerial photographic sequences from before and after the second World War and in satellite imagery from the cold war period (Nováček 2011, 12; Nováček et al. 2013, 24-30). Notwithstanding the extensive building which has taken place in the past decade, some archaeological remains still survive in the lower town. In this context, mention should be made of the excavation of a Neo-Assyrian baked brick vaulted tomb in the lower town 500 m northwest of the citadel carried out between 2008 and 2011 by the Directorate of Antiquities of Erbil in conjunction with the German Archaeological Institute (van Ess et al. 2012). Mention should also be made of the discovery at Bastura in 1946 of the head of the canal constructed by Sennacherib (Safar 1946; 1947).

Previous operations

This is the background against which the HCECR implemented a programme of archaeological investigations.1 The first operations took place in 2006 with the work of a team from the University of West Bohemia directed by Karel Nováček. These included carrying out a ceramic surface collection from an area on the western side of the mound; conducting geophysical prospection utilising micro-gravimetry, shallow refraction seismology and multi-electrode direct resistivity; cleaning and recording profiles in two cuts at the foot of the mound; and excavation of a 4 x 4 m trench in a house in the eastern part of the citadel (Novaček 2007; Nováček et al. 2008). In 2008 four bore holes through the mound yielded cultural materials demonstrating that at the centre of the citadel occupational layers extend down 22 m from the surface. In 2011 and 2012 five exploratory trenches were laid out in order to verify the exact location of the foundations of the Grand Gate constructed in the mid nineteenth century, an objective in which they were successful.

Geophysical prospection

In addition to the work carried out by the Czech mission in 2006 mentioned above, geophysical prospection has been carried out from 2010 by two Italian Cooperation

projects (MAECi-IsIAO and MAECI-Sapienza) directed by Carlo G. Cereti of Sapienza, University of Rome, with the support of the MAIKI, Italian Archaeological Mission in Iraqi Kurdistan, codirected by Luca Colliva and Maria Vittoria Fontana (Colliva et al. 2012; Cereti and Colliva, forthcoming). This started with trialing the use of ground penetrating radar, a technique which was found not to yield good results, perhaps due to the presence of ground water: it found traces of the surrounding fortification wall but failed to reach the deeper levels. In 2013 the application of electrical resistivity tomography and seismic refraction tomography successfully imaged north-south transects of (nearly) the whole mound as well as two partial east-west transects. In 2014 further work was carried out at the foot of the citadel. For a more detailed summary of the results of the geophysical work on the citadel see the accompanying document 'Geophysical prospection'.

Archaeological plan

It will be clear from the above that the citadel mound of Erbil is an archaeological site of international significance. Not only is it expected to contain remains from the full sequence of periods outlined but for every single period it is expected that discoveries could be made of fundamental importance. Exploration of the mound is an objective which is guaranteed to produce rich rewards. It will transform our understanding of the history and archaeology of the citadel. Recognising this potential, in 2011 the HCECR commissioned an archaeological assessment of the mound leading to the formulation of a plan for active investigations envisaging exploration of the mound through a combination of remote sensing and excavation.

Archaeological Excavation Team

In order to co-ordinate and implement this plan an Archaeological Excavation Team was appointed under the leadership of Dara al-Yaqoobi, Head of the HCECR, together with Dr. Abdullah Khorsheed Khader representing the Syndicate of Kurdish Archaeologists, Sabir Hassan Hussein representing the Department of Antiquities, and Sangar Mohammed Abdullah and Ibrahim Khalil Ibrahim of the HCECR. Dr. John MacGinnis was appointed as archaeological advisor and shortly after Dr. Mary Shepperson as on-site archaeologist.

Strategy for excavations

With respect to excavation, an evaluation of how an archaeological research programme can be carried out in the reality of the existing topography of the citadel mound resulted in the initial designation of areas for possible investigation (Fig. 1). These vary from small operations aimed at elucidating standing features to

¹ For a popular overview of the recent archaeological activity see Lawler 2014. Some excavation was in fact also carried out in the 1970s in the course of digging the foundations for the southern gate to the citadel constructed at that time; the Abbassid period ceramics recovered are now in the Erbil Museum.

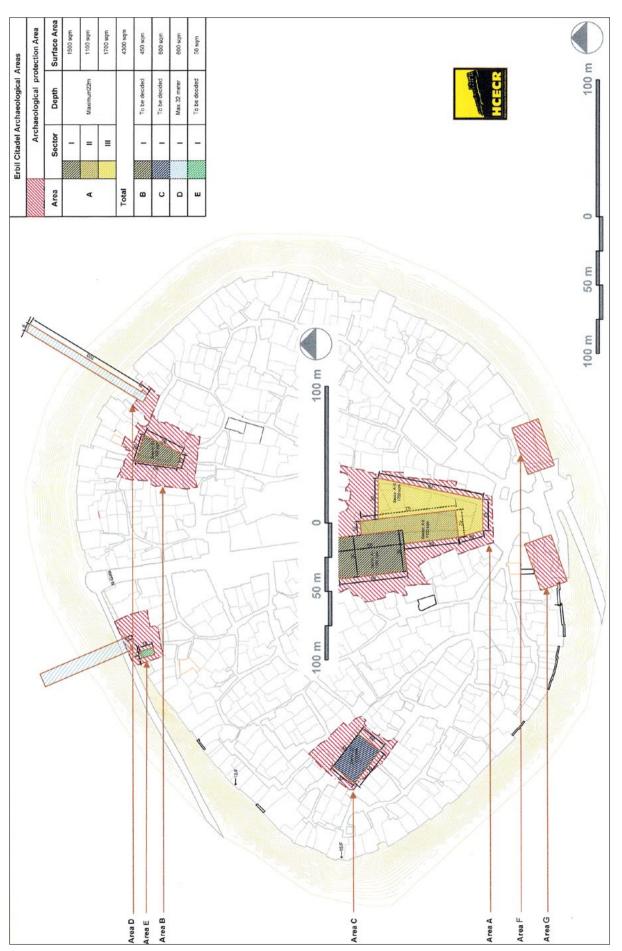


FIGURE 1. ERBIL CITADEL, AREAS DEMARCATED FOR ARCHAEOLOGICAL INVESTIGATION.

proposed sites for major excavations. The programme of excavation has started with an area on the perimeter of the mound (Area E, see below). It is expected that as things develop further areas may also be proposed.

In more detail, the areas initially identified as possible sites of excavation are:

(1) Area A (Central Excavation)

The most important archaeological objective is to conduct a major large scale excavation in the centre of the mound. The excavation needs to be sited towards the centre of the mound as this is the area in which this complete sequence down to prehistoric origins can be expected. Furthermore, it is highly probable that an excavation in this area will come down on to some of the major buildings of earlier phases, particularly the medieval and Ottoman period mosques, the cathedral and early Christian church and the ancient Assyrian temple of Ishtar. In terms of the areas demarcated in the Master Plan, the place to carry out this excavation is Area A. Balancing the space available against considerations of time and resources, it is proposed to demarcate an area measuring 20 x 20 m and excavate this down to the natural, i.e. to the surface immediately predating human occupation. This is expected to be a stratigraphic sequence of the order of 22 m thick.

(2) Area B

Area B is located in the northeast of the city. The zone for archaeological investigation is formed by a trapezium overlying the area now covered by Block 36. It measures 20 m on the north side, 30 m on the east, 10 m on the south and 30 m on the west. Surrounding the zone for archaeological investigation is a demarcated perimeter zone (marked with stripes on the map), so demarcated in order that no construction takes place before the completion of any archaeological investigations. Prior to the completion of the citadel revitalisation Area B would be an amenable and suitable site for an archaeological investigation.

(3) Area C

Area C is a zone in the western lobe of the city measuring 20 m x 30 m. It would involve the demolition of the shacks that constitute Block 50. Surrounding Area C is a demarcated perimeter zone, so demarcated in order that no construction takes place before the completion of any archaeological investigations. Prior to the completion of the citadel revitalisation Area C would be an amenable and suitable site for an archaeological investigation.

(4) Area D (step trench)

Area D is a location on the perimeter of the mound east of the Amedi Gate where the presence of a vacant lot in the line of mansions ringing the citadel presents an opportunity for archaeological work to be conducted. It is the only location where a step trench from the top of the mound could be laid out. In light of the results of the work in Area E (see below), Area D would also be the ideal place to carry out further investigations into the history and sequence of fortification walls around the citadel.

(5) Area E (Investigation of fortifications)

Area E is another location on the perimeter of the mound, this time west of the Amedi Gate, where the presence of a vacant lot in the line of mansions ringing the citadel presented an opportunity for archaeological work to be conducted. It was judged the best location for investigating what remains might survive of the historical fortifications. Excavations in this area were carried out in 2013 and 2014 and the results are discussed further below.

(6) Grand Gate (Foundations)

Prior to the demolition of the old southern gate, limited excavations (five test trenches) were carried out in order to trace the foundations of the Grand Gate in order to facilitate the reconstruction of the gate.

(7) Grand Gate (Northwest)

The opportunity could be taken to carry out an archaeological excavation in a restricted area in front of the surviving architectural elevation west of the Grand Gate in order to expose earlier levels and determine how they relate to the still surviving modern and pre-modern architecture. Once the road here has been moved back to going through the reconstructed Grand Gate, there will be an area up to 27 m long and 12 m wide where such an excavation could be sited.

(8) Grand Gate (East)

There is also an area east of the Grand Gate where at an upper level a block of remains appears to preserve a section through the city wall. Here it would be possible to clean up the section and conduct limited excavation in order to define and present these remains.

(9) Additional operations

It is envisaged that in due course there may be other areas where it is considered necessary or desirable to carry out archaeological investigations.

Selection of area for initial excavation (Area E)

It was decided to commence the programme of major investigations with one of the smaller operations. The area chosen for the first major operation was Area E, a

location on the perimeter of the mound just west of the Ahmedi Gate. The area was open courtyard space and therefore amenable for investigation. The principal aim of working in Area E was to investigate whether remains of the historical fortifications were preserved. That a defensive wall once existed is known from a firman issued by Sultan Mahmoud I in 1745 ordering their repair. It is not known whether or not this order was carried out but in any case at some stage in the following decades the nature of the citadel perimeter changed fundamentally. The city wall was replaced with a line of substantial houses which grew to completely encircle the perimeter, giving the citadel the distinct appearance which it has to this day. The full evolution of such a development will have taken a substantial period of time and it not known exactly when this change started. It is possible that the city wall was leveled in accordance with the order of Mahmoud I but that a subsequent rebuilding never took place, and that it was the existence of this leveled area with solid foundations which led to the evolution of the Late Ottoman period/early modern configuration of houses around the perimeter.

Commencement of operations

The commencement of operations was marked by a formal ceremony on March 27th 2013 attended by His Excellency Nawzad Hadi, Governor of Erbil, together with representatives of the HCECR, archaeologists from across Kurdistan, members of the press and invited members of the public. This was held on site in the location of Area E. Proceedings began with a speech of H. E. the Governor, followed by speeches by Dara al Yakubi, Head of the HCECR, and by Dr. Abdullah Khorsheed and Dr. John MacGinnis. H. E. The Governor and the Head of the HCECR then formally started the excavation.

Summary of results

In the course of three seasons in 2013 and 2014 the area excavated in Area E consisted of a main trench measuring 20 x 15 m and an additional trench in the northwestern corner measuring 6 x 8 m. The primary aim of the excavation, locating the fortification wall, was achieved. A section of this wall was exposed and excavation was then conducted both to the north and south of it. In broad terms, the area may thus be considered in three sections – the area within the wall, the area outside, and the wall itself (Fig. 2).

Inside of the fortification wall

As regards the area on the inside of the wall, most of the features found are foundations and subfloor features of buildings that were demolished together with a fair number of pits. Most of these are very late, nineteenth or twentieth century AD. The deeper features visible in the soundings may be considerably older: ceramics going back as far as the Abbassid period have been recovered but the contexts from which they come were not well defined and it is possible these earlier ceramics were recycled in fill laid down at a later period. (The general presence on the Citadel of an occupation dating to the Abbassid period is of course not in doubt). The most interesting features are the two circular/conical brick structures. Although similar at first glance, they are in fact constructed differently. The one on the eastern side has its bricks faced on the outside, while the western one has its inside surface properly faced but not the outside, which suggests it is a sub-surface structure. The fill of this structure was excavated to a depth of nearly 3m without reaching any surface, at which point the work had to be suspended for reasons of safety. The fill was soft and very ashy all the way down with lots of animal bone and organics, as well as a large quantity of Ottoman period pottery including a number of distinctive poppyhead pipe bowls. At the moment the function of these circular structures is still not clear - defensive towers, cold storage, ovens or even ice houses have all been suggested.

Outside of the fortification wall

The area outside of the wall consisted chiefly of levelling fills, sloping deposits and a thick ash layer. The principal levelling fill, which was made up of alternating bands of red clay and grey dirt, was laid down in order to bring an area outside of the main wall up to the level of the ring of residences. It is as a result highly likely that it was created in order to form a platform for another mansion in this area. As a result, this fill must date to after 1745. For this method to work there must have been an outer retaining wall but signs of this have yet to be actually found. Underneath this levelling fill was a thick deposit made of dark olive-brown earth sloping up to the fortification wall: this deposit is interpreted as a rampart built up on the outer side of the wall. Underlying this was a layer of firstly broken mud brick material up to 1 m thick and below that a thick layer of ash. The ash layer, discussed further below, is provisionally interpreted as the remains of a destruction layer from an event preceding the construction of the main fortification wall. This ash was above another layer of compacted mudbrick rubble up to 40 cm thick which in turn overlay a wholly different earlier defensive wall.

The fortification wall

We turn now to the fortification wall itself (Fig. 2-3). The wall is built of a mixture of baked and unbaked mud bricks. It was in the end excavated to its full depth, resulting in an exposed standing section some 2.80 m high. The most notable feature is a cylindrical tower set in the wall with a diameter of 7.50 m. As this is solid brickwork it probably acted as a platform for defenders.

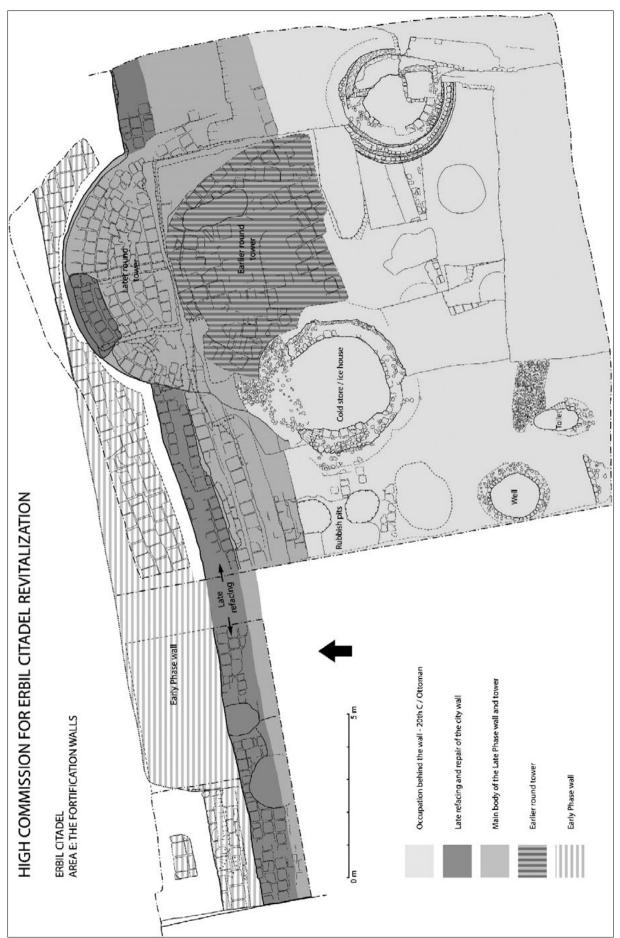
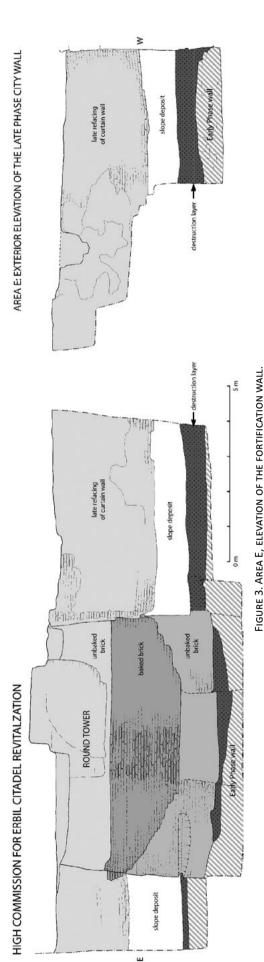


FIGURE 2. AREA E, PLAN OF THE EXCAVATIONS.



The tower had three main phases, an initial phase of unbaked brick, a baked brick rebuilding, and lastly a section of unbaked brick again. The wall itself is also not one single construction but rather something which was modified and added to on multiple occasions. The exposed outer elevation of the wall appears to be a late re-facing of the pre-existing wall structure three brick rows thick. This outer skin is not properly bonded to the wall behind and is made of slightly smaller bricks. The earlier wall behind is at least two bricks wide but traces of further brick rows continue back behind the wall face, where they are badly cut by later features, making it impossible to find the interior limits of the wall. As well as the outer re-facing of the wall, the tower was also repaired with a section of baked brick – this could be the remains of the repair work ordered by the Sultan in 1745.

There are also traces of curving brickwork behind the tower and careful cleaning of the uppermost surfaces revealed a very clear curving row of bricks forming the outer edge round a mass of dense brickwork. It seems virtually certain that this is the remains of an older tower – not as well preserved as the main one – and it seems very probable that deeper excavation in this location would reveal a corresponding curtain wall. Lastly, at the western end of the trench are the well preserved remains of a section of major walling built of baked brick which extends out beyond the wall face and clearly predates the main section of the fortification wall as visible now.

The fact that this wall has been rebuilt and repaired to this extent suggests it had a very long life in this form, probably stretching over several hundred years. In its earliest form this wall could be Medieval or even Early Islamic. The precise dating is a matter of ongoing research. Material culture recovered so far — ceramics and small finds — do not give much in the way of useful information as the contexts from which they come were too disturbed to be stratigraphically meaningful. There are however two other approaches which may prove more fruitful, (1) analysis of the dimensions of the bricks used and (2) analysis with scientific techniques such as OSL (Optically Stimulated Luminescence) dating; work on both of these approaches is currently in progress.

However the story does not stop here. Continuation of the excavation on the outside of the main wall below the level of its foundations revealed that it was built on top of a layer of ash up to 80 cm thick, and that this in turn overlay – at a depth of over five metres below the top of the tower – the remains of another massive wall. This is a completely separate, much earlier city wall underlying all the upper phases. In the section exposed to date no tower is visible, though there is an evident kink. The outer face of this wall was plastered with a thick layer of red mud plaster, which must have given a rather striking appearance to the city. Another interesting feature is that the later tower is built right up

to the edge of the earlier wall, deliberately using it as a foundation, suggesting that the earlier wall was still in evidence when the later wall was built. At the moment we have no direct indication of the age of this earlier fortification. A critical clue in this regard will be the results of C₁₄ tests currently been carried out on samples of charcoal taken from the ashy layer separating the two walls. At this stage the most obvious interpretation is that this ash is a destruction layer associated with the end of the use of the earlier wall. It clearly demonstrates some violent event which occurred to Erbil, and it may be that it will in due course be possible to relate it to evidence from historical sources: possible candidates would include the destruction inflicted by the Mongols in 1258. Another piece of evidence for dating the earlier fortification is the size of the bricks used – 40 x 40 cm - dimensions consistent with, if not confined to, ancient Mesopotamian culture of the first and second millennia BC. In this context it should be noted that the history of the fortifications will have begun not just in the Assyrian period (900-600 BC) but in fact even earlier. We know, for example, that in the early second millennium, around 1800 BC, Erbil was besieged by a coalition of Shamshi-Adad of Assyria and Dadusha of Eshnunna (in the Hamrin). Shamshi-Adad explicitly refers to 'all the fortified cities of the land of Urbilum' - Erbil must certainly have been one of them. So we know the city was fortified at least from that period. In reality, it will not be surprising if we eventually discover that Erbil was a fortified city long before this, well back into the third millennium BC.

One last thing to consider about these massive fortification walls is the impact they might have had on the development of the citadel. The slopes of the mound are steep and our findings suggest that a possible reasons for this is that the underlying structure might be a continuous series of fortification walls, each one using its predecessor as a foundation. It would explain why the slopes seem relatively stable, even at the top edge where they support the current buildings. The fact that the settlement was restricted behind fortifications for most of its history would also explain why so much of its growth has been upward.

Future Operations

The initial plans for archaeological investigations were laid out above. As envisaged, the selection of areas actually to be investigated and the sequence and scheduling of excavations will be an on-going process. At the present moment, the results of the work in Area E suggest that there is further work that can be done in investigating the fortifications systems.

Fortification system

The excavations in Area E have uncovered remains of the fortification wall which must correspond to that last in use in the middle Ottoman period, falling out of use sometime between 1745 and 1800. In addition to this the excavations uncovered sections of two earlier walls, one inside of the Ottoman period wall and one clearly below it, with an intervening destruction level. It is therefore certain that not only does the Ottoman period wall comprise multiple phases, but that there are entirely separate earlier fortification walls. It is entirely possible that the full history of fortification walls at Erbil is (much) more extensive than the three walls discovered to date. Elucidating this sequence more fully would make a major contribution to our understanding of the history and development of the city. Due to the proximity to the access road leading up to the Amedi Gate, the extent to which further investigations of the fortification systems can be carried out in Area E is limited. There is however a second perimeter area, Area D, east of the Amedi Gate, where the existence of a vacant plot would allow an excavation to further investigate the fortification systems but without the problem of coming up against the access road. Conducting an excavation in this area is accordingly recommended as one aim of future operations.

Internal excavations

Area B and Area C are both areas where the demolition of modern shacks will clear a space where it would be possible to conduct archaeological investigation prior to redevelopment in accordance with the Master Plan.

Major central excavation

A major large scale excavation in the middle of the mound (Area A) remains a major objective. As outlined above, this has the potential to make a major contribution not just to the historic and prehistoric sequences of Erbil but to Mesopotamian archaeology as a whole.

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The site of Bazyan: historical and archaeological investigations

Narmin AMIN ALI and Vincent DEROCHE

The monastery of Bazyan – in Kurdish, Der Bazyan – is situated in a cultivated plain in the district of the nearby town of Takiya in the province of Sulaimaniyah approximately 45 km west-northwest of Sulaimaniyah itself, on the edge of the major route linking the city to Kirkuk (Fig. 1). The pass of Bazyan immediately to the north of the site is considered one of the major passes through the section of the Zagros mountains stretching fromtheLesserZabtotheSirwanriver, equal in importance

to the passes of Sgrama, Basara and Darbandikhan. From antiquity onwards there is continuous attestation for this route being used for the transportation of goods from the southern part of Garmiyan (Kirkuk, ancient Arrapha) to the north of Mesopotamia and to the highlands to the east (the Shahrizor, ancient Zamua), and beyond. The pass is for example referred to, under the name Babita or Babitu, by Ashurnasirpal II (863-859 BC) who, in describing his campaign to Zamua, states that 'the pass



FIGURE 1. GENERAL VIEW OF THE SITE FROM THE WEST. SOURCE: AUTHOR.

was unapproachable, closed by a wall'. In Kurdish the pass is called Darbanda Ruta or Darbanda Wushka - 'the denuded pass' - because it is devoid of trees. It is also mentioned both earlier, by Adad-nerari II (911-891 BC) and later, by Sargon II (722-705 BC). Military forts were constructed on these routes, as were customs posts for the collection of dues on goods in transit. According to Prof. Tofiq Wahbi, the oldest reference in Islamic sources is in the Nuzhat Al-Qulub of Hamdallah Mustawfi (473 AH = 1080 AD), where it is called Darband Khalifa -'the pass of the caliph' - evidently a mystical name as under Ishmailism the title caliph is used as an epithet of the Imam as the caliph (vicar) of God on earth. In 629 AH (1231 AD) Bazyan is mentioned, along with the Shahrizor, in connection with the spreading of the news of the presence of Mongol forces when they passed by Kirkuk and then through Bazyan on their way to Azerbajan. In the Ottoman period it is referred to as the pass of the Imam Shah (bin Ghazi) because the Sultan Kanuni (Suleiman the Magnificent) passed through in 941 AH (1534 AD). In the time of Nadir Shah Safawi it was called Darban Ak 'the white pass', from the colour of it rock. In a document going back to 978 AH (1750 AD) the prince of the Shahrizor proposed constructing a fort at the entrance to the pass, stating 'the construction of a fort on the Darban river in the wilayat of Baban, which rises from the Shahrizor, is becoming necessary, both in order to assure the security of the region, as well as for the economic advantages for the government'; the costs of this undertaking were estimated at 20,000 gold pieces if constructed out of dry stone masonry. The recommendation to the prince by the princes of Baghdad envisages proceeding with a feasibility survey, moving on to construction in the event of a positive conclusion. In the Ottoman period numerous battles took place around the pass between Tubal Ottoman Basha and Nadir Shah, and in 1194 AH (1780 AD) the pass is again mentioned in the context of fights between Ottoman forces and the princes of Baban. In the course of a visit to the region in 1965 Taha Baqir noted ruins of walls of dry stone masonry going back to the time of Abdulrahman Basha: he revolted against Baghdad in 1223 AH (1805 AD) but was defeated in battle by Kujal Suleyman Basha, wali (governor) of Baghdad, aided by the Kurdish princes Khalid Basha and his sons, who led the Turkish army up to the pass. The wali joined together his troops coming from Mosul and Baghdad and bombarded the Kurdish positions for three days. Since the pass was closed, the Ottoman soldiers turned it by crossing over the mountains, forcing Abdulrahman to flee with his whole army to Persia. The Ottomans then destroyed the wall and entered victoriously into Sulaimaniyah, now evacuated by the forces of Abdulrahman. The conquerors promised immunity to the population and installed as governor the prince Suleiman Basha, son of Ibrahim Basha; the wali then returned victorious to Baghdad. According to Taha Baqir, there was still a gate in the wall in the time of Claudius Rich, who in 1832 mentions a gate at the entrance to the pass, together with an inn and a well. In 1918 the Kurdish leader Sheikh Mahmoud was wounded here fighting the British and sought refuge behind a boulder, known to this day as Barda Qaraman, 'the rock of the hero'; he died in 1956.

As regards the monastery, there is no historical or literary information, nor has any inscription been found which might tell us the name of the saint to whom it was dedicated. Excavations to date have yielded a certain number of coins as well as a bronze cross which are taken to be Nestorian. The ruins are first mentioned by Rich during his visit in 1832: he saw the remains of a rectilinear structure which he attributed to the Sassanian period, comparing it to those of Koro at Khanaqin and the 'Palace of Shirin' (Qasr Shirin). Between 1987 and 1992 the Directorate General of Antiquities of Sulaimaniyah organised excavations under the supervision of M. Mutasam Rashid. The site had until then been taken to be Zoroastrian but what the excavations, sadly not completed, actually revealed was a fort with a Christian monastery. Our visits to the site in 1998, 1999, 2000, 2009 and 2010 – made possible by the Directorate General of Antiquities of Sulaimaniyah and in particular by M. Kamal Zewe and M. Hashim Hama, who facilitated access to the museum and the museum depot – allowed us to undertake a preliminary study, and the excavations undertaken by the French team in 2011, 2012 et 2013 have allowed us to considerably deepen our knowledge of the site.

The 2011 campaign allowed us to create an accurate plan of the whole monument and its topographic environment, as well as to identify the parts of the building which had been restored (Fig. 2). The work of the mission has confirmed the existence of the church, of inhabited areas in the northeast corner of the fort, of the cistern, and of remains of a storage room in the northwest corner. One problem relating to the site relates to the fact that in the excavations of 1987-1993 the ceramic and numismatic inventories did not register the archaeological contexts from which these materials came - there is not even any indication in the excavation reports which we have consulted in the archives in Baghdad. In addition to this the objects were subsequently all mixed up. The church, a basilica plan with three spans and a bema (platform), has a raised sanctuary, further raised in a second phase (Fig. 3). It is preceded on the western side by a gallery and on the south by a narthex (antechamber) where two tombs have been inserted, undoubtedly at a later date. In accordance with the regional style, the nave was covered by barrel vaults supported by the walls and by quadruple columns ranging from 110 cm to 125 cm in diameter. The columns rest on rectangular bases at ground level, again raised in a second phase. These columns are made of rubble plastered over to give the appearance of monoliths. To the east of the rectangular sanctuary is an ambulatory, then an apsidal room with niches, probably



FIGURE 2. PLAN SHOWING THE LOCATION OF SOUNDINGS. SOURCE: AUTHOR.

a beth sahde, the tomb of holy men around whom a cult had grown up. The semi-circular bema in the nave is a tribune where the clergy were installed during the Liturgies of the Word prior to re-entering the sanctuary for the Liturgy of the Eucharist. This is one of the rare cases where the bema in an ancient Syriac church is

preserved; a small corridor (*shqaqona*) connects it to the sanctuary.

In the 2012 campaign, in order to gather more information about the site, a sounding was opened up in the area north of the enclosure wall (Fig. 4) at a place



FIGURE 3. THE SANCTUARY AND THE NAVE. SOURCE: AUTHOR.



FIGURE 4. NORTHERN SOUNDING 4. SOURCE: AUTHOR.

where the archaeological deposits were preserved to a significant depth (the east side of the enclosure wall is

cut by a wadi while the south and west sides have been destroyed by water erosion and by the construction of the

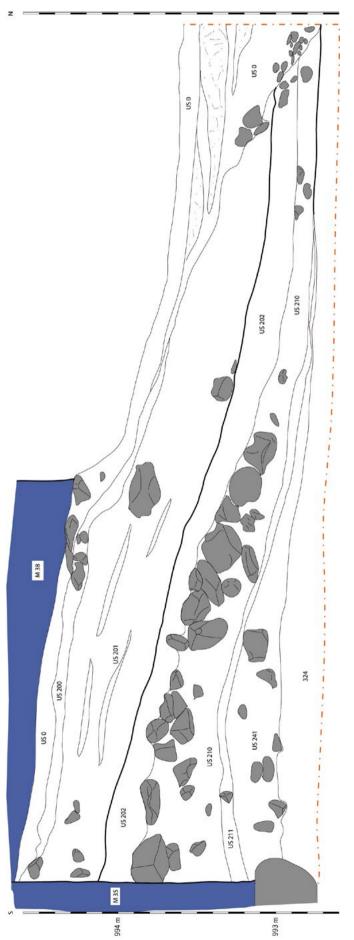


Figure 5. Stratigraphy of northern sounding 4. Source: Author.

second modern road). In Sounding 4, along the northeast edge of the rampart (USM 35) between loci 35 et 36 (Fig. 5), the first phase of the wall rests directly on natural soil; associated finds are ceramics dating to the Sassanian period and a cross pendant made of bone with carbonised wood attached (US 241; Fig. 6): these date to the 6th-7th centuries AD confirming the Christian occupation of the site. The wall is associated with a trodden surface (US 211) made of plaster with lime and pebbles; the wall itself was coated with lime plaster. The reinforcement of the defensive system is evident in a second phase which saw the addition of a glacis built directly on wall 35, covering it to a depth of a metre. This glacis (US 202 and 210) is made of large blocks of limestone in a lime mortar and extends outwards at a 20% slope for a distance of at least 5 m. The almond-shaped half tower (USM 38) is bonded directly with the masonry of the glacis. The occupation levels are evidenced by a succession of brown ashy deposits with a heavy concentration of objects (US 201). Another sounding was executed in the middle section of the north wall, in front of the section of the wall locus 37 which is the most recent section in this part of the surrounding wall. The results of this sounding were slightly different: the glacis was again found, but not the earlier floor, something which for the remains inexplicable. moment The interior northeastern sector reveals itself as the oldest structure, constructed over multiple periods with multiple functions: habitation, then a fort and church with visible reconfigurations (Fig. 8). The return of the eastern wall in locus 61 marks the position of a large gate masked under a large dry stone wall which had been installed as a defensive measure. The axis of symmetry of this position relates to all the space on the west up to walls 75, 79 and 127. The monumentality of the whole is underlined by 'false' quadruple columns



FIGURE 6. CROSS PENDANT. SOURCE: AUTHOR.

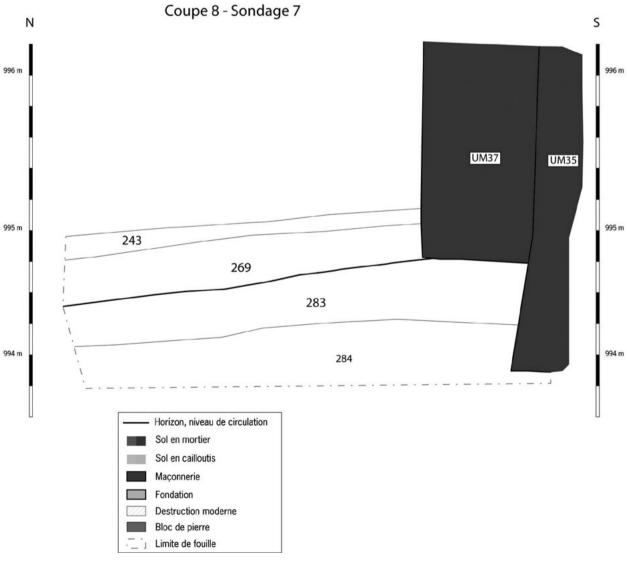


FIGURE 7. STRATIGRAPHY OF NORTHERN SOUNDING 5. SOURCE: AUTHOR.

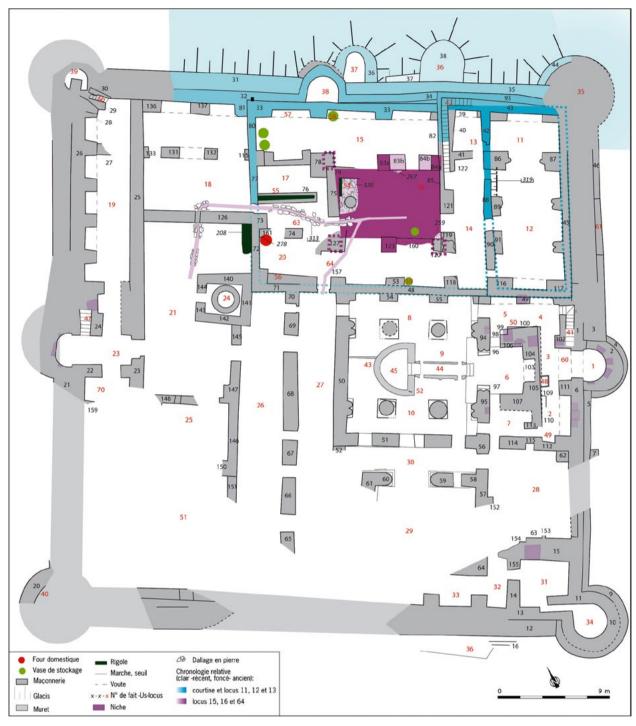


FIGURE 8. INITIAL NORTHEASTERN SECTOR. SOURCE: AUTHOR.

made of rubble bonded into a very hard mortar; one of these (USM 119) is quite well preserved, including its pendant (Fig. 9). There are half columns on walls USM 86, 89 and 45, but no trace of a half column on USM 91. According to the sounding south of wall 83, the line of supports 120/123 and 127 to the south has no

symmetrical counterpart on the north. The nature of the space between USM 75 and 127 on the west and USM 119 and 121 on the east remains to be determined, the most probable hypothesis being a court on the south with a colonnade to ensure the lighting of the area. Associated with the monumental phase is a floor of white plaster,



FIGURE 9. QUADRUPLE COLUMN. SOURCE: AUTHOR.

compact and smooth in all loci (11, 12, 13 et 14), with a raised area in 12; under this floor and its associate subfloor preparation is an earlier working surface of white plaster. This area appears to have been the elite part of the fort, with a utilitarian area more towards the west and the storage chamber with large jars (pithoi). USM 75, 79, 76, 77 et 74 are the extension of wall 83 and 84. There are a number of elongated and slightly hollowed structures laid in a bed of thick plaster on top of low walls which appear to be mangers (USM 54, 55, 56, the structure west of 72). These structures, surely later than the 'principal' phase of the building, are not necessarily very remote in time from it, this part of the dwelling having been eroded in this zone. One notes the presence of a number of domestic mud brick fire installations (tannours); the lack of associated material does not allow for a date to be proposed, but it is an indication of occupation at the site.

In conclusion, the site of Bazyan remains one of the most important sites in a region intermediate between the northeast (Shahrizor) and the southwest (Kirkuk), fundamental in the history of the early Christian period in the Kurdish part of Iraq. The structural analysis of the different phases in a relative chronology allows us to clarify moreover the context of the church and the fortification. Four phases emerge, three of which are Sassanian. The first is the northeastern sector (see above); then a first enclosure wall constructed at the same time as the majority of the buildings, in particular the church; then a second enclosure wall, initially associated with a phase which does not seem to have undergone any other transformation; and finally the glacis and internal modifications which date to the Umayyad and Abbasid periods. The site is occupied at least until the end of the first millennium and very likely later.

Short notes on Chalcolithic pottery research: The pottery sequences of Tell Nader (Erbil) and Ashur (Qal'at Sherqat)

Claudia BEUGER

The examination of the prehistoric pottery of Tell Nader, a 1 ha site within the modern outskirts of Erbil, has promoted the re-evaluation of the pottery from Ashur, the nucleus of the Assyrian empire, concerning the question of its earliest date. Until now it was not possible to prove a date earlier than the third millennium BC for Ashur. However Dittmann (2010, 51 n. 17)¹ already discussed a Neolithic age of three vessels which were lying *in situ* under the central court of the Assur-temple. The fresh look at the Ashur material now allows us to assume some kind of prehistoric settlement activities from the 7th to the 4th millennium BC on a much better basis.

Since a complete presentation of the documented material from Tell Nader of the 2011-2013 excavations is already in preparation, it is the main concern of this paper to show the main types of Tell Nader especially as a reference for the Ashur material.

The pottery sequence of Tell Nader (Erbil)

At Tell Nader we can define a more or less uninterrupted Neolithic sequence from the Proto-Hassuna period onwards, including Hassuna, Samarra and Halaf sherds – all without any context so far. The youngest finds date to the Late 2nd or Early 1st millennium BC, such sherds were found only on the fringes of the site. Although a jar burial was cut by construction works in 2010 at the outer eastern part we can assume that the architectural structures of the latest phases are completely eroded (Kopanias *et al.* 2013).

The impression of an Ubaid date for the main horizon at Tell Nader² was established by the clear presence of numerous typical dark painted and greenish overfired sherds. The bowls with a zigzag line (Fig. 1) can count as a fossil type and finds several parallels in Northern Ubaid contexts such as at Tepe Gawra XVII (Tobler 1950, pl. CXXI, 95) or Hammam et-Turkman IVA-C (Akkermans 1988a, 138 fig. 3.35-36, 140; fig. 5.66-68). Even if slightly earlier material is well attested (Fig. 2a),

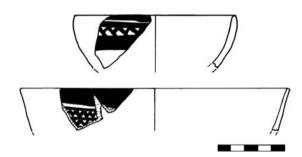


FIGURE 1. TELL NADER, NORTHERN UBAID: BOWLS WITH ZIGZAG LINES (PREDOMINANTLY FINE CLAY, LESS INCLUSIONS, WET FINISH, GREENISH OVERFIRED).

it will need a more detailed study – and stratigraphy – to identify material which can be assigned to the Halaf-Ubaid-transition, if it is there at all. Some special features of the Ubaid are fragments of some lenticular jars with a high spout (Fig. 2b³) or oval shaped bowls (Fig. 2c; Tobler 1950, pl. CXXIII, 112, Gawra lev. XVII; pl. CXXV, 145+147, Gawra lev. XVI, XV).

Another stratum above that Ubaid level offers a new possibility to study the late Ubaid/Early Uruk-transition. In this context we can highlight a mainly chaff tempered and in most cases undecorated bowl type of varying dimension with a significant groove on the rim (Fig. 3a). It is very probable that this feature can be likewise identified with the 'bowls with bevelled rim' in Syria (Matthews 2003, 46-7 fig. 3.15:15, 31; Brustolon and Rova 2007, 12 type C2), which would support a LC1-2 date. Beside this the so called Wide Flower-Pots⁴ (Fig. 3b) and handmade conical and concave bowls are frequent at Tell Nader (Fig. 3c-d). The same period is proved by neckless jars with flaring rim (including the variant 'hollowed rim jars') and double rimmed jars/ channel rim pots (Fig. 3e and f; LC25: Al Quntar and Abu Jayyab 2014, 96-7 pl. 6.1-2). Furthermore double

I I thank Helen Gries (Berlin) for this hint and Reinhard Dittmann (Münster) for some personal communications about this subject. Indeed the vessel on the left in Haller and Andrae, 1955, pl. 25a (in situ photograph) finds good references within the Proto-Hassuna assemblages of Tell es-Sotto (Bader 1993, 48 fig, 3.5) and Yarim Tepe I (Merpert and Munchaev 1993, 106 fig. 6.18 type I).

² This horizon does not show any architecture so far, but industrial installations, kilns and as well as a burial of a woman (layers 4-5).

³ Present in Gawra lev. XIX-XVII and Eridu XIII-VI; Safar and Lloyd 1981, 155 (cf. Tobler 1950, 136).

⁴ This type is discussed by Baldi (2014, 398, 415 fig. 5), who considers it to be the eastern variant of the so called Coba bowls, a marker of the LC1-2 in Syro-Anatolian contexts (e.g. Brustolon and Rova 2007, 11 Table 2).

⁵ However one of them is painted in the manner of the 'sprig ware' (LC1: Ball 1997, 93; Al Quntar *et al.* 2011, 162).

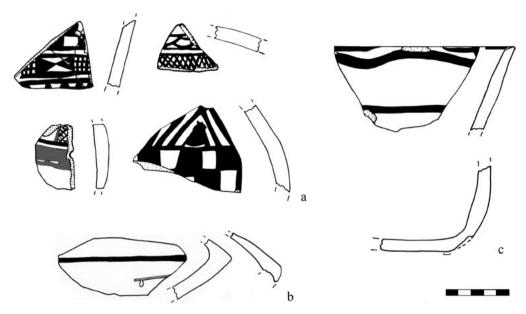


FIGURE 2. TELL NADER, EARLY NORTHERN UBAID: A. PAINTED SHERDS (PREDOMINANTLY FINE CLAY, ORGANIC TEMPER, BURNISH, BROWNISH-BUFF WITH REDDISH-BROWN PAINTING), B. FRAGMENTS OF LENTICULAR JARS WITH A HIGH SPOUT (?) (FINE CLAY, ORGANIC TEMPER AND LIME INCLUSIONS, WET FINISH, GREENISH AND BUFF, LEFT: TRANSPARENT GREYISH BAND PAINTING AND INCISION), C. OVAL SHAPED BOWLS (FINE CLAY, ORGANIC TEMPER, WET FINISH, BUFF AND GREENISH, RIM WITH REDDISH BROWN PAINTING, BASE WITH BLACK PAINTING).

mouthed jars (Fig. 3g) were assigned to the LC1-2 horizon by Gut (1995, 226, 229, 231 pl. 21). Another preliminary observation can be added to these LC1-2 indicators: It is not really tested by stratigraphy and statistical analysis yet, but it is already worth mentioning that while studying the collections in the sherd garden it was obvious that we have several collections with very little painted decoration besides collections with a high amount of painted material. This phenomenon should be seen as evidence of the already known reduction of painted decorations in this era.6 The interpretation of Quntar and Abu Jayyab (2014, 106) that the LC2 potters used the benefit of chaff for the firing process but tried to hide even the fine chaff temper by burnishing the surface⁷ can be supported by the Tell Nader material on a very preliminary level, since burnishing is common but not predominant so far. Also the question of a reduction of the vessel types8 needs more detailed study in Tell Nader.

The Middle Uruk period is not yet really tangible at Tell Nader: We have a lot of ring scrapers, but they are often greenish and of fine clay like the typical Ubaid material (Kopanias *et al.* 2014, 169 fig. 10a). In some cases we can observe a circumferential bitumen (?) band painting. One bowl was found in situ and resembles the shape and the coarse fabric of a LC3 example at Tell Brak (Kopanias *et al.* 2014, 169 fig. 10c; Felli 2003, 86-7 fig. 4.22.2). Indeed it should be emphasized that the fossil types of LC3 or Middle Uruk which were defined for the Khabur¹⁰ are missing at Tell Nader – and likewise at Qalinj Agha. One reddish sherd with a polished surface can probably identified as an example of the Late Uruk Red Uruk Ware (Kopanias *et al.* 2014, 169 fig. 10b; Gut 1995, 292-3).

⁶ Vértesalji (1984) was able to demonstrate the long time run of the typical Ubaid-ceramics on into the Early Uruk levels for most southern sites, an exception being Uruk/Eanna Archaisch XII-X/IX (referring to the stratigraphical problems see below and Dittmann 2006, 23-4, 40). Quntar and Abu Jayyab (2014, 99, 106) stress that in Brak TW level 21 (LC2-end) painted decoration stopped completely, and was replaced for a short period (Brak TW Level 20, LC2-final) by rapidly made decoration such as impressions/incisions (not identified at Tell Nader so far). Even the latter disappeared in early LC3.

Referring to them this habit stopped in LC3.

⁸ Quntar and Abu Jayyab (2014, 99): in LC2 14 types form 90.1% of the assemblage, in early LC3 7 types form 90.7% of the assemblage.

⁹ The painting does not really support Alden's (1988) interpretation of these objects to be potters' scraping tools.

¹⁰ Grey burnished ware, bowls with drop painting, bevelled rim bowls, jars with grooved inside, casserole-bowls, hammer head bowls referring to Schwartz 2001, 239 fig. 7.4; Brustolon and Rova 2007, 11 Table 2. This group was wrongly ascribed to LC1-2 in Kopanias *et al.* 2014, 169. Unfortunately something else went completely wrong with the pottery catalogue of that manuscript – I apologize for this; the corrigenda are: 168 Fig. 6a-h; 169 oval vessel Fig 8d, tortoise bottle Fig. 7h, double rimmed jar – variant Fig. 9f, large bowl Fig. 10c, ring scraper Fig. 10a, Red Uruk Ware Fig. 10b, pie crust pot stand Fig. 11g; 177 table Fig. 8e = Fig. 9g, Fig. 8f-g = Fig. 7h.

¹¹ Abu al-Soof 1969, 8: no BRBs and no other Southern Uruk influence. On this basis Gut (1995, 242) argues that Qalinj Agha was abandoned after Gawra B (Qalinj Agha lev. IV-I = Gawra XIA-X or IX). The pottery of Qalinj Agha lev. IV-I is more or less identical (Gut 1995: 241-242).

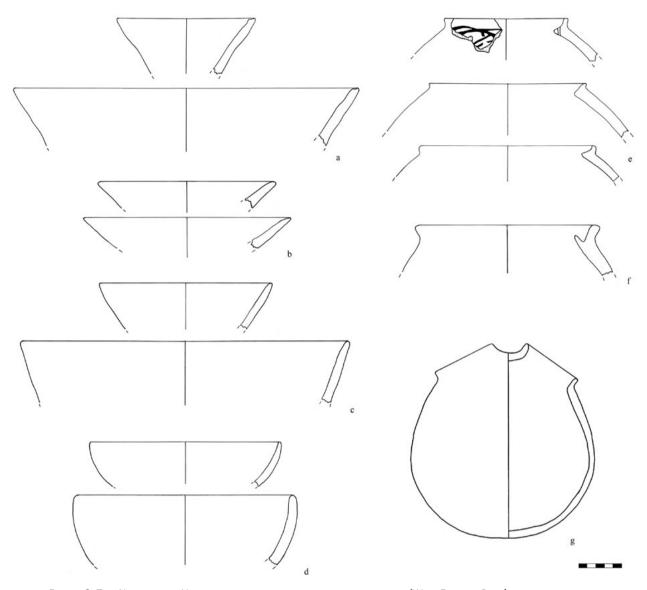


FIGURE 3. TELL NADER, POST-UBAID: A. BOWLS WITH A GROOVE ON THE RIM, B. 'WIDE FLOWER-POTS', C. CONICAL BOWLS, D. CONCAVE BOWLS, E. NECKLESS JARS WITH FLARING RIM, F. DOUBLE RIMMED JAR, G. DOUBLE MOUTHED JAR (PREDOMINATELY FINE CLAY, ORGANIC TEMPER, BURNISH, BROWNISH-BUFF).

The pottery sequence of Ashur (Qal'at Sherqat)

The following remarks are an attempt to add a further Chalcolithic site on the map of Mesopotamia. My work on the sherd material of Tell Nader encouraged me to reconsider the question of Ashur's earliest settlement. On this behalf the pottery corpus of the deep trench at Qal'at Sherqat (Ashur) which was excavated in the late 1980s (Dittmann *et al.* 1988; Dittmann 1990; Beuger 2007) and the pottery corpus of the earlier excavated so called Archaic Ishtar temples (Andrae 1922; Bär 2003) shall be re-evaluated. Most of the earliest sherds of both excavations date to the late 3rd Millennium BC. A slightly earlier date, probably to the mid of the 3rd Millennium,

can be assumed for some sherds and small finds from the deepest level H of the temple complex which is still the only structure in Ashur founded on natural rock (Bär 2003, 39-41; Beuger 2013, 3-4). Anyhow the date of the first settlement at Ashur is still debated. Bär (1999) already discussed a Jemdet Nasr age for Ashur in detail, but ended up rejecting this. The stylistic characteristics of the small finds were in particular not precise enough.

¹²Also Miglus (1996, 53), who studied the architectural remains of Ashur intensively, has stressed that the wall fragments of level H of the Archaic Ishtar temples are still the earliest known architectural remains at Ashur.

¹³ For the group of small incised lime stone plates see Dittmann (2010).

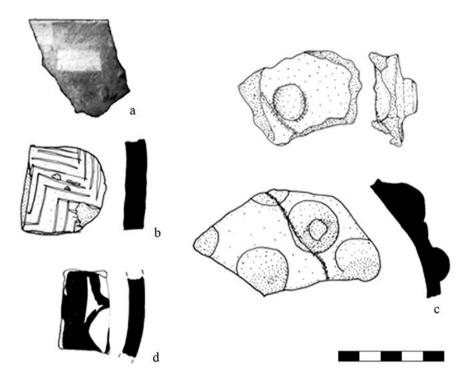


FIGURE 4. ASHUR, UBAID: A. PAINTED RIM (?) SHERD (BÄR 2003, 289 TAF. 146); B. INCISED HERRING BONE PATTERN (FINE CLAY WITH MINERAL INCLUSIONS AND SOME COARSE ORGANIC TEMPER, HAND-MADE, BUFF-REDDISH-GREENISH; BEUGER 2007, CAT. II PL. 117, 3), C. APPLICATIONS (TOP: FINE CLAY, ONE WITH MINERAL INCLUSIONS AND SOME COARSE ORGANIC TEMPER, BELOW: VERY FINE FABRIC; BEUGER 2007, CAT. II PL. 116, 1-2), D. BLACK PAINT, INSIDE SOME BURNISH (MINERALS WITH SOME ORGANIC TEMPER, GREENISH; BEUGER 2007, CAT. I PL. 59, 8).

Nevertheless the problem of Ashur's earliest date shall be reconsidered since some sherds showed up within the two complexes under study do not really fit into 3rd millennium contexts. One example (Fig. 4a) from the broader context of the Archaic Ishtar Temples is documented only as a photograph. The decoration of that sherd probably finds a reference at Nineveh level 5. This assignment is not unrealistic since for Tell al-Naml, located only 15 km to the South, Ninevite 5 together with Scarlet Ware was reported (cf. Rova 2003, 3 n. 6; Sulaiman 2010: Tell al-Faras pl. 40, Tall al-Naml pl. 216-7). Additionally Andrae (1922, 16; Bär 1999: 12-3; Nagel 1964, 14) has mentioned several reddish painted sherds with geometric designs within a layer below the deepest H-structure of the Archaic Ishtar temples. Wolfram Nagel believes that those sherds are in fact pieces of Scarlet Ware (early and classical style).¹⁴ On

To go beyond the 3rd millennium date we should note the following aspects of the settlement history of Ashur: Andrae (1938, 98) described simple pits and fire places as probable prehistoric remains at Ashur. However he stressed that lithic finds were never made and prehistoric pottery was not mentioned at all. He also argued that the long period of extensive excavations should have offered clear evidence of prehistoric remains – if they were there. But the last point, in my opinion, can be refuted: We should not forget that the situation of Ashur is not a normal mound like tell, where erosion sometimes brings earlier objects to the light at the foot of the hill. Ashur

this basis an early date for Ashur at the beginning of the 3rd millennium is still not proved but is possible. Bär (1999, 13) however also emphasised the problem that these ceramic styles have longer run times.

¹⁴ Nagel (1964, 14) offers the following inventory numbers for the sherds: "im 'Archaischen Haus' (Ass 5048, 5065a-h), im Assur-Tempel (Ass 17104 a-b), zwischen Muschlalu und Enlil-Ziqqurrat (Ass 3379) sowie auf dem Stelenplatz (Ass 16027)." Recently the author was allowed to study those Scarlet Ware sherds by courtesy of the Vorderasiatisches Museum. They show bichrome paintings (dark brown-black and reddish brown or orange) of typical metopic and geometric designs and a characteristic ridge on the shoulder carination.

The fabric resembles typical 3rd millennium mineral tempered material. As a preliminary result we can assign them to the Jemdet Nasr/Scarlet Ware complex. For the Archaic Ishtar Temples Nagel refers to a statement by Andreae (1922, 16; Bär 1999, 13) without any inventory numbers. But such sherds were not found – either by Jürgen Bär or by the author, each of whom independently studied the sherd material of the temple complex in the Vorderasiatisches Museum in Berlin.

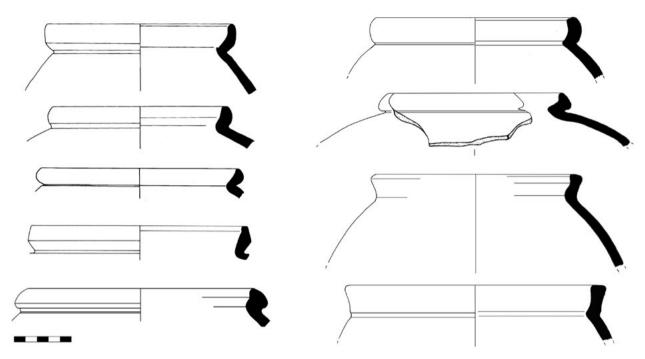


FIGURE 5. ASHUR, POST-UBAID: NECKLESS JARS WITH FLARING RIM (PREDOMINATELY FINE CLAY WITH MINERAL INCLUSIONS AND SOME COARSE ORGANIC TEMPER, BUFF;

BEUGER 2007, CAT. II 69.12, 72.14-17; 27.10-11, 32.2-3).

is a flat ruin with meters of younger remains which are probably covering prehistoric remnants. Nevertheless I will try to prove that some prehistoric sherds have reached the light of day but were not identified as such so far.

In regard to this question the following sherds from the Archaic Ishtar Temples and the deep trench should be discussed: the rough style of the incisions on Fig. 4b does not really match with the normal herringbone patterns which were regarded as characteristic of the first half of the 2nd millennium BC (Beuger 2013, 52). The style and the fabric are rather reminiscent of the description of similar Ubaid sherds, for example from Nineveh (Gut 1995, 231). Sherds with a pinched surface (Fig. 4c) are also attested in the 3rd millennium – for example at Tell Asmar, houses Va-c (Delougaz 1952, pl. 188 C.665.341+541+543a-c) - and the context of the deep trench of Ashur (Beuger 2007, cat. II 116.1-2). But they also find parallels in Ubaid contexts at sites such as Qalinj Agha lev. VI (Abu Al-Soof 1966, 79 pl. IV, 17)15 or Tell Abada (Jasim 1985, 133 fig. 211d). A more distinct Ubaid example is the black painted sherd with a greenish fabric (Fig. 4d; Beuger 2013, pl. 59, 8) from the area of the Ishtar temples. And finally it is possible that Fig. 4a is not Ninevite 5 but Ubaid in date. 16

If we follow this idea we should add a group of plain ware sherds (Fig. 5) which probably date to the post-Ubaid horizon.¹⁷ Some of them recall types from Tell Nader (Fig. 3e) and find good parallels at several LC1-2 sites.¹⁸ More caution is needed in the attempt to bring the bowls in Fig. 6 together with the so called casserole bowl, which is a fossil type for LC3-LC4 in northern Mesopotamia (Brustolon and Rova 2007, 14 type C8; Gut 1995, 98 nos. 881-884, Nineveh 3-4).

If these results find acceptance the evidence of an earlier horizon at Ashur can be established – in this case already as early as the Ubaid period.¹⁹ However this is not a big surprise with respect to the prominent geographical

¹⁵ But note that referring to Gut (1995, 243 n. 646) such decoration is not typical for the northern Tigridian area, but for the Hamrin.

¹⁶Cf. for example at Gawra XIII and XII: Tobler 1950, pl. CXXIX, 202; pl. CXXX, 206; pl. XXXVI, 275; pl. CXXXVII, 286.

¹⁷ Al Quntar et al. 2011, 161: an early form of later LC 3 rims.

¹⁸ Cf. for example Qalinj Agha (Hijara 1973, pl. 19), Tepe Gawra Lev. (XIII)/XII-IX (Tobler 1950, painted and unpainted: pl. CXXX, 210; pl. CXXXVII, 288, 290-292, 295; pl. CXXXVIII, 299, 301, 305; pl. CXLVI, 408-410; pl. CXLVII, 415-416), Khirbat al-Fakhar (LC1: Quntar et al. 2011, 7 fig. 7 nos. 4-5).

¹⁹ A very preliminary review of some sherds from Ashur at the Vorderasiatisches Museum also offered Halaf and Samarra sherds. Cf. also Dittmann 2010 as mentioned above.

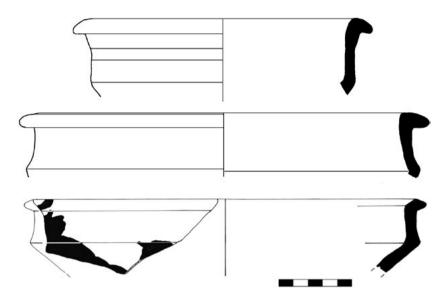


FIGURE 6. ASHUR, LC3-4: CASSEROLE BOWLS (?) (FINE CLAY WITH MINERAL INCLUSIONS AND SOME COARSE ORGANIC TEMPER, BUFF, BEUGER 2007, CAT. I PL. 7,4; CAT. II PL. 19. 12-13).

situation of the site. Furthermore, other prehistoric sites are known, especially in the Makhmur plain on the east bank of the Tigris.²⁰ But only excavations to the deepest heart of Ashur will provide conclusive evidence.

Conclusion

The results at Tell Nader raise the hope, that we will be able to present a new sequence from the Late Ubaid to Early Uruk – or post-Ubaid horizon, as it was termed at last (Marro 2014) - which would be a correlate for the earlier excavations at Tepe Gawra, Nineveh and of course Qalini Agha in that region. Qalini Agha is known for its Early Uruk tripartite building and offers many ceramics which are more or less identical with the material of Tell Nader, though the pottery of that site is not well published. The first excavation report of Qalinj Agha gave a detailed description of the pottery, but no pictures. The pottery of the later excavations, when the main buildings of levels IV-III were uncovered, was published only in minimized photographs or without a detailed description (Gut 1995, 241, ref. to Abu al-Soof and es-Siwwani 1967, Abu al-Soof 1969). However some very helpful drawings were published for the main level IV by Ismail Hijara (1973). For Tepe Gawra it was already emphasized by others that especially the relevant levels reveal stratigraphical problems (Gut 1995, 223; Rova and Brustolon 2007, 5).

Moreover statistical analyses of the types and fabrics²¹ are completely missing and the publication concentrates principally on complete vessels (Gut 1995, 225). We are also dealing with a similar situation in Southern Mesopotamia. Here Eridu and Uruk are considered as the most important sequences. But both of them confront us with the problem of old excavation methods and documentation systems. And again for the Ubaid-Uruk-transition, stratigaphical problems were described: Nissen (1993, 126, 130) has stressed that the Uruk Survey (Adams and Nissen 1972) as well as the Nippur Survey (Adams 1981) were based only on the Uruk/ Eanna-Sequence due to the stratigraphical problems at Eridu (Nissen 1993, 126). However Dittmann (2006, 24, ref. to Eichmann 1989, 41) pointed to an interference especially in this sequence, and concludes that we have no suitable sequence for Southern Mesopotamia. Additionally Marro (2012, 16, ref. to Akkermans 1988b, 218; Stein 2010, 33) already criticised that the way of the preliminary presentation of the pottery is one of our main problems in understanding the data. Arguments to demonstrate an Ubaid presence are generally based on painted material instead of the simple wares. That is true especially within the preliminary reports, which often enough never brought through to final publications.

In view of this we still lack a material basis to understand mechanisms behind the Ubaid-Uruk-transition in Mesopotamia and therefore for the important discussion

²⁰ Forest 1996, 54 fig. 46, ref. Copeland and Hours 1987; Kar-Tukulti-Ninurta: Dittmann 2010, 51 n 17; near Makhmur: El-Amin and Mallowan 1950: 65-6, pl. X-XI; Bakirte: Dittmann 1995, 96, 99 fig. 11; Sulaiman 2010, Tell al-Şabāģiyya pl. 69; Tall al-Sudayra pls. 168-89.

²¹ Tobler (1950, 159-62) offers a mineralogical analysis, but a typology of the fabrics was not developed.

about the direction of cultural and technical transfer, which lasts into the Middle Uruk period.²² Concerning the wide spread the Late Ubaid pottery, those questions have already been discussed in more detail. The discussion on the distribution pattern is lively and offers a variety of ideas with regard to interpretation: migration, marriage, trade, nomadism (Weeks *et al.* 2010: 264-6). The mechanisms are probably multiple, but especially technological aspects (e.g. channel rimmed vessels for distillation, Levey 1959, 31-5) should have forced the distribution very actively, and socio-cultural innovations such as beer drinking may also have influenced the vessel corpus (Joffe 1998; Berman 1994, 29; Pollock 2010).²³

Our investigations at Tell Nader should result in a more comprehensive definition of the local north-eastern pottery cultures, something already discussed by Gut (1995, 223 n. 568; Brustolon and Rova 2007, 6) and earlier scholars (Perkins 1949; Porada 1965) when they defined the Gawra horizon instead using of the term Early Uruk. Wright (2014, 124) on the other hand still prefers the term Early Uruk, based on the results of his study of material from Eridu, Susa and Tell Brak. Considering the concentration on Syro-Anatolia in most recent studies it is now necessary to put the southern perspective back on the agenda. However Ashur is not a candidate to bridge the North and the South since all prehistoric remains, which will be identified within the publications or at the Vorderasiatisches Museum in Berlin, originate from younger fillings.

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²² For the Ubaid period Moon (in Roaf 1984, 142) already stressed a closer relationship between Tell Madhur in the Hamrin and Tepe Gawra instead of Southern Mesopotamia.

²³ For historical periods state organization is generally seen as the responsible factor for homogeneity of vessel shapes in large regions. An intensively discussed example is the pottery of the Middle Assyrian period: Several scholars assumed a direct influence of administrative mechanisms which are connected with the state. Some are speaking about an Assyrian pottery, meaning an ethnic identification with the pottery – although it is fast made, plain ware (for critics see Beuger 2013, 279-80). Especially the prehistoric supra-regional appearance of the pottery styles contradicts such interpretation, since we do not expect a hierarchical system for the ceramic industries at this early stage (Carter and Philip 2010).

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New Evidence of Paleolithic Occupation in the Western Zagros foothills: Preliminary report of cave and rockshelter survey in the Sar Qaleh Plain, West of the Kermanshah Province, Iran

Fereidoun BIGLARI and Sonia SHIDRANG

Introduction

An intensive survey of the caves and rockshelters of Kermanshah Province was planned by the Kermanshah provincial office of the Iranian Cultural Heritage, Handicrafts and Tourism Organization (ICHTO) during the late 2000s. The aim was to register the sites on Iran's National Register of Historic Places. These surveys, which were initiated in 2009, provided additional evidence for the potential of the region to yield a rich Paleolithic record. Three teams of archaeologists surveyed all districts of the province during 2009 and 2010 and over 300 caves and rockshelters were identified and recorded, with archaeological material dominated by the Upper Paleolithic and Epipaleolithic periods, and fewer finds of the late prehistoric, historic and Islamic periods. During these surveys a number of previously identified sites were also re-examined. In accordance with the research plan recommended by the Kermanshah ICHTO, these surveys were limited to caves and rockshelters only, and the open-air sites were excluded. Despite all limitations, there is no doubt that the results will facilitate planning for future protection and excavations of the recorded sites, and help to a better understanding of the human use of caves and rockshelters in this part of the Zagros Mountains across a multitude of periods. One of the districts surveyed is Salās-e Bābājāni located in the northwest of Kermanshah Province. As far as the archaeology of the Paleolithic period is concerned, this region has largely remained unknown. The new investigations resulted in identification of a significant number of Paleolithic sites, which for the first time yielded information for settlement patterns of the Upper Paleolithic and Epipaleolithic hunter gatherer groups in these lowland regions.

Research background

High intermontane valleys

Paleolithic research in the Kermanshah region started in the late 1940s with the pioneering excavation of Carlton S. Coon at Bisotun cave (Coon 1951). This small rockshelter produced one fragment of a hominin radius bone in association with a rich Mousterian industry (Trinkaus & Biglari 2006). The nearby site of Ghār-e Khar was tested by Philip Smith in 1965.

Smith's test revealed a sequence from at least the late Middle Paleolithic through Upper and Epipaleolithic and later periods (Young and Smith 1966; Shidrang et al. 2016). During the Iranian Prehistoric Project, directed by R. Braidwood in the Kermanshah region, Warwāsi Rockshelter and Kobeh Cave were tested by Bruce Howe (Braidwood 1960). In addition to these sheltered sites, a large workshop with Levallois cores and their products was identified by Peder Mortensen and Smith near Harsin in 1977 (Smith 1986; Mortensen and Smith 1977). Following a hiatus in archaeological research after the Iranian Revolution of 1979, in the mid-1980s, with the initiation of archaeological research by Iranian archaeologists, survey of Paleolithic sites resumed in the Kermanshah region and the number of areas covered by these surveys increased. During the 1980s and 1990s over one hundred Paleolithic and Epipaleolithic sites were identified in Kermanshah intermontane valley terrain (Fig. 1). However for a number of reasons development of Paleolithic research was not a continuous process during these two decades. One obstacle was the lack of interest among ICHTO authorities, who were more focused on historic sites and monuments. As a result, the investigations that were carried out during the 1980s and 1990s, mostly by F. Biglari and S. Heydari, were limited in scale due to the lack of proper support.

Of these investigations, the most intensive survey was conducted on the southern slopes of the Taq-e Bostan and Maiwaleh Mountains in 1996-1999, identifying 14 sites in an area of approoximately 7 x 1 km (Biglari and Heydari 2001; Biglari 2004; 2007). A number of Paleolithic sites were also identified during the Islāmābād Survey Project directed by Kamyar Abdi and carried out by Biglari and Heydari in the late 1990s. These surveys resulted in the discovery of 25 Paleolithic and Epipaleolithic sites (Biglari and Abdi 1999). In addition to the above mentioned investigations, a number of small scale surveys carried out at Bisotun, Miān Darband, Rawānsar and Quri Qaleh revealed new Paleolithic and Epipaleolithic sites (Biglari 1995; 2001; Biglari and Taheri 2000). Publication of the results of these new surveys and the large number of recorded sites attracted the attention of the ICHTO authorities to the rich potential of caves and rockshelters for further investigations. The need to protect them from the damage caused by extensive illegal excavations led

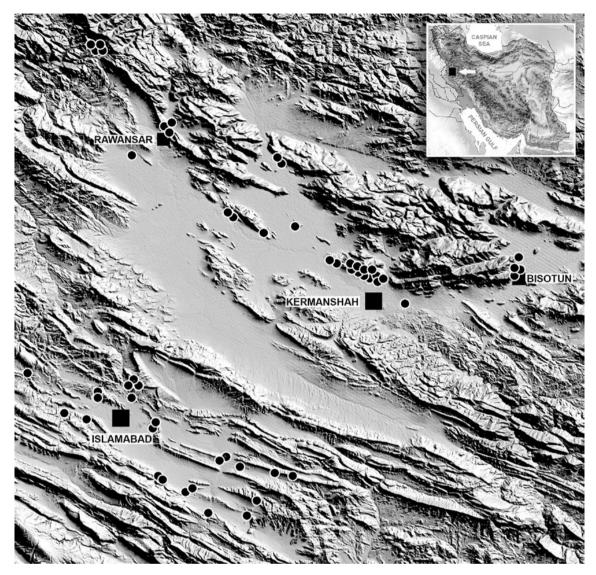


FIGURE 1. LOCATION OF PALEOLITHIC SITES RECORDED IN THE KERMANSHAH AND ISLAMABAD PLAINS DURING THE 1980S AND 1990S.

to the initiation of an intensive caves and rockshelters survey project in the province in the late 2000s.

Lowland Plains

As regards Paleolithic archaeology, the lowland plains along the western foothills of the Zagros in Azgeleh, Zahāb and Ghasr-e Shirin largely remained unknown and only a few Paleolithic sites are recorded in these lowland plains. One reason for the lack of interest in the potential of these lowland areas for Paleolithic research might be the paucity of large caves with preserved Pleistocene deposits, which may have discouraged archaeologists from expanding their surveys to these marginal zones. The only Paleolithic sites known in this region include

the small cave of Kal-e Dāvoud near Sar Pol-e Zahāb, an open air site near Khosrawi, southwest of Ghasr-e Shirin, and two cave and rockshelter sites on the margins of the Zahab Plain.

The Kal-e Davoud Cave was identified by Frank Hole and Kent Flannery during their prehistoric survey in the Sar Pol-e Zahāb Plain in 1961. They excavated a test pit in the cave (Fig. 2) that revealed three sedimentary layers with Middle Paleolithic artifacts and limited faunal remains from layers II and III of the sequence (Hole 1962; Skinner 1965). The site was visited by Biglari and Abdi in 2007 when they collected 21 lithic artifacts including core fragments, flakes, flake fragments and a single side-scraper.

Site	Site type	Archaeological Period	Researcher (s)	Year	Source	
Kal-e Davoud	cave	Middle Paleolithic F. Hole and K. Flannery		1961	Hole 1962; Skinner 1965	
Tapani	cave	Paleolithic? Iranian Archaeological Service		1968	IAS 1969	
Khanche Charmi	cave	Neolithic?	Neolithic? A. Hozhabri		Hozhabri 2006	
Khosrawi	open-air	Middle Paleolithic	F. Biglari and K. Abdi	2007	Biglari and Shidrang 2011	
Elyasi	rockshelter	Upper Paleolithic	F. Biglari		-	
Sar Qaleh sites	caves and	Upper Paleolithic and	A. Biglari	2009	Biglari et al 2013	
	rockshelters	Epipaleolithic	A. Digiai i			
Sar Qaleh sites	caves and	Middle, Upper,	F. Biglari and S. Shidrang	2010	Biglari and Shidrang 2011	
	rockshelters	Epipaleolithic	F. Digiail allu 3. Siliulalig			

TABLE 1. PALEOLITHIC SITES RECORDED IN THE SAR POL-E ZAHAB, GHASR-E SHIRIN AND SAR QALEH LOWLAND PLAINS.

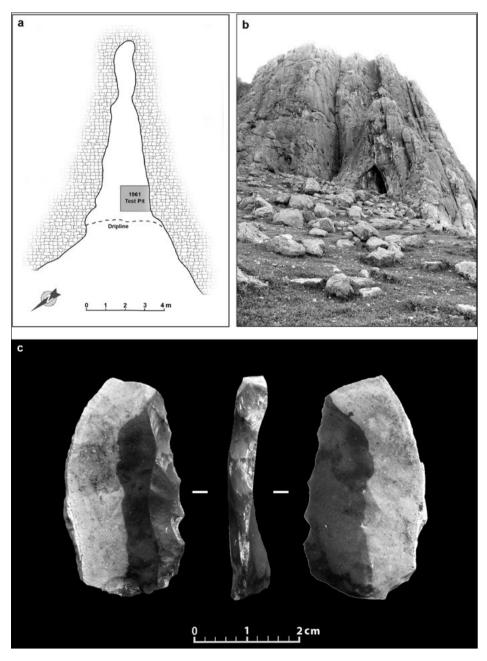


FIGURE 2. KAL-E DAVOUD CAVE: (A) PLAN OF THE CAVE DRAWN IN 2007 SHOWING LOCATION OF THE 1961 TEST PIT; (B) GENERAL VIEW OF THE CAVE; (C) SINGLE SIDE-SCRAPER FOUND DURING VISIT OF THE SITE IN 2007.

Tapāni cave, located to north of Sar Pol-e Zahāb, was recorded as a Paleolithic site in 1968 and registered on Iran's National Register of Historic Places by the Iranian Archaeological Service in 1969 under the registration number 831 (IAS 1969). A team directed by Ali Hozhabri conducted a general survey in the Ghasr-e Shirin region in 2006 that identified various sites including two cave sites with late prehistoric and historic material south-east of Ghasr-e Shirin. Khānche Charmi, one of these cave sites, yielded a bladelet industry that is attributed to the Neolithic period (Hozhabri 2006), although on the basis of lithic drawing the industry could be Epipaleolithic in age. The other cave site, Eshkaft Emam Hassan, contained Bronze Age material. Elyāsi Rockshelter, situated about 15 km to the northnortheast of Sar Pol-e Zahāb, was visited and sampled by F. Biglari in 2007, producing a blade/bladelet assemblage with Upper Paleolithic techno-typological characteristics. In a reconnaissance survey in 2007, F. Biglari and K. Abdi located and sampled a vast Middle Paleolithic occurrence at south-west of Ghasr-e Shirin, near Khosrawi (Fig. 3). The sample collected contained Discoid and Levallois cores and their products made of chert nodules and cobbles scattered on a hilly area along the Ghasr-e Shirin- Khosrawi Road (Biglari and Shidrang 2011).

Salās-e Bābājāni

So far two general archaeological surveys have been completed in the Salās-e Bābājāni District. The first survey was conducted in 2004 under the supervision of Yaghoub Mohammadifar, who identified number of sites mainly attributed to historic periods (Mohammadifar 2004). A general survey was conducted by Aref Biglari in 2009 resulting in the identification of 172 archaeological sites covering all cultural periods from Paleolithic to recent Islamic times. He recorded seven cave and rockshelter sites at four locations along the edges of the Sar Qaleh Plain. Of these sites, two caves are located on the north-eastern face of Sewar Hawar Mountain, one cave is located at Darband-e Zard, two caves are located at Sheikh Rozin, at the southern end of the Salmane Mountain, and two cave and rockshelter sites (Dar Pellah and Serakah) are located at the northern end of the Sar Qaleh Plain. These sites were attributed to the Upper Paleolithic, Mesolithic (Epipaleolithic), Chalcolithic, Bronze Age, Parthian and Islamic periods (Biglari et al. 2013).

Physical geography

The Sar Qaleh Plain, which has an area of about 60 km², is surrounded by the limestone ridges of Sewar

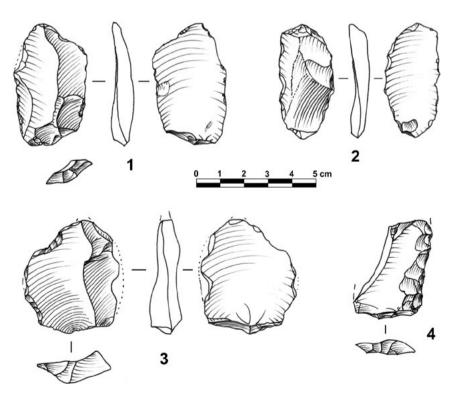


FIGURE 3. MIDDLE PALEOLITHIC LITHIC ARTIFACTS FROM KHOSRAWI, SOUTH-WEST OF GHASR-E SHIRIN.

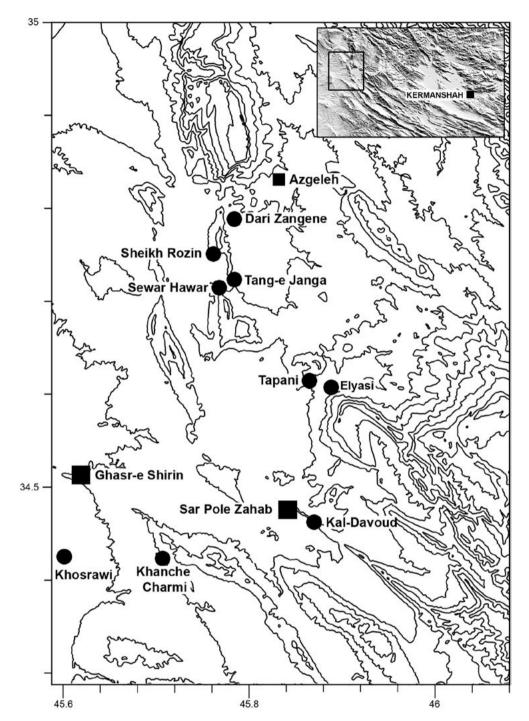


FIGURE 4. LOCATIONS OF RECORDED PALEOLITHIC SITES IN THE LOWLAND REGIONS OF SAR POL-E ZAHAB, GHASR-E SHIRIN AND AZGELEH.

Hawār, Tagh-Tagh and Salmaneh to the east, Bagh Kuh mountain to the south, Showal Derra Mountain to the north-west and Sar Tang Mountain to the west (Fig. 5). The plain extends along a north-south direction, is 17 km long and 5 km wide in its middle part. It lies at an altitude of 410-480 meters above sea level, the height

decreasing towards the north. The Ab-e Hawasan, which is formed by the convergence of three tributaries of the Layez, Cheshmeh Shirin and the Dāri-Zangena, is the only permanently flowing river in the plain. The river enters into the northern edge of the Sar Qaleh Plain from the extreme northern end of the Salmaneh Mountain,

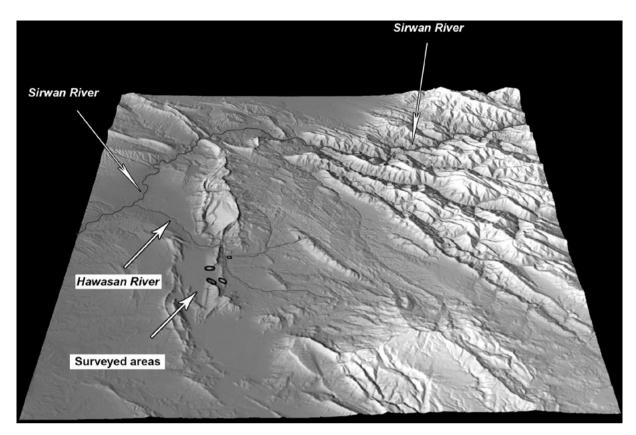


FIGURE 5. THE PHYSICAL GEOGRAPHY OF THE SURVEY AREA.

through the Darband-e Dahol gorge, and then flows to the northwest, joining the Sirwan River (Diyala) in Iraq after about 17 km (Fig. 5). Geologically, the area is part of the folded zone of the Zagros mountains which includes the Tale Zang formation (northeast, east and south-west of the plain), the Shahbazan formation (south and northwest) and the conglomerate Bakhtiari Formation (west) and attributed to the Paleocene, Eocene and Pliocene (IOOC 1969; BPC 1963) (Fig. 6).

Survey methodology

We systematically surveyed the selected areas on foot, and all caves and rockshelters within each area were examined. Intensive survey on foot meant that we achieved a high recovery rate in the surveyed areas. As mentioned earlier, following the research plan recommended by the Kermanshah ICHTO, these surveys were limited to sheltered sites, and open-air sites were excluded. Since 1:25,000 scale maps of Salās-e Bābājāni were not available, the locations of sites were plotted on 1:50,000 maps and Google Earth medium resolution images. To record the latitude, longitude and altitude of the sites, a Garmin GPS reading and UTM coordinates

system was used, with errors corrected by means of the Google Earth application and field observations. In addition to drawing a plan of each site and making a photographic record, all details were recorded on site forms which included entries for the dimensions of the entrance, floor area, front slope, distance to the water sources, recent evidence of use of the shelters by carnivores or other animals, and disturbances caused by animals, plant growth, and human activities. We attempted to collect all visible archaeological material without any biases towards diagnostic artifacts. All parts of the collection area were covered evenly by three to four crew members. The material collected was bagged and marked by site number, with site names indicated by a three letter code consisting of KRS (for Kermanshah, Salas District) followed by a site number. The sites in each survey area were numbered serially as they were found and recorded. The local names of the sites were also recorded.

The survey results

Salās-e Bābājāni District is mostly occupied by Zagros highlands, with the western part consisting of the lowland

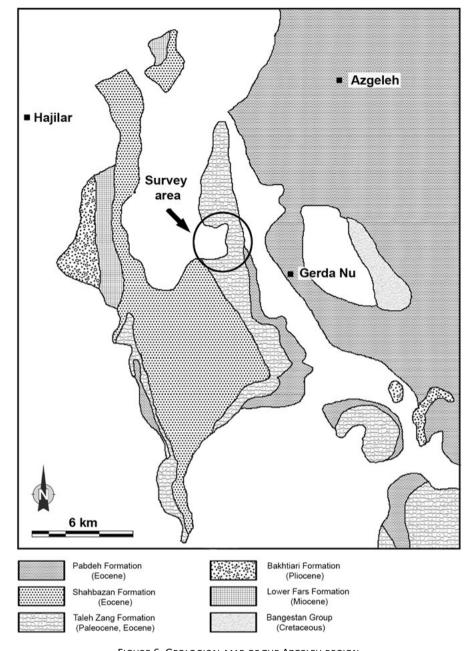


FIGURE 6. GEOLOGICAL MAP OF THE AZGELEH REGION SHOWING THE LOCATION OF THE SAR QALEH SURVEY AREA.

plains of Jegiran and Sar Qaleh which lie along the western foothills of the Zagros. Thanks to these fertile plains and to perennial rivers such as the Ab-e Hawāsān and the Jegiran, this lowland region has been favorable for human occupation during prehistoric and historic times and as a result is rich in archaeological sites. However, due to the lack of suitable roads and its proximity to the Iran-Iraq border, and also because of security concerns during and after the Iran-Iraq war (1980–88), particularly the existence of possible minefields, the study area has

been neglected by archaeologists. The survey, which because of border security was limited to certain parts of the Sar Qaleh Plain, was conducted in 2010 in two stages, during which 29 caves and rockshelters were identified along the edges of the Sar Qaleh Plain and one site near Dāri-Zangene to the east of Salmaneh Mountain (Fig. 7). The high density of sites identified as being associated with the Upper Paleolithic and Epipaleolithic periods indicates the high potential of this lowland region for delivering new data on the sites used by hunter-gatherer

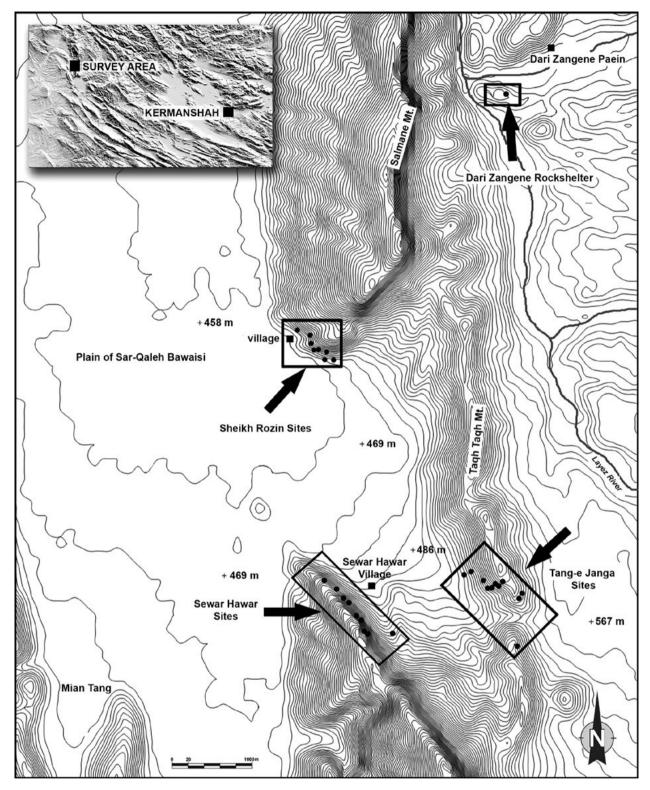


FIGURE 7. MAP OF THE SAR QALEH PLAIN SHOWING LOCATION OF RECORDED SITES IN 2010.

groups in the Late Paleolithic. Given the preliminary nature of the survey data, our interpretations are tentative and need to be confirmed by excavations in the future.

The sites identified in the 2010 survey include three principal cave and rockshelter sites groups, including 10 caves and 19 rockshelters that are located at altitudes of

480 to 680 meters above sea level (Fig. 20). The survey produced 1219 lithic artifacts from these 29 sites. The number of artifacts ranged from single finds at two sites (Sheikh Rozin and Sewar Hawār) up to 170 finds at the Tang-e Janga 10 Rockshelter. Four sites also produced pottery shards and two sites yielded small calcined bone fragments. A partially polished disc-shaped pebble with unfinished hole on one side and scratch marks on its cross-section was also found in one of the rockshelters of the Tang-e Janga sites group.

Most of the lithic artifacts collected can be assigned to the Upper Paleolithic and the Epipaleolithic periods on the base of their techno-typological characteristics. The Middle Paleolithic finds, which were very scarce, are restricted to a few lithic artifacts mixed with later Paleolithic materials, or as single finds in three rockshelters of the Sheikh Rozin sites group. However, late Upper Paleolithic and Epipaleolithic materials were fairly well represented. Among the sites surveyed, one rockshelter yielded a rich and relatively large assemblage of lithic artifacts and pottery shards dating to the Late Uruk and Akkadian periods (c. 3400-2200 BCE). It seems the site was used temporarily by people who were involved in harvesting crops, indicated by the presence of a large number of denticulate blades and flakes with the remains of bitumen adhering to their surfaces and sheen along their lateral edges. Another piece of evidence for Uruk presence in the surveyed area is a piece of Beveled-Rim Bowl from one of the sites in the Sheikh Rozin sites

Site		Site type		F1		Finds			Archaeological Period					
	No.	Cave	Rock- shelter	Elevation (m)	Facing	Lithic	Pottery	Bone	Other	МР	UP	Epi	UP or Epi	PP
Dari Zangena	KR-S1		•	520	NE	53					•	•		
Tang-e Janga 1	KR-S2		•	658	E/SE	74					•	•		
Tang-e Janga 2	KR-S3		•	650	Е	10					•	•		
Tang-e Janga 3	KR-S4	•		660	SE	108			•		•	•		
Tang-e Janga 4	KR-S5	•		680	S/SE	12						•		
Tang-e Janga 5	KR-S6	•		650	W/SW	32	3				•	•		
Tang-e Janga 6	KR-S7	•		654	SE	21					•	•		
Tang-e Janga 7	KR-S8		•	636	S	32					•	•		
Tang-e Janga 8	KR-S9		•	647	S/SW	4					•			
Tang-e Janga 9	KR-S10	•		620	SW	8						•		
Tang-e Janga 10	KR-S11		•	580	S/SE	170					•	?		
Tang-e Janga 11	KR-S12	•		547	S/SE	55					•	•		
Sewar Hawar 1	KR-S13		•	559	NE	1	4						•	
Sewar Hawar 2	KR-S14		•	548	NE	8	3						•	•
Sewar Hawar 3	KR-S15	•		578	NE	22					•	•		
Sewar Hawar 4	KR-S16		•	576	NE	5						•		
Sewar Hawar 5	KR-S17		•	618	N	8						•		
Sewar Hawar 6	KR-S18		•	576	E/NE	3						•		
Sewar Hawar 7	KR-S19		•	649	NE	60	7							•
Sewar Hawar 8	KR-S20		•	640	NE	2							•	
Sewar Hawar 9	KR-S21		•	590	W/SW	5						•		
Sheikh Rozin 1	KR-S22		•	493	W/SW	5							•	
Sheikh Rozin 2	KR-S23	•		511	W/NW	1				•				
Sheikh Rozin 3	KR-S24		•	530	W/NW	13		1		•			•	
Sheikh Rozin 4	KR-S25		•	525	E/SE	115		1		•	•	•		
Sheikh Rozin 5	KR-S26		•	530	S/SW	11							•	
Sheikh Rozin 6	KR-S27	•		525	S/SW	7					?	•		
Sheikh Rozin 7	KR-S28		•	480	S/SW	156					•	•		
Sheikh Rozin 8	KR-S29	•		491	SW	139					•	•		

TABLE 2. CAVE AND ROCKSHELTER SITES RECORDED IN THE SAR QALEH PLAIN AND DARI-ZANGENEIN 2010.

cluster. In the following sections the sites clusters and their finds are described. Because of security concerns, our field survey was restricted to parts of the eastern edge of the Sar Qaleh Plain, including the north-eastern slopes of the Sewar Hawar Mountain, the south-western slopes of the Tagh-Tagh Mountain overlooking the Tang-e Janga pass and southern end of the Salmaneh Mountain, in the vicinity of the abandoned village of Sheikh Rozin. In addition to the areas surveyed in 2010, limestone ridges in the southern and south-western foothills of Salmaneh Mountain, the western slopes of Tagh-Tagh ridge (between Sheikh Rozin and Tang-e Janga), Darband-e Zard to the west of Sewar Hawar Mountain, and Mian Tang in the vicinity of the Hawan village also contain many rockshelters and caves that were left unsurveyed because of the above mentioned restrictions. The high archaeological potential of these areas is confirmed by the general archaeological survey conducted in 2009 by Aref Biglari, who located a cave site with Upper Paleolithic and Epipaleolithic material at Darband-e Zard, and two cave and rockshelter sites with Epipaleolithic and later periods at Serakeh Mountain, northeast of Bawaisi (Biglari et al. 2013).

Tang-e Janga sites

Tang-e Janga or Tang-e Rostam is located between the two mountains of Tagh-Tagh and a northern arm of Bāgh Kuh and Sewar Hawār. This pass connects the Jegiran Plain to the Sar Qaleh Plain at an altitude of 590 meters above sea level, 45 meters above the Jegirān Plain and 30 meters above the Sar Qaleh Plain. The pass is 60-80 meters wide and bounded on the north by the southern end of Mount Tagh-Tagh, while to the south it is limited by an arm of the northern end of Bāgh Kuh. The sites recorded in the Tang-e Janga Pass and the south-western

slopes of Tagh-Tagh Mountain include 11 sheltered sites that are all located within a stretch 1200 meters long (Fig. 8).

One of the sites is located at the south of the pass while the other 10 sites are located in the north and north-west. The Tang-e Janga sites group includes six caves and five rockshelters located at altitudes between 547 and 680 meters above sea level; they open for the most part to the south-east, south and south-west (Figs. 9-10). In terms of size, the smallest site has an area of about 11 m² and the largest of approximately 170 m². Based on their techno-typological characteristics, the lithic artifacts collected from these sites can be attributed to the Upper Paleolithic and Epipaleolithic. The largest collection of lithic artifacts includes 170 pieces that were found at the large rockshelter site of Tang-e Janga 10. Apart from lithics, which were the most frequent archaeological material, several undiagnostic fragments of pottery were found in one of the sites (Tang-e Janga 5). Overall, the largest and richest recorded site in this group was the large rockshelter of Tang-e Janga 10 which yielded a lithic assemblage mainly showing Upper Paleolithic characteristics.

Sewar Hawar sites

The Sewar Hawār Mountain, which is approximately 2.5 km long and rises to 790 metres above sea level, is located to the west and southwest of the Tang-e Janga Pass. Its highest point is about 330 meters above the Sar Qaleh Plain. The eastern side is characterised by steep slopes leading to cliffs, along the base of which are numerous caves and rock shelters which were mostly used during the Paleolithic and later periods (Fig. 11). The western slopes are less steep and have several closed

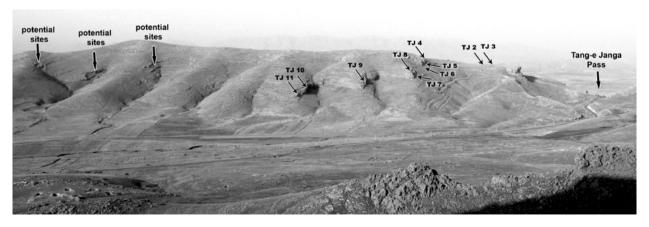


FIGURE 8. GENERAL VIEW OF THE SITES RECORDED IN THE TANG-E JANGA AND OTHER POTENTIAL SITES.

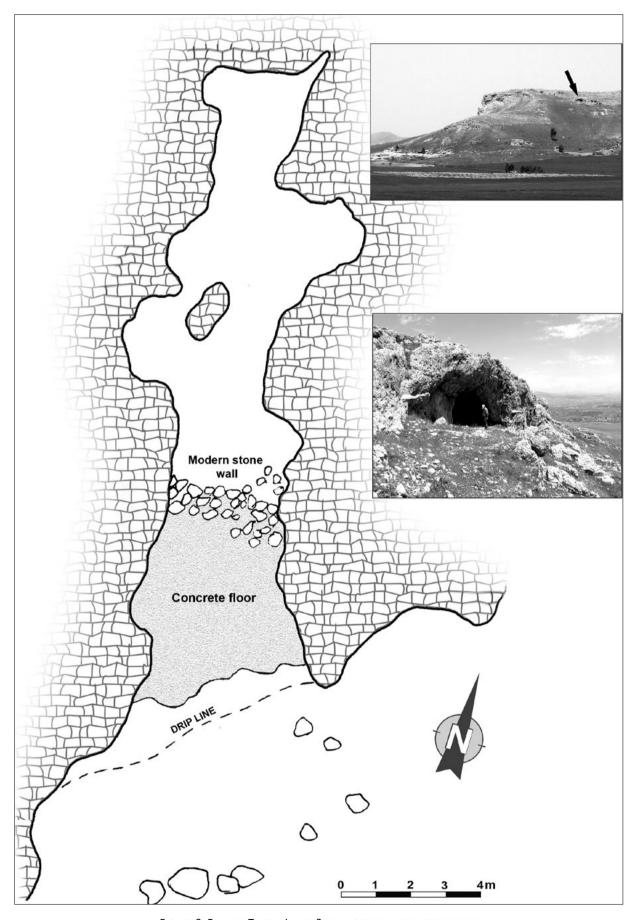


Figure 9. Plan of Tang-e Janga 3 cave, general view of the pass and location of the cave, and close-up of its entrance.



FIGURE 10. THE MOUTH OF TANG-E JANGA 6 CAVE.

and narrow valleys of which the largest, Darband-e Zard, contains a number of caves and rock shelters. The sites recorded on Sewar Hawār include 9 cave and rockshelter sites, all situated within a zone approximately 1500 meters long. This group of sites includes a cave and eight rockshelters located at altitudes between 548 and 649 meters above sea level. These sites open to the northeast, north, and west. The smallest site is Sewar Hawār 8 rockshelter, with an area of 18 m², while Sewar Hawār 3 cave, with an area of about 120 m², is the largest. The archaeological material collected at these sites can be dated to the Upper Paleolithic and Epipaleolithic and in one case to the Bronze Age.

Sheikh Rozin sites

The Salmaneh Mountains, which extends more than six kilometers in a north-south direction and with a maximum width of three kilometers, are located at the north-eastern margin of the Sar Qaleh plain. The main peak reaches heights of 800 to 900 meters above sea level and between 350 to 450 meters above the Sar Qaleh Plain. Its eastern side is steep slopes leading to nearly vertical cliffs. These cliffs are about five kilometers long and have numerous caves and rock shelters situated along their base. Unfortunately, because of security concerns, we were not able to visit these sites. The Hawasan River passes through the northern end of this mountain, where it enters the northern margins of the Sar Qaleh Plain. The western slopes of Salmaneh are less steep and include at least seven narrow side valleys with rocky walls. The small Sheikh Rozin side valley is the southernmost of the valleys in which our team was able to carry out an



FIGURE 11. GENERAL VIEW OF THE SEWAR HAWĀR SHOWING LOCATIONS OF SOME OF THE SITES RECORDED IN 2010.

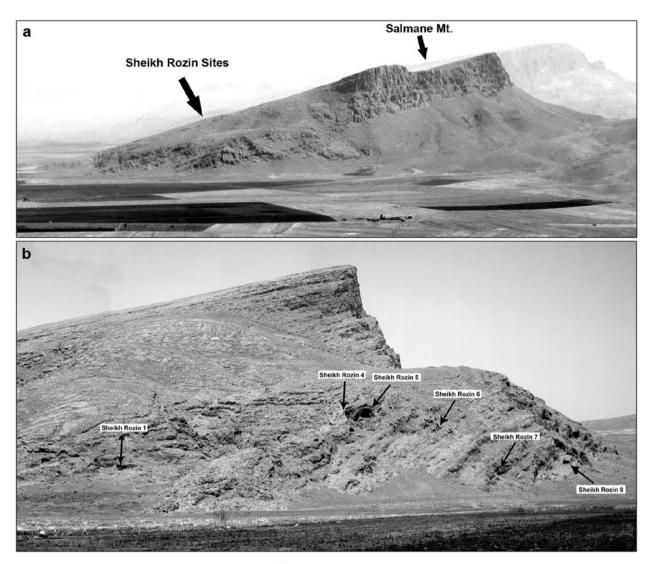


FIGURE 12. SHEIKH ROZIN: (A) SOUTHERN END OF THE SALMANEH MOUNTAIN SHOWING LOCATION OF THE SHEIKH ROZIN SITE GROUP; (B) SHEIKH ROZIN SITES.

intensive survey. In a survey area about 500 meters long eight Paleolithic sites, consisting of three caves and five rockshelters, were identified at altitudes of 480 to 530 meters above sea level (Fig. 12). Most of the sites surveyed face southwest and overlook the Sar Qaleh Plain (Fig 13). The smallest site is about 18 m² in area but the other sites are between 30 and 70 m² (Fig. 14). Most of the lithic artefacts collected can be assigned to the Upper Paleolithic and Epipaleolithic and in some cases a few Middle Paleolithic lithic artifacts were found as well.



FIGURE 13. SHEIKH ROZIN 3, VIEW LOOKING SOUTH FROM THE SHELTER ENTRANCE.

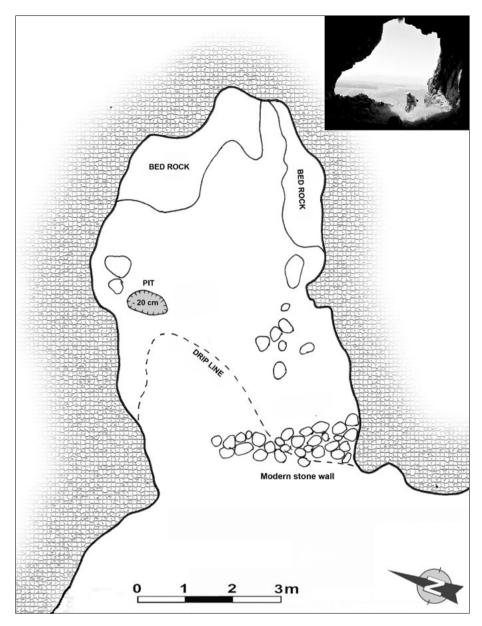


FIGURE 14. PLAN OF SHEIKH ROZIN 8 CAVE.

The lithic assemblages

Because the number of artifacts collected at each site is often less than a hundred pieces, the information obtained for sites is limited. Most collections consist of a combination of artifacts from at least two different periods, therefore, interpretation of the statistical results should be viewed cautiously and are not discussed here. Consequently, our data analysis is limited by the fact that only general assignments can be made. The regional, easily available, raw material used in the production of the lithic artifacts seems to be nodules, concretionary masses and layers of the primary and/

or reworked deposits of the nearby outcrops of (a) the Taleh Zang Formation: medium-bedded to massive, grey to brown, fossiliferous limestone of the late Paleocene-Middle Eocene age with primary chert deposits (James and Wynd 1965); (b) the late Pliocene-Pleistocene Bakhtiari Conglomerate Formation with reworked chert pebbles/cobbles (James and Wynd 1965); and (c) the Quaternary alluvial and fluvial deposits (BP 1963; IOOC 1969). The majority of the lithic artifacts collected are made of fine grained chert with light grey color. The second most frequent chert type is a fine grain variant with dark gray to black color.

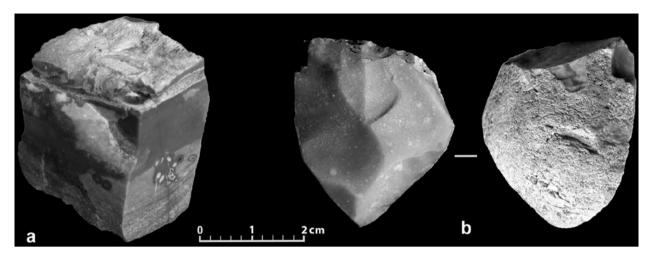


FIGURE 15. TWO FORMS OF RAW MATERIAL FROM THE STUDY AREA: (A) TABULAR CHERT AND (B) NODULAR CHERT.

Upper Paleolithic

Compared to the small number of Middle Paleolithic finds which were limited only to a few sites, the number of identified Upper Paleolithic sites is considerable and they yielded rich lithic collections. Of the total number of identified sites, fifteen can be certainly assigned to the Upper Paleolithic based on their lithic assemblages (Fig. 7); in addition, one further site could potentially be attributed to the Upper Paleolithic, though due to the lack of characteristic indicators this assignation is not certain. Most of the Upper Paleolithic sites are located close to the Tang-e Janga Pass, the southern part of the Tagh-Tagh Mountain and the southern end of Salmaneh Mountain (Fig. 7). Archaeological material of this period was also identified at a site on the slope of Sewar Hawar Mountain and a site in Dāri-Zangena as well. Lithic artifacts mostly display the techno-typological characteristics of the Late Upper Paleolithic of the Zagros such as carinated burins, end-scrapers on flake/blade and Dufour bladelets (Figs. 16-7). Based on our preliminarily observations, it is possible to suggest that these sites have been used by Upper Paleolithic hunter-gatherers in the period approximately 30 to 20 ka BP. According to the analysis of the Upper Paleolithic sequence of Warwasi Rockshelter, located in a high intermontane valley of Kermanshah, the Upper Paleolithic of the Zagros, or Baradostian, in its early phase has an assemblage characterized by carinated end-scrapers/burins, Arjeneh points, Dufour bladelets, side-scrapers and truncatedfaceted pieces. The later phase of the Baradostian, or Zagros Aurignacian, has been classified as Late Zagros Aurignacian based on characteristic types similar to the Aurignacian techno-complexes. Technologically, this assemblage is dominated by bladelet debitage (Olszewski

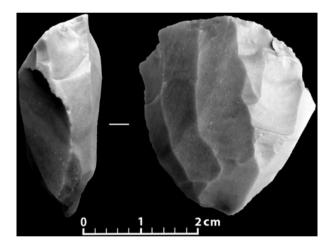


FIGURE 16. UPPER PALEOLITHIC BLADELET CORE FROM SHEIKH ROZIN 7.

and Dibble 1993; 2006). Also based on the analysis of the Yafteh sequence, two main techno-typological phases have been suggested for the Baradostian (Bordes and Shidrang 2009). The lower part of the deposit was associated with an assemblage chiefly oriented towards the production of Arjeneh points and relatively large, straight or slightly curved Dufour bladelets. In the upper part of the sequence carinated burins are dominant. Small twisted bladelets that were removed from carinated burins were subsequently transformed by inverse or alternate retouch into Dufour bladelets. It would be risky

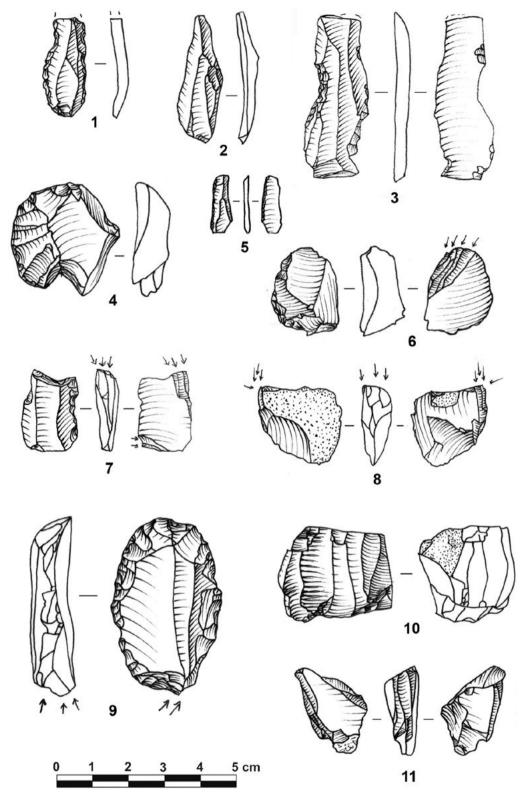


FIGURE 17. SELECTED UPPER PALEOLITHIC ARTIFACTS FROM SAR QALEH SITES.

to compare our surface collections to these two sequence. However, to the extent that it is justifiable to characterize the Upper Paleolithic components as a whole, they more closely resemble the late phase of the Baradostian.

Epipaleolithic

The largest number of recorded sites in the Sar Qaleh survey are Epipaleolithic, including 20 certain sites and two other probable sites that may have been used during this period. As with the Upper Paleolithic sites, most of these sites are located in the vicinity of the Tang-e Janga Pass, the south of the Tagh-Tagh Mountain and the southern end of the Salmaneh Mountain. But unlike

the Upper Paleolithic, Epipaleolithic sites are also found on the north-eastern slopes of the Sewar Hawar Mountain. Epialeolithic material was also found in the Dāri-Zangene rockshelter. The lithic artifacts found in these sites bear the techno-typological characteristics of the Zarzian, the Epipaleolithic industry of the Zagros. The characteristic tool types of the Zarzian industry (particularly in its late phase) consist mainly of geometric tools, especially the triangle forms (Fig. 18). Other

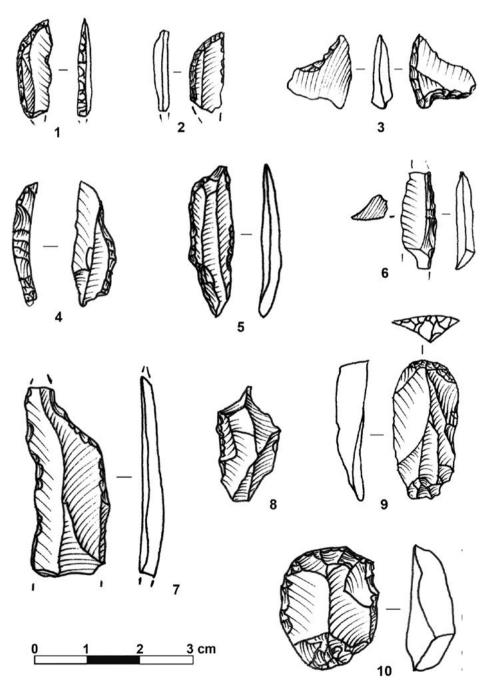


FIGURE 18. SELECTED EPIPALEOLITHIC ARTIFACTS FROM SAR QALEH SITES.

tool types include denticulates, notches and small endscrapers on blade or bladelet which were for the most part produced throughout the Late Upper Paleolithic and Epipaleolithic sequence of Zagros, although with diachronic variations (Fig. 18). Based on the technotypological characteristics of the Zarzian assemblages from these sites, it is possible to suggest that these sites were used by Epipaleolithic hunter and gatherer groups over a period from about 20 to 12 ka BP. The Zarzian industry is characterized by microliths of non-geometric and geometric tools, thumbnail scrapers, micro-burins, perforators, backed blades, notches and denticulate tools. This industry is reported from several excavated cave and rockshelter sites in Iran and Iraq, among which the Warwasi and Pa Sangar assemblages are the most representative of Zarzian industry. The presence of four units at the Warwasi Rockshelter offered the first chronologically detailed documentation of this industry, presenting changes from inversely retouched bladelets to geometrics, then to curved backed forms and finally to an increase in the variety of geometric types (Olszewski 1993). However, evidence of the earliest phase of the Zarzian or the presence of all four Units is not clear in the Sar Oaleh lithic assemblages. In addition to the aforementioned sites, three other sites are also attributable to the Upper Paleolithic and Epipaleolithic generally, since none of the index characteristics of the Baradostian or Zarzian industries can be observed in their lithic assemblages.

Summary and conclusions

Recent survey of caves and rockshelters in the Sar Oaleh Plain provides information about the distribution of the Upper Paleolithic and Epipaleolithic occupations in this part of the western Zagros foothills. The new survey revealed that the lowland regions situated along the western foothills of the Zagros Mountains were repeatedly occupied by hunter-gatherers at least since the late Upper Paleolithic and throughout the Epipaleolithic period. It is not clear whether the paucity of Middle Paleolithic artifacts is a product of geomorphological factors, or whether it reflects a real absence or rarity of Middle Paleolithic occupation in the study area; the presence of the Middle Paleolithic sites of Kal-e Davoud and Khosrawi, approximately 35 km to the south and southwest of Sar Qaleh, does however demonstrate that hominin groups were present in these lowland regions during the Middle Paleolithic. Preliminary analysis suggests similarities between the Upper and Epipaleolithic industries of these lowland sites and the Baradostian and Zarzian lithic assemblages from excavated sites in high intermontane valleys in the west-central Zagros. The new data from the Sar Qaleh survey, combined with data from excavated sites in the high intermontane valleys of Kermanshah, have the potential to make a significant contribution to the better understanding of the adaptive strategies of huntergatherers in the late Paleolithic in the western Zagros. Nevertheless, further survey in other parts of Sar Qaleh are needed before any conclusions can be drawn about settlement patterns and their possible changes through time in this lowland region. Subsequent excavations at selected sites with the potential for long cultural sequences will be necessary in order to reveal changes in material culture and other aspects of the lifestyle of late Pleistocene hunter-gatherers in this poorly known region of the western Zagros.

Acknowledgments

We would like to thank the editors of this volume, Konstantinos Kopanias, and John MacGinnis. Special thanks goes to Latif Fatahi and Babak Moradi for their great help in the field. We are also grateful to Akram Tahmasebi and Alireza Moradi Bistouni for their support. In this survey we received the sincere assistance of different organizations to whom we would also like to express our thanks. We thank Mr. Shahbazi, Lieutenant Governor of Salās-e Bābājāni, Mr. Ensaf, from the Municipality of Azgeleh, Colonel Pazhuheshi from regional headquarter of IRIA in Kermānshāh; and Private Saadi Abedi for accompanying our crew members as armed escort in the horrendous heat of the region. We are also very grateful to Manuel Berberian, Kamyar Abdi, and Kamal Taheri for their comments.

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Activities of Sapienza-University of Rome in Iraqi Kurdistan: Erbil, Sulaimaniyah and Duhok

Carlo Giovanni CERETI and Luca COLLIVA

The cooperation project 'Safeguard and Enhancement of Cultural Heritage in Iraqi Kurdistan' was promoted in 2012 by the Italian Ministry of Foreign Affairs and International Cooperation (MAECI) and the Sapienza University of Rome, in the framework of the activities carried out since 2006 between Italian and Kurdish institutions (Cereti and Giunta 2012). The project is led by the Department of Classics of the Sapienza University (DiSA) and headed by Carlo G. Cereti. It was devised as a response to the capacity building request of Kurdish institutions in managing and enhancing capacities in the field of cultural heritage.

During the two years of life of the project, the Italian team along with the Ministry of Municipality and Tourism of the Kurdish Regional Government (KRG) cooperated with the High Commission for Erbil Citadel Revitalization (HCECR),¹ the General Directorate of Antiquities of KRG, the Directorates of Antiquities of Erbil, Sulaimaniyah and Duhok, and the museums of Erbil (Erbil Civilization Museum), Sulaimaniyah (Slemani Museum) and Duhok (Duhok National Museum), to strengthen capacities of the local partners.²

The main aim of the project was the training of staff of the above mentioned Kurdish institutions through courses that included frontal lessons and on-the-job training in multiple fields including archaeology, architectural restoration, museology, numismatics, Sasanian history and philology, topography and photogrammetry. All

courses involved Italian specialists and were aimed at achieving specific goals through integrated programs in which theory, methodology and practical activities were well balanced.

Eight training courses were carried out:

- three courses in numismatics and museology for the staff of the Directorates of Antiquities and Museums of Duhok, Erbil and Sulaimaniyah, focused on cataloguing methodologies and tailored to the characteristics of the numismatic collections in the museums' collections;
- one course in Sasanian history and epigraphy for the staff of the Directorate of Antiquities of Sulaimaniyah and the Slemani Museum; the class was focused on the study of the Sasanian commemorative monument of Paikuli and of its bilingual inscription in Middle Persian and Parthian, the remains of which are exhibited in the museum.
- two courses in topography, photogrammetry, surveying and GIS: one for the HCECR staff and one for the staff of the Directorate of Antiquities of Sulaimaniyah and the Slemani Museum.
- one course in architectural restoration for the HCECR staff, focused on restoration and conservation methodologies and implementation of restoration projects for monuments of historical interest.
- one course in archaeological methodologies for the HCECR staff. The course focused on geophysical surveys, archaeometrical analyses and documentation of archaeological sites and materials.

During the courses a preliminary cataloguing of the entire numismatic collection of the Erbil museum and part of Duhok and Sulaimaniyah collections was also realized, as well as a complete catalogue of the inscribed blocks from Paikuli, a new topographic map of the Erbil Citadel and new geophysical surveys of the Citadel aimed at studying its archaeological stratigraphy.

In June 2014, as an ideal conclusion to the activities carried out in Kurdistan, a training course was held in Italy with participants from the HCECR and the Directorates of Antiquities and the Museums of Duhok, Erbil and Sulaimaniyah.

¹ The High Commission for Erbil Citadel Revitalization (HCECR) is responsible for the management, study and implementation of operations on the Citadel of Erbil, one of the most fascinating historical and archaeological sites of Iraq, whose wonderful Ottoman buildings crown an artificial mound 32 m high that conceals archaeological remains of at least 6000 years of human presence. The site has been recently inserted in the UNESCO World Heritage List (Dara al Yaqoobi and Michelmore 2012; MacGinnis 2014).

² Many people collaborated, supported and helped the project team during these activities. The authors wish to thank all the Kurdish colleagues and friends who sustained and participated in this project, and above all the General Director of Antiquities of KRG, Abubakr Othman Zainadin – Mala Awat; the Directors of Antiquities of Erbil, Sulaimaniyah and Duhok, respectively Nader Babakr Mohammed, Kamal Rashid Rahim and Hassan Ahmed Qasim, and the staff of the Erbil, Sulaimaniyah and Duhok Museums; the head of the HCECR, Dara Talaat Mohammed Ali al-Yaqoobi; the chief architect of the HCECR, Ranan Khasraw Tawfiq and all the staff of the HCECR. We also wish to thank the members of the Italian team, particularly the Project Manager Angela Bizzarro and all the companies that worked with us: BraDypUS, IGES, Studio 3R and TERR.A.IN.

Numismatic Cross-Cataloguing Activities

A significant part of the cooperation project was devoted to promoting museum activities and involved the three main museums of the Kurdish Regional Government: the Slemani Museum, the Erbil Civilization Museum and the Duhok National Museum. Cataloguing work has been carried out together with the staff of all these institutions.

The cataloguing activities focused on one class of artifacts, coins. The selection of this class of materials arose from the necessity expressed by our Kurdish counterparts to achieve a better understanding of their un-inventoried assemblages, and in answer to the absence of staff specialized in numismatics. This initiative represents the direct implementation of a previous project of MAECI and IsIAO, carried out in 2009-2010 (Artusi 2012a; 2012b, Ranucci 2012).

Special attention was dedicated to the examination and arrangement of the coin collections of the three Kurdish museums. The Italian team and the staff of the Museums carried out the preliminary cataloguing of part of the Slemani and Duhok coin collections, and of the entire Erbil collection, a total of approximately 12,000 coins (Fig. 1): 700 coins of the Erbil collection, 900 of the approximately 1100 coins of the Duhok collection, and more than 10,000 coins of the Slemani museum, whose holding, according to the Director of the museum, comprise more than 25,000 specimens. Each specimen has been inventoried, measured and assigned within its proper chronological and geographical context. For each museum all data has been systematically gathered and

FIGURE 1. ERBIL CIVILIZATION MUSEUM, CATALOGUING ACTIVITIES OF THE NUMISMATIC COLLECTION (PHOTO DISA).

recorded, together with photographic documentation, into a relational database.

Cataloguing activities have been strictly linked to the training of the museums' staff. Classes in and training activities in numismatics have been organized during the three months in which Italian specialists were in Kurdistan. The courses in Numismatics focused on Ancient and Islamic Coinages and were conducted respectively by Samuele Ranucci and Simona Artusi (Sapienza - University of Rome), supervisors of the Numismatics section of the project.

A general introduction to the discipline and to the monetary history of the territory has been delivered, along with some insights related to specific museums series in order to provide skills and a more self-confident approach to the artifacts. On the job training played an important role in terms of methodology, providing local staff with suitable cataloguing methods and appropriate criteria for digital cataloguing. This participatory approach led to direct results in improved presentation of museums specimens, manifest in the creation of new display cases in the museum's galleries, with elaboration of graphics and publications accompanying the exhibit.

Unfortunately most of the coins, especially those in the Slemani Museum, are devoid of information on their archaeological context; however, it is reasonable to suppose they have for the most part been found either in the region or in immediately adjacent territories and can thus be considered as relevant evidences for a better understanding of the social and economic history of the area.

The catalogued coins cover a wide chronological span, ranging from the 5th century BC to the 20th century: many series and types belong to Ancient (Greek, Hellenistic, Roman, Parthian), Sasanian and Islamic coinage. The chronological distribution of the coins differs in the three Museums: Sasanian, Islamic and Roman coinage are predominant in the Slemani Museum while at the Erbil Civilization Museum there is a prevalence of Islamic productions, with fewer Ancient coins, and at the Duhok National Museum Hellenistic and Islamic coinage prevail. In light of the increasing percentage of modern forgeries, which the specialists continue to identify within the collections, these data may be subject to revision.

Epigraphic Activities

Paikuli is a tower-shaped memorial building erected by the King of Kings Narseh in the place where the Sasanian nobility received him after his victory over Wahram III (Herzfeld 1924; Humbach and Skjærvø 1978-83; Cereti and Terribili 2012; 2014; Terribili and Tilia, *this volume*). Most of the inscribed blocks and architectural remains

of the Sasanian monument of Paikuli are now stored in the Slemani Museum. The presence in the museum's collection of these blocks, with the famous bilingual inscription in Parthian and Middle Persian, suggested the inclusion in the Cooperation Project of a course for the Slemani Museum staff in Sasanian Epigraphy. The course, focused on the epigraphic material of Paikuli, was conducted by Gianfilippo Terribili (Sapienza - University of Rome), supervisor of the project's Epigraphic section. The course was divided into two complementary parts. The first part was theoretical, outlining the history of the Sasanian dynasty and the Kurdistan region under their rule, providing an introduction to the Middle Persian and Parthian languages and their development with an overview of the different kinds of the epigraphic sources attested for this period (inscriptions, numismatic, seals and bullae), and giving a detailed analysis of the features of the Paikuli Monument. The second part was practical, focused on the reading and analysis of the 106 Middle Persian and Parthian inscribed blocks kept in the Slemani Museum. The data generated led to the creation of a fully recorded catalogue of these pieces for the museum database.

Topography and Photogrammetry Courses

Within the MAECI-Sapienza Cooperation Project, the partnership between DiSA and Studio 3R led to the development of two training courses for the staffs of the

Slemani Museum and the HCECR in topography and photogrammetry.

The course held in Sulaimaniyah focused on surveying and documentation of architectural elements. As a case study and training on the job, the participants carried out a detailed documentation of the architectural elements of the Sasanian monument of Paikuli now stored in the garden of the Slemani Museum.

The chosen method is based on close range digital photogrammetry, which allows the creation of detailed 3D models of the elements. The conjunction made between a series of pictures, covering the entire surface of the elements, and selected control points permitted the generation of true orthophotos and the creation of drawings to document prospects of the architectural elements (Fig. 2). In order to provide a realistic and scientific hypothesis of the monument's shape, the 3D documentation of each element will be hereafter integrated in a virtual model reconstruction of the Paikuli monument and its inscription. The study and creation of this model is still ongoing.

The course held in Erbil aimed at training the HCECR personnel in the modern surveying and photogrammetric techniques applied to both urban and architectural scales. It was conducted, as the previous one, by the topographers Sven Stefano Tilia and Alessandro Tilia.

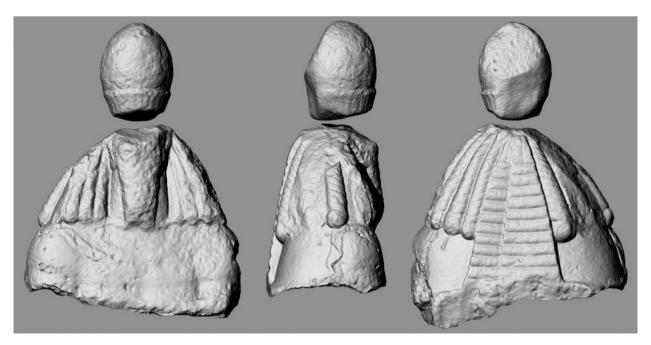


FIGURE 2. SLEMANI MUSEUM, 3D MODEL OF NARSEH'S BUST FROM PAIKULI MONUMENT (PHOTO DISA, PROCESSING STUDIO 3R).

Among the various topics covered are: use of total station, development of topographic data in CAD for creating plans and sections, digital photogrammetric techniques applied both to cartography and architecture, use of GPS equipment and creation of GIS platforms. The course focused particularly on the identification of an appropriate mapping system able to represent different levels of detail and information. In order to properly document the site it was necessary to make an accurate topographic map supported by the scheduled GIS platform to provide the frame to set the data collected. The necessity of a more accurate map was evident after an analysis of the available maps carried out with the HCECR staff. Due to the lack of suitable aerial photographs, digital photogrammetry applied to satellite images was chosen as the more appropriate method. The images, used as stereo pairs, were acquired by Worldview-2 with a ground resolution of 50 cm and

oriented both internally and externally. Differential correction should be carried out using three permanent stations. This, unfortunately, was not possible in the area. Hence a total number of 18 ground control points (GCP) were acquired in the proximity of the four corners as well as in the centre of the area covered by the images. GCP were obtained thanks to a topographical survey with differential GPSs tied to a permanent station in Erbil that belongs to the NGS CORS network. The collected data were calculated in post-processing by comparison with the observations of the permanent station. After the registration of all the necessary GCPs and the radiometric correction of the panchromatic images, which were originally extremely dark, the orientation was completed and a model of the ground surface was determined as a grid of elevation points from which it was possible to extract the contour lines. The map was finalized with the restitution of blocks and roads. Finally,

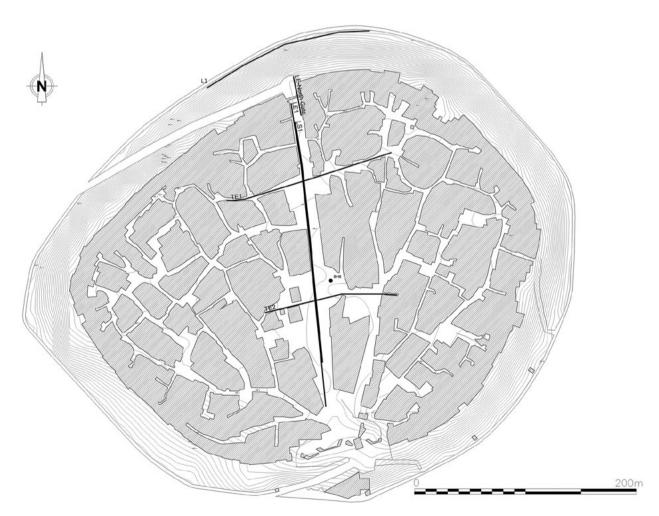


FIGURE 3. ERBIL CITADEL, TOPOGRAPHIC MAP OF THE CITADEL WITH THE POSITION OF THE GEOPHYSICAL SURVEYS (PHOTO DISA, PROCESSING STUDIO 3R).

everything was drawn up in AutoCAD to generate a map with a definition suitable for representation at a 1:5000 scale. The correct insertion in the newly generated map of previously created detailed maps of two buildings confirmed the accuracy of the output within the limits set by the scale ratio (Fig. 3).

Architectural Restoration Activities

Valter Maria Santoro, geotechnical engineer and supervisor of the Conservation Section of the Cooperation Project, coordinated the second training activity for the HCECR staff focusing on the conservation and restoration of historical buildings, with particular attention to the local cultural heritage and traditions. Workshops were organized by DiSA in cooperation with IGES snc and conducted by the supervisor jointly with conservator Corinne Achermann and the architect Claudio Prosperi Porta. The workshops treated several topics, including conservation principles and methodologies, implementation of conservation and restoration projects of historical buildings and traditional architectures, strengthening and improvement of structures, and seismic retrofit and conservation and restoration of decorated architectural surfaces in historical buildings. The activities were mainly oriented to delve deeper into the different methodologies of architectonical surface restoration and seismic-proof solutions enhancement. This methodological approach formed the bulk of a report entitled "Guidelines for the drafting of a Final Project of Restoration of a Historical Building" presented to HCECR at the end of the project.

Archaeological Activities

A training course on archaeological methodologies concluded the activities carried out in collaboration with the HCECR. The course, coordinated by Luca Colliva (Sapienza - University of Rome), supervisor of the archaeological sector of the Cooperation Project, included theoretical lectures and hands-on sessions; it was organized by DiSA in cooperation with BraDypUS Communicating Cultural Heritage sa, Studio 3R sas and TERR.A.IN snc and it was conducted jointly by the supervisor, archaeologist and IT expert for Cultural Heritage, Julian Bogdani, the geophysicist Antonio Edoardo Bracci, geologists Carlo Breganze, Giolj Guidi and Diego Peraccini, the engineer Giuseppe Mainardi and the topographer Alessandro Tilia. The course presented to the trainees the main techniques for geophysical survey of archaeological sites and the most common methods of archaeometric analysis; training on the job activities included sessions on collection of proper documentation for archaeological sites and materials, as well as new geophysical surveys of the Citadel of Erbil. These geophysical surveys enrich the data previously obtained by the surveys carried out in 2006 by the Czech-Kurdish Mission directed by K. Nováček (Nováček 2009) and in 2010 by the Italian MAECI-IsIAO Cooperation Project 'Preservation of Cultural Heritage of the Kurdish Region in Iraq' (Colliva et al. 2012). The decision to start a new campaign of geophysical investigations was due not only to the valuable results previously obtained but also to serious methodological reasons. The complexity of the site, intensely occupied until the last century, with a human presence believed to stretch back continuously for at least 6000 years, requires special care and persuaded us of the necessity to use non-invasive geo-archaeological exploration systems, at least in these first phases of study, in order to gather as much information as possible on the site's stratigraphy, something needed to study the archaeological levels and to plan future extensive and necessarily more destructive archaeological activities. In the first part of the course, held in June 2013, the participants carried out geophysical surveys with electrical resistivity tomography (2D ERT) and seismic refraction tomography. The electrical resistivity tomography provided a complete section along the main road that cuts the Citadel from north to south, together with a detail of the area of the North Gate and sections of two cross streets, oriented approximately E-W, that cover some important anomalies detected during the first reading of the N-S section. The surveys reached, at least in some parts, a depth of about 30 m from the surface, offering valuable information on the stratigraphy of the tell; two seismic refraction tomographies of the N-S section were furthermore executed to obtain a more complete framework of the archaeological stratigraphy of the tell.

The geophysical survey carried out in the second part of the course in April 2014 provided a section of the stratigraphy at the bottom of the Citadel slope in front of the North Gate. The total length of these sections is more than 250 m and the surveys reached, at least in some parts, a depth of about 20 m from the surface, providing significant knowledge on the geological stratigraphy under the Citadel (Fig. 3). The data analysis, pursued in collaboration with the MAIKI, is not yet complete but the first results are quite encouraging. Noteworthy from an archaeological point of view are two major anomalies found in the north-south section at a depth of between 12 and 30 m from the surface, and a layer of higher resistivity visible at a depth of 8-10 m (Figure 4). The first of these anomalies, previously recorded during the Kurd-Czech survey within the limits of its N-S axis (Novácek 2009: 209-11), is located in the northern part of the Citadel, at a depth of approximately 12 to 20 m. The new N-S and E-W sections (Fig. 4), allow to estimate the size of this anomaly, 10-15 m N-S and 25-30 m E-W, while evidencing its E-W orientation. The second anomaly is located near the centre of the Citadel, at a depth of approximately from 16 m to 30 m, with an estimated size of 40-45 m on the N-S axis. The lower part of the second anomaly (from 24-25 to

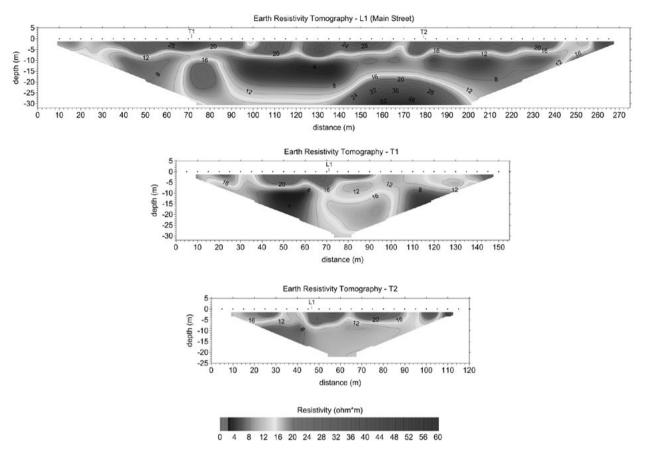
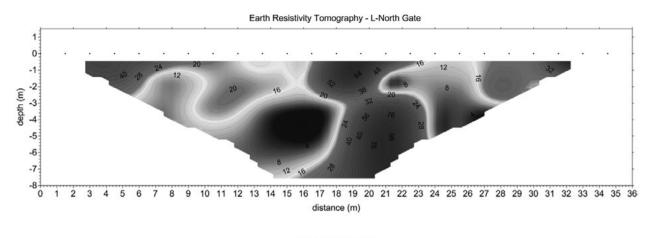


FIGURE 4. ERBIL CITADEL, 2D ERT SECTION OF THE MAIN STREET AND OF TWO CROSSING STREETS (PHOTO DISA, PROCESSING TERR.A.IN).

30 m of depth) is probably related to natural soil, as confirmed by boreholes carried out by HCECR, while its upper part, from c. 18 to 24 m of depth, may suggest the presence of imposing structures: it cannot be excluded that this anomaly represents one of the ancient buildings on which the mound took form. Unfortunately, nothing can at present be said about their chronology. On the other hand, the layer of higher resistivity that marks the first 8-10 m of the archaeological stratigraphy could be related to Islamic levels as suggested by comparison with archaeological materials found in the boreholes carried out in 2008-2009 and during the archaeological excavations recently started by the HCERC.³ The survey performed near the North Gate produced similarly interesting results, confirming the presence of the defensive structures already suggested by the results of the 2010 GPR surveys and found in the northern area of the Citadel during the excavations of the HCECR (Fig. 5).

With regard to the second survey campaign, the main aim of the geophysical sections undertaken at the bottom of the Citadel was to characterize the soil and the geological stratigraphy at the base of the tell while at the same time checking for the presence of archaeological levels, of which no trace has yet been found. There are however no archaeological structures visible in the section and the lightest areas, at a depth of approximately 10 m, have resistivity values of less than 10 ohm*m, which can be hardly associated with significant anomalies (Fig. 6). These values could be due to areas with the same lithology but a lower presence of humidity or a greater percentage of silt. These data confirm the previously assumed presence of the natural soil at this depth. The high number and significance of the anomalies and their presence in almost all the investigated areas confirm the existence of a very complex stratigraphy and the importance of this archaeological site, results which encourage us to pursue further explorations.

³ Personal communication from the HCECR staff.



Resistivity (ohm*m)

0 8 16 24 32 40 48 56 64 72 80 88 96

FIGURE 5. ERBIL CITADEL, 2D ERT SECTION OF THE NORTH GATE AREA (PHOTO DISA, PROCESSING TERR.A.IN).

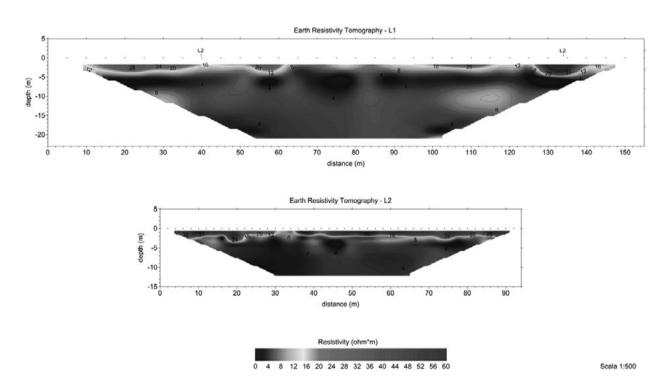


FIGURE 6. ERBIL CITADEL, 2D ERT SECTION AT THE BASE OF THE *TELL* SLOPE, IN FRONT OF THE NORTH GATE (PHOTO DISA, PROCESSING TERR.A.IN).

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The Achaemenid Period Occupation at Tell ed-Daim in Iraqi Kurdistan

John Curtis and Farouk AL-RAWI

Introduction

Traces of occupation in Northern Iraq of the Achaemenid or Persian period (c. 539-330 BC) are frustratingly meagre. I reviewed all the available evidence at a colloquium in Paris in 2003 (Curtis 2005), and outside the Kurdish Autonomous Region I was able to point to limited archaeological evidence only at Nimrud, Khorsabad and Ashur, plus a few sites in the Eski Mosul Dam Salvage Project, notably Tell Jigan and possibly Kharabeh Shattani. This archaeological evidence is supplemented by a few textual sources such as an Aramaic document of 410 BC detailing the journey of Nehtihor from Babylonia to Egypt via Assyria, and Xenophon's Anabasis which deals with the journey of the 10,000 Greek mercenaries through Assyria. In the Kurdish Autonomous Region there is archaeological evidence for the Achaemenid period from Tell ed-Daim, which we will consider presently, and Erbil, which was evidently a major centre at this time (MacGinnis 2014). Although archaeological evidence is lacking for Erbil, we know it to have been an important place for a number of reasons. We know from the Bisitun inscription that the Sagartian rebel Shitrantakhma was put to death at Erbil, according to the Nabonidus Chronicle Cyrus mustered his army and crossed the Tigris below Erbil, and it was a place where Nehtihor could obtain provisions. Also, the Alexander historians describe the great riches that were found in Erbil after the nearby battle at Gaugamela. Apart from Erbil, however, there is little evidence for major urban centres at this time, and the overriding impression of Northern Iraq during the Achaemenid period is of a region that was remote from the new political centres and was given over largely to agriculture. This impression is reinforced by the depiction of the Assyrian delegation on the Apadana reliefs at Persepolis. We see the Assyrians bringing bowls, animal skins, perhaps filled with wine, a length of cloth, and two rams. The undulating hills of Assyria are of course ideal for rearing sheep, and agriculture is likely to have been the principal occupation of the scattered villages of the region.

Because of the lack of evidence for Achaemenid occupation in Northern Iraq, I thought it would be worthwhile to draw attention at this conference to the site of Tell ed-Daim in the Kurdish Autonomous Region which is one of the most interesting and informative Achaemenid sites in northern Iraq but which remains little known, partly I think because it has only ever

been published in Arabic. While preparing this paper I have had the great advantage of being able to refer to a translation of the Arabic report kindly made by Dr Farouk al-Rawi.¹

The now flooded site of Tell ed-Daim² was near the small town of Wazah Rustum (or elsewhere Merzeh Rustum) and was situated in the Rania-Bangird Plain between the mountains and the Lower (Little) Zab river, which was 1 km to the east. The Rania-Bangird Plain, now flooded, is said to have been very fertile, and sat astride one of the main routes between Mesopotamia and Iran. The site of Tell ed-Daim was excavated in 1956 in advance of flooding caused by the building of the Dokan Dam. Excavations were undertaken by Abdul Qadir al-Tikriti, Hatem Shukri and Rashid Abdul Latif, and both Fuad Safar and Mohammed Ali Mustafa were also involved in a supervisory role. The results of the excavation were published, in Arabic as I have said, by Abdul Qadir Hassan al-Tikriti in Sumer volume 16 (al-Tikriti 1960).

Tell ed-Daim is a multi-period site occupied from the prehistoric period onwards. The mound has a height of about 12 m and as far as I can see from the published contour plan (al-Tikriti 1960, pl. 1) it measures very approximately 120 m east-west by 100 m north-south. In a large rectangular north-south trench dug down from the centre of the mound a total of eleven levels were identified, the earliest of them attributed to the Hassuna period. The latest levels, numbers 2 and 1, were ascribed to the Late Assyrian and Achaemenid periods respectively. It is the Achaemenid-period occupation, which was actually the most significant settlement at the site, that I want to look at now.

In this so-called Level I the remains of a large building were discovered (Fig. 1). The building is eroded on the north, south and east sides. There are thought to have been buttresses on the outside walls, as there were on the west wall which was the only external wall face to have survived. As excavated the extant remains measured about 25 m x 15 m and as restored about 25 m x 22 m. Walls were of mud brick, c. 1.5 m thick, resting on stone foundations, and there was mud plaster on both inside

I am also grateful to Dr Jon Taylor of the British Museum who provided invaluable help with this project.

On occasions when the water level in the lake is low the site of Tell ed- Daim is apparently wholly or partly out of the water, in common with other nearby sites such as Tell Shemshara.

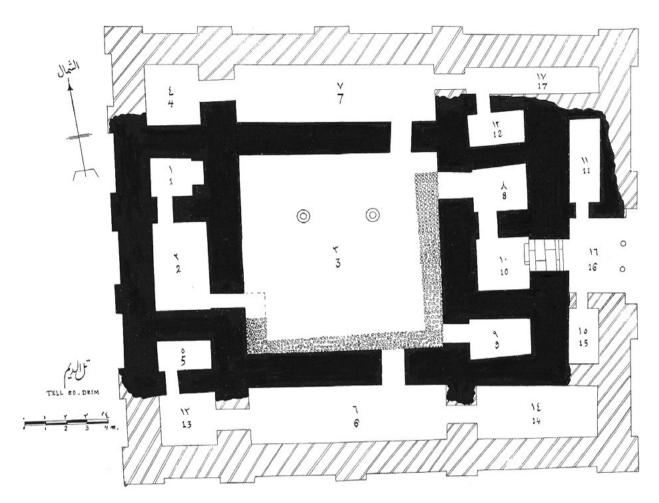


FIGURE 1. PLAN OF THE BUILDING AT TELL ED-DAIM (FROM AL-TIKRITI 1960: PL. 1).

and outside surfaces. These substantial walls are perhaps suggestive of a second storey. There are said to have been two sizes of mud brick, $35 \times 15 \times 9$ cm and $30 \times 10 \times 9$ cm. There were apparently two coats of mud plaster on the internal walls, one green, 2 cm thick and one dark red, 3 cm thick.

The main entrance to the building was on the east side. In the entranceway were two columns presumably supporting a roof or awning. There are thought to have been rooms on either side of the entranceway, one which was excavated (Room 11) and one which was reconstructed on plan (Room 15). There were apparently two floors in Room 11 as 'above the second floor' was a pottery jar (Fig. 2:10). Also from this room was a black 'serpentine' (?) bead (pl. 11/14³). From the entranceway steps led down to Room 10, the floor of which was 40

cm lower than the entranceway. The room measured 2.60 x 2.60 m and there was evidence of burning here. Above the floor in Room 10 was a small pottery jar (Fig. 2:9), a bronze earring (pl. 11/2), one bronze and two silver rings (pl. 11/4), and a long bronze rod (pl. 11/12).

Access to the central part of the building was via a small anteroom (Room 8). Above the floor in this room was a grey stone platter or cover (Fig. 3:15), two small bronze bells (pl. 11/5-6), a bronze pin with a disc-shaped head and eye (pl. 11/7), a clay bead (pl. 11/16), and a clay spindle-whorl (pl. 11/17). Also from this room were two more clay spindle-whorls (pl. 10/7-8).

The large space in the centre of the building (Room 3), presumably a courtyard, measured about 9.5 m square. In the northern half of the room were two circular column bases in polished dark grey stone, diameter 58.5 cm. The text seems to say they were resting on square stones. The

³ All plate numbers hereafter are to al-Tekriti 1960.

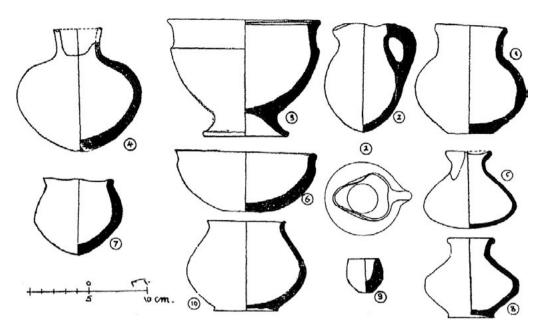
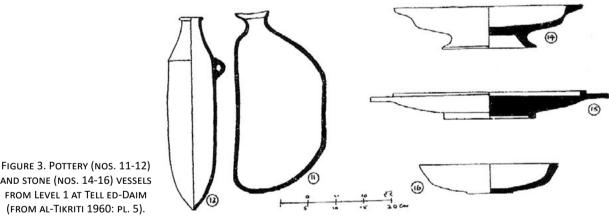


FIGURE 2. POTTERY VESSELS FROM LEVEL 1 AT TELL ED-DAIM (FROM AL-TIKRITI 1960: PL. 5).



AND STONE (NOS. 14-16) VESSELS

drawing in al-Tikriti 1960: pl. 11 is presumably one of these column bases. Around two sides of this courtyard is a pebble pavement. Above the floor of the courtyard was a pottery jar (Fig. 2:8). Also found in the courtyard was a fragment of a brown clay cylinder seal (pl. 11/18) with a totally indistinct design.

Three rooms opened directly off the courtyard. The first of these was Room 9 in the south-east part of the building. In this small rectangular room there were traces of burning and it was here that the red plaster was best preserved. Above the floor in this room was a bronze horse-bit with bar-shaped cheek pieces (Fig. 4), a pair of bronze tweezers (?) with an eye for suspension (pl. 11/8), a bronze ring (pl. 11/1), and two pottery jars (Fig. 2:4-5). Also above the floor, and by the entrance to the room, were a bronze kohl-jar (Fig. 5), a silver disc with embossed flower design (Fig. 6), and a bronze ring (pl. 11/3). The embossed rosette or flower on the silver sheet is reminiscent of the omnipresent rosettes on the sculptures at Persepolis, although it has many more petals, but this is a ubiquitous motif and not necessarily

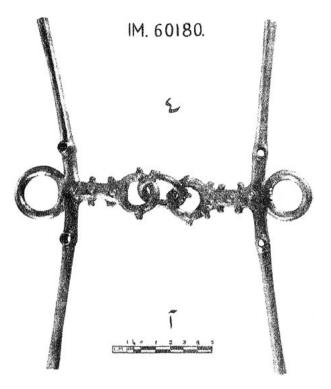


FIGURE 4. BRONZE HORSE-BIT FROM TELL ED-DAIM, IM 60180 (FROM AL-TIKRITI 1960: PL. 10/4).

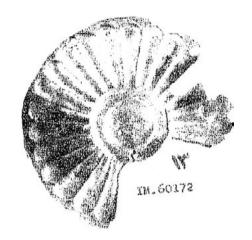


FIGURE 6. SILVER DISC WITH EMBOSSED FLOWER DESIGN FROM TELL ED-DAIM, IM 60172 (FROM AL-TIKRITI 1960: PL. 11/13).



FIGURE 7. BRONZE WALL PLAQUES FROM TELL ED-DAIM, IM 60191 A-B (FROM AL-TIKRITI 1960: PL. 9).

IM. 60183. IM. 60182.

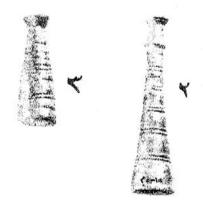


FIGURE 5. BRONZE KOHL-JARS FROM ROOMS 2 (RIGHT) AND 9 (LEFT) AT TELL-ED-DAIM, IM 60182-3 (FROM AL-TIKRITI 1960: PL. 10/2-3).

Achaemenid. There was also from this room an iron hoe with a straight socket (pl. 10/1), and a bronze tool with a long handle and spatulate head, overall length 36 cm (pl. 10/5).

From the opposite side of the courtyard, and diagonally across from the entrance, there was access to what may have been the two most important rooms in the building. In the first of these, Room 2, measuring 4.0 x 2.8 m, there were signs of burning on the walls and particularly on the floor that was blackish and baked hard by fire. Directly above the burnt layer on the floor were two complete bronze wall plaques (Fig. 7) and the remains of three similar examples. There were two large storage jars with seeds in the north-east corner of the room. Also above the floor in Room 2 were a bronze kohl-jar (Fig. 5), a long bronze rod flattened at one end (pl. 11/11), an enigmatic stone object (pl. 11/15), a green stone bowl (Fig. 3:14), a large irregularly shaped pottery jar (Fig. 3:11) and a small pottery amphora with a handle on the shoulder (Fig. 3:12). A long bronze pin was found in the fill (pl. 11/9). A bronze spoon or spatula (pl. 11/10) was apparently found in a grave in this room.



FIGURE 8. STONE SCOOPS FROM TELL ED-DAIM, IM 60206, 60208 (FROM AL-TIKRITI 1960: PL. 5/17-18).

FIGURE 9. BRONZE HORSE-BITS FROM PERSEPOLIS (LEFT) AND DEVE HÜYÜK (RIGHT) (FROM IVANTCHIK 2001: FIG. 86/1,3).

Room 2, which may have been a kind of anteroom, provided the only access to the small square Room 1, measuring just 2 m x 2 m. There was a niche or alcove in the east wall, and the floor of the room was much burnt. In the south-east (?) corner of the room were storage jars containing burnt seeds. Barley, wheat and lentils are said to have been identified. A 'sandstone' (?) bowl (Fig. 3:16) was found on the floor of the room, and on the floor in the niche were two stone scoops (Fig. 8). In the niche a grave was found under the floor. Also above the floor in this room were a pottery jar, a pottery jug with handle, and a pottery goblet (Fig. 2:1-3).

Exits from the central courtyard to the north and south were thought to have given access to ranges of rooms that were mostly not excavated or had eroded away. In Room 5 a pottery bowl (Fig. 2:6) was found 'between burials', and a pottery jar (Fig. 2:7) was found above the floor of Room 7.

The Small Finds

A number of the objects found in the building at Tell ed-Daim are characteristic of the Achaemenid period and some of them are so distinctive that they might even be described as Achaemenid type-fossils. Let us start with the bronze horse-bit found in Room 9 (Fig. 4). It has jointed canons that are joined by a bronze ring, and bar-shaped cheek-pieces that are cast in one with the bit itself. There are vicious spikes on the canons to keep the horse under control. This horse-bit is quite different from all the Late Assyrian horse-bits that are known, where the cheek-pieces are never cast in one with the bit itself (Curtis 2013, 92-4, pls. LXXI-LXXII). Instead, it belongs to a class of horse-bit that is well-known from Achaemenid contexts. Examples, sometimes with

similar barbs or spikes on the canons, may be noted from Persepolis, where at least 15 bits of this kind were discovered, from Deve Hüyük and from Warka (Fig. 9; Curtis and Tallis 2005, 218; Ivantchik 2001, fig. 86).

Also characteristic of the Achaemenid period are the two bronze kohl-jars that were found at Tell ed-Daim (Fig. 5), one in Room 2 and one in Room 9. Such jars or bottles were used for keeping kohl or eye blackener that was generally applied with a bronze pin. They have often been found in graves, presumably of women. They are mostly open at the bottom, and it seems they were manufactured like this to make it easier to fill them up with kohl which may have been more of a paste than a liquid. The bottom was then closed with a bronze disc or a covering of some other material. A number of bronze kohl-jars of this kind have been found in excavations in Northern Iraq (Fig. 10). Examples may be noted from two sites in the Eski Mosul Dam Salvage Project, Tell Jigan (Ii and Kawamata 1984-5, fig. 18 on p. 183) and Khirbet Hatara (Fiorina 2007, fig. 12, nos. 53a-b), as well as from Nimrud. Here, Layard found a bronze kohl-jar in or near a tomb at the south-west corner of the mound.⁴ Recently, another example has been found in a grave excavated by the University of Heidelberg at Bakr Awa in Iraqi Kurdistan about 60 km south-east of Sulaimaniya and a short distance to the north-west of Halabja (Miglus et al. 2011, fig. 16; 2013, fig. 9a).5 A

⁴ British Museum N 529, ht 10.8 cm (see Fig. 10).

⁵ I saw this kohl-pot in Sulaimaniya Museum in October 2011 amongst objects being conserved from the excavations at Bakrawa. During the same period, while making a list of bronze objects in the store in Sulaimaniya Museum, I noted more than 20 bronze kohl-jars from unauthorized excavations, presumably all or most of Achaemenid date. They are mostly open at the bottom, but one example had a bronze disc half-preserved at the base, held in position by the earth inside. The disc was not fixed to the container, and was probably held in place with grease or glue.

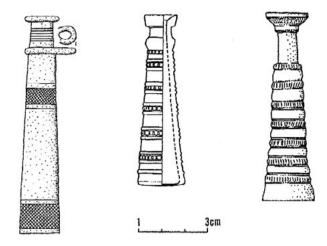


FIGURE 10. BRONZE KOHL-BOTTLES FROM NIMRUD (LEFT), TELL JIGAN (CENTRE) AND KHIRBET HATARA (RIGHT). (FROM LEFT, DRAWINGS BY J. E. CURTIS, FROM II AND KAWAMATA 1984-5: FIG. 18 ON P. 183, AND FROM FIORINA 2007: FIG. 12/53A).

bronze kohl-jar has also been found in an Achaemenid period grave at Gre Amer Höyük in South-East Turkey, as reported in the present conference.⁶ Excavations at this site in the Ilisu Dam Rescue Project on the Upper Tigris have been ongoing since 2009. Sometimes these bronze kohl-jars are accompanied by bronze pins with distinctive castellated heads that are themselves hallmarks of the Achaemenid period.⁷ Such castellated pins were found with the kohl-jars at Tell Jigan and at Gre Amer Höyük. Bronze kohl-jars of the type found at Tell ed-Daim are also paralleled in glass, including one example from Nimrud (Barag 1970, 156, no. 4, fig. 47; 1975, 23, 33, fig. 2; 1985, nos. 77-8). They also date from the Achaemenid period.

Of particular interest amongst the finds from Level 1 at Tell ed-Daim are two complete bronze wall plaques and the remains of three similar examples found in Room 2 (Fig. 7). They are square with concave sides, and have holes in the corners for attachment with nails. A bronze peg with a domed head, which still survives in one case, fitted into a large circular hole in the centre of each plaque. The plaques are decorated with floral designs showing lotus flowers and leaves. The plaques were found directly above the burnt layer on the floor

of Room 2, which is consistent with their having been mounted on the wall. It is clear from Assyrian evidence, both as shown in Assyrian wall-paintings and from shadows left on the walls of excavated buildings such as the Palace of Ashurnasirpal II at Ashur (Preusser 1955, pl. 14a), that such plaques were fixed high up at regular intervals around the walls of rooms. In Assyria such plagues are most commonly of glazed terracotta with painted decoration, either square with concave sides or round, and examples may be noted from the Temple of Ishtar Kidmuri at Nimrud (with an inscription of Ashurnasirpal II) and from Tell Billa (Curtis and Reade 1995, 102-3). From Nimrud there are also two bronze examples (Curtis 2013, 54-5, pl. XXIV/399-400), both of them square with concave sides like the Tell ed-Daim pieces. One of them has an inscription of Ashurnasirpal II (883-859 BC). Although of the same outline shape as the ed-Daim examples, they are a little different in that the best preserved plaque has a large boss hammered out from the back as opposed to having a separate embossed peg in the centre, and these Nimrud examples are relatively plain and lack any floral decoration. These small differences presumably reflect the later date of the ed-Daim examples which must be Achaemenid rather than Assyrian. Bronze wall plaques similar to the Assyrian examples are also known from contemporary contexts at Zincirli in North Syria (Curtis 2013, ibid.).

Next, I want to consider the two scoops found in Room 1 (Fig. 8). One is said to have been made of sandstone and the other of white marble.8 They are rectangular, cut off square at one end and rounded at the other, and have low sides all around except at the squared-off end where they are open. They are about 25 cm long. There are two similar scoops in grey stone from Persepolis, found during the excavations of A. Tajvidi in 1970 (Fig. 12; Curtis and Tallis 2005, nos. 138-9), there are two silver examples from Erzincan (probably Altintepe) in the British Museum (Fig. 13; Curtis and Tallis 2005, nos. 138-9), and there is another silver scoop in the so-called Lydian Treasure (Özgen and Öztürk 1996, no. 70). It is often supposed that these scoops were used to shovel incense, in which case they might have been intended for use in religious ceremonies, but this idea remains speculative. In any case, a date in the Achaemenid period for the scoops under discussion seems assured.

As Achaemenid period pottery is notoriously difficult to recognize and date, it is no surprise that amongst the published forms from Tell ed-Daim there are few that one could point to as being distinctively Achaemenid. The bowls, jars and jug shown in Fig. 2 are not particularly distinctive, with the possible exception of the footed bowl no. 5, which bears some resemblance to Assyrian

⁶ An image of this container and a castellated pin was shown in the paper of Gul Pulhan (read by Stuart Blaylock) at the conference on 'Archaeological Research in the Kurdistan Region of Iraq and the Adjacent Areas', Athens, 1st-3rd November 2013. I was informed by Stuart Blaylock (pers. comm.) that several more castellated pins were found in these excavations.

⁷ For a discussion of castellated bronze pins see Curtis 1984, 34-5.

⁸ However, one of these scoops with the numbers IM 60208/SM 1380/ DM 45 which was on display in Sulaimaniya Museum in October 2011 appears to be made of grey stone.

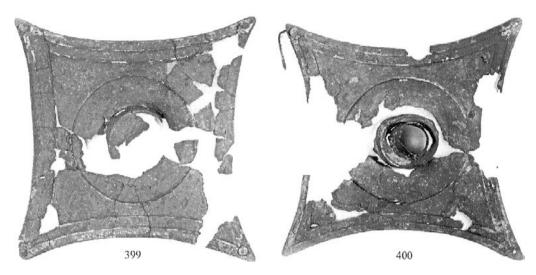


FIGURE 11. BRONZE WALL-PLAQUES FROM NIMRUD (FROM CURTIS 2013: PL. XXIV/399-400).



FIGURE 12. STONE SCOOP FROM PERSEPOLIS (FROM CURTIS AND TALLIS 2005: PL. 139).



FIGURE 13. SILVER SCOOPS FROM ERZINCAN (BRITISH MUSEUM NOS. 123263-4).

carinated forms and could be a developed (and later) form of them. By contrast, the two pottery vessels shown

in Fig. 3 do find close Achaemenid parallels. The jar with an exaggerated bulge on one side and almost flat on the other (Fig. 3:11) can be compared with a pottery jar from Persepolis (Schmidt 1957, pls. 71/9, 72/13), and the jar or small amphora that is pointed at the base and has a handle at the shoulder (Fig. 3:11) belongs to a class of jar that is well-known in Achaemenid contexts particularly in the Levant (e.g. Stern 1982, figs 109. 146). The drawings of potsherds from level I at ed-Daim (al-Tekriti 1960, pl. 6) are not very helpful and little can be learned from them.

Conclusions

With the presence of so many type-fossils of the Achaemenid period, then, I think we can definitely posit an Achaemenid date for this building. Red plaster is also characteristic of the Achaemenid period (see, for example, Perrot 2013, 154-5 and fig. 145). But what exactly was this building? The first point to note is that we do not of course have a complete plan. The parts to the north and south are pure speculation, and we cannot even be sure that Room 16 is actually the entrance. Secondly, the presence of the pebble pavement on the east and south sides of the central room 3 surely indicates that this was a courtyard open in part to the sky and the elements. However, the positioning of the two column bases in the northern half of the courtyard suggests that this northern part of the courtyard was roofed over, perhaps supporting a second storey. There is evidence for this kind of architectural device in, for example, the Palace of Darius at Susa (Perrot 2013, fig. 253). So, we have a mediumsized building with a courtyard in the centre. The small rooms 1-2 which are accessible only from the courtyard and are in the furthest part of the building are intriguing.

Room 1 measures just 2 m x 2 m, and Room 2 is only 4 m x 2.8 m. It might be tempting to see the alcove in the east wall of Room 1 as a niche for a cult statue, and Room 2 as an antecella, an interpretation which could be supported by the presence of the two scoops, very likely items of cultic equipment, on the floor of the alcove in Room 1. So could this building be a temple?

Only a limited stretch of the outer wall of the building was excavated but it seems to have had buttresses. Now external buttresses are more commonly associated with temples, but, as al-Tekriti notes, in the Late Assyrian period at least, buttresses are found with both temple and palaces. Similarly, wall-plagues, as found in Room 2, decorate both palaces and temples in the Late Assyrian period, as we have seen, but they are only associated with important buildings. The niche and the incense scoops in Room 1 might point towards a temple, but in both Rooms 1 and 2 there were storage jars with grain which might indicate a more domestic function. Lastly, not only is it difficult to draw conclusions on the basis of an incomplete plan, but we do not know what an Achaemenid period temple in Northern Iraq should look like. A further difficulty is that we have no evidence for further Achaemenid period buildings at Tell ed-Daim (it might have been a stand-alone structure or other buildings might have eroded away) so we cannot put it into any kind of a context.

We cannot be sure, then, whether this was a religious or a residential building (or perhaps a combination of the two), but given the strategic importance of the site of Tell ed-Daim on a major route between Iran and Mesopotamia, it is tempting to agree with the interpretation of al-Tekriti that this is a small palace. We might go even further and suggest that it might have been the seat of the local Persian governor. However that might be, it is the contents of the building that are of particular interest. They include a number of important Achaemenid period type fossils, and will serve as useful indicators of Achaemenid occupation at other sites, particularly in the Kurdish Autonomous Region. Early indications are that there may be quite a number of them.

There are reports of burning in Rooms 1-2 and 9-10 so it seems likely that the building was destroyed by fire, but when and in what circumstances are unknown. It could have been during the Achaemenid period or at the end of the Achaemenid period. The graves that are reported in Rooms 1-2 and 5 presumably post-date the destruction and abandonment of the building.

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'Inscription D' from Sennacherib's Aqueduct At Jerwān: Further Data and Insights

Frederick Mario Fales and Roswitha Del Fabbro*

The aqueduct in limestone blocks at Jerwan in the plain of Navkur (Dohuk region) of Iraqi Kurdistan still stands today as one of the most imposing monuments erected by the Assyrian king Sennacherib (704-681 BC) as part of his vast hydraulic program for the capital city Nineveh. This aqueduct – which allowed the waters of a 'Canal of Sennacherib' starting at Khinis, on the Gomel river, to pass over a deep and fast-flowing wadi maintaining a steady gradient in a southwesterly direction toward the basin of the Khosr river, and thence due south to the imperial capital – was subjected to a four-week campaign of archaeological survey (with light digging activities) by the Danish-American Assyriologist Thorkild Jacobsen and the British archaeologist Seton Lloyd in March-April 1933 on behalf of the Oriental Institute of the University of Chicago. 1 After this intense and innovative investigation, the vast artefact remained scarcely visited and not further studied for some eight decades, due to circumstances of conflict and political unrest in the area. In September 2012, in the framework of the 'Land of Nineveh' Archaeological Project, effected by the Italian Archaeological Expedition to Assyria (acronym: MAIA) of the University of Udine, directed by Daniele Morandi Bonacossi,² the two authors – who form the epigraphical team of the expedition - re-examined the Jerwan aqueduct, with an eye to the cuneiform inscriptions engraved on the stone surfaces, both in themselves and in relation to the architectural features of the vast artefact.

This fieldwork has led to two previous studies of comprehensive scope,³ in which, among other features, the authors pointed out the fact that the relative haste with which Jacobsen and Lloyd were forced to conduct their survey/partial excavation of the aqueduct (as an offshoot of the Oriental Institute's large-scale excavation at nearby Khorsabad – Dūr Šarruken) gave rise to some grave

misapprehensions on the quantity of blocks forming the structure,4 and caused them to miss a duplicate of one of the royal inscriptions celebrating the building of the monument.⁵ The present contribution will, instead, focus specifically on the so-called 'inscription D' of the aqueduct - the vastest epigraphical complex within the monument, albeit not necessarily formed by only one text – by presenting a set of further architectural and epigraphical details leading to some fresh suggestions on its constitution; it is also enriched by a diagram of this inscription effected through AutoCad and laser scanning techniques, which was performed by a team under the direction of Dr Arch. Roberto Orazi, member of the MAIA expedition,⁶ and on which a detailed mapping of the inscribed blocks, as they are visible nowadays, has been subsequently superimposed by one of the present authors.7

The so-called 'inscription D'8 of Sennacherib's aqueduct at Jerwān is located on the southern façade of the western half of the monument, extending on three recesses (from west: sectors 5-3-1) and two buttresses (sectors 4-2) of the structure, for a total of approximately 45 metres of

⁴ Fales and Del Fabbro 2014, 67-8, where a reduction of the 'two million blocks' surmised by Jacobsen and Lloyd to some 400,000 exemplars was suggested on a mathematical-geometric basis.

⁵ Fales and Del Fabbro 2014, 76-7, inscription C2. A further result of the authors' previous study (Fales and Del Fabbro 2014, 72-3 and 93-4) was that of establishing definitely that inscription A mentioned a 'palace of Sennacherib' which cannot, of course, correspond to the Jerwān artefact itself, but must refer back to a palatial structure which the king had built elsewhere (at Khinnis? At Dūr Šarruken before the abandonment of his father Sargon's capital city?) and from which the inscribed/uninscribed blocks of inscription D should have been transported at the time of the original erection of the aqueduct.

⁶ Fig. 2. Dr Orazi, as leader of the *Project of Conservation and Management of Sennacherib's Irrigation System* on behalf of the ITABC (*Istituto per le Tecnologie Applicate ai Beni Culturali*, CNR, Rome) in cooperation with the MAIA archaeological project, and the team under his guidance – and specifically Francesca Colosi and Eva Malinverni (Project team and GIS), Salvatore Barba, Roberto Gabrielli, Antonio Salvatori (Photogrammetry and laser scanner), Luana D'Auria, Fausta Fiorillo, Silvia Salviani, Francesca Verri (Restitution), and again Luana D'Andria, Laura Mattioli (AutoCad elaboration) – are to be heartily thanked for their kind and generous contribution to the present paper. The overall results of their AutoCad and laser-scanning mapping of the entire Jerwān aqueduct are planned to appear in an independent study, as part of the MAIA reports, in the near future.

⁷ Fig. 8, executed by R. Del Fabbro on the basis of Orazi's plan in Fig. 2. This new mapping of the position of the inscribed blocks of Inscription D, with legend of displaced blocks, may now be used alongside Jacobsen's original diagram (Jacobsen and Lloyd 1935: 24, fig. 7).

⁸ So it was labelled by Jacobsen, alongside three other typologies of engraved texts (A, B, and C): Jacobsen and Lloyd 1935: 19-27.

As on previous occasions, many thanks are due to the Director of Antiquities of Dohuk, Dr. Hassan Ahmed Qasim, and to Mr. Abubakir Othman Zainadin (Mala Awat), General Director of Antiquities of the Kurdistan Regional Government, for their extremely generous and friendly support of the field activity which led to this article. Equally as on previous occasions, this conference paper goes back to a fruitful and intense cooperation between the authors, both on the field in Kurdistan and back in Europe, thus giving rise to a common manuscript, albeit divided into individual paragraphs. Specifically, §1 was authored by Fales, §2 by Del Fabbro, §3 jointly.

¹ The results were published in book form in Jacobsen and Lloyd 1935 and back in Europe, thus giving rise to a common manuscript.

² For the expedition's results to date, see Morandi Bonacossi 2012-3; 2014; 2016; *forthcoming*; Morandi Bonacossi and Iamoni 2016.

³ Fales and Del Fabbro 2012-3; Fales and Del Fabbro 2014.

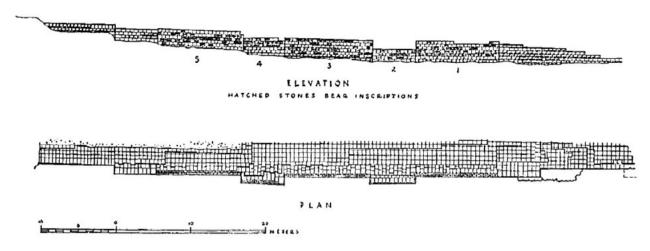


FIGURE 1. ELEVATION AND PLAN OF THE SW SECTOR OF THE JERWĀN AQUEDUCT, SCALE 1:500, FROM JACOBSEN AND LLOYD 1935, FIG. 3 (COURTESY OF THE ORIENTAL INSTITUTE OF THE UNIVERSITY OF CHICAGO).

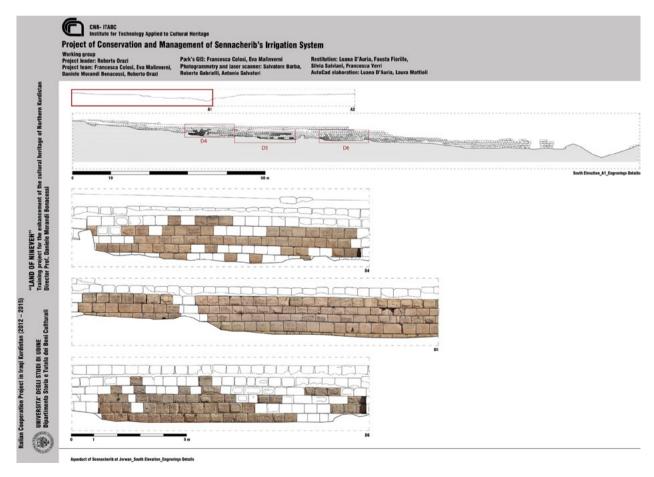


FIGURE 2. 'INSCRIPTION D' ON THE SOUTHERN FAÇADE OF THE WESTERN SECTOR OF THE AQUEDUCT.

AT TOP, THE CAD-GENERATED ELEVATION OF THE FAÇADE WITH INDICATION OF THE POSITION OF

THE INSCRIBED BLOCKS; BELOW, THE INDIVIDUAL SEGMENTS THROUGH

LASER-SCANNING TECHNIQUE (R. ORAZI, © MAIA).

masonry (Figs. 1-2).⁹ The entire section which hosts the inscribed stonework represents an anomaly on the remainder of the structure, since it is appears to be the outcome of a restoration which was carried out later than the time of the construction of the aqueduct itself – in fact in decidedly post-Assyrian times.¹⁰ The circumstances leading to this restoration were suggested, albeit tentatively, by Lloyd: 'At some time when the aqueduct was in use the parapet had been breached by the pressure of the water, or possibly by a hostile attack, and the outrush of water had carried away some of the stonework beneath. The breach had been patched with stones discarded from some other building, many of them still bearing traces of inscriptions appropriate to it'.

The possible cause of the breach remains, of course, a matter of speculation, since no extant archaeological feature seems to act as a clue on the matter. Nevertheless an in-depth re-examination of the SW sector of the monument, effected by the authors in the field and rechecked against excavation photographs, points to a number of specific features confirming Lloyd's insight of a breach of sorts which had subsequently been repaired. On the other hand, however, the technical aspects involved in the operation raise a further series of questions which affect the historical reconstruction of the repair itself.

The features noted in particular by the authors were the following:

- the outer masonry of this repaired SW section juts forward from the rest of the wall, almost to the point of seeming detached from the latter. This feature is particularly evident in a picture taken by Jacobsen and Lloyd (Fig. 3), in which a well-defined outer section of the stonework appears decidedly different from the inner fabric: especially noteworthy is the different method of laying the blocks of the two most external rows and their irregularity in size. These blocks, in fact, were cut in an approximative way even if they are to some extent modular and are not as regular as those of the rest of the structure;
- to the extent that the re-used blocks were somewhat irregular in size, a particular treatment seems to have been used to make the façade more homogeneous. Wherever necessary, i.e. where the surfaces of adjoining blocks did not match or mutually fit, it was chosen to roughly chisel the face of the stones only along the outer bands of conjunction with the neighbouring ones, thus



FIGURE 3. A VIEW FROM WEST OF THE SO-CALLED 'REPAIRED BREACH': TO THE LEFT OF THE DOTTED LINE IS THE ORIGINAL STRUCTURE; TO THE RIGHT OF THE DOTTED LINE ARE THE TWO ROWS OF THE RESTORATION: ELABORATION AFTER JACOBSEN AND LLOYD 1935, PL. X B (COURTESY OF THE ORIENTAL INSTITUTE OF THE UNIVERSITY OF CHICAGO).

leaving a jutting central area (Fig. 4).¹¹ This treatment of course resembles a rustication of the blocks, and may at first sight give the impression of an intentional embellishment, but a comparison with the very elegant and smooth rustication of the original façade –as it is visible, e.g., to the east of the repaired breach near the central archways of the aqueduct (Fig. 5) – proves that it was at most a poor cousin of the latter, executed for mainly utilitarian purposes, perhaps by imitation;

- an additional external layer of stonework, which was not foreseen in the original construction, was added in this section in order to strengthen the masonry;
- observing the façade at its easternmost point (i.e. in the last restored recess to the east), where

Orazi's plan in Fig. 2 is actually partial, since it depicts only sectors 5 (D4) 4, 3 (D5), and 1 (D6) of Lloyd's diagram in Fig. 1. This is mainly due to excessive falls of blocks which prevented a full laser-scanning visual.
The reasons for this terminus post quem are explained in detail in

¹⁰ The reasons for this *terminus post quem* are explained in detail in Fales and Del Fabbro 2014, 95-6.

¹¹ As noticed by the two excavators, in fact, 'a deep layer of stone chips at the foot of each façade bears witness to the fact that these facing-stones were worked by masons in situ' (Jacobsen and Lloyd 1935, 9).



FIGURE 4. CHISEL MARKS ON THE OUTER BANDS OF A BLOCK (PHOTO BY M. GATTI, © MAIA).



FIGURE 5. RUSTICATED BLOCKS
OF THE ORIGINAL STRUCTURE
TO THE EAST OF THE 'REPAIRED
BREACH' (PHOTO BY
M. GATTI, © MAIA).

the 'repaired breach' ends and joins the buttress pertaining to the original structure, it is patently evident that the blocks which belong to the restoration lean against the buttress and do not bond with it (Fig. 6);

 unlike the rest of the structure, both on its eastern and western sides, the blocks in this entire SW section are, as Lloyd noted, 'stepped downward, each course projecting a few centimeters beyond the one above it'12 (Fig. 7). It is thus clear that the masons who repaired the breach viewed the reinforcement of the structure as essential; the blocks were placed in this stepped out manner in order to prevent future collapses. This points to the fact that, during the restoration work, much less attention was paid to aesthetics (as shown

¹² Jacobsen and Lloyd 1935, 9.



FIGURE 6. THE CONJUNCTION BETWEEN RESTORATION AND ORIGINAL STRUCTURE (PHOTO BY M. GATTI, © MAIA).



FIGURE 7. PANORAMIC VIEW
OF THE CENTRAL RECESS OF THE
'REPAIRED BREACH'; NOTE THE
MASONRY, WHICH IS SLIGHTLY
STEPPED DOWNWARD (PHOTO
BY M. GATTI, © MAIA).

also by the preceding points), and much more to functionality.

All said and told, however, the above features still retain a certain overall ambiguity for the modern scholar, since on the one hand they suggest a degree of care and time employed in the operation, while on the other evidencing a certain slipshodness and possibly even haste in effecting an emergency repair. The general inaccuracy in the laying of the stones might even have us imagine that the façade of the repaired breach, after restoration, was not meant to be completely visible; it might have been partially covered by a low earthen rampart, so as to give greater stability to the structure. On the other hand, this notion is contradicted by the 'rustication' process, which, however crude, could have been easily substituted by a full-scale planing of the relevant blocks, and thus suggests that relatively able

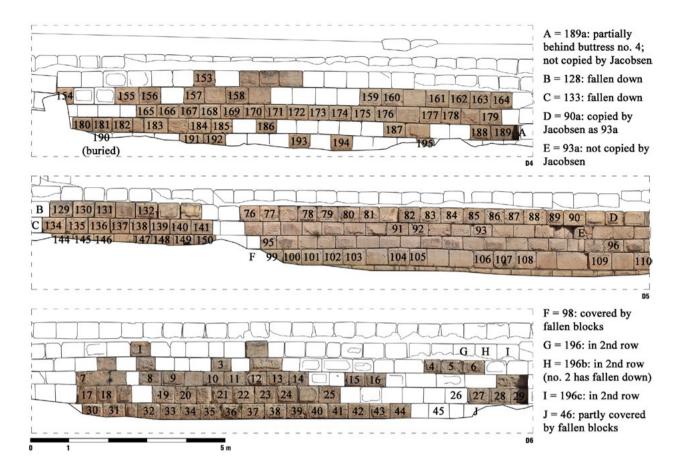


FIGURE 8. DETAIL OF FIG. 2 WITH BLOCK NUMBERING INSERTED, AND LEGEND ON NEWLY VISIBLE/PARTLY VISIBLE/NO LONGER VISIBLE BLOCKS AFTER 2012 FIELDWORK (R. DEL FABBRO, © MAIA).

and attentive 'minds and hands' were at work on the repair.

One general feature is however relatively clear: that the 'repaired breach' of the SW wall is a definite marker of a diachronic element in the history of the Jerwan monument. The monumental and imposing quality of the original aqueduct, with its long and high courses of limestone, which could be admired from afar, was intended as a testimonial of the architectural capabilities of the Assyrian king Sennacherib. On the other hand, in the later phase when the restoration of the SW wall was carried out, this aspect seems to have carried little or no weight; rather, the essential aim of the operation was to guarantee stability and functionality to the structure - whether it continued to be used as an aqueduct as originally planned or, more likely, had been converted into a mere stone causeway that allowed people, animals, and carts to bridge the fast-flowing wadi beneath it.

This general framework of the architectural features of the repaired sector of the SW façade may help to explain the totally haphazard order in which the inscribed blocks of the so-called 'inscription D' were arranged in it – thus giving rise to a fully unique epigraphical complex in the cuneiform horizon, for its disorderly and incoherent layout (Fig. 8). The inscription is formed by more than 200 blocks, interspersed at random among uninscribed specimens. More precisely, Jacobsen copied 204 inscribed blocks, ¹³ considering also one in the second row (no. 196), six which had fallen down and lay at the foot of the wall (nos. 197-202), and two which had been initially omitted and were added later to his generally well-executed diagram, ¹⁴ i.e. nos. 93a and 127a.

The fieldwork of the present authors has however determined that two more inscribed blocks (which

¹³ Jacobsen and Lloyd 1935, pls. XIX-XXX.

¹⁴ Cf. Jacobsen and Lloyd 1935, 24 fig. 7.



FIGURE 9. BLOCK NO. 127B, WHICH WAS NOT COPIED BY JACOBSEN AND NOT NUMBERED IN HIS DIAGRAM (PHOTO BY M. GATTI, © MAIA).

have been dubbed 196b and 196c) are today visible in a second row, thanks to the dislodgement and falling away of two front-row blocks (no. 2 and the uninscribed one to its right) which hid them from the sight in the Thirties. However, the cuneiform signs on these blocks 196b-c are quite difficult to read, since the surface is nowadays covered with lichen. Further additions to be considered are: no. 90a (not present in Jacobsen's diagram, but erroneously copied as no. 93a, a block whose precise location was misplaced by the Danish-American scholar, who put it in the course below its correct location), which is placed two blocks to the right of no. 90, as well as no. 189a (only partially visible in its left half, since its right half is stuck inside the buttress to the east), and no. 127b (Fig. 9) a block located in the left return of the easternmost buttress of the repaired breach, more exactly between nos. 127a and 123. In sum, these five blocks (nos. 93a, 127b, 189a, 196b, and 196c) were, for different reasons, not copied by Jacobsen. The total number of inscribed blocks should therefore be updated to 209.

As already stated in detail elsewhere,¹⁵ the inscribed blocks were put in place in a completely random order. This gives rise to utterly discontinuous textual sequences; inscribed blocks are in the main alternating with uninscribed ones and, in any case, even where two or more inscribed blocks are adjacent, they do not provide a continuously coherent text. Moreover, some

of the blocks prove to have been placed upside-down¹⁶ or with the cuneiform script rotated at 90 degrees.¹⁷ Despite this overall chaotic aspect, it would seem that the inscribed face of the blocks was the one preferably chosen to be put on view, because most likely it was less rough than the other faces, and the choice to turn the inscribed face inwards within the masonry would have entailed a greater amount of work on the treatment of the surfaces of the blocks. Moreover, as stated above, the surface treatment seems to indicate an intention to avoid the visual perception of misalignments of contiguous blocks, thus suggesting – again – that the elevation was at least partially visible. But this tension toward visibility and even, to a small degree, aesthetics, was evidently marred by the fact that the people who performed the repair were no longer able to read the royal inscription of Sennacherib which the blocks conveyed.

In this state of things, any attempt to reorder the blocks of inscription D into a coherent philological framework by modern investigators has faced many of the same difficulties as trying to piece together a jigsaw puzzle, with the added frustration that comes upon realising that some pieces are missing. ¹⁸ In common experience, after looking for such stray pieces everywhere – under the carpet, in the vacuum cleaner bag – one eventually comes

¹⁵ Fales and Del Fabbro 2014, 81.

¹⁶ See blocks nos. 30, 88, 90a, 92, 97, 101, 127a, 140, and 195.

¹⁷ See blocks nos. 4, 29, 93a, and 94.

¹⁸ For the Assyriological attempts hitherto effected on the text of Inscription D, with their bibliography and results, cf. Fales and Del Fabbro 2014, 83-5.



FIGURE 10. BLOCK NO. 93A (NOT COPIED BY JACOBSEN):

DAMAGES POSSIBLY DUE TO EXPOSURE TO WEATHERING AND TO VEGETATIVE GROWTH (PHOTO BY M. GATTI, © MAIA).

to accept the fact that they are lost forever and one sadly dismantles the puzzle to pack it back in its box. In the case of inscription D of Jerwān, however, fieldwork has left the present authors with a definite suspicion of where one might look for the remaining pieces of the puzzle. As noted above, some of the inscribed blocks lay behind the visible ones, in the second row of the masonry, and a few of them have come to light since Jacobsen and Lloyd's time due to the collapse of the outer blocks. Thus, at least in theory, if one were to remove the ashlars of the façade, the probability of finding other inscribed blocks and of reconstructing additional parts of the relevant royal inscription(s) of Sennacherib should be relatively high.

These considerations are hardly meant to be otiose, but rather to open the way to some conclusive remarks on the overall state of preservation of this particular section of the Jerwān monument, as established by the authors' fieldwork some 80 years since the survey-excavation by T. Jacobsen and S. Lloyd took place. At the beginning of the fieldwork operation in 2012, the main areas of damage noted on the section bearing the so-called 'inscription D' were those caused by lack of regular maintenance and by the general state of abandonment in which the entire vast monument was found, in particular from exposure to the elements: temperature changes between hot summers and severe winters has resulted in numerous cracks in the limestone blocks themselves (Fig. 10).

The entire SW section bearing the inscription has now been carefully cleared of the weeds, shrubs, and bushes which had grown in the gaps between the ashlar blocks and in the fractures created by weathering, in order both to carry out the photographic documentation of every single inscribed block and to forestall further damage caused by vegetative growth. Another noxious agent which was recorded was the presence of musks and lichens on the surface of the limestone blocks whose growth was promoted by the presence of stagnant water and humid conditions away from direct sunlight. As already hinted above, this phenomenon is particularly evident for the blocks in the second row, which have been covered by other stones for centuries and - following their collapse - whose epigraphic elements are at present almost illegible due to the presence of organic matter. A possible future program of preservation and restoration of the structure must, therefore, take into account all of these threats, in order to counteract them.

Moreover, in comparison with the situation recorded by Jacobsen and Lloyd in 1933, the authors have observed the following specific differences:

the fall of some stones, in particular from the higher courses of ashlars, such as to reveal the presence of other inscribed blocks which were hidden from the eyes of the first investigators (e.g. nos. 196b and 196c). These falls do not seem to have been necessarily caused by explicit human activity, but rather by the lack of preservation

- in the face of seasonal weather changes and precipitations;
- the covering up of the lower courses of inscription
 D: in order to unearth the entire façade of the monument, Jacobsen and Lloyd dug rather deep and narrow (about two meters wide) trenches alongside the walls¹⁹ and these have now, over the decades, partially filled up again.

In this respect, a minimal requirement for the preservation of the monument within the archaeological heritage of Iraqi Kurdistan for the future would be a full-fledged cleaning of the trench excavated by Jacobsen and Lloyd in order to bring to light the lower courses of the inscription, the blocks fallen in ancient times and already identified by the first investigators (nos. 197-202), and those collapsed after their archaeological sounding. This initial action would at least enable researchers to complete the revision of the location of the inscribed blocks and their overall collation against the copies drawn by Jacobsen. The initiation of these, and a number of other decisive actions in the overall preservation of the monument, will allow the Jerwan aqueduct to take its rightful place as one of the great architectural achievements of antiquity to be enjoyed and respected by a public of archaeologists and interested tourists who will, we hope, be visiting Iraqi Kurdistan in the near future.

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¹⁹ Cf., e.g., Jacobsen and Lloyd 1935, pl. X A.

The Land of Nineveh Archaeological Project: A Preliminary Overview on the Pottery and Settlement Patterns of the 3rd Millennium BC in the Northern Region of Iraqi Kurdistan

Katia GAVAGNIN

Introduction

The aim of the LoNAP1 is to reconstruct the formation and evolution of the cultural and natural landscapes of the important region of northern Mesopotamia, which straddles the provinces of Ninawa and Dohuk (Northern Iraqi Kurdistan), and to ensure their development and protection in innovative ways. The investigated region consists of the area bordered by the plain of Dohuk and the foothills of the Zagros to the North, the lake formed by the Eski Mosul dam to the West, and the Navkur plain that extends from the Jebel Magloub to the Al-Khazir river valley and beyond to the South and East (Fig. 1). This vast region, which had so far never been explored by means of a holistic and interdisciplinary approach, played a key role in the cultural dynamics that have affected Northern Mesopotamia from prehistoric times until the Islamic periods.

497 sites were visited during the first two years of survey and approximately 19,000 diagnostic potsherds dated from the 7th millennium BC to the Islamic period have been collected from 286 of these (Fig. 2).²

About 1350 potsherds dated to the Early Bronze Age were identified. They are subdivided into two main groups: 9% of them belong to the Ninevite 5 period, while 91% dated to the Mid-Late 3rd Millennium BC.

Ninevite 5 Period

This earliest period is very sparsely attested, with about 130 potsherds. The low presence of Ninevite 5 specimens is a somewhat unexpected because our survey area is located in the core of this ceramic production that developed around and to the North of the site of Nineveh at the beginning of the 3rd millennium BC. The 'heartland' of the Ninevite 5 province is located between the Wadi Jaghjagh to the west, the middle reaches of the Khabur to the south, the eastern bank of the Tigris to the

east and the Tur Abdin to the north (Grossmann 2014, 81). In the later phase, characterised by the incised/excised Ninevite 5, this ceramic production expanded to include all the Upper Khabur Basin to the west (Rova 1988; 1996; Milano and Rova 2000), with the westernmost limit at the site of Tell Chuera. To the south, sporadic Ninevite 5 attestations have been recovered at Mari in Syria and Tell al Naml in Iraq; the northern limit remains the Tur Abdin (with few attested site in the Cizre-Silopi Survey: Algaze *et al.* 2012, 22-5) while the eastern limit is less defined: Ninevite 5 specimens have been recovered in north-eastern Iraq, on the Upper Diyala River near the Iranian border (Grossmann 2014, 81-2).

Painted Ninevite 5 is represented in the survey material by only 24 potsherds (Fig. 3), mainly decorated with geometrical patterns (triangles, grids, ovals, wavy-lines, etc.) in black colour. A few purple/dark-red specimens are also attested (Fig. 3: 5). Concerning forms, almost all the retrieved rims belong to carinated cups and they are mainly beaded (Fig. 3: 2, 4-5).

The majority of the potsherds are unpainted (Fig. 4). Ribbed fine ware, identified through horizontal ribs or grooves on a grey/greenish fine fabric that usually occurs in the upper part of the vessel, is most common (Fig. 4: 2-3, 5).

Incised patterns (e.g. simple triangles, zig-zag or weavy lines, herring-bone pattern, etc.) seems to be more frequent (Fig. 4: 1, 4) than incised/excised ones – mainly broad excisions creating the appearance of raising panels (Fig. 4: 6, 10). As for painted Ninevite 5 types, sherds mostly belong to carinated cups with in-turned beaded rim and pointed base (Fig. 4: 1-2, 4-5, 9).

LoNAP specimens found parallels³ at several sites both in Northern Iraq (Nineveh: Gut 1995; Tell Mohammed Arab: Roaf 1983; Killick 1986; Killick and Roaf 1987; Bolt and Green 2003; Tell Fisna: Numoto 2003; Tell Jessary: Numoto 1990; Tell Karrana 3: Rova 1993; Telul eth-Thalathat V: Fukai *et al.* 1974; Tell Kutan: Bachelot 2003 etc.) and in Northern Syria (Tell Leilan: Schwartz 1988; Tell Brak: Matthews *et al.* 1994; Matthews 2003;

¹ The Land of Nineveh Archaeological Project of the Udine University is directed by Prof. Daniele Morandi Bonacossi to whom I am deeply grateful for the opportunity of joining the team as one of the mission's ceramicists.

² For a detailed description of the sites and settlements patterns see

² For a detailed description of the sites and settlements patterns see Morandi Bonacossi and Iamoni 2015; Morandi Bonacossi 2012-2013; 2014.

More detailed information on the comparisons for this period could be found in Gavagnin, Iamoni and Palermo 2016.

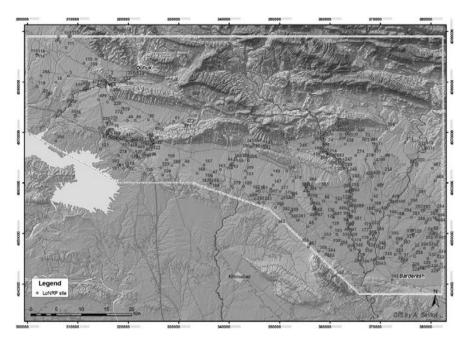


FIGURE 1. THE LONAP SURVEY AREA WITH THE SURVEYED SETTLEMENTS.

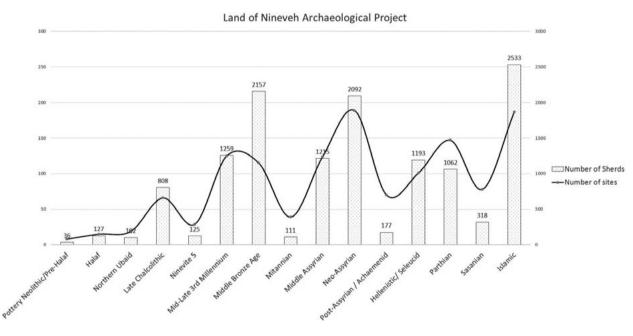


FIGURE 2. CHART SHOWING THE NUMBER OF SHERDS COLLECTED IN THE LONAP AREA BY PERIOD. THE LINE REPRESENTS THE RELATIVE SURVEYED SITE PER PERIODS (AFTER GAVAGNIN, IAMONI AND PALERMO 2016, FIG. 2).

Tell al-Raqa'i: Curvers and Schwartz 1990; Tell Barri: Biscione 1998; Valentini 2008; Tell Khazna I: Munchaev and Merpert 1994 etc.): they thus perfectly fit into the pottery production of the Ninevite 5 ceramic region.

At this preliminary stage of study, it seems that no specimen of the Terminal Uruk and Transitional, or of the Late Excised phase is attested, and that Ninevite 5 potsherds mainly belong to the middle part of the period,

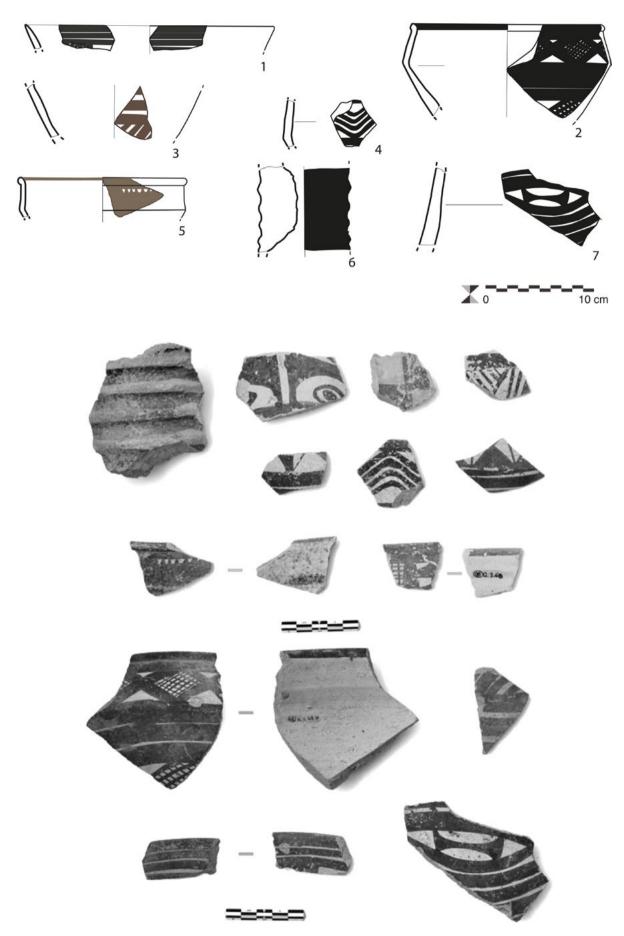


FIGURE 3. NINEVITE 5 PAINTED POTSHERDS.

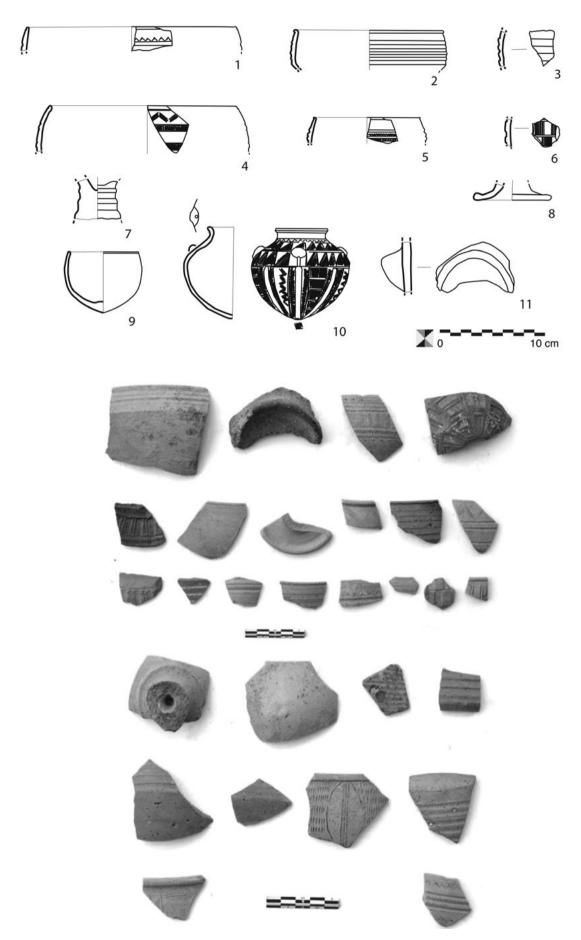


FIGURE 4. NINEVITE 5 INCISED AND INCISED/EXCISED POTTERY SPECIMENS.

namely to the Intermediate, Painted/Early Incised and Incised/Excised phases (Rova 2003, 5).

It is important to consider, however, that these oldest phases have been rarely found and moreover that just a few sites yielded a complete Ninevite 5 sequence. The 'Terminal Uruk' phase is attested at Tell Karrana 3 and Tell Mohammed 'Arab in Northern Iraq and at Tell Brak in Syria, while the 'Transitional Ninevite 5' phase is present just at Tell Karrana 3, Tell Jigan, Tell Fisna and in TW sounding at Tell Brak (Grossmann 2014, 82).

Given that at this preliminary stage of study we decided to consider the Late Chalcolithic as a whole, and not to subdivide it into different sub-phases (Morandi Bonacossi and Iamoni 2015), is not possible to understand well the transition between 4th and 3rd millennium BC. In the LoNAP area the number of settlements decreases dramatically, from 96 sites in the Late Chalcolithic to 29 sites in the Ninevite 5 period: is not possible to know, however, if all the sites were inhabited in the latest part of 4th millennium BC (Late Chalcolithic 4-5 and Late Uruk), and so whether there is a real decrease in sites number or rather if the decrease happened before, and the Ninevite 5 period being be the beginning of a new occupation expansion. The trend of diminishing site number is also attested in other surveys: around Tell Hamoukar (Ur 2004, 157-8), Tell Brak (Eidem and Warburton 1996, 55) and Tell Leilan (Arrivabeni 2010, 45), and in the Cisre-Silopi Plain (Algaze et al. 2012, 22-5) the number of settled sites also diminished, even if less markedly. In the North Jazira survey (Wilkinson and Tucker 1995, 49-50) and in the survey around Tell Beydar (Wilkinson 2000, 10) the situation is a little bit different: at the beginning of 3rd Millennium BC the number of larger sites increased while the smaller sites have been abandoned.

Only two of the 29 sites attributed to the Ninevite 5 period were not inhabited in the Late Chalcholithic, and all of these were occupied in the Mid-Late 3rd Millennium BC. The lack of potsherds attributed to the earliest phases of the Ninevite 5 period makes it difficult to assess settlement continuity from the 4th to early 3rd millennium BC. A break in occupation between the end of Uruk period and the beginning of Ninevite 5 phase has been proved at some sites in Northern Iraq (e.g. Tell Mohammed 'Arab) and it is a known trend in other surveys such as at Tell Leilan (Stein and Wattenmaker 1990; Arrivabeni 2010), Tell Hamoukar (Ur 2004; 2010) and Tell al-Hawa (Wilkinson and Tucker 1995). Further study on recovered pottery and data from new survey campaigns could clarify the situation in the LoNAP area.

Mid-Late 3rd Millennium BC

The second half of 3rd Millennium BC is one of the most represented phase among the LoNAP materials (the

fourth for number of potsherds after the Islamic, Neo-Assyrian and Middle-Bronze Age periods) and occurs with a large number of types: concerning open forms, the most attested rims are the thin-beaded rim (Fig. 5: 3) – for the beakers – and the beaded/flat beaded rim (Fig. 5: 2, 4-6) – for the bowls. The closed forms, mostly smallmedium jars, usually have a folded rim (Fig. 5: 7-8; Fig. 6: 3) or an indented rim (Fig. 5: 9), while the lid-seated rim storage jars are less attested (Fig. 5: 10; Fig. 6: 2). The most common bases are flat, often showing a stringcut surface (Fig. 5: 11-12), but also rounded and flatconcave specimens have been recovered. With regard to decoration, abundant examples of comb-impressed and comb-incised sherds (Fig. 6: 1-4) and only few applied decorations - rope, snake relief (Fig. 6: 5-6) - have been noted.⁴ As was the case for Ninevite 5 materials, LoNAP specimens dated to the mid-late 3rd millennium BC found parallels at several sites of Northern Iraq (e.g. Nineveh: McMahon 1998; Tell Taya: Reade 1968; Tell Jessary: Numoto 1990 and Tell al-Rimah: Postgate et al. 1997 etc.) and Northern Syria (e.g. Tell Brak: Oates 2001; Tell Beydar: Gavagnin and Mas 2014; Tell Hamoukar: Colantoni and Ur 2011; Chagar Bazar: McMahon and Quenet 2007; Tell Leilan: Schwartz 1988; Tell Mohammed Diyab: Nicolle 2006 etc.).

Recently, the ARCANE project in the Tigridian Region stressed that the majority of data from this region belong either to the earliest (phases ETG 2-4, Ninevite 5 period) or to the latest part of 3rd millennium BC (phases ETG 7-9, corresponding to the Akkadian, Post-Akkadian and Ur III periods), while the middle part (ETG 4b-6, corresponding to the EJZ3 phase in the Jezirah region) is scarcely attested (Lebeau 2011; Bielinski and Rova forthcoming). This situation seems, in this preliminary overview, not to have been totally confirmed in the LoNAP materials. In fact, even though the Ninevite 5 and Akkadian and Post-Akkadian phases are well attested there, several specimens dated to the EJZ3 period have also been recognized. As noted elsewhere (Gavagnin et al. 2016), the specimens dated to the middle part of 3rd millennium BC are mainly Common Ware potsherds. As the Common Ware types have a long duration some shapes start in the Ninevite 5 period and persist throughout the mid and late 3rd millennium BC – only a more precise analysis of the material could clarify if we have a real presence of types dated to the central part of the 3rd millennium BC or not.

Concerning the localization of our area in this period, contrary to the Khabur Basin and Northwestern Syria, where the ceramic provinces of 'Metallic Ware' and

⁴ More detailed description of the types and their comparisons have been provided in Gavagnin *et al.* (2016).

⁵ This term was used for the first time by H. Kühne (Kühne 1976, 33-66) to describe a highly depurated and compact fabric, with a colour range from dark grey-blue to dark red, found at Tell Chuera, resembling the bronze vessels found on the same site. For more detailed studies on the Metallic Ware see Schneider 1988; 1989; Kühne and Schneider

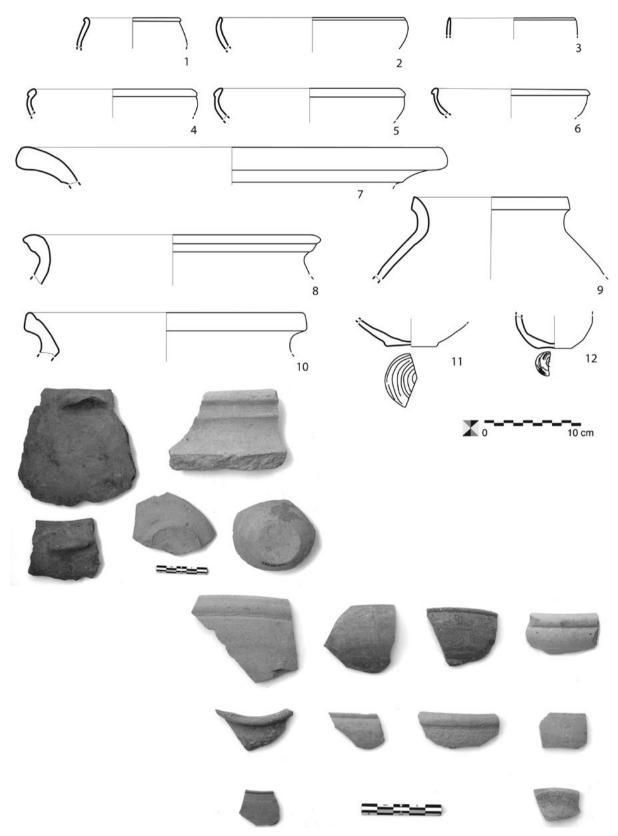


FIGURE 5. MID-LATE 3RD MILLENNIUM POTSHERDS.

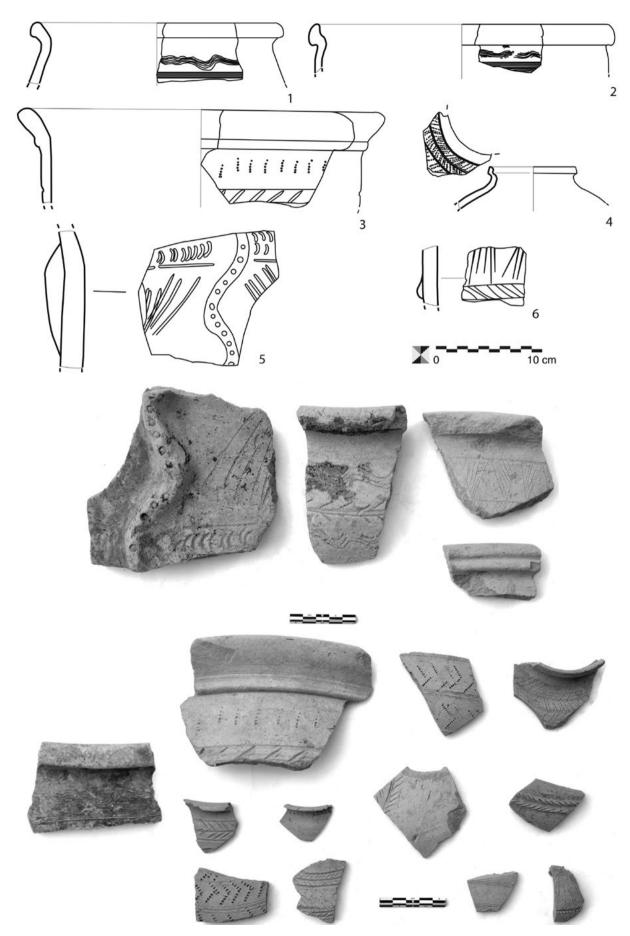


FIGURE 6. AKKADIAN AND POST-AKKADIAN POTSHERDS.

of 'Caliciform Ware' are well known and defined, the Jezirah is more fragmented. In the Iraqi Jezirah the so-called 'Taya Ware' seems to replace the Ninevite 5 pottery. This trend has been observed as well in the Eastern Syrian Jezirah, for example a Tell Leilan, with the appearance of the 'Leilan Ware', which is different from the Taya Ware, but has several affinities with it. A similar ware was also found at Tell Brak and in the neighbouring sites together with 'Metallic Ware' (Rova 1996, 23-4). In the LoNAP survey material, several fragments of this kind of greenish-yellowish very fine wares have been recovered, but at this moment it is not clear whether they belong to one of these above-mentioned types, or if they could constitute another local ware, similar to the others.

The second half of the 3rd millennium BC represents a phase of extraordinary flourishing of occupation in the LoNAP region, with a four-fold increase in the number of settled sites with respect to the Ninevite 5 period – from 29 to 125 settlements – and the third peak in the demographic history of the area after the Neo-Assyrian and Parthian periods.

This trend has been recorded also in the surveys around Tell Brak (Eidem and Wartburton 1996, 55), Tell Beydar (Wilkinson 2000, 10-1), Tell Leilan (Arrivabeni 2010, 43) and Tell Hamoukar (Ur 2004, 158-62), even if with lower increase in the numbers of sites. This situation differs profoundly however from the settlement process recorded during the mid-late third millennium in the nearby North Jazira Project (NJP) area and other regions of Northern Mesopotamia, e.g. the Cizre-Silopi area. In the NJP the number of settled sites decreases in comparison with the Ninevite 5 period. The site of Tell Al-Hawa, however, witnessed an intensive urban expansion in the mid-3rd millennium, which resulted in its growing from 24 to 66 ha and in the extinction of small satellite mounds (Wilkinson and Tucker 1996, 50-3). The Cizre-Silopi survey also witnessed a decrease in site numbers, though not a big expansion of any one site in particular (Algaze et al. 2012, 25-6).

Concerning settlement distributions, most of the sites were scattered in the Navkur plain or along the Jebel al-Qosh and Jebel Ba'dreh piedmont belt. The closeness of our research area to Nineveh, an important urban and later also religious centre from the final part of the Late Chalcolithic onwards, might be responsible for the lack

1988; Daszkiewicz and Smogorzewska 1999; 2000; Pruss 2000; Broekmans *et al.* 2004; 2006 and more recently Kibaroğlu *et al.* 2008; Falb 2009; Kibaroğlu and Hartmann 2015.

of competing urban centres in the region immediately to the north of the city. As mentioned above, all the Ninevite 5 settlements are inhabited in the mid-late 3rd Millennium BC; in relation to the following period, 34 sites were abandoned while 24 new sites were settled in the Middle Bronze Age. All of these sites are small: only a few exceeded 10 hectares, with the majority measuring less than 5 hectares.

Discussion and conclusions

The 3rd millennium BC is well attested in the LoNAP area: the earliest phase, namely the Ninevite 5 period, is represented by a small number of potsherds and of settlements. The retrieved specimens mainly belong to the middle part of the period, namely to the Intermediate, Painted/Early Incised and Incised/Excised phases, whereas the Terminal Uruk, and the Late Excised phases seem, in the current state of research, not to be present. Concerning settlement patterns, in the Ninevite 5 period there is a drastic reduction in the number of sites in respect to the Late Chalcolithic, from 96 to 29, and just 2 of the 29 sites attested for the Ninevite 5 period were not inhabited in the Late Chalcolithic period. At this preliminary stage of the study, however, we were not, due an insufficiency of data, able to ascertain a definite continuity in occupation for the latest phases of 4th millennium BC and the beginning of 3rd millennium BC. With respect to the transition from Ninevite 5 to the Mid-Late 3rd Millennium BC, all 29 Ninevite 5 sites remained settled in the second half of the millennium. Contrary to the transition from the Late Chalcolithic to the Ninevite 5, a certain number of potsherds dated to the middle part of the 3rd millennium BC have been identified, supporting settlement continuity, even though only a more detailed study will be able to determine if all of them are continually inhabited or whether they were rather abandoned and then resettled at the end of 3rd millennium BC.

In the mid-late 3rd millennium BC we witness a fourfold increase in the number of sites - from 29 to 125 - supported also by a higher quantity of potsherds. As said before, this growth in the number of settlements is attested in other surveys in Northern Mesopotamia, but in general it is accompanied by an expansion in size of one or more sites. The LoNAP survey area seems to differ from this trend, with the presence of small settlements ranging from 1 to 5 hectares, with just few exceeding 10 ha. Apparently, where the urbanization of the landscape, resulting from the growth of large urban centres developing out of previous smaller settlements (as in the case of al-Hawa), did not take place, we find instead a flourishing network of rural sites dotting the landscape. The response to the lack of urbanization in the Mid-Late 3rd millennium consisted of a profound ruralisation of the landscape, something which for Northern Mesopotamia can be now grasped for the first time thanks to the LoNAP survey.

⁶ Mazzoni 1982; 1985.

⁷ This term was used by J. Curtis (1982) referring to a fine greenish-yellowish ware found at Tell Taya (level IX-VII), usually showing radial burnishing. The term 'Taya Ware' was used also to describe a generic type of fine greenish-yellowish pottery, with a fine fabric, found in Akkadian and Post-Akkadian contexts (Ball 2003; Spanos 1992; Wilkinson and Tucker 1995; Orsi 2011).

⁸ Senior and Weiss 1992.

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Animal husbandry and other human-animal interactions in Late Ubaid-Early Uruk northern Iraq: the faunal remains from the 2012 excavation season at Tell Nader

Angelos Hadjikoumis

Abstract

Animal husbandry and generally human-animal relationships in northern Iraq are poorly known to archaeological research. This paper presents and discusses the (predominantly) Ubaid faunal assemblage recovered in 2012 at the multi-period site of Tell Nader (Erbil, northern Iraq). Despite limitations in sample size, preservation and chronological resolution, the analyses presented shed light into several aspects of human-animal interactions at Tell Nader and more broadly in northern Mesopotamia. The importance of each species, management strategies of domestic herds, consumption of animal products and bone tool production constitute the main issues addressed in this paper. The economy of Late Ubaid/Early Uruk Tell Nader was heavily domestic and evenly balanced between sheep/goat, pig and cattle husbandry. Beyond the obvious exploitation of these taxa for their meat, there is evidence for exploitation of renewable products from some of them. The interaction with wild animals was very limited and the faunal evidence suggests that the landscape around the site was predominately open, possibly with few forested pockets. Fieldwork is ongoing at the site and it is anticipated that these preliminary and tentative results from northern Iraq will be confirmed, refuted or further refined based on larger samples.

Introduction

The study of animal remains from sites in northern Mesopotamia is of pivotal importance to many central archaeological questions mainly revolving around the origin of productive economies in early periods and the development of complexity and urbanisation in later periods. Ongoing war in the last 25 years has brought archaeological research in Iraq to a halt. Especially the Kurdistan Region in Iraq still constitutes a terra incognita for some archaeological periods, at least from a zooarchaeological point of view. The nearest areas in the region from where we have available zooarchaeological information are southeastern Turkey, northern Iran, northern Syria and southern Iraq. Hence, Tell Nader (see Kopanias in this volume for more details on the site), as a multi-period site has the potential to contribute towards bridging gaps with the better-known areas mentioned above. An extensive literature review of Near Eastern zooarchaeology is out of scope during these early stages of research at Tell Nader. The integration of results from Tell Nader on a regional or supra-regional scale will be carried out once the faunal material from Tell Nader has increased substantially in volume and chronological resolution.

The role of zooarchaeology at Tell Nader is dual. On the practical level, zooarchaeology provides on-site advice, whenever feasible, as well as processing of animal remains. On the scientific level, zooarchaeology contributes to the study and interpretation of excavated faunal assemblages. This study presents and discusses the faunal remains from the multi-period (late 6th-early 1st millennium BC) site of Tell Nader in the Kurdistan Region in Iraq (Kopanias *et al.* 2013). Despite the evidence for human activity at Tell Nader for several millennia, based mainly on ceramic typology, the 2012 sample is considered as predominantly Late Ubaid/Early Uruk material, i.e. late 5th-early 4th millennium BC (e.g. Kopanias *et al.* 2013, 2014, this volume). This assumption constitutes a compromise in resolution and reliability but is expected to contribute preliminary zooarchaeological knowledge and help formulate research questions for future excavation seasons at Tell Nader. The results of the small 2011 assemblage have already been published elsewhere (Kopanias *et al.* 2013) but they are also referred to in this study whenever necessary. The study of faunal material excavated in 2013 is still under way.

The long-term aim of zooarchaeological research at Tell Nader is to identify and follow through time the human-animal interactions that occurred at the site and ultimately integrate them in their regional context. This overall aim includes many specific issues revolving around many themes such as hunting, animal husbandry, the cultural role of animals, cuisine, the surrounding environment and its exploitation. Due to the small size of the 2012 assemblage, its bad state of preservation and the currently crude chronological resolution, the results and conclusions of this preliminary report should inevitably be considered as tentative.

Materials and methods

So far, three excavation seasons have taken place at Tell Nader (2011, 2012 and 2013); the 2011 and 2012 samples have been studied while that of 2013 is under study. As mentioned above, most other types of archaeological

materials excavated so far are of Late Ubaid/Early Uruk chronology and hence the 2012 faunal sample, is also considered as Late Ubaid/Early Uruk, at least predominantly. The small 2011 sample (MaxAU=132) likely included a higher degree of admixture with later material and general surface contamination (Kopanias *et al.* 2013). The study of both the 2011 and 2012 samples took place at the Fitch Laboratory of the British School at Athens, where laboratory space, the faunal reference collection and overall support were generously offered to the author. During the study of the material, the faunal reference collection of the Wiener Laboratory of the American School of Classical Studies at Athens was also made available.

For mammals, the anatomical units selected for systematic recording are: horncore bases, mandible/ loose cheek teeth, atlas, axis, scapula, proximal and distal halves of humerus, radius, femur, tibia, metapodia (only III and IV in pigs), proximal half of ulna, pelvis, astragalus, calcaneum and phalanges 1-3 (excluding lateral phalanges in pigs). No attempt has been made to distinguish phalanges into fore- and hind-limb. These anatomical elements have been selected for their durability, identifiability and potential to yield information on aspects that illuminate the human-animal relationship. In addition to mammals a few remains of tortoise, crab and lizard have also been recorded, while bird remains are absent in the 2012 sample, in contrast to one piece in the 2011 sample (Kopanias et al. 2013). For the quantification of species composition, anatomical representation, age-at-death and sex ratios the minimum numbers of anatomical units (hereafter MinAU) is used, while for taphonomy and butchery the maximum numbers of anatomical units (hereafter MaxAU) is preferred, all according to Halstead (2011).

Age-at-death involves both dental and postcranial evidence. It was estimated from the eruption and wear stage of mandibular dental remains following Payne (1973; 1987) for sheep and goats, Grigson (1982) and Halstead's (1985) adaptation of Payne for cattle, and Grant (1982) and Bull and Payne (1982) for pig. During quantification, dental specimens attributable to more than one age interval were proportionately assigned. Epiphyseal fusion was recorded following Silver (1969). Pelves of sheep and goat were sexed whenever possible based on their morphology following Boessneck *et al.* (1964) and those of cattle following Grigson (1982). Fragmentation, taphonomy and butchery were recorded as described in Halstead (2011) and biometric measurements were taken following von den Driesch (1976).

Results

Sample collection and preservation condition

Preservation and recovery biases usually affect different species, anatomical elements and age categories in different ways and should be kept in mind when interpreting the results of the different analyses. The excavated matrix at Tell Nader was sieved through an 8 mm mesh and all faunal remains visible to the naked eye were collected by hand. Hence, recovery of faunal materials has been rigorous and did not seem to have introduced any biases, at least for large-sized animals (e.g. cattle). This is evident by the lack of discrepancy in the numbers of smaller anatomical elements such as phalanges and calcaneus when compared to larger elements such as femur and tibia (Figure 2). In the case of medium and small animal species (e.g. sheep/goat, pig, gazelle and canids), a mild recovery bias against smaller anatomical elements and younger/smaller animals can be discerned in the dearth of some of the smallest anatomical elements. The fact that this trend is barely discernible in the case of the pig (Figure 3) and slightly clearer in the case of sheep/goat (Figure 4) suggests that this bias has not significantly altered the overall anatomical and species composition of the 2012 sample.

In terms of preservation, the material has suffered mainly two types of attrition; erosion (unknown whether chemical, hydraulic, mechanical weathering or a combination of them) and carbonate encrustation. The surface of most specimens is enveloped in carbonate crust by more than 50%. In addition, specimens or parts of specimens free from carbonate crust are usually severely eroded. Overall, the poor condition of faunal remains affects negatively the volume and resolution of the data extracted from them. The limitations of the sample in terms of overall size and preservation preclude altogether the conduct of some analyses (e.g. biometric, types/location of butchery marks, frequency of pathologies) and hinder the refinement of others (e.g. mortality profiles, sex ratios and taphonomy)

Species composition

The species composition of the Tell Nader 2012 sample based on MinAU is presented in Figure 1. Species composition based on MaxAU is quite similar and it is thus not presented here. To allow reliable comparisons between species with different numbers of foot bones, pig metapodia and phalanges were divided by two and sheep/goat phalanges also by two, thus becoming analogous to the equid's single main metapodium, first, second and third phalanx per foot. No adaptations were necessary for any other species due to the absence (or presence of single specimens) of metapodia and phalanges. Horncores and antlers have been excluded from the quantification of species abundances due to the absence of such elements in some of the identified species.

In absolute numbers the assemblage is dominated by sheep/goat (48.8%) followed by pig (31.3%) and cattle (11.8%). If we take into account the average body size of

pig in relation to that of sheep or goat, it is clear that pig was the most important domestic species, at least in terms of meat production, followed closely by sheep/goat. However, if sheep and goat also contributed significant quantities of milk for dairy production, then it is possible that sheep and goat combined would be equally, if not more, important than the pig. The same is true for cattle, which despite its relatively low absolute numbers, must have contributed large amounts of meat due to its large size, potentially complemented by milk production and draft power for agricultural work and transportation. Moreover, some particularly large pig specimens can be viewed as evidence for the presence of wild/feral pigs, which were occasionally hunted at Tell Nader but this possibility currently remains open for further investigation through other lines of zooarchaeological evidence (e.g. biometry), whenever larger samples become available. The same is theoretically possible concerning sheep and goat, though there is currently less evidence to support such a scenario.

In the 2011 sample, only goat was positively identified within the sheep/goat taxon, hence the question of the presence or absence of sheep at the site remained open (Kopanias *et al.* 2013). The 2012 sample settles the question, not only by confirming the presence of sheep but also suggesting that it was even slightly more numerous than goat at Tell Nader. Taking into account only the remains that could be attributed to either sheep or goat (MinAU=91), sheep are more numerous (57.1%)

than goat (42.9%), although due to the small sample it would be wiser to view this result as an indication for roughly equal numbers of sheep and goat.

Beyond the economically important, additional animal species are represented by few remains (Figure 1). Gazelle is represented by 12 MinAU (2.6%) and its presence at Tell Nader can be considered reliable. Based on the current and recent distribution of different gazelle species in the Middle East, the most likely candidate species is Gazella subgutturosa, without definitely excluding other species and especially Gazella gazella. The small sample of biometrical measurements on gazelle bones from Tell Nader and the extensive size overlap between species such as Gazella gazella, Gazella subgutturosa and the (on average) smaller Gazella dorcas to a lesser extent (cf. Dobney et al. 1999; Martin 1998), make difficult the confirmation of the assumption that gazelle remains at Tell Nader belonged exclusively to Gazella subgutturosa. Whatever the case might be, the small number of remains suggests that, at least economically, gazelle was of limited importance.

Equid remains (MinAU=10 or 2.2%) were also identified, although most cannot be attributed to a species. A mandibular first or second molar exhibits characteristics compatible with donkey/wild ass or onager such as a shallow V-shaped lingual fold and no penetration of the buccal fold into the 'neck' (Davis 1980). Besides these two taxa, the possibility of the presence of other

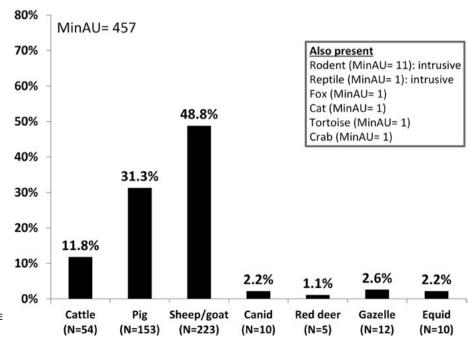


FIGURE 1. SPECIES COMPOSITION
OF THE 2012 FAUNAL ASSEMBLAGE
FROM TELL NADER.

equid species (e.g. horse) cannot be excluded due the possibility of intrusion of post-Ubaid/Uruk material in the sample. Overall, equids were not abundant at Tell Nader. Assuming that most remains are of Late Ubaid/ Early Uruk chronology, their presence most probably is the product of onager (or wild ass) hunting, although the admixture of later material deriving from domestic horses or donkeys cannot be excluded.

Canid remains are also represented in the 2012 sample (MinAU= 10 or 2.2%). Strictly speaking, the presence of wild canid species such as wolf or jackal cannot be excluded but the most reasonable assumption with the data at hand is that most, if not all, canid remains belonged to domestic dogs. The results of the 2011 sample suggested (Kopanias *et al.* 2013) and those of the 2012 sample confirm that, even in low percentages, the dog was consistently present at Tell Nader.

The presence of red deer at Tell Nader is attested by only by five MinAU (1.1%), all from limb bones. Little can be based on such a small sample beyond suggesting that some red deer hunting occurred around Tell Nader, which in turn could contribute towards the reconstruction of the ancient environment around Tell Nader.

Several other taxa may have been present at Tell Nader but for different reasons their presence is currently considered tentative and will hopefully be clarified in faunal samples studied in the future. Some of these faunal remains are intrusive as their near-perfect condition suggests, while others are so scarce that their presence cannot be confirmed yet. The former category includes rodent remains (MinAU= 11), possibly of mole rats of the genus *Spalax* which are common burrowers in tell sites all over Iraq, as well as a single remain of a lizard. In the latter category belong the remains of fox (MinAU= 1), cat (MinAU= 1), tortoise (MinAU= 1) and crab (MinAU= 1). All these are small-sized species, the abundance of which may have been compromised by the bad condition of the material and possibly by a recovery bias against them. The same is true for the small anatomical elements of canids, as well as the remains of birds which are absent from the 2012 sample but present in the 2011 sample (Kopanias et al. 2013).

Anatomical representation

The 2012 assemblage is too small to allow detailed analysis of the anatomical representation of the main species identified. Nevertheless, the anatomical representation of cattle, pig, sheep and goat is more compatible with local processing and consumption of entire carcasses as no striking selection of body parts can be observed (Figures 2, 3 and 4). Some discrepancies observed between anatomical elements can be attributed to preservation (*cf.* Brain 1981) and possible recovery biases favouring larger elements and species.

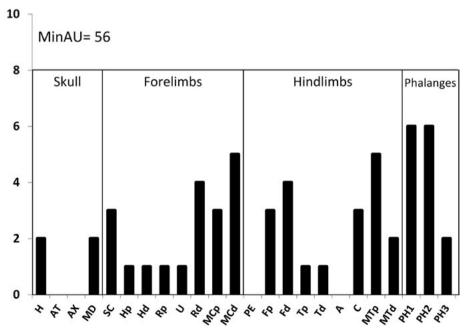


FIGURE 2. ANATOMICAL BREAKDOWN OF CATTLE REMAINS. KEY: H=HORNCORE, AT=ATLAS, AX=AXIS, MD=MANDIBLE/ LOOSE MANDIBULAR TOOTH, SC=SCAPULA, HP=PROXIMAL HUMERUS, HD=DISTAL HUMERUS, RP=PROXIMAL RADIUS, U=ULNA, RD=DISTAL RADIUS, MCP=PROXIMAL METACARPUS. MCD=DISTAL METACARPUS, PE=PELVIS. FP=PROXIMAL FEMUR. FD=DISTAL FEMUR, TP=PROXIMAL TIBIA, TD=DISTAL TIBIA, A= ASTRAGALUS, C= CALCANEUS, MTP=PROXIMAL METATARSUS, MTD=DISTAL METATARSUS, PH1-3= PHALANX 1-3.

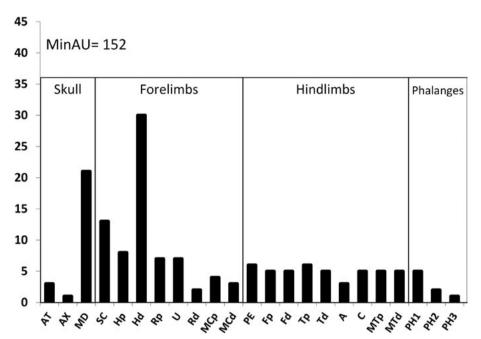


FIGURE 3. ANATOMICAL BREAKDOWN OF PIG REMAINS.
SEE FIGURE 2 FOR KEY.

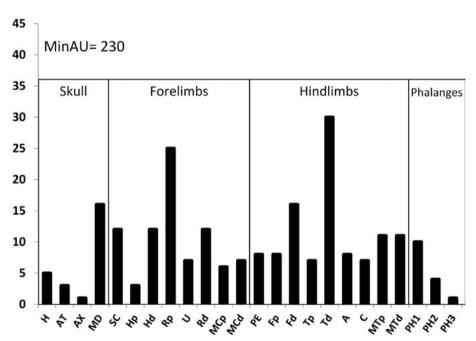


FIGURE 4. ANATOMICAL BREAKDOWN OF SHEEP/GOAT REMAINS. SEE FIGURE 2 FOR KEY.

Ageing

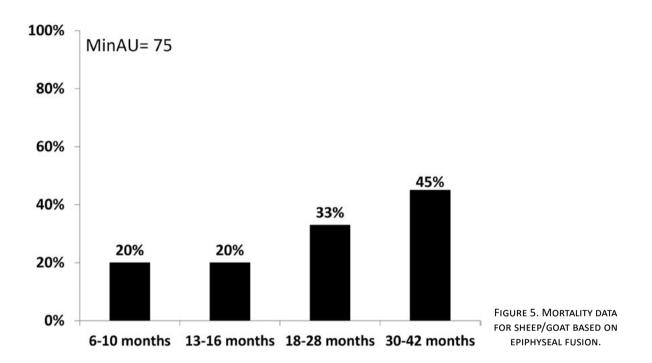
The small size of the 2012 assemblage restricts significantly the potential of age-at-death data to reveal management practices, even concerning the three commonest taxa (sheep/goat, pig and cattle). Only six sheep/goat mandibles and loose mandibular teeth could be assigned an age (Table 1). They merely show the

presence of adult animals (44.5% in the 4-6 years age interval) and some mortality among younger animals (6 months to 3 years of age).

Data on epiphyseal fusion are also limited. The analysis of data on sheep and goat combined shows that some animals were slaughtered in their first year, some in their second, third and early fourth, while more than half of

Stage	Α	В	С	D	Е	F	G	Н	I	
Age	0-2 months	2-6 months	6-12 months	1-2 years	2-3 years	3-4 years	4-6 years	6-8 years	8-10 years	Total
MinAU	0	0	1	1	1.3	0	2.7	0	0	6
% mortality	0%	0%	16.7%	16.7%	22.1%	0%	44.5%	0%	0%	100%

TABLE 1. MORTALITY DATA FOR SHEEP/GOAT BASED ON DENTAL ERUPTION AND WEAR.



the sheep/goat in the sample survived beyond 3.5 years (Figure 5). The unfavourable preservation condition of the material may have influenced to some degree the age profiles produced. It is thus reasonable to assume that younger cohorts are underestimated due to higher rates of destruction because of the weaker structure and density of bones of immature animals.

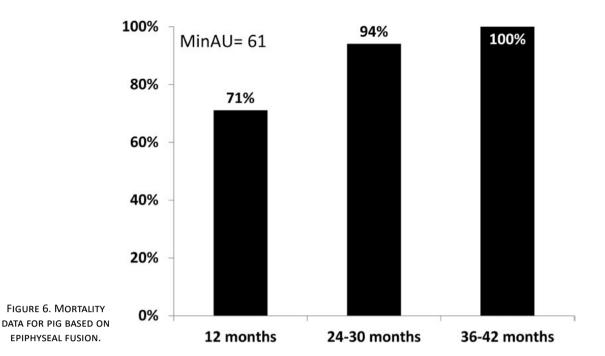
The sample of pig mandibles and mandibular teeth is larger than that of sheep/goat and hence more reliable in

the trends it exhibits (Table 2). Few pigs were slaughtered younger than six months, but most of the pigs appear to have been slaughtered in two peaks approaching 40% each, one in the 6-12 months and another in the 1-2 years age interval.

The age profile produced with the epiphyseal fusion data corroborates that of the dental eruption and wear in that it shows high mortality in the first and second years (Figure 6). Only a few pigs lived beyond their second

Stage	Α	В	С	D	E	F	
Age	0-2 months	2-6 months	6-12 months	1-2 years	2-3 years	>3 years	Total
MinAU	0	1.13	7.87	7.78	3.22	0	20
% mortality	0%	5.7%	39.3%	38.9%	16.1%	0%	100%

TABLE 2. MORTALITY DATA FOR PIG BASED ON DENTAL ERUPTION AND WEAR.



year, possibly representing animals that participated in the reproduction of the herd. In addition, it is worth mentioning that most elements that fuse in the first year were in a 'fusing' rather than an 'unfused' state thus suggesting that culling occurred nearer to the end than the beginning of the first year. Moreover, a similar trend is observed in the elements fusing during the second year. The severe erosion processes that the material went through during its depositional history may have contributed to this pattern through a higher rate of destruction of unfused, in contrast to fusing and fully fused elements.

Concerning cattle, only seven mandibles or mandibular teeth have been assigned to an age interval. The only tentative trends observed in this small sample are, the slaughter of some cattle in their second and third year and the presence of some old adult and senile cattle. Although data on the incidence of pathology are too scarce to be amenable to meaningful analysis, it is worth mentioning that a cattle metacarpus exhibits an obvious broadening (and asymmetry) of the distal articulation (Figure 7), a common condition caused by years of draught exploitation (Bartosiewicz *et al.* 1993, 1997; Isaakidou 2006).

Only 26 cattle remains yielded epiphyseal fusion data (Figure 8). The sample is too small to support reliable patterns and the only noteworthy characteristic is a broad accordance with dental ageing data (Table 3), in that some cattle were slaughtered between the second and

fourth years of age, while the majority survived beyond the fourth year.

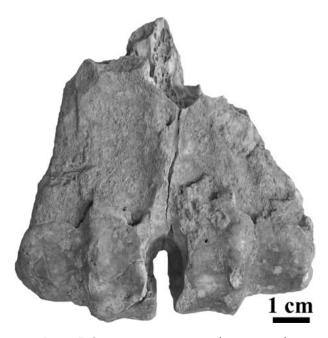
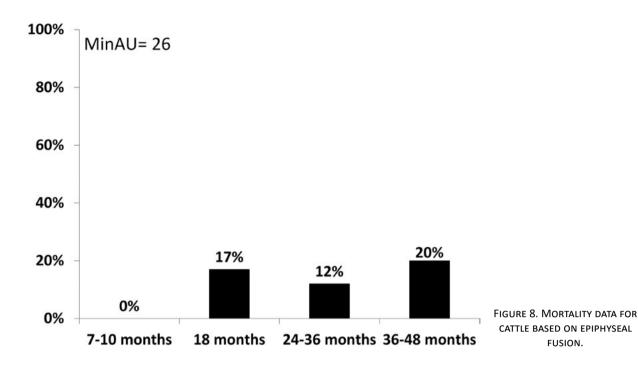


FIGURE 7. CATTLE DISTAL METACARPUS (PALMAR VIEW) EXHIBITING SEVERE BROADENING OF THE ARTICULAR SURFACE, AS WELL AS SOME LIPPING.



Stage	Α	В	С	D	E	F	G	Н	I	
Age	0-1 month	1-6 months	6-18 months	18-30 months	30-36 months	young adult	adult	old adult	senile	Total
MinAU	0	0	0	2	2	0	0	1.5	1.5	7
% mortality	0%	0%	0%	28.6%	28.6%	0%	0%	21.4%	21.4%	100%

TABLE 3. MORTALITY DATA FOR CATTLE BASED ON DENTAL ERUPTION AND WEAR.

The rest of the species identified at Tell Nader have not yielded large enough samples of dental or postcranial remains to allow an analysis of their mortality profiles. Concerning gazelle, all postcranial remains that bear information on fusion state (MinAU= 4) are fully fused and the same is true for canids (MinAU= 4) and red deer (MinAU= 3). Concerning equids (MinAU= 3) two specimens are fused and a first phalanx is fusing.

Sexing

Due to the small size of the sample it is not possible to approach the sex ratios even of the most abundant taxa. The only relevant recorded specimens are two female pig mandibles, two female goat pelves and one male sheep/goat pelvis.

Fragmentation

Few specimens were complete and most had been fragmented in the past (Table 4). The higher percentage of whole cattle bones can be explained by a more efficient retrieval of cattle phalanges and other relatively small anatomical elements, which can easily be overlooked in cases of smaller animals such as sheep/goat and pig (Figures 2, 3 and 4). As far as the types of old breaks on long bones only (unfused epiphyses excluded), a clear pattern emerges without major differences between the three major taxa (Table 5). Most old fresh breaks consist of 'shaft splinters' followed by 'end+shafts' and 'shaft+end splinters'. Shaft splinters can be produced by several factors such as marrow extraction and gnawing by carnivores and pigs. Long bone ends with parts of the shaft attached are more likely to be the result of marrow

Fragmentation time (MaxAU)	Sheep/goat (227)	Pig (98)	Cattle (51)	
Whole	7%	10%	18%	
Old break	62%	57%	55%	
New break	31%	33%	27%	

TABLE 4. INCIDENCE OF FRAGMENTATION FOR THE THREE MOST ABUNDANT TAXA.

Old break types (MaxAU)	Sheep/goat (138)	Pig (56)	Cattle (24)
End+shaft or shaft+end splinter	37%	39%	38%
Shaft splinter	53%	43%	58%
Shaft cylinder	10%	18%	4%

TABLE 5. TYPES OF OLD BREAKS OF LONG BONES FOR THE THREE MOST ABUNDANT TAXA.

extraction, while shaft cylinders are indicators of gnawing by carnivores (Binford 1981). With this logic, the higher percentage of shaft cylinders in pig remains corresponds well with the higher occurrence of gnawing for that species (Table 6).

Butchery and bone tool manufacture

As far as butchery marks are concerned, the limited size of the assemblage and the poor preservation condition of the material do not allow detailed analyses. Most butchery marks have either been eroded away or obscured by carbonate crust. Nevertheless, Figure 9 confirms the rather expected fact that the carcasses of main domestic species (sheep/goat, pig and cattle) were butchered by the inhabitants of Tell Nader as the few visible cutmarks testify. Moreover, another interesting aspect of the results is a preference for sheep/goat (N= 11) and cattle (N=3) in the manufacture of bone tools and an avoidance or less frequent use of pig bones. Although the absolute numbers of bone tools are not large, there is ample evidence that bone tool manufacture was a known craft at Tell Nader. The bone tools recovered so far, and those that will be excavated in the future will be the object of a more specialised study. Nevertheless, for the sake of completeness it should be mentioned that the most common types are (1) pointy (consisting of long bone ends with part of the shaft worked into a point, e.g. Figure 10), (2) flat (usually made of large ribs and scapulae) and (3) cylindrical/semi cylindrical (almost exclusively made of sheep/goat metapodia but occasionally distal tibia).

Taphonomy

A detailed taphonomic study is hindered by the eroded and encrusted condition of the 2012 assemblage. For this reason, the results cannot be used to reliably quantify the

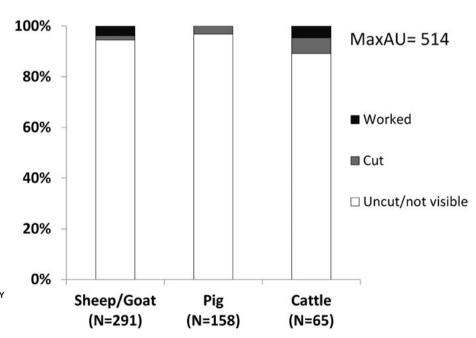


FIGURE 9. INCIDENCE OF BUTCHERY AND WORKED BONE IN FOR THE THREE MOST ABUNDANT TAXA.



FIGURE 10. EXAMPLE OF POINTY TOOL MANUFACTURED FROM A SHEEP/GOAT DISTAL METACARPUS.

effect of each taphonomic process but it is nevertheless useful to identify those processes and possible broad differences between taxa. Specimens of all three taxa have been gnawed by carnivores (or pigs), though pig remains appear to have been more severely affected, possibly due to easier access to and preference towards pig, in contrast to sheep/goat and cattle, remains (Table 6). Traces of burning are also present on all three major taxa with a tendency for a higher occurrence on cattle remains than the other two taxa. The other three taphonomic processes (i.e. ingestion, bronze/copperstaining and rodent gnawing) are only marginally present, exclusively on sheep/goat remains.

Discussion

The 2012 faunal sample, in contrast to that of 2011, provides the first reliable glimpses on several aspects of the human-animal relationship at Tell Nader. Before elaborating further on those aspects it should be clarified that any interpretations expressed here can only be viewed as tentative for a number of reasons. Most importantly, the chronology of the site is currently blurry

Condition (MaxAU)	Sheet/goat (307)	Pig (169)	Cattle (66)	
None/not visible	90%	87%	89%	
Gnawed (carnivore)	4%	11%	3%	
Burnt	3%	2%	8%	
Ingested	1%	0%	0%	
Bronze/copper-stained	1%	0%	0%	
Gnawed (rodent)	1%	0%	0%	
Total	100%	100%	100%	

TABLE 6. INCIDENCE OF TAPHONOMIC PROCESSES ON THE REMAINS OF THE THREE MOST ABUNDANT TAXA.

but will be refined through future excavation seasons. For the purposes of this study, the 2012 sample is considered as broadly Late Ubaid/Early Uruk, bearing in mind that the possibility of admixture with earlier or later material is possible. Moreover, the size of the sample can be considered reliable for analyses concerning the relative abundances of the most common taxa but other analyses entail a higher risk of misinterpretation due to inevitable sub-sampling (e.g. per species, age interval, taphonomic process and fragmentation type). The situation is exacerbated by the sample's poor preservation condition, which will hopefully improve as the excavators advance in deeper, more protected levels.

Species frequencies in the 2012 sample (Figure 1) reveal that the animal economy at Tell Nader was predominantly domestic. Several wild species have been identified in the sample (e.g. gazelles, red deer and possibly wild equids and canids) but none of them is abundant enough to support a scenario involving economically significant hunting activities. Although it cannot be excluded that some wild or feral animals may be included in the remains of domestic sheep/goat, pig and cattle, these three taxa were by far the most important, at least in economic terms. Moreover, the anatomical representation of these three taxa (Figures 2, 3 and 4) is more compatible with a local production, processing and disposal of the animals consumed rather than a selection of body parts transported to the site, whether by means of hunting or trade. It is anticipated that with the addition of larger samples, biometric, ageing and sexing data will become more productive in elucidating the exact status of sheep, goat, pig and cattle at Tell Nader, as well as improving resolution on their management.

Overall, the results support a scenario of an economy relatively balanced between sheep/goat, pig and cattle husbandry. The species composition reveals that the abundance of each taxon is inversely analogous to its average body size, with cattle being the largest in size but least abundant, sheep and goat are the smallest but most abundant, while pig is in intermediate both in size and abundance. This pattern can be used to suggest that the animal economy at Tell Nader during the Late Ubaid/Early Uruk consisted of different components, complementary to each other. Sheep, goat, pig and cattle husbandry and the variations in management between and within species formed a palette of economic strategies, through which the inhabitants of Tell Nader secured a relatively predictable supply of animal products. Differences in the seasonal requirements of each species and the production of each desired animal product could be finely tuned with labour requirements and consumption patterns to increase efficiency and satisfy social needs (cf. Halstead 2004).

The data from Tell Nader do not allow elaborate interpretations concerning the exploitation of each

species. Nevertheless, the analyses presented in this study, and especially those concerning age-at-death, can be used to formulate working hypotheses to be confirmed, refuted or refined further in the future. For the most abundant sheep/goat, age-at-death data (Figure 5 and Table 1) suggest that a significant percentage (30-40%) was slaughtered between one and three years of age, most probably with the purpose of maximising meat yields and eliminating unproductive/barren animals. A significant percentage (around 50%) survived beyond 3-4 years, thus ensuring the reproductive success of sheep and goat herds and possibly also contributing secondary products such as hair/wool and milk to the inhabitants of Tell Nader. Beyond some mortality in the first year (unknown if any within the first six months), there is no evidence for a focus on dairying. However, the possibility of sheep/goat dairying should remain open for several reasons. The obvious preservation biases on the assemblage probably cause an underrepresentation of the more fragile remains of newborn and immature animals to a degree that is currently impossible to quantify. In addition, existing evidence for dairying and hair/wool exploitation in the Ubaid and Uruk periods in northern Mesopotamia (e.g. Helmer et al. 1997) advises against refuting milk or hair/wool exploitation at such an early stage of research at Tell Nader. Data on male: female ratios are scarce and are not of significant help in addressing these questions beyond hinting a female majority in adult sheep. Furthermore, the extent of tool manufacture from sheep/goat bones (Figures 9 and 10), probably underestimated due to the poor preservation condition, reveals another important activity at Tell Nader in the late 5th-early 4th millennium BC.

Pig is the second most abundant species in the 2012 sample and most probably contributed larger quantities of meat to the inhabitants of Tell Nader than sheep and goat combined. Age-at-death data (Figure 6 and Table 2) suggest that a large percentage, possibly around or more than half the population, were slaughtered before the end of their first year. Few were consumed as tender meat between two and six months of age, while most were more likely slaughtered closer to one year of age at a significantly larger body size. Most of the remainder of pigs, perhaps those that did not reach a satisfactory weight in their first year, were slaughtered in their second year. This pattern can be used to suggest that pig slaughter may have constituted a recurrent seasonal event that articulated with other agropastoral activities in a way that increased the system's efficiency and ensured an even supply of animal products. Furthermore, few pigs (around 15%) were kept beyond their second year, presumably to ensure the viability of the herd. The absence of pigs older than three years can be viewed as an additional indication of the scarcity, or absence, of wild pigs in the sample but this question should be reexamined in the future through biometric analyses based on larger samples.

Cattle may have not been abundant in absolute numbers (Figure 1) at Tell Nader but their contribution to the site's economy undoubtedly matched that of sheep/goat or pig. The fact that cattle are multiple times larger than pigs, sheep or goats, coupled with indications of some mortality (possibly around 20%) at two or three years of age (Figure 8 and Table 3) reveals that beef production constituted an important activity. More intriguing though, are the indications of many animals surviving to advanced age (Table 3). This pattern is weakened by the unreliably small samples involved but it can nevertheless sustain two possible interpretations that need not be mutually exclusive. The first is that cattle were kept until old because they were exploited for their draught power over many years, which is also supported by some evidence of draught-related pathologies (Figure 7). The second interpretation involves the exploitation of cattle for calf and milk production but there is currently no sound evidence to support this scenario in the small samples analysed so far.

Despite the scarcity and consequently low importance of wild animals in the diet of the inhabitants of Tell Nader, their presence is interesting in several ways. In terms of environment, the presence of gazelle and possibly wild equids can be viewed as an indication of a predominantly open landscape around the site. The presence of red deer in the sample also suggests the existence of, at least some, forested pockets. As far as the canid remains are concerned, they more likely represent domestic dogs than wolves or jackals. Such an interpretation is also more compatible with the low, but certainly underestimated, incidence of gnawing on the remains of domestic species (Table 6). For the rest of wild animal species identified in the 2012 sample (fox, cat, rodents, tortoise, lizard and crab) as well as the bird remains identified in the 2011 sample (Kopanias et al. 2013), it would be more prudent to postpone any interpretations until larger samples confirm or refute their presence at Tell Nader.

Conclusions

The analyses presented and discussed in this study have produced new archaeological knowledge on many important aspects of the human-animal relationship at Late Ubaid/Early Uruk Tell Nader. Despite the limitations of the assemblages involved, the scarcity of faunal studies on coeval material in northern Iraq renders the insights reached more important, even if most remain tentative or mere working hypotheses at this early stage of the archaeological exploration of Tell Nader. A relatively well-supported conclusion of this study is that the animal economy at Ubaid Tell Nader was heavily domestic and based on three pylons: sheep/goat, pig and cattle husbandry. All three contributed primarily towards the production of meat for the site's inhabitants but there is also evidence, albeit circumstantial in most cases, for the exploitation of secondary products. Whether dairying

was practised and to what extent cannot be satisfactorily addressed with currently available data due to a possible underestimation of remains of immature sheep/goat and cattle. The age-at-death analysis for sheep/goat does not exclude the exploitation of milk or that of hair/wool. The preference primarily for sheep/goat bones in bone tool manufacture, more likely for functional reasons, is also noteworthy. Cattle most probably provided more than just their meat with other main possibilities being draught power and milk. Pig herding, whether organised on a household or higher level, constituted a stable and seasonally recurrent source of meat. The consumption of some pigs younger than six months, if not natural fatalities according to a management strategy, may hint a culinary preference that could be afforded by some inhabitants.

Overall, the analysis of animal remains from Tell Nader so far suggests a well-organised system of animal husbandry geared towards diversity, rather than specialisation, to ensure a stable and even provision of animal products for most of the year. When more faunal and botanical data from Tell Nader become available and the chronological and spatial resolution of the site improves, an integrated interpretation of the entire agropastoral system should be attempted.

The scarcity of wild species in the sample shows that hunting was of marginal economic importance for the inhabitants of Late Ubaid/Early Uruk Tell Nader. The presence of gazelle and equids is suggestive of a predominantly open landscape around the site and that of red deer of some forested areas perhaps further afield. Beyond the exact circumstances around the limited hunting activity at Tell Nader, the study of future samples will focus on confirming the presence or absence and significance of rarer wild species tentatively identified in the 2012 sample.

Acknowledgements

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Hawsh-Kori and Char-Ghapi: Why the Sassanids built two monuments in the west of Kermanshah and the south of Iraqi Kurdistan

Ali Hozhabri

Introduction

Char-Ghapi lies in the northeastern fringe of the present day city of Qasr-e Shirin on a relatively flat mound with mild slopes (Fig. 1). According to several Muslim authors, the Sassanian emperor Khosrau II, byname Khosrau Parviz, built in the midst of the Qasr-e Shirin plain a structural complex presumably for his Christian wife Shirin. Khosrau's Mansion was probably a large palace and a royal residence. Given its architecture and plan, Char-Ghapi might have been a religious building, and Ban Qala was a fort that maintained regional security and presumably also served administerial purposes (Fig. 2). The recently discovered defensive wall on the border of the two counties of Qasr-e Shirin and Sarpol-e Zahab (Hozhabri 2005) can also be added to the Sassanian

complex of Khosrau Parviz. After giving a description of the sites founded by Khosrau II, the Muslim historians refer to a vast garden unique of its kind with various species of trees. To irrigate the garden and supply water for the residents of the mentioned structures, the Shah- Godar runnel originating from Alvand river was constructed. As Khosrau Parviz had also constructed an artificial forest with diverse animal species in the area, it is likely that the abovementioned wall, besides guarding the Khosrauid complex and marking its boundaries, kept the animals inside the Khosrauid 'zoo.' De Morgan published in 1896 the structures of the Khosrauid complex which he had surveyed in 1891 (Fig. 3). If we accept that the complex was to serve as a residence for the Christian mate of the emperor, can we then assume that the religious building of Char-Ghapi with its square

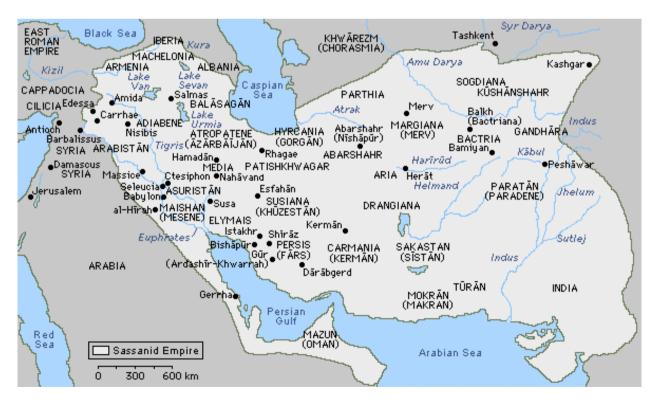


FIGURE 1. THE LOCATION OF CHAR-GHAPI IN THE SASSANIAN EMPIRE.



FIGURE 2. CORONA SATELLITE IMAGE OF THE AREA OF THE AREA OF QASR-E SHIRIN.

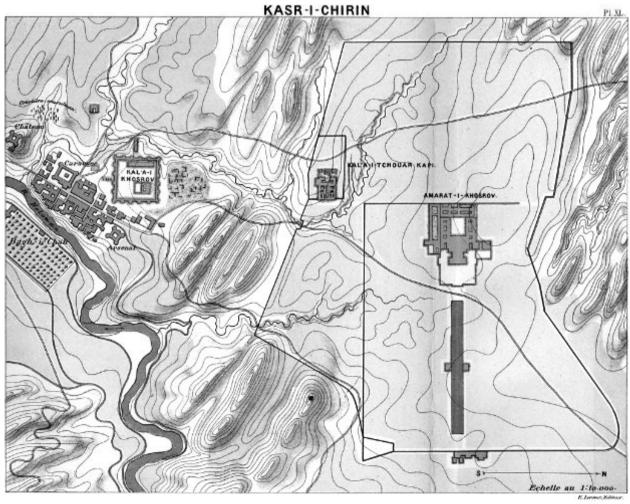


FIGURE 3. SASSANIAN MONUMENTS IN QASR-E SHIRIN (DE MORGAM, 1896).



FIGURE 4. INSIDE THE CHAR-GHAPI (PERSONAL ARCHIVES: HOSSAIN AZIZI).

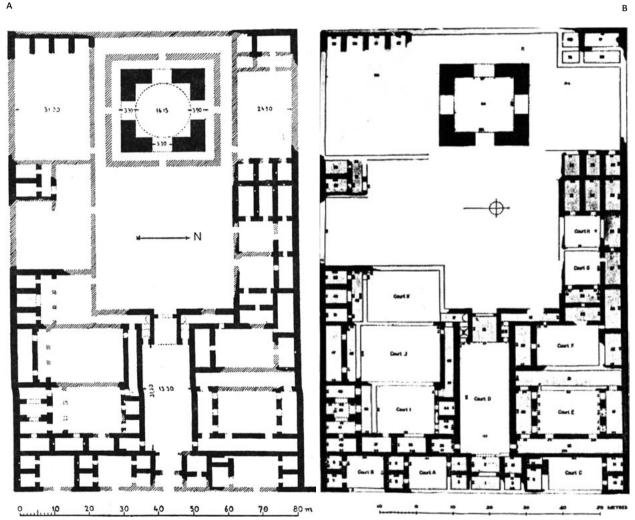
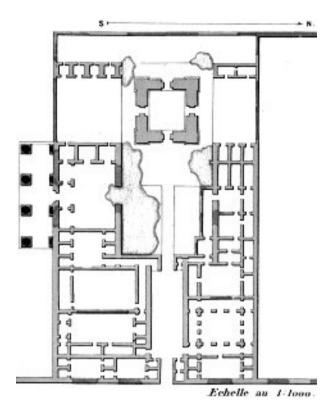


FIGURE 5A-B. THE PLAN OF THE CHAR-GHAPI BY (A) HERSFELD AND (B) BELL.

plan with a domed roof (Fig. 5), was actually a church for her? Some absolutely rejected the idea that the building was a sanctuary (Scerrato 2004, 60). Sarre and Herzfeld (1910, 203) have described the square dome of Char-



Ghapi as a fire temple and Scerrato (2004, 47) regarded it as a royal seat. Comparing the structure to the Abbasid palace of Ukhaidir in Iran, Bell (1914, 44-7) dated its original foundation to the early Islamic era. Pope (1994, 71) viewed the Char-Ghapi complex as remains from a fire temple of the late Sassanian period. Gullini (1964, 34-52) argued that the structure is Sassanian only in its architectural tradition, whereas Erdmann (1941, 30-50), Godard (et al. 1987, 257-9), van den Berghe (2000, 98-100) and Schippmann (1971, 282-6) attributed the square dome complex and the surrounding spaces all to this period. Godard (et al. 1992, 1:14) suggested that Char-Ghapi was a palace of Khosrau II, and that its square dome represented a reception hall of the palace (Godard et al. 1992, 1:14-5) (Figs. 6-7).

FIGURE 5C. THE PLAN OF THE CHAR-GHAPI BY (C) DE MORGAN.



FIGURE 6. THE FAÇADE OF THE CHAR-GHAPI (BELL 1905).

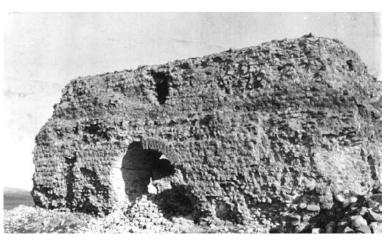


FIGURE 7. THE FAÇADE OF THE CHAR-GHAPI (BELL 1905).



FIGURE 8. THE BRICK ARCH OF CHAR-GHAPI.

Description of Architecture¹

Standing about 4.5 meters above the surrounding lands and measuring about 150 meters east-west and 50 meters north-south, Tepe Char-Ghapi suffered serious damages during the Iran-Iraq war so that today no standing remains of the architecture that was visible to de Morgan in the late nineteenth century and Bell in the early twentieth century are preserved (Figs. 8-10). In the westernmost part of the mound stands a square structure measuring 24.6 x 24.6 meters in the exterior and 16.15 x 16.15 meters in the interior, with four 2.91 meterwide bays. The southeastern and northeastern piers were badly damaged and the structure compared to what is seen in Bell's photos² has been heavily disturbed. In all the four external corners of the building an additional mass measuring 1.80 x 1.80 x 0.30 meters was added to strengthen the foundations. Small and large river cobbles and half-beaten plaster mortar were used in building the structure. The four bays were covered by a brick barrel vault. Of the roofing of the central room only a squinch survives (Besenval 2000, 203). The vaults, formed by bricks measuring 37-8 x 37-8 x 8-9 cm, had semicircular arches one and a half brick in thickness, and the walls and the floor were coated in plaster mortar. The strength of the building rested partially on the use of a very hard, cohesive plaster mortar that was prepared by fired at a temperature range of 107 to 200°C (Hammi 1980, 80). Since the heat did not affect the core of the larger chalkstone fragments, they were beaten before firing, and these particles used as temper enhanced resistance of plaster mortar against moisture; firing had no adverse effects on chemical properties of plaster. The



FIGURE 9. THE EASTERN GATEWAY OF CHAR-GHAPI.

 $^{^{\}rm 1}$ This section is mainly based on the following unpublished report: Hozhabri 2005.

² http://www.gerty.ncl.ac.ukyindem.php.



FIGURE 10. PART OF THE DOME OF CHAR-GHAPI.

thick plaster that once covered the rough surface of the stone walls had collapsed, leaving the walls exposed. The exposed walls, though unsightly, often add to the splendor of the building because of their plainness and the power of their form and bulk (Pope 1994, 71) (Fig. 11).

The eastern, western and southern walls have a thickness ranging from 4.15 to 4.50 meters, a discrepancy probably caused by presence or absence of coating or by partial disturbance of the walls; the north wall is 4.50 meters in thickness. Close to the western bay, inside the structure, a stone platform measuring 5.28 x 5.08 meters was raised, the surviving height of which is almost 0.6 meter (Fig. 12). In the southern side of the eastern bay, outside the structure, lies another brick platform with plaster mortar measuring 2.55 x 1.44 meters. Both platforms came to light in the 1992 excavations. In building the western platform, a revetment of green dimension sandstones and plaster mortar was formed before filling the space in between with cobbles, rubbles and clay mortar (Figs. 13-4). Some 6.37 meters to the southwest of the square dome, remains from four small rooms, a large hall, a courtyard and a passageway were recovered during the organic excavations of 1992. The question now arises as whether Char-Ghapi had an ambulatory (Scerato 2004, 60). Given the available evidence, it is not possible to reconstruct an ambulatory for its square dome.



FIGURE 11. MODERN VIEW OF CHAR-GHAPI TAKEN BY THE AUTHOR IN 2005.



FIGURE 12. STONE PLATFORM IN CHAR-GHAPI.



FIGURE 13. CLOSE UP OF PLATFORM.



FIGURE 14. CLOSE UP OF PLATFORM.

Rooms

Room 1 is a rectangle room measuring 4.85 x 4.20 meters and was entered from the north side. The doorways of the other three rooms faces east, and only Room 1 gives access to the square dome. Rooms 2, 3 and 4 lead to a vast courtyard to the east, which was partially cleared in the course of 1992 season. The doorway of Room 1 is

1.15 meters, those of Rooms 2 and 3 are 1.20 meters and that of Room 4 is 1.28 meters in breadth. The western walls of the rooms are formed by a bearing wall ranging between 1.50-1.86 meters in thickness, and the partition walls separating the rooms as well as the eastern walls are 1.20 meters thick. Blind arcades, measuring 0.35 meter deep and 1.75 meters wide and overlooking the courtyard, were added to the facade between rooms to

add some diversity to the otherwise plain walls. Rooms 2, 3 and 4 measure 4.74 x 4.20, 4.80 x 4.20 and 4.20 x 4.20 meters, respectively. To the west of these lies a large rectangle hall measuring 23.8 x 10.27 meters; its southern wall is 1.75 meters and its western wall is 1.40 meters in thickness. In the southeastern corner of the hall, a bulky round mass of stone and plaster with a diameter of 3 meters is visible. This probably meant to bolster up the foundations. The room had a doorway on the north wall that has totally disappeared.

Though completely missing currently, the dome of Char-Ghapi was probably almost identical with those in Firouzabad (Godard et al. 1992, 1: 14, 35). As one of the largest known Sassanian domes, it sat on four pointed squinches, and, as in the Firouzabad palace constructed four centuries earlier, was built of unhewn stone set with mortar (Pope 1994, 71). In view of the observations made by the earlier archaeologists and what was exposed by Chegini in his 1992 excavations, one can define four architectural phases for Char-Ghapi: Phase 1 represents the original construction of the structure with pebbles and half-beaten plaster mortar; Phase 2 marks addition of a platform next to the eastern entrance and restoration works on the structure; in Phase 3 the structure was abandoned and was later used by a group of shepherds to keep their stocks together; and in Phase 4 some of the bays were blocked using green, dimension sandstones, and another platform was built next to the western bay of the square dome.

Why Char-Ghapi is not a Fire Temple?

In an independent investigation into the Sassanian fire temples we were able to distinguish three distinct architectural phases, with each phase exhibiting certain structural changes in the standard fire temple plan.³ Study of the square domes from the early Sassanian period (Fig. 15a) suggested that they, 1) were invariably square in form, 2) were all aligned with the intercardinal points; 3) all had an ambulatory, 4) all had a dome resting on four piers; 5) for the most part had ancillary rooms (Konar-Siyah, Farash-Band, Negar, Kuh-i Khadjeh, Takht-e Suleiman and Bishapur) which in rare cases were later additions (Shiyan, some of the rooms at Kenar Siyah) and sometimes there were no indications of annexations (Zarshir) or their impressions had escaped attention of excavators; and 6) all were religious buildings and, except one that is alleged to have been a church, were fire temples of the early Sassanian period.

A look into the related buildings from the mid-Sassanian era (Fig. 15b) reveals the following: 1) they were similarly all aligned with the intercardinal points, 2) the plan no longer included a ambulatory; 3) the square plan with

domed roof gave way to the cruciform plan; 4) access to interior was usually made through the eastern doorway (Bandian, Turang Tepe, Shiyan) but in some cases also through the west (Hadji Abad in Darabgerd) and south (PD and B at Takht-e Suleiman); 5) typically a doorway or doorways led from the interior of the cruciform room to other separate rooms; 6) in larger examples, such as those at Bandian and Takht-e Suleiman, the fire temple and the external spaces were separated by a rectangle room that prevented direct access to the cella, which in the case of Haji Abad was probably in the form of a passageway; 7) they invariably served as fire temples; 8) the fire altar presumably stood at the center of the cruciform room, e.g. at Bandian and Mele Heiran4 or Heyrana (Kaim 2001); and 9) one of the surrounding rooms served as 'Anahita temple' (e.g. the columned halls at Takht-e Suleiman and Bandian, and Room 114 at Hadji Abad).

Finally, the following points can be made as to the fire temples of the late Sassanian period (Fig. 15c): 1) again, all were aligned with the inrecardinal points, 2) an *iwan* was added to the plan; 3) ambulatory probably continued to be lacking; and 4) the plan again changed to introverted square dome from the extroverted cruciform plan.

Thus, given its orientation to the cardinal points and lack of the characteristic components of ambulatory and *iwan*, Char-Ghapi fails to qualify as a fire temple. An alternative possibility, therefore, presents itself: Char-Ghapi might be a church.

Why is Char-Ghapi a Church?5

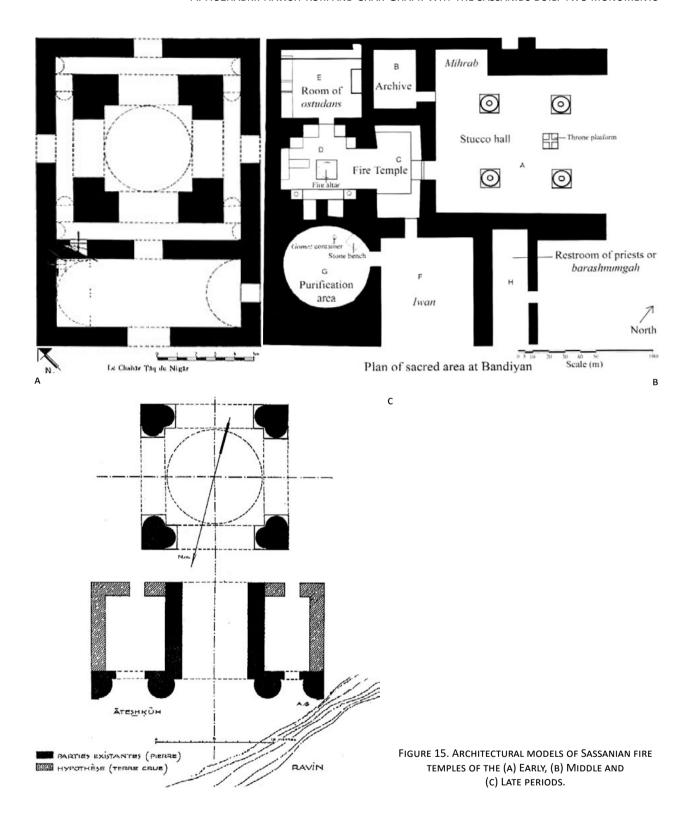
As the only structure typifying the religious architecture of ancient Persia (Godard 1992, 78), square dome did not disappear after the Muslim conquest of Iran and continued in use in its original form, i.e. four piers with a dome atop squinchs. The standardized layout of square domes across such a vast territory and financing their construction and maintenance were most probably, at least for the most part, related to the Zoroastrianism.⁶ In the churches of Ctesiphon, Harran and al-Rasafa (Fig. 16), with their so-called 'cross-in-square' outline were so closely related to some fire temples that the Christians and Zoroastrians intermittently used the same buildings as they were congruent with the ritual needs of the both groups. This appropriation of the Sassanian architecture by Christians was one of the media through which Iranian artistic forms made their way to the Medieval Europe and extensively inspired the Roman architecture. This

³ The results of this study were presented at the 3rd Congress of Iranian Young Archaeologists, 2006 (Hozhabri 2006, 38). For more details, see Hozhabri 2013).

⁴ Mele Heiran settlement is situated in the eastern outskirts of Serakhs

⁵ This was presented by the author at the Symposium on the Sassanian Archaeology and Art in February, 2014, and its historical reason has been discussed as a hypothesis in an independent paper (Hozhabri 1391/2012).

⁶ Habibi: http:/anthropology.ir/node/13598.



same plan of Sassanian fire temples recurred in a series of churches in Armenia, whence it spread to the Balkans. Its influence in the Iran proper has continued into the recent times and it is a truly long-lasting tradition that

is still received with favor (Pope 1994, 71). According to the documents of the Council of Seleucia, Yazdegerd ordered that all temples destroyed by his ancestors be restored throughout the kingdom in a more splendid

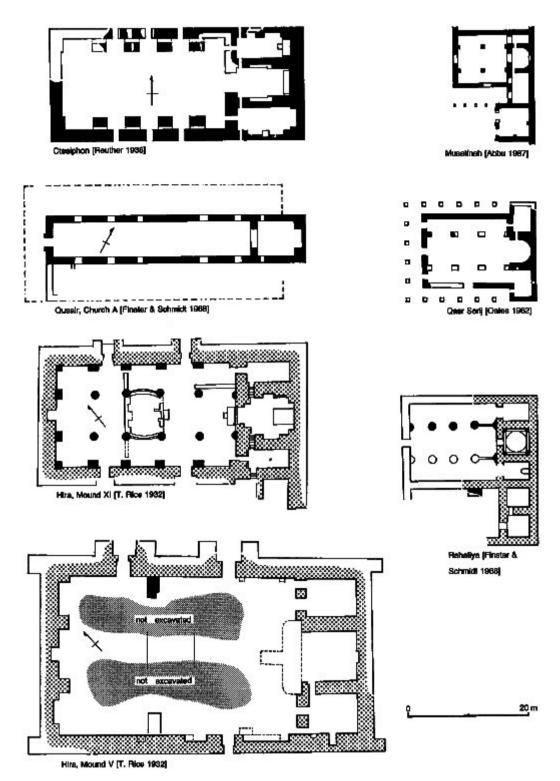


FIGURE 16. PLANS OF CHURCHES IN IRAQ FROM THE SASANIAN PERIOD (OKADA, 1991: FIG. 1).

manner, that all those who were persecuted because of their faith in God be freed, and that priests and church heads and members should be allowed to travel freely. It is not surprising, then, if we find churches resembling temples. A story about Narseh the Christian substantiates this: '... with all these Zoroasterian priests, he occupied the church and turned it to a fire temple. ... Much to his surprise, Narseh saw there the fixtures and instruments specific to Zoroastrians.... Without any doubt, he put out the fire and cleared the place. Then, he returned the church furniture and performed rituals' (Godard et al. 1992, 1: 161). Herzfeld reported a square dome from the Jareh valley, Kazerun, describing it a fire temple attributable to Mehr-Narseh, whilst Godard (et al. 1992, 1: 64, 160) regarded the structure as a church. The controversy arose from the dimensions and size as well as the different appearance of this structure from the four square domes discovered in the Jareh valley (Godard et al. 1992, 1: 160). Godard claimed that the small subsidiary domes at the corners which primarily serve to support the main dome, for instance, in al-Rasafa, The Church of Pantokrator and at the cathedral of Constantinople are justifiable, but here, located at the end of the hall atop its two walls, there was no reason for their existence. He assumed that the domed hall had nothing to do with the fire and those unusual columns and unnecessary domes that did not contribute at all to the equilibrium of the structure, were simply decorative and borrowed from another tradition. Therefore, here we are probably dealing with a church rather than a fire temple (Godard et al. 1992, 1: 160-1). Such being the case, the structure was a fire temple that was turned into a Sassanian church with minor modifications, and the Christian bestowers embellished it with certain western architectural forms that they were familiar with. However, despite the changes made in its details to meet the requirements of a Christian building, it is such a representative and typical fire temple that can be safely characterized as a fire temple (Godard et al. 1992, 1: 64).

Church construction was, therefore, subject to following the already existing architectural forms: in Rome they were inspired by basilica style and in Iran by square dome style. Since the Christians had to conceal their faith for over 300 years, after fleeing from Rome to the western areas they followed Roman traditions in building their churches before the Iranian architecture began to inspire them. Therefore, even when Christianity was officially recognized in Rome, different situation prevailed in the Roman architecture. From the very beginning, it adopted limited numbers of spatial relations with highly symbolic nature as the basic church architecture, i.e. the concepts of 'center' and 'passage,' thereby interpreting the fundamental existential meaning from a fresh Christian prospective. Apart from these characteristics, the early Christian architecture is characterized by the ubiquitous importance of interior spaces, an attribute that has since retained its significance. Previously, central, elongated spaces had emerged in the most striking manifestations of the Roman architecture. The centripetal space of the Pantheon not only was a universal symbol but also

epitomized human's new understanding that he himself was a player in space. The longitudinal space of the Roman basilicas conveyed a similar twofold meaning. In addition, it had the passage element to symbolize the directed nature of human action (Norberg-Schulz 2009, 135). The early Christian architecture took advantage of both of these forms. The plan of most of the earlier churches consisted of a combination of elongation and centralism; elongation dominated the architecture of western churches and central-plan dominated the eastern ones. In the Byzantine architecture of the sixth century A.D., the central-plan was adopted for major churches and the churches typically had also a secondary axis (Norberg-Schulz 2008, 137). The San Giovanni Cathedral in Laterano, adjacent to the residence of the bishop of Rome, is a vast columned basilica with two east-west oriented aisles between the columns and a high altar at the end; the transept was added in the Medieval period (Norberg-Schulz 2008, 142). Beginning from the time of Justinian I, centralism became the defining feature of the Byzantine architecture. The earliest example is the octagon, domed Sergius and Bacchus Church, the construction of which began before 527 A.D. The church flanked the Justinian's residence. After the splendid experience of Hagia Sophia, a cruciform domed outline was again used in the architecture of Justinian's church. In this plan, the dome sits atop the nave and transept junction (Norberg-Schulz 2008, 144). However, with the migration of the sued Christians to the political borders of the Sassanian Iran, they for the most part settled initially in the western areas and, as you would expect, started with the Roman architecture style.

Also, the existence of the rooms, etc. at Char-Ghapi, as in the church on the Kharg island, can be related to activities relevant to church. Prior to the beginning of construction of oil installations on Kharg, Ghirshman completed two seasons of excavations on the island between 1959-1960. Using massive slabs of hewn stones, the Nestorian priests had put up on the island a church with a tripartite nave in Sassanian fashion; the central nave was larger than the lateral ones. The choir, altar, treasury, diaconicon, library hall and assembly hall for priests, etc. are some of the excavated units within this church. The convent of Kharg may be a unique example from the period of the revival of Christianity by Abraham de Kashkar in the sixth century A.D.⁸

Analysis of the plan of the churches in the modern Armenia, Iraq and Iranian Kurdistan and Azerbaijan reveals three styles in church architecture. The first follows the Roman (basilica) tradition (Fig. 17); the second represents the Iranian (square dome) tradition (Figs. 18-24); and the third is mainly characterized by local architectural elements and is quite distinct

⁷ Al Rusafa (Arabic: نفاصرك) or Rasafa is the east-bank settlement of <u>Baghdad, Iraq</u>, or the eastern shore of the river <u>Tigris</u>.

⁸ Ghirshman, Anthropology and Culture, www.anthropology.ir/node/14290.

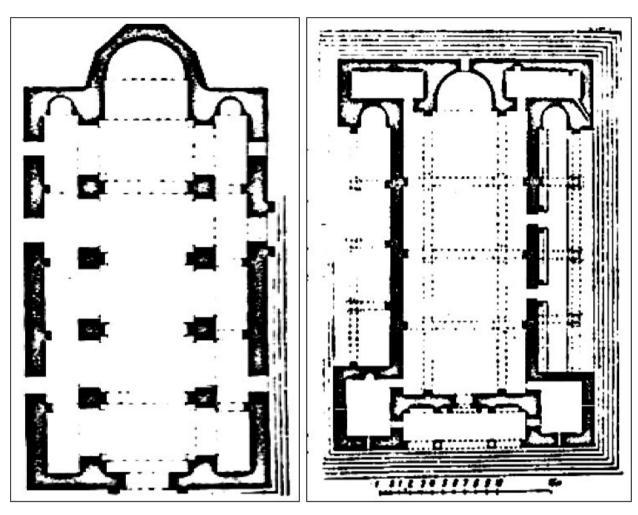


FIGURE 17. PLANS OF BASILICA CHURCHES IN ARMENIA AT (A) GEGHART AND (B) ERERUK.

from the other two. In the Roman tradition, two rows of pilasters turn the church into an elongated hall, with the mithraeum located at its end. The Iranian tradition, with its four columns at the center of a square structure and a dome atop it, resembles the plan of fire temples, particularly those from the early Sassanian period. The locally inspired tradition represents a style that is distinct from the prevailing national patterns and incorporates specific requirements of the time and incentives of their builders.

Why Char-Ghapi Dates to the Sassanian Period?9

The chronology of Char-Ghapi can be approached from two different directions: exploring historical sources and archaeological evidence.

Historical Analysis

In the Sassanian era, Nestorians were in majority among the Iranian Christians (Schipmann 2004, 67). Nestorius proclaimed that Christ's divine nature and human nature were distinct. Emphasizing the human nature, he argued that Mary should be considered simply the Mother of Christ not the Mother of God (Yarshater 2002, 388). Nestorius believed in no oneness other than the union of the natures, i.e. the God with his entirety dwelt in the human Christ as if he resided a sanctuary. The oneness was simply embodied in the unity of will, which gradually evolved in Christ's life and culminated after the resurrection. It was only after the resurrection that the human nature shared in God's immutability and preponderance and became worthy of devotion. The Antioch (Nestorian) School made use of the historicallinguistic approach (Yarshater 2002, 389). Nestorius and his disciples attributed two quite distinct dimensions to

⁹ Reasons for the claim that Char-Ghapi is a late Sassanian church have already been presented by the present author. (See Hozhabri 2013)

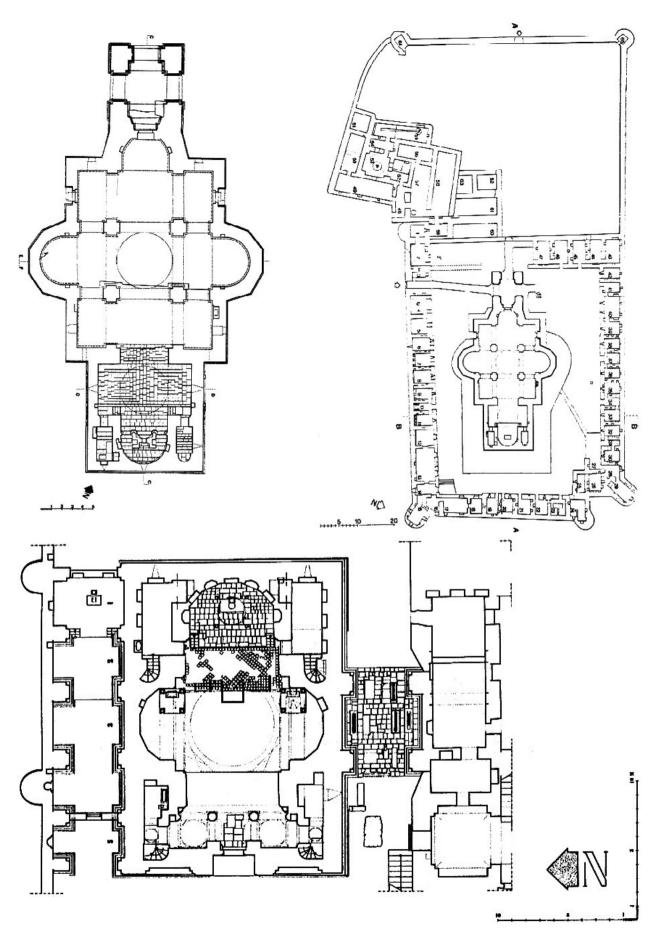


FIGURE 18A-B. CHURCH WITH CROSS PLAN: (A) ST. STEPANOS AND (B) ST. THADDEUS.

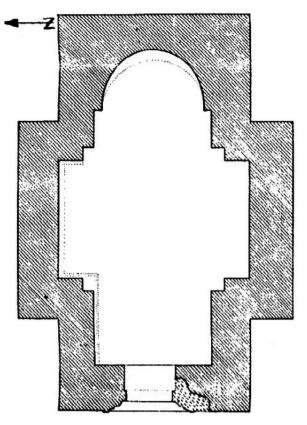


FIGURE 18C. CHURCH WITH CROSS PLAN: (C) ST. MARY.

Christ, thus earning the title Dyophysites. In contrast, the Jacobites hold a Monophysitic view, believing that the two divine and human natures of Christ were combined to form a unified nature. The advocates of the Nestorian church generally refer to themselves as 'Messihaye,' but the moniker never came into vogue and the church was typically called 'Assyrian Church' (Molland 2002, 80). Nestorian Church was named after its founder, Nestorius (ca. 381-451 A.D.), a Syrian monk and a prominent preacher. Nestorius was selected patriarch of Antioch in 428 A.D. (Ehrman 2004, 182). His principal teaching concerned 'the existence of two distinct natures' in Christ. Accordingly, he regarded Christ a human in whom dwelt the divine Logos or the God (Lane 2001: 92). As said, he rejected the title Theotokos, Mary Mother of God, insisting on Mary Mother of Christ (Baun 2003, 23). In 435 A.D. when Nestorius was exiled to Rome, many of his disciples departed for Iran (Badr 2001, 237), thus the Nestorianism becoming the formal faith of the Persian Church (Miller 1981, 299).

Dadisho, the patriarch of the Persian Church, held the position till 456 A.D. In Edessa there was a very famous theological school. As the ideas of Nestorius began to spread, they aroused enthusiasm in this school. In 457 A.D., since Monophysitic tendencies predominated in the region, students who had received Nestorian education

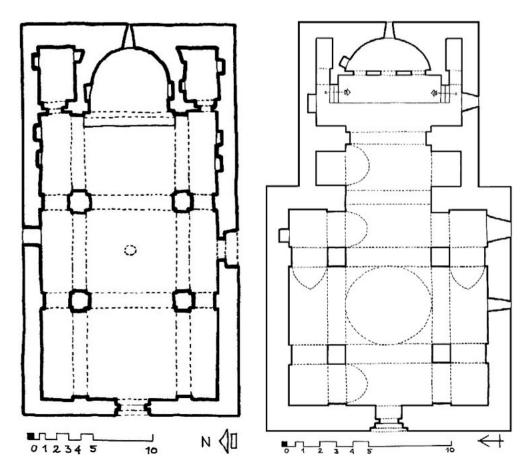


FIGURE 19. PLAN OF THE FOUR-COLUMNED CHURCHES OF (A) ST. HEREPSIME AND (B) ST. GEORGE.

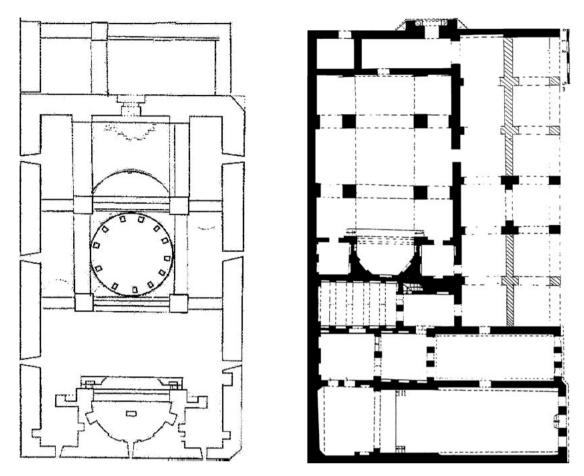


Figure 20. Plan of the four-columned churches of (a) Saint Mary in Shām Valley (1518), and (b) Saint Mary in Djolfa (1681).

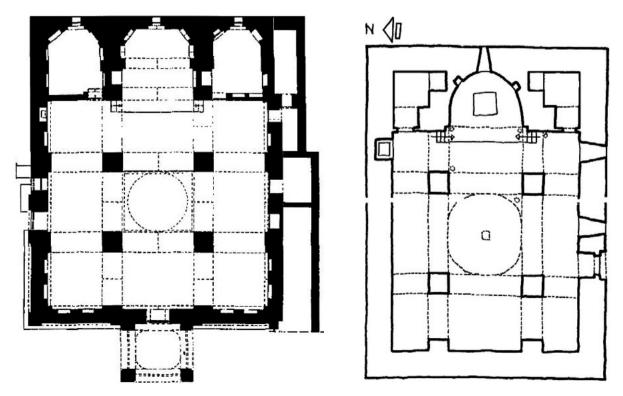


FIGURE 21. PLAN OF FOUR-COLUMNED CHURCHES FROM THE SAFAVID PERIOD: (A) THE CHURCH OF ST. HOVANS IN DJOLFA; AND (B) THE CHURCH OF THE ST. GEORGE (IN QAREBAGH IN THE URMIA REGION.

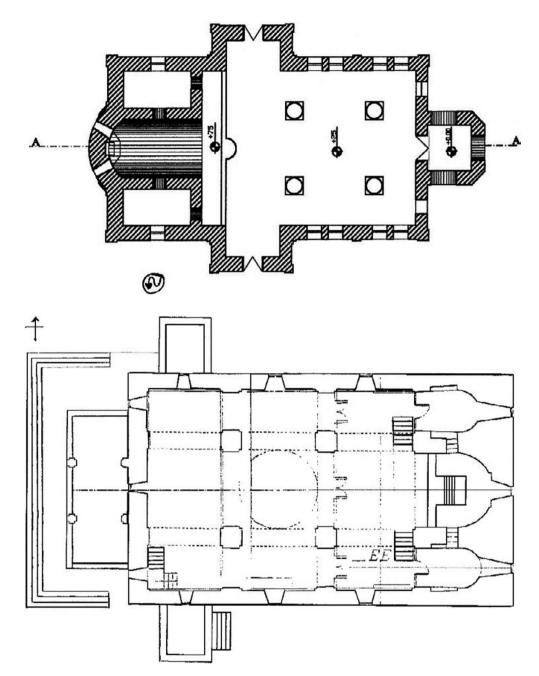
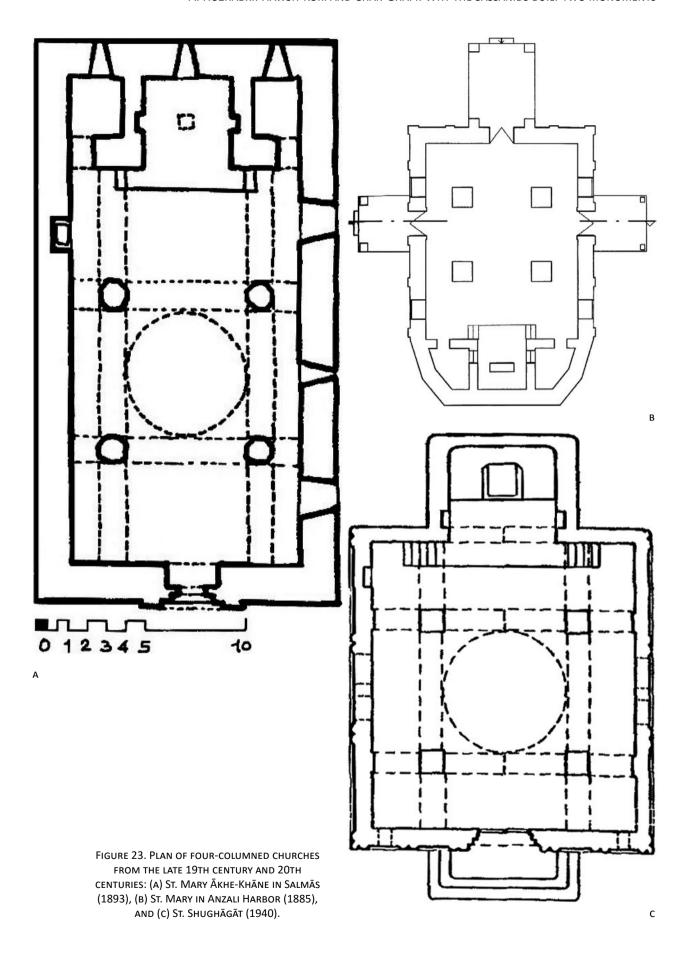


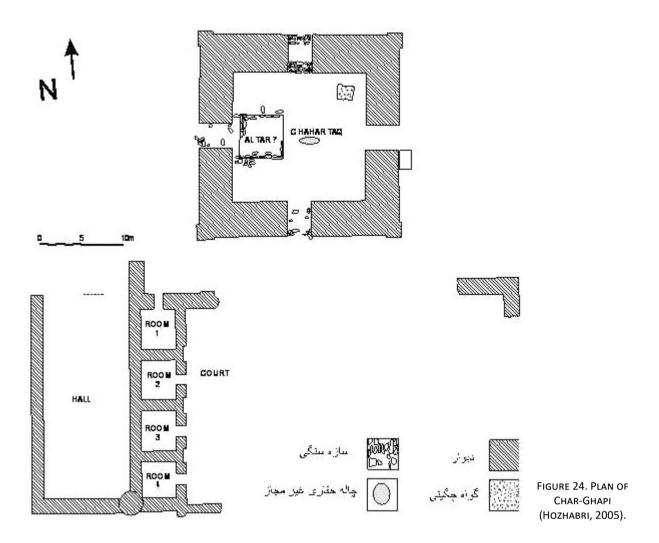
FIGURE 22. PLAN OF FOUR-COLUMNED CHURCHES FROM THE 18TH AND 19TH CENTURIES: (A) THE NESTORIAN CHURCH OF MĀR-GEORGIS (1830); (B) ST. MARY IN TABRIZ (1785).

were all expelled. Upon his return to Iran, Barsauma attained a high position in the court of the Sassanian king Piroz as he was an eminent scholar and had shown high competency. He was the bishop of Nisibis. In 486 A.D., another council headed by Acacius was held, as a result of which the Persian Church completely separated from the western church. The council had two major acts:

1) Nestorius' teachings were recognized as the formal

faith of the church of Sassanian kingdom; and 2) priests and bishops were allowed to be married. In 489 A.D., the Edessa School was closed by the Byzantine emperor because it promoted Nestorianism and its students took refuge in the Persian Nestorian Church. Barsauma and Narsai, director of the Edessa School accepted them and established for them and other pupils a school within the Sassanian territory. In 571 A.D., a theologian





named Henana of Adiabene was elected director of the theological school in Nisibis. Influenced by his trainings, he became entranced by the Monophysitc doctrine, which had already been spread throughout Syria by Jacob Baradeus. Hanana began to teach the doctrine to the pupils of the School of Nisibis. In the meantime, Gabriel, the physician of Khosrau Parviz, abandoned Nestorianism for Monophysitism and also induced the Queen Shirin to follow his example. When the patriarch of the time died in 608 A.D., Khosrau refused to refill the position, which remained vacant up to 628 A.D. The refusal was rooted in his concerns over tendencies of the Iranian Christians towards the Christianity practiced in Rome. Therefore, at the same time, he had to devise a plan to prevent the religion from fraternizing the adherers of a single faith in two hostile empires.

Khosrau put up the Sassanian complex of Qasr-e Shirin for his consort in an area probably called 'Beth Lashpar' in Sassanian times. Shirin was an Aramean Syriac Christian, and Edessa (Urhay in Syriac, Ar-Ruhā in Islamic sources, modern Urfa), located in modern northern Iraq, was a major Syriac settlement. In the 2nd century A.D., the city became a major center Christianity and the first Persian Christian Church was established there (Badiei 1994, 194). Soon after, apart from that in Jerusalem, other churches would emerge across Judiah (Galatians 1: 22; 1 Thessalonians). Another church was put up in Samarra (Acts 1: 8-24), as was in Antioch (Acts 11: 20-30; 13: 1), though the latter was actually turned into a staging post for the missionary journeys of the Apostle Paul (Thiessen 1949, 299-300). Of the other major Syriac centers was Nisibis (modern Nusaybin), the spiritual city of the Eastern Christians. Also, in the Sassanian period Halwan was the center of a namesake county with five small districts (Tasuks): Shad Peroz (Kavadh), Kuhestan (Jibal), Tamra, Erbil and Khanaqin. In 553, 588 and 605 A.D., Halwan as a parish (Kolesnikoff 2010, 186) and an important market was also a major base for spread of Christianity in the Mah Province (Yarshater 2002, 163). Furthermore, Christianity at the time was the major intellectual force. The cult, which prior to this was the faith of the opponents of the Roman empire and its disciples were subject to persecution, in spite of persecution and pressure and may be as a result of these, became strictly organized and considerably influential; in the provinces adjacent to Iran as well as within Iran itself bishoprics emerged in 225 A.D. (Lukonin 1993, 115). By 225 A.D., over twenty bishoprics existed in Iran and Mesopotamia (Miller 1981, 269). There are indications that Christianity commenced first in Jazireh and Mesopotamia and then in Kurdistan and western Iran in the early Christian centuries (Hekmat 1992, 240). The first persecution of the Christians in Iran began under Shapur II in 339 A.D. and had political derives, for it was in this same period that Constantine declared Christianity as the formal religion of the Roman empire (Frye 1998, 359). However, on the other hand, the harsh stance of the official church of Constantinople towards the disciples of other Christian churches made them began to seek the support of the Persian empire, where different Christian faith groups had a more tranquil life (Kolensikoff 2010, 147), as the tough Christian teachings of the time were not able to compete the Gnostic philosophy and other teachings; and, it may be due to this same reason that those such as Saint Augustine converted to Manichaeism (Lukonin 1993, 125). The break with the other Christians in the 5th century A.D., enhanced the status of the Nestorians in Iran (Frye 1998, 359). The Persian Church became Nestorianized in about 484 A.D. (Miller 1981, 298-300). The favorable conditions under Hormizd IV (579-590 A.D.), to the dereliction of which al-Tabari testifies, come to an end in the reign of Khosrau II, when Monophysitism emerges under the auspices of Shirin and Gabriel. Internal strife, which to some extent was directly correlated with this new racemose theological association, weakened Nestorianism, though did not bring about its fall. These conflicts were evident in the Synod of Mar Hazqiel (576 A.D.) and escalated in the Synod of Mar Iso'yabh (586 A.D.), Synod of Mar Saurisho (596 A.D.) and Synod of Mar Grigor (605 A.D.) that marked the beginning of a hiatus during which the office of catholicos remained unfilled. The hiatus would only end by Khosrau's death in 628 A.D., after which Iso'yabh II became the catholicos. However, in this same period, Marutha of Takrit (649 A.D.) established a Monophysite hierarchy in Iran, and once this was officially recognized, he earned the title of Maphrianate (appointer, inseminator) of Antioch. The Eastern Christian Church (Orthodox denomination) had to put all its force to quell the ever increasing influence of these heretics (Yarshater 2002, 393-4). In 614 A.D., Iranian army opened Jerusalem after 20 days of siege (Schippmann 2004, 69; Kolesnikoff 2008, 146). The Holy Cross was among the booty that was brought to the royal treasury of Khosrau. Capturing this cross comprised the most important political idea of Khosrau II: affirming his sovereignty

over the entire Christian world¹⁰ (Kolesnikoff 2010, 146). Destruction of Jerusalem in the 7th century A.D. reaffirmed the position of the Church of Antioch as the central church of the Christianity; it represents the first non-Jewish church. The Jacobites or those who believed in 'one nature' of Christ took advantage of the internal conflicts of the Nestorius' disciples and began to propagandize. Intense competition continued between the two sects (Ghadyani 2002, 157). Archaeological evidence suggests that religious influence of Nestorians also penetrated the eastern regions: at the archaeological site of Gäwürgala (or Gyaur-Kala), [Turkmen take from Persian 'Gabr Qala' (Fortress of the Zoroastrians in ancient Merv)], apart from the two structures probably relevant to Zoroastrianism, there was also a Nestorian convent within the fort dating to the 5th century A.D. (Seyed Sajjadi 2004, 169).

In light of the above discussions, it is my contention that Char-Ghapi was a church that Khosrau put up in response to the potential danger of the Roman Christianity but failed to complete because of the lack of religious tolerance on the part of the Zoroastrian priests in the imperial court who finally conspired to dethrone and kill Khosrau by one of his sons. It appears that the Heraclius' Persian campaign of 622 brought to a halt the construction project of Qasr-e Shirin complex and resulted in partial destruction of the existing structures. And, in the wake of the Muslim Arab invasion of 16 A.H., after the supposed completion of the unfinished structures in the early centuries of the Islamic era, a new function was likely assigned to the complex, though al-Yaqubi speaks of the ruins of the complex and ibn Athir relates that the walls of Qasr-e Shirin were cracked in the earthquake of 345 A.H. Thus, the complex would have remained abandoned as late as the fourth century A.H.

Archaeological Analysis

Relative chronology of Char-Ghapi in view of the archaeological evidence including pottery and architecture reveals the construction date of the structure. As said, some have ascribed the building complex of Qasr-e Shirin to the early Islamic era. We would expect pottery of this period within Char-Ghapi if it had been occupied in this timespan. Of the Umayyad pottery tradition limited but still considerable remains are available. As with the earlier periods, particularly in Iran, pottery was not highly valued and was mainly used for practical purposes (Ettinghausen *et al.* 2003, 113). The Abbasid ceramics show advances in the pottery traditions of the Umayyad period. However, the sherd assemblage collected during the surface survey of Char-Ghapi contains even not a single glazed fragment (Fig.

¹⁰ 'With the Cross falling into my hands, I acquired a supremacy over them. I did not give it back to them, [because] so long as we have this Wood in our hands and our treasury, we will be superior to them and they will be servile and vanquished' (Bal'ami 2006, 811).

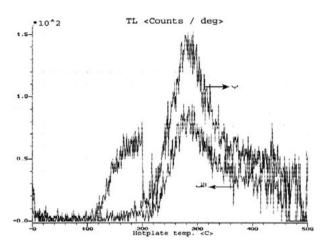


FIGURE 25. RESULTS OF THERMOLUMINESCENCE DATING TEST NO. 1 (1350±75).

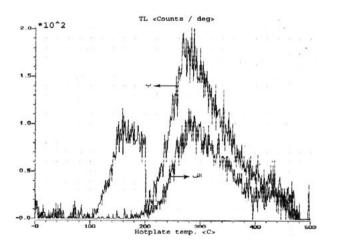


FIGURE 26. RESULTS OF THERMOLUMINESCENCE DATING TEST NO 2 (1370±70).







FIGURE 27. CERAMICS FROM SURFACE SURVEY AT CHAR-GHAPI (HOZHABRI 2005).

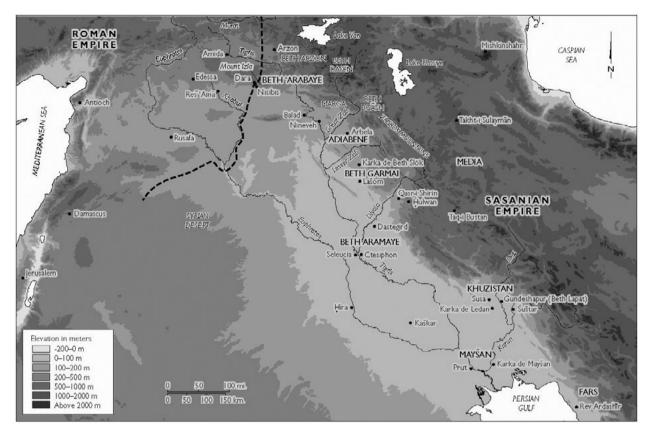


FIGURE 28. LOCATIONS OF CHRISTIAN PLACES IN THE SIXTH CENTURY AD (WALKER 2006 MAP 2).

2728). One can, therefore, get closer to the historical truth of the structure by combining the absolute and relative chronologies.

During a revisitation to Char-Ghapi in the summer of 2013, two bricks originally used in the vaults of the bays of the square dome were sampled to be dated by thermoluminescence technique. The first brick was sampled from the interior of the structure, from the mass that Chegini had left there as evidence of his recent excavations at the site, while the second was taken from the section of the southern trench. The samples were analyzed by Faranak Bahrololumi from the Research Center for Preservation and Restoration of the Iranian OCHHT Research Institute, giving the following results: the first sample belongs to 1350±75 years BP (Pl. 2525) and the second to 1370±70 years BP (Fig. 2626). Therefore, the date suggested for Char-Ghapi is 663 ± 75 A.D. (588-738- A.D.) by the first and 643 ± 70 A.D. (573-713 A.D.) by the second sample. Combining these thermoluminescence dates with the data from the political history resources will give a date between the

reigns of Hormizd IV (579-590 A.D.) and Hisham ibn Abd al-Malik (724-743 A.D.), i.e. the late Sassanian to the late Umayyad period on the basis of the first sample, and between the reigns of Khosrau I (531-579 A.D.) and Al-Walid I (705-715 A.D.). i.e. the late Sassanian to mid-Umayyad period based on the second. So, the thermoluminescence dates for Char-Ghapi do not go beyond the Umayyad period (750-680 A.D.). Since the major construction works of the Umayyad and Abbasid dynasties were mainly clustered in present day Syria and, to a lesser extent, in Iraq, the late Sassanian period seems the more likely date for the construction of Char-Ghapi.

Conclusion

Char-Ghapi is a *Chahār-tāqi* or a structure with a square plan with domed roof (Fig. 25). As discussed earlier, the Sassanian fire temples were all aligned with the intercardinal points, whereas Char-Ghapi was oriented to the cardinal points, a situation that is seen in one other category of the sanctuaries: churches. We similarly argued that in almost all the churches the mithraeum lay

at the west end, and this is represented at Char-Ghapi by a platform in the west. Since Khosrau Parviz failed to install a bishop from the death of the patriarch in 607 A.D. up to his dethronation in 628 A.D., and meanwhile he also had the True Cross among his booties from Jerusalem, it appears that he was disposed to institute a Persian version of Christianity against the Roman version and attempted to assign a second official religion for the empire, though he failed as a result of a conspiracy by the Zoroastrian priests and statesmen and was finally put to death. Thus, Char-Ghapi must have been founded in this timespan as part of Khosrau's aspiring ambitions, which were never achieved. The conversion of Shirin and Gabriel was probably the effect of these ambitions as well as the pressures put on them by the courtiers and Zoroastrian priests who assumed that they had induced Khosrau to convert discreetly. Also, the region had already a particularly important place in the Christian realm (Fig. 2829).

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Across millennia of occupation: the Land of Nineveh Archaeological project in Iraqi Kurdistan: The prehistory and protohistory of the Upper Tigris rediscovered

Marco IAMONI

Thanks to the occurrence of favourable socio-political conditions, Iraqi Kurdistan is now home to many new archaeological projects which promise to yield data of crucial importance for many research topics of Near Eastern archaeology. The Land of Nineveh Archaeological Project (LoNAP) is in this respect one of the most potentially fruitful investigations, thanks to the extensive area under examination and the various issues addressed. In particular LoNAP offers fresh evidence for starting a new sub-project in the pre- and protohistoric field which will investigate the ancient environment and its impact on / relationship with different subsistence strategies, the related settlement patterns and the dynamics of socio-economic complexity that characterised the region throughout the 7th-4th millennia BC.

The Land of Nineveh Archaeological Project. Methods and targets

Upper Mesopotamia is a region that has been widely studied by archaeological projects, with both regional and intra-site investigations (excavations). A wealth of data has been retrieved (especially in the Syrian Jezirah) and used to approach a number of different archaeological topics regarding the archaeology of the Ancient Near East. These go from the more well-established and widely studied (e.g. the formation of territorial kingdoms and/or empires of the Bronze Age and, in particular, Iron Age) to those perhaps less familiar to the wider public but by no means of lesser importance (e.g. the Neolithic revolution, the stabilization of human communities in villages and the later transformation of these into urban settlements), to the analysis of intercultural exchanges that led eventually to new forms of interaction between communities of different origins (e.g. the interaction of north/south Mesopotamia and Hellenistic period).

Upper Mesopotamia is however made up of a number of different regions (Wilkinson 2003, 16-7; Bernbeck and Nieuwenhuyse 2013, 20), which may offer different evidence or perspectives on the above-mentioned issues: Iraqi Kurdistan and more specifically the Eastern Upper Tigris (EUT) are, in this respect, a *terra incognita* due to the substantial absence of archaeological projects carried out in the region. To fill this gap, the Italian

Archaeological Mission in Assyria (IAMA) of the University of Udine has developed the Land of Nineveh Archaeological Project (LoNAP). LoNAP has been conceived as an interdisciplinary investigation that studies settlement patterns, socio-economic dynamics and land exploitation over an area of about 3000 km (Fig. 1). Its main focus is the reconstruction of the cultural and natural landscape over a timespan that goes from the Neolithic to the Islamic era (Morandi Bonacossi and Iamoni 2015). Due to the importance of what has been called the 'hilly flanks' of the Zagros for the most ancient periods of occupation (Braidwood and Howe 1960; Braidwood et al. 1983), a LoNAP project unit conducted by a research team of the University of Roma 'La Sapienza' has focussed on Palaeolithic, Epipaleolithic and early Neolithic human presence in the region. Preliminary results suggest the considerable importance of the region also in this respect.1

With reference to methodology, LoNAP employs a double approach (survey + excavations) to explore the archaeological record present in the area.

The survey is carried out by LoNAP at two differing levels of intensity. The first phase, which will be completed during the next (2016) season, is an extensive survey of the region. This commenced with the analysis of the area first through aerial and satellite images, among which declassified US satellite images (CORONA) have been particularly useful (Ur 2013a-b; Wilkinson 2003, 33-7), together with other sources of satellite images (e.g. Orbview, SPOT) and Digital Elevation Models (DEM).² The 'ground-truthing' of the potential sites thus identified via direct field-walking of specific topographic units (e.g. *tell* and lower town) followed and has completed this preliminary analysis (Morandi Bonacossi and Iamoni 2015).

A second phase will be an intensive survey via off-site transects so as to detect less visible sites (e.g. those

¹ Conati Barbaro *et al.* 2016. About 50 km east of the eastern limit of the LoNAP area lies the key site of Shanidar, where one of the few presences of Neanderthals in the Middle East has been documented (Solecki 1971). The LoNAP area is rich in caves and shelters and it is to be expected that the investigation may offer substantial data also for this crucial phase of human occupation.

² These are available freely through the U.S. Geological Survey website (www.usgs.gov).

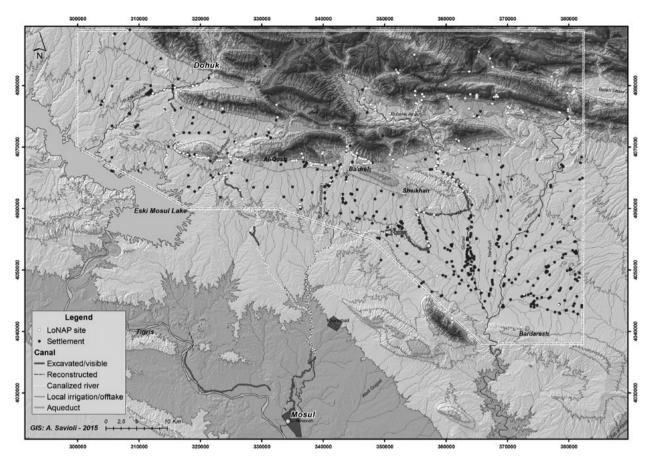


FIGURE 1. MAP OF THE LONAP AREA WITH SURVEYED SITES AND CANALS (© LONAP PROJECT).

located on the edge of the plains at the lower southern fringes of the Zagros, where the undulating conformation of the landscape makes difficult the identification of sites in satellite images). This second step is scheduled to begin during the 2016 season, with the contemporaneous conclusion of the extensive survey.

A second step that is also planned to start with the 2016 campaign is the beginning of excavation at the site of Tell Gomel, which is one of the largest sites thus far surveyed by LoNAP. It lies in the Navkur Plain on the river of the same name and has an exceptional and impressive sequence, which natural erosion caused by the River Gomel has made perfectly visible by cutting a vertical c. 40 m high cliff along the western side of the site. The site survey has revealed evidence of occupation here starting in the Late Chalcolithic (with possible earlier traces)³ and ending in the late Islamic period, with

significant attestations during the Bronze and Iron Ages, and the Hellenistic and Parthian periods. Furthermore, Gomel might have been the ancient Gammagara (mentioned in the Jerwan inscriptions, Jacobsen and Lloyd 1935, 20-1, 32), later possibly Gaugamela (Fales and Del Fabbro 2014), the ancient site of the famous battle between Alexander the Great and Darius III that led to the definitive conquest of the Persian empire by the Macedon king. Altogether, archaeological evidence suggests that Tell Gomel possesses crucial information for the study of the settlement system⁴ and the material culture, especially for the 3rd millennium BC – 1st millennium AD, that may help to fill one of the many gaps that affect the archaeological understanding of the East Upper Tigris.

It is thus clear that LoNAP touches on several different archaeological spheres, thanks to the wide area and ample chronological span under analysis. The presence

³ Pre LC attestations come from an Ubaid seal said to be from Gomel and currently displayed at the Museum of the Oriental Institute of Chicago (n. A12466), and a possible Hassuna potsherd retrieved during the site survey.

⁴ An intensive survey of a 100 sq km area around the tell is subject of a PhD project (The Tell Gomel Archaeological Survey) being undertaken by F. Simi.

in the LoNAP area of major tracts of Neo-Assyrian canalisation and other associated structures (e.g. aqueducts) and symbolic/propaganda monuments (e.g. Assyrian reliefs at Khinis) makes, however, the strategy by which the Assyrian empire exploited the territory in the 1st millennium BC, and the impact/modifying effect that this strategy had on the landscape - an issue of special concern. Despite pioneering investigations that recognised the great importance of this strikingly sophisticated project of water engineering (Jacobsen and Lloyd 1935) and later studies re-analysing the evidence to hand (Ur 2005), the absence of systematic investigation in the region has hampered a full understanding of the functioning of the canals, the construction techniques used, the maintenance of the system, and the time and modes of abandonment. LoNAP aims to carry out an extensive and detailed investigation of this crucial system of irrigation (and possibly water transportation) by means of direct field-walking in order to make clear the exact paths followed by the canals: the first preliminary data have already revealed a system of canals and aqueducts much more complex than previously assumed (Morandi Bonacossi and Iamoni 2015). At the same time, archaeological soundings and geoarchaeological sampling of the canal sediments will contribute to an understanding of the exact dimensions of these canals, their carriage capacities, and the abandonment of this first systematic attempt to modify water availability over an area of several hundreds square kilometres.

Prehistory and protohistory in Upper Mesopotamia: results and open questions

To date, the basis for the reconstruction of prehistoric landscapes has depended on the investigations carried out especially in the Syrian Jezirah, where various projects at regional level (Nieuwenhuyse 2000; Lyonnet 2000b; Meijer 1986; Trentin 2010; Copeland 1979), as well as at site level (Nieuwenhuyse and Wilkinson 2008; Ur and Wilkinson 2007; Brustolon and Rova 2007; 2008; Ur 2002; 2010; Ur et al. 2011) have been carried out. The results of these investigations have significantly broadened our view of these phenomena and at the same time deepened our understanding of the role of Upper Mesopotamia, as a region with its own independent traits in the development of human communities from simple non-permanent villages (Akkermans 1993) to stable settlements and eventually to urban centres (Stein 1999; Oates et al. 2007).

In more detail, the development of occupation in Upper Mesopotamia can be briefly summarized in the following steps.

The ceramic Neolithic saw the sparse presence of human occupation, with very small sites located mostly – but not exclusively – in proximity to watercourses (Wilkinson and Tucker 1995, 39; Algaze *et al.* 2012, 13-4; Nieuwenhuyse

and Wilkinson 2008). This pattern continues to be valid also during the late Neolithic/Halaf period, c. 5900-5300 BC, though with an increase in site numbers, especially towards the end of the Halaf (Nieuwenhuyse 2000). Two key issues immediately appear to need further investigation. The first concerns site distribution and its apparent randomness (though somehow connected to the presence of vital natural resources such as water and the availability of food), which may hide underlying - but thus far less comprehensible - patterns (Iamoni in press). The second concerns the distribution of the material culture traditions characterising the region: the subdivision of the ceramic Neolithic into culturehistorical phases (Hassuna/Samarra and Halaf), though rightly criticised (Campbell 2007), is still in use. Recent re-analyses (Akkermans 2013; Nieuwenhuyse et al. 2013) suggest that such a classification should be abandoned. New evidence may help to fix this weakness in the study of the 7th-6th millennium occupation of Northern Mesopotamia, as well as to propose a more precise characterization of the ceramic tradition in the region.

During the Northern Ubaid, settlement seems to reflect different and sometimes contrasting modes of occupation: a radical increase in settlement has been recorded in the province of Cizre and Silopi (Algaze et al. 2012, 16-8), whereas in the Sinjar area and the Syrian Jezirah there is evidence of occupation similar to that of the preceding Halaf phase (Wilkinson and Tucker 1995, 40; Lyonnet 2000a). The genesis of the Ubaid in the north is, however, a matter of crucial importance and yet still largely unexplored in many respects. A substantial phase of continuity, rightly termed a transition, has been highlighted (Karsgaard 2010; Campbell and Fletcher 2010; Breniquet 1989). Yet the basis of data on which such conclusions rest is still significantly meagre; the nature and modes of - as well as the reasons for - the emergence of a Northern Ubaid culture remain largely unknown (Nieuwenhuyse and Wilkinson 2008, 274).

The Late Chalcolithic shows again a similar discontinuity between different areas of Upper Mesopotamia, with a much denser occupation in the Jezirah and the Sinjar area (but see also similar evidence from the Zammar area, Iamoni 2014, 102-3) and a decrease in settled sites in the Turkish Upper Tigris around Cizre (Algaze et al. 2012, 21). A major change concerns the emergence of site hierarchy: although possible seeds of this phenomenon have already been noted during the Ubaid phases (Wilkinson and Tucker 1995: 40-1; Trentin 2010), only at this time does it appear substantial, becoming a defining trait of the occupation of Upper Mesopotamia from the Late Chalcolithic/Early Bronze Age onwards. Again, however, site hierarchy does not seem to appear homogeneously throughout the entire region: the emergence of sites such as Brak (Ur et al. 2011; Oates et al. 2007) and Tell al Hawa (Ball 1990; Ball et al. 1989)

with settled areas of 50 hectares or more may well be a phenomenon restricted to a specific portion of Upper Mesopotamia, whereas other zones in the region were apparently left untouched by the process.

In this broad analysis, the Upper Tigris has thus far remained in a marginal position: only recently has this gap started to be filled thanks to investigations concentrated mostly on the western side of the Tigris river (Wilkinson and Tucker 1995; Algaze et al. 2012; Ball et al. 2003; Simpson 2007; Altaweel 2006; 2007; Iraqi Minister of Culture and Information 1986; Iamoni 2014). The Eastern Upper Tigris, in spite of the presence of some of the most important pre and protohistoric sites such as Nineveh (Campbell Thompson and Mallowan 1933), Arpachiyah (Mallowan and Cruikshank 1935) and Tepe Gawra (Speiser 1935; Tobler 1950; Rothman 2002), has been only marginally involved in research projects. Preliminary studies promise to fill this gap, by adding substantial corpora of data that may help to clarify some of the points discussed above - or even perhaps open up new and unexpected perspectives or interpretations in the archaeological research in the region.

The Land of Nineveh Archaeological project and the Eastern Upper Tigris rediscovered. Human adaptability and the formation of urban societies (HAFUS)

LoNAP, thanks to the extensive region under analysis, offers an invaluable source of data to study many of the different issues highlighted above. In particular, the different morphological features of the LoNAP area allow settlement to be studied from a wider perspective: three different eco-zones characterise the region under investigation. Each of these replicates at a smaller scale macro-regions that occur throughout Upper Mesopotamia (river valley, flat dry plain, and well-watered and fertile land, Fig. 2).

This peculiarity of the region is a crucial asset of the research projects that aim to investigate the roots of human settlement in a region rich in natural resources and thus attractive for stable human occupation. The presence of different zones further helps to better evaluate the impact that environment had on the rise (and possible abandonment) of ancient settlements. A LoNAP spinoff project (Human Adaptability and the Formation of

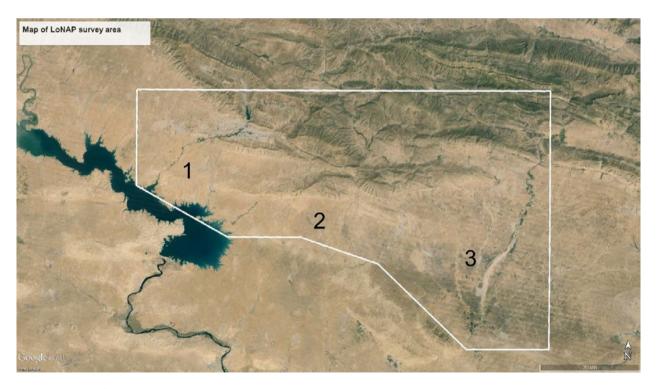


FIGURE 2. MAP OF THE LONAP SURVEY AREA WITH THE THREE DIFFERENT ECO-ZONES CHARACTERIZING THE REGION: (1) THE TIGRIS RIVER VALLEY; (2) THE FLAT AND DRY PLAIN OF BAIDRAH; (3) THE WELL-WATERED AND FERTILE VALLEY OF NAVKUR. IMAGE BASED ON A GOOGLE EARTH SATELLITE PHOTO.

Urban Societies, HAFUS) is dedicated to a more detailed analysis of the prehistoric and protohistoric (7th-4th mill. BC) dynamics (including settlement patterns, contacts/exchange, formation of social identity and material culture) in the region. A preliminary summary of the LoNAP 2012/13 results has already been presented in two separate articles (Morandi Bonacossi and Iamoni 2015; Gavagnin *et al.* 2016).

The progress of the LoNAP project – and in particular the last 2015 campaign – have confirmed the region's crucial role during the Neolithic and Chalcolithic periods. More than 830 sites have been discovered so far, of which c. 150 were settled between the 7th and the 4th millennium BC (Fig. 3). The study of the early ceramic Neolithic occupation, attestations of which had previously only been scarcely detected, has benefited particularly from the new strategy of investigations: prior survey campaigns had concentrated on larger sites where later levels of occupation (e.g. EBA, Assyrian and Islamic) had frequently obscured the possible traces of

the earliest (and usually smallest) settlements. The 2015 survey focussed on soil marks (represented frequently by white layers visible in satellite images, see Fig. 4-B) in proximity to watercourses: these white layers have been interpreted as anthrosols (Savioli forthcoming), whose nature may depend on a significant presence of ashes in the area, which may reflect the sunlight and consequently produce the whitish colour in the satellite image (Savioli forthcoming; on this point see also Ur et al. 2013, 94 who proposes decayed mudbricks as responsible for the occurrence of light anthropogenic soil). The latter point needs however to be corroborated by more data: at present, the LoNAP evidence suggests a substantial (though not absolute) correlation between light layers and anthrosols, which has been particularly useful to identify Neolithic settlements whose area was frequently smaller than half hectare.

With reference to the above-mentioned issues, the preliminary results provide insufficient basis for definitive conclusions; however, a few points seem

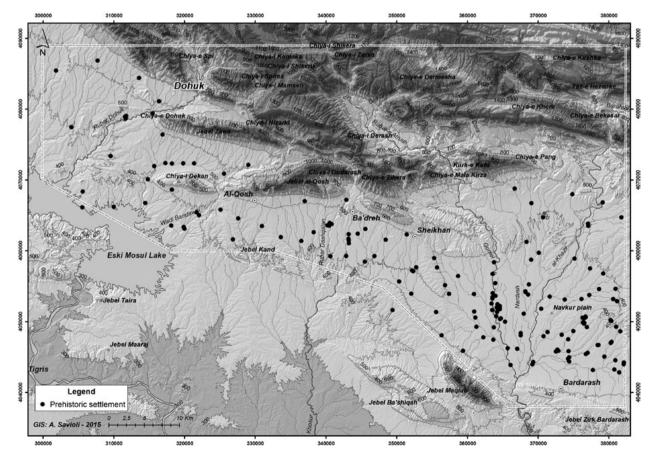


FIGURE 3. MAP OF THE LONAP PREHISTORIC SITES (@LONAP PROJECT).

to emerge clearly and permit the delineation of some significant patterns for the study of these crucial formative phases of Near Eastern societies.

The ceramic culture found in many of these sites suggests a significant degree of continuity with local ceramic traditions, in particular the so-called Hassuna. The latter, albeit occurring in adjacent areas such as the Sinjar (Wilkinson and Tucker 1995, 38-9) and sites such as Yarim Tepe I (Merpert and Munchaev 1987) and Nineveh (Campbell Thompson and Mallowan 1933; Gut 1995), has never been detected properly in the region. Ceramics retrieved during the 2015 activities seem to confirm a Hassuna presence and may this point to a significant northwards extension of the border of Hassuna ceramic tradition. They include the full range of most common Hassuna types (thus with incised as well as with painted decorations, see Fig. 4-A), a fact that may strengthen the argument for the Tigridian origin for this kind of ware, since the Syrian Jezirah does not seem to contain the entire spectrum of Hassuna types (Bernbeck and Nieuwenhuyse 2013, 24). The Halaf seems to be well attested, with a number of sites which display the common ceramic types and decorative patterns found in particular at Tepe Gawra and Arpachiyah. Sites are rather small and seem to grow in number throughout the Neolithic, a trait that may suggest some kind of demographic increase. This same factor has been proposed as the explanation for a similar pattern in the Syrian Jezirah, although there it has been envisaged for the final part of the Halaf period, i.e. around the second half of the 6th millennium BC cal. (Nieuwenhuyse 2000, 188). Future study of the pottery collected will permit verification of whether this also holds true for the East Upper Tigris region.

The Chalcolithic offers even more substantial data, especially for the latter part of the period. With reference to the Ubaid and its genesis in the north, the data to hand cannot yet help answer the questions outlined above, but they may suggest some general trends that will need to be explored in more detail with future studies. Continuity with the preceding final ceramic Neolithic/Halaf might be confirmed by the similar numbers of sites thus far attested in both periods, although the extent of settlement continuity is still unclear. The material culture shows the classic features of the Northern Ubaid (Gavagnin et al. 2016), as this is attested at sites such as Tepe Gawra (Tobler 1950) and Arpachiyah (Mallowan and Cruikshank 1935). Some traits, such as the presence of animal motifs in the painted decorations, may strengthen the idea of a kind of ceramic cohesion with the Syrian Khabur Valley (Stein 2010: 24; Baldi forthcoming) within the wider framework of the Northern Ubaid ceramic tradition, but these are questions that require a deeper investigation of the body of data.

The late 5th and 4th millennium BC in the East Upper Tigris, that is the Late Chalcolithic – as this has been

chronologically defined on the basis of recent studies (Rothman 2001; Stein 2012, 129 Tab. 1) - offers more substantial evidence of occupation. At the same time it provides some of the most interesting data, further underlining the crucial role of the East Upper Tigris for the study of the dynamics characterising the period. With reference to the settlement pattern, this sees a veritable explosion of settled sites throughout the entire region under analysis. The reason for this marked increase in settlement is as yet unknown, but it is clear that some dramatic changes took place in regional settlement. It seems likely that these concerned the sustenance economy (e.g. increase of the surplus of staple production) that created demographic pressure and a consequent increase in newly settled sites, although this can only in part justify such a phenomenon; there must have been other reasons behind this process. Not much more can be said at the moment: an 'external' explanation (impact of new contacts with non-local societies, e.g. south Mesopotamian/Uruk settlements) can, however, apparently be excluded (Morandi Bonacossi and Iamoni 2015). The material culture and in particular the ceramics retrieved during the survey have thus far shown the almost total absence of Uruk pottery (Gavagnin et al. 2016), thus suggesting that contacts with southern sites were very limited. The pottery shows very local traits that to some extent fit very well with ceramic sequences from sites such as Tell Brak (Matthews 2003; Felli 2003) and Tell Leilan (Schwartz 1988), but in many respects the assemblage possesses distinct characteristics that seem to be entirely local. This concerns for example the scarce presence of ceramic hallmarks of the LC such as the so-called Coba bowls for the earliest period (Rothman 2002, 55; Rova 1999-2000) or the hammerhead bowls and the casseroles for the late phases of the LC (Stein 2012, 142).

It is now well known that Upper Mesopotamia experienced autonomous processes that led to the emergence of socio-economic complexity and ultimately urbanization independently of other influences, in particular from southern Mesopotamia (Stein 1999; Oates et al. 2007). This is likely to also be the case for the East Upper Tigris: early data suggest, however, that the process may have followed alternative paths. A key case study in this respect may be Tell Asingrian (Fig. 4-C). The 'Hill of Iron' (the name in Kurdish) is a c. 5 hectare site in the Navkur Plain that lies a few kilometres from the modern town of Rovia. It rises about 10 meters above the surrounding plain and shows an impressive 5th-4th millennium occupation (preceded by a likely village of the 7th-6th millennium BC and followed only by a later Middle Assyrian settlement), and promises to offer a crucial sequence for the investigation of settlement development in the region throughout the entire Chalcolithic and its possible roots in the late Neolithic period. The Asingrian data, especially if combined with the regional survey data of LoNAP, may

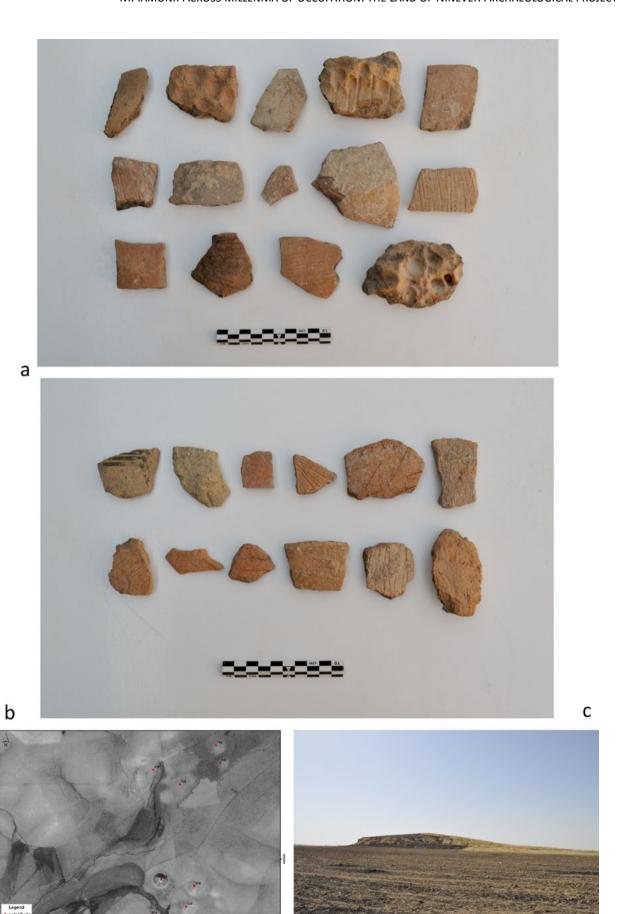


Figure 4. (a) selection of Neolithic (Hassuna) pottery collected during survey; (b) CORONA satellite image with some Neolithic sites (c) a view from the north of Asingrian.

thus furnish key evidence to decode the mechanisms that have triggered such processes in the East Upper Tigris. At the same time this extensive body of data from survey and excavation will help us to understand the nature of such processes, their origins and their interdependence with the surrounding territory and local resources. Last but not least, it will permit a better evaluation of the level of interaction with the neighbouring regions and a better comprehension in particular of the apparent absence or very limited presence of contacts with South Mesopotamia, where similar phenomena occurred at the same time. The HAFUS project has been developed to fill all these gaps. Furthermore, by means of survey and excavation data from Asingrian in the following seasons, HAFUS will verify the occurrence of processes in the local Neolithic and Chalcolithic dynamics of the EUT area that may have broader relevance, so as to open up the prehistoric and protohistoric archaeological investigation of Upper Mesopotamia towards new - and perhaps unexpected – lines of research.

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The Iraqi Institute: Education for Archaeological Research and Conservation

Jessica Johnson, Abdullah Khorsheed and Brian Michael Lione

Introduction

The Iraqi Institute for the Conservation of Antiquities and Heritage (referred to in short as the Iraqi Institute, or IICAH) is an important institution in the establishment of the Kurdistan Region of Iraq as a center of modern archaeological research of the highest quality and importance. This paper describes the basic history and the long-term mission of the Iraqi Institute. At its core is the goal of a obtaining a sustainable, capacity-building Institute – and not just a place where short-term training occurs.

There can be no significant preservation of the wealth of ancient and historic material culture in Iraq unless there are people who are educated in current theoretical approaches, and skilled in practical application of those theories. There can be no long-term, significant support of foreign and local research without people who understand how that research is organized and framed. There can be no long-term political strategy for saving heritage in the face of conflict, development and disinterest in the past without people who have the knowledge to take and adapt international ideas and strategies that have worked elsewhere and frame them for the needs and challenges of Iraq. New experience and knowledge brought by the Iraqi Institute helps Iraqi people begin to recover from continuing, horrific destruction of their communities and the physical remnants of Iraq's important history.

History

The Iraqi Institute was established by the United States Department of State via a Targeted Development Program Grant issued and administered by the US Embassy in Baghdad from 2008-2011. Under this grant, a US-based non-governmental organization worked with Iraqi and Kurdistan Regional Government (KRG) representatives to establish the Institute in Erbil, the capital of the Kurdistan Region of Iraq. Work began in Iraq in earnest in early 2009, and by the fall of that year, the first classes in object and artifact conservation were being delivered to a small class of eight Iraqi heritage professionals.

These first classes were taught in a rented house in Ainkawa, a suburb of Erbil, while renovations were underway to transform the former Central Library building in Erbil into a modern teaching and residential facility. The Institute and the current building opened in March 2010 (Fig. 1).

Since January 2011, the Iraqi Institute has been managed by a board of five Iraqis – three who work for the State Board of Antiquities and Heritage; and two, including the Director, Dr. Abdullah Khorsheed, who work for the KRG on the archaeology faculty at Salahaddin University. During the management handover to the Iraqi board in 2011, academic partners from the original grant worked to establish an Advisory Council. This body includes 20 Iraqi and international experts with decades of experience in working in the Government of Iraq, the KRG and in the academic, management and education sectors of international heritage conservation.

These advisors and others oversee the development of three basic areas of conservation education that have been taught at the Institute since 2009 and managed by the University of Delaware since 2011. All courses are taught by a series of Visiting Lecturers, outstanding scholars and practitioners with decades of experience in their fields who teach from one to four weeks as part of larger 'modules' of education which last about ten weeks (Johnson and Lione 2014). Other organizations and governments have offered shorter-term training opportunities since 2011.

Participants in the courses are generally drawn from the cadre of heritage specialists in the employ of the SBAH or the KRG (a few from private museums have also attended). The participant pool to date has included hundreds of Iraqi men and women from all 18 provinces, representing a mix of ethnic and religious backgrounds.

Programs at the Iraqi Institute

The Archaeological Site Preservation Program (ASP) began in 2013. The key topics in the ASP course include strategies for identification, evaluation, prioritization, and stabilization of archaeological sites. The course has classroom and field components to ensure an equal balance of theoretical and practical learning experiences.

¹ See http://www.artcons.udel.edu/public-outreach/iraq-institute for a more complete description of University of Delaware programs at the Iraqi Institute and a listing of the current Advisory Council.



FIGURE 1. IRAQI INSTITUTE FOR THE CONSERVATION OF ANTIQUITIES AND HERITAGE.

Dr. Katharyn Hanson served as the Program Director of this course.

Throughout the ASP Course, students learn about the theory of archaeological survey, methods to identify and evaluate sites, applications in remote sensing, GPS and GIS techniques, and how to employ them in support of field work. This technical approach also includes methods to understand and apply documentation skills to photograph artifacts and sites. The main goal of the ASP course is to provide students with knowledge that they can use to preserve archaeological sites. To do this, students learn about the types of threats to archaeological sites; ways to identify, classify and prioritize threats to sites; and approaches and techniques to physically protect and preserve sites. Students also practice ways to communicate ideas and how to organize and present data on site preservation priorities to support decision making processes and influence management decisions.

The Collections Care and Conservation program (CCC) is the oldest and largest of the courses at the Institute. The CCC teaches people how to care for artifacts in museums (Cassman *et. al.* 2010). The focus to date has been on exhibit-quality artifacts; recent additions to the

coursework include the care of what are often termed 'repository' or 'archaeological archive' collections. Repository collections include the often less beautiful, but research important, collections and archives that archaeological projects create during excavation and research. Jessica Johnson, in addition to her role as Academic Director, served as the CCC Program Director.

Two specific topics always included in the Collections Care and Conservation Program courses are preservation of human remains and the lifting of very fragile artifacts. In early planning courses SBAH colleagues specifically asked that students be trained in the recovery and care of human remains because they saw this as an area where there was little expertise in Iraq.

Whenever possible, CCC courses collaborate with local museums (such as the Slemani Museum and the Erbil Civilizations Museum), the KRG antiquities departments, and more recently new excavations, so that student participants can work on real artifacts – and these partners get information or materials that can be used for their own research projects. The Institute also has permission to work on artifacts owned by SBAH that are on exhibit in museums in the Kurdistan Region of Iraq.

The Architectural and Site Conservation (ASC) course focuses on the conservation of built heritage – buildings, monuments, and structures. The ASC course provides students with an education in the theoretical and practical aspects of preserving built heritage, from legal frameworks to field work, and everything in between. Working with the support of management at the High Commission for the Erbil Citadel Revitalization (HCECR), students are able to learn and practice new skills using the architectural resources on the Citadel, a newly-inscribed World Heritage Site. Prior to his transition to Executive Director of the Institute, Brian Michael Lione was the ASC Program Director.

The ASC course is split into two parts. In the first part, students receive instruction in the history of architectural conservation, as well as the legal and policy frameworks for international conservation work. Students learn how to conduct photographic documentation of buildings to record their condition and document conservation efforts. Students also learn how to document built heritage using measured drawings and historical research. The ASC students have to become computer literate, and technology savvy very quickly. In the first module they progress from hand measurement and survey to electronic documentation using electronic distance measurement (Total Station) equipment and photogrammetry and computer aided drafting (CAD) software.

The second part of the ASC Course introduces students to the concepts of basic stabilization treatments for historic buildings and structures, and the concepts of comprehensive site management for heritage sites. Students also gain an understanding of the structures, systems, and materials of traditional architecture. They are taught to identify agents of deterioration in materials, and causes of structural failure. Students learn emergency stabilization techniques and methods to prevent further damage and deterioration through site protection efforts. Comprehensive site management strategies are discussed as the final topic of the module, pulling together all the other ideas and lessons from the whole of the ASC Course.

Common Aspects of All Courses

These courses teach theoretical approaches and international standards that allow Iraqi heritage specialists to understand what is possible. However, courses are designed to teach methods and techniques that are realistic in local contexts using materials and equipment readily available in Iraq. Technology plays an important role in all programs, but courses also teach 'notech' approaches. For example: the ASP course teaches GPS use in documenting and managing archaeological sites. However, in some parts of Iraq it may be illegal to use a GPS device, much less own one. So, the course is designed to teach tried-and-true approaches to map

reading, and compass use. This example – and others like it in the ASC and CCC courses – illustrates the sort of skills that can be easily shared with others in the workplace when students return to their jobs back home.

A solid understanding of the English language is another important skill taught at the Iraqi Institute. Most of the Institute courses include English language training; students have 60 to 90 minutes of language instruction each day they are in class. In this way, student participants are encouraged to continue their learning and improve their skills through interaction with specialized literature, the internet, and in conferences and workshops around the globe. An ability in English also facilitates connections between Iraqi Institute graduates and the international community of academics and practitioners in their field.

The University of Delaware programs also work with a small group of Institute graduates each year to develop their skills as teaching assistants and assistant lecturers. These Iraqis – termed Master Trainers – are already proving their abilities. They support all the Visiting Lecturers that come to work with the Institute and are beginning to teach in the laboratory and classroom. In time, they will take over the management of the programs (Johnson and Lione 2014; Johnson *et al.* 2014).

Other programs at the Iraqi Institute

Since the transition to Iraqi leadership, other programs have used the Iraqi Institute facilities (Table 1). These opportunities – often short, technical courses – have been arranged by governments, academic organizations and non-profits. Working through the Director of the Institute, the course directors schedule their efforts and request a number of student participants. Each course pays a standard set of 'usage fees' that are charged for classroom use, translators, dormitory use, etc.

This broad range of projects at the Institute gives the staff wider experience while providing students with more opportunities to interact with other archaeologists and heritage professionals from around the world.

In January and April 2014, the University of Arizona (a partnering organization on the Advisory Council) taught a course titled 'Collection Management Systems for Archaeology: Repositories, Inventories, Archives and Data Management'. This course was developed by Arizona and others to prepare Iraqi heritage managers to better prepare for and manage a response to the recent expansion of archaeological work in Kurdistan and throughout Iraq. Material recovered and produced in new excavations threatens to overwhelm museums and antiquities directorates as artifacts, samples, maps, photographs, and many new kinds of data are collected. The University of Arizona course shared an approach

Organization	Project Description	Year
International Commission on Missing Persons (ICMP)	Training programs	2011
Superior Institute for Conservation and Restoration, Italy	Training programs	2011-2013
University of Athens, Greece	Archaeological research	2011
Adam Mickiewicz University of Poznań and Warsaw University, Poland	Archaeological field school	2012
Technical University of Berlin, Germany	Architectural conservation	2012
World Monuments Fund	Training programs	2013-2014
Leiden and Leipzig Universities	Archaeological research	2013
University of Arizona	Training program	2014
Boston University	Training program	2014

TABLE 1. OTHER PROGRAMS AT THE IRAQI INSTITUTE.

to management of archaeological collections that is used in North America and Europe, one that considers archaeological research collections as archives and not just as a set of objects. It also produced several training videos with English, Arabic and Kurdish versions that describe some of the techniques and ideas from the course that make the information more widely available.²

Conclusion

Beyond learning about heritage preservation and archaeology, the Institute is a place where people come from around Iraq – from every one of the 18 provinces – and become friends. Through a wide variety of activities, students learn more about their country's heritage and build strong bonds with each other that continue when they return to their homes and professions. The resultant alumni network is another way that the Institute is helping to rebuild a strong community of archaeologists and other professionals in the country.

With the invasion of the Islamic State in Syria and Iraq (ISIS) in 2014, plans to begin revised programs were put on hold. However, as of this writing, new and expanded programs are being planned with a new international collaborations and it is clear programs will return in 2015. Despite these recent challenges, the Iraqi Institute – and Kurdistan – remains a safe place where people from around the world can come together and learn from each other about archaeology and heritage. The friendships that are made, and the community of students and teachers that is developing at the Institute, will go a long way to rebuild and restore the expertise that is needed to protect Iraq's heritage, to build new museums and parks to educate all Iraqi people about their heritage; and of course, to work with the international archaeological community in expanding the knowledge and understanding of Mesopotamia.

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² Available at: http://capla.arizona.edu/management-museum-collections.

Two seasons of excavations at Kunara (Upper Tanjaro): An Early and Middle Bronze Age city

Christine Kepinski and Aline Tenu

General presentation

The site of Kunara is located approximately 5 km south-west of Suleymaniah (Fig. 1). It was chosen following a survey which we undertook in 2011 on the Upper Tanjaro (Kepinski 2014). In 2012 and 2013, two seasons of excavations took place in collaboration with Kamal Rasheed Rahim, director of the Department of Antiquities of Suleymaniah.

During these two seasons, we were assisted by three members of the Department of Antiquities of Suleymaniah, Rebin Mohammed Rashid, Sami Jamal Hama and Perween Yasser, as well as by a PhD student from the University of Paris I, Ari Khaleel Kamil.

The choice of Kunara: main reasons

On the basis of the sherds collected during the survey, we assumed Kunara was occupied from the Neolithic to the Bronze Age, but as the oldest levels, Neolithic (Hassuna) and Chalcolithic, are not easily accessible, we selected two other sites, Bingird and Kalespi, which lie in the immediate vicinity of Kunara, to allow for completing the sequence from Kunara (Fig. 1). This research, carried out under the contract with the Department of Antiquities of Suleymaniah, should provide clear pottery sequences associated with radiocarbon dates. It will help us to improve our first evaluation and to deliver a more accurate assessment of the ancient settlements in this valley.

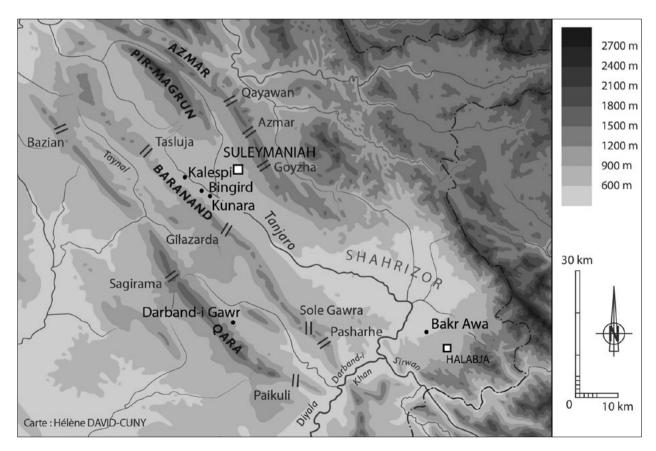


FIGURE 1. MAP OF THE TANJARO VALLEY.



FIGURE 2. KUNARA, GENERAL VIEW.

We selected Kunara because of its dating, but also because of its size, which reaches about nine ha. It is a major settlement of this landlocked part of the valley where most of the sites are less than one hectare, while a dozen of them are between one to seven hectares. Kunara includes two main hills: to the west, an upper city at least 20 m high, and to the east, a lower city (Fig. 2). Between them, a modern road was dug into a depression and emphasizes it. It partly cuts a natural hill on top of which extends the lower town. Sherds from the Chalcolithic and the Neolithic periods were concentrated at the bottom of the upper town, whereas in the lower town, the sherds we collected are mainly dated to the Bronze Age.

Excavations: main results

Before excavations started, a geophysical survey was conducted in the lower town (Kepinski *et al.*, 2015). It reveals the presence of a monumental building, more than 60 m long and 30 m wide (Fig. 3). The building is bordered to the east by several parallel lines which could indicate rows of rooms around two or three courtyards.

Elsewhere data are more disturbed, but to the south black dots may reveal a structure either burnt or one made of baked bricks. To the north, another building with a different orientation appears clearly on the magnetic map: it probably belongs to a more recent level.

Four areas were opened up for excavation, one on the upper town, Area A, a stratigraphic trench and three on the lower town, Areas B, C and D (Fig. 4). Area B includes a 10 m square and several trenches. It is intended to excavate the monumental building revealed

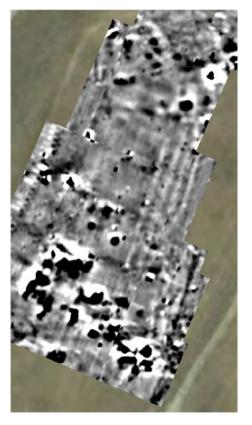


FIGURE 3. KUNARA, GEOPHYSICAL SURVEY.

by the magnetic image. Area C is an extensive excavation south of Area B with five 10 m wide squares. In 2013, a new trench, Area, D, was opened with two step trenches,

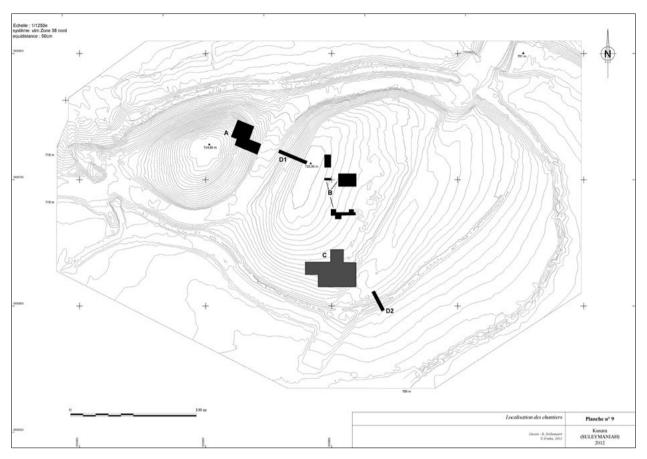


FIGURE 4. KUNARA, AREAS IMPLANTATION.

one to the west and one to the south, laid out in order to establish whether or not Kunara was surrounded by a defensive system and also to study the stratigraphic relations between the upper and the lower town.

The four Areas A, B, C and D have yielded remains which can be ascribed to three main periods, each one including several phases. This first stratigraphy of the site is of course preliminary and needs to be confirmed and refined by future excavations. The sherds retrieved from the excavations, as well as three radiocarbon dates for Kunara II and Kunara III, indicate the possible sequence:

Kunara I	2000-1900 BC	Middle Bronze	Isin Larsa
Kunara II	2200-2000 BC	Early Bronze	Ur III
Kunara III	2350-2200 BC	Early Bronze	Akkad

Kunara I (2000-1900 BC)

Kunara I is mostly documented in Area C. It includes several fragmentary buildings on both sides of a street (Fig. 5). To the west we identified parts of different buildings including a buttressed façade and the central space of a big building. This last displays a porch and two entrances, one of which is preceded by a semi-circular pebble threshold (Fig. 5).

In area B, several walls just below the surface could also have belonged to that period; they are eroded and do not yet form any clear plan. In area D2, a floor could be dated to Middle Bronze age.

Kunara II (2200-2000 BC)

Kunara II is by far the best attested period at the site. Our finds give the picture of a small town spread over a two distinct elevations. In the lower town, areas B and C convey a concentration of imposing buildings including a monumental one, though their contemporaneity still has to be confirmed. An enclosure wall may have surrounded the top of the lower town, but this proposal also remains hypothetical. A staircase – quite eroded, but its plan is very clear – gave access to a paved passage, and then



FIGURE 5. KUNARA, AREA C.

to the upper quarter. Beside this gateway, we started to uncover several open spaces and a large building with walls 1.40 m wide.

In area B, Kunara II corresponds to the monumental building, we started to excavate in four different sectors. Two parallels walls seen on the magnetic maps were partly uncovered. The easternmost one was at least 35m long, and we excavated in 2013 its southern corner. Along its eastern facing, a thick preparation with pebbles (Fig. 6), 70 cm wide, provides rain removal and waterproofness.

All the walls are imposing, between 1.20 m to 1.70 m thick; they are carefully built with stone foundations and a superstructure made of uneven layers of *pisé*. The *pisé* has most of the time collapsed but one wall is preserved up to 1.80 m high. Actually we were able to identify several techniques, real *pisé* made with earth carefully prepared with minerals and rammed inside a shuttering made of planks. In *pisé*, layers remain discernible, but sometimes constructions used a different kind of earth, including white calcareous nodules, and a different building technique. In that case, no layer can be seen in a very homogeneous earth massif. Generally speaking, *pisé* walls themselves can not be easily distinguished from the mass of fallen *pisé* of the superstructures of the buildings.

The large buildings of Area B and C, gathered on top of the lower town, were surrounded by domestic dwellings, some elements of which were excavated in Area D1 and D2. Their walls are thinner, about 50 cm wide, and their floors always prepared with pebbles. One entrance was even covered with small baked bricks. *Tannurs* and storage jars were associated with this quarter.

In Area A, at the top of the upper town, we uncovered another monumental building built on a huge sand platform 4 m high. Two staircases uncovered on the slope, the contemporaneity of which is not clear, and a landing, gave access to the building. The staircases, 7 m long and 0.90 m wide, were built with stone foundations and earth steps. At the top and around the building, the surface was flattened down by some stones. At the foot, a passageway was made between the platform and the rather thin wall (only 0.90 m in width) which constituted its enclosure or retaining wall.

At the top of the platform, the monumental building itself is built with large walls, 2.60 m wide. The topography suggests that it would have covered completely the upper town and reached about 70 m long by 30m wide. We uncovered partly a large space that should have been a courtyard and a room situated to the north (Fig. 7). In both we excavated two distinct plastered floors. A terracotta water pipe, more than 10 m long, was laid



FIGURE 6. KUNARA, AREA B.



FIGURE 7. KUNARA, AREA A.

under the most recent one, and ran from the courtyard to the outside of the building.

The northern wall of the courtyard shows very striking building techniques. It is built with layers of *pisé* interrupted each 60 cm by a layer of ten rectangular mud

bricks (42 x 21 x 6 cm) covered by diluted bitumen. Bricks are prepared with gravel and are laid in stretchers bond. Some crushed bones were mixed in with the mortar. In the masonry a channel 5 cm deep and 19 cm wide might be the imprint of the shuttering used during the erection of the wall.

Kunara III (2350-2200 BC)

Remains of Kunara III have been recognized in all areas excavated so far. The monumental building of Area A, level II, is built on top of another one which corresponds to Kunara III. Its walls are thinner; however the outside wall is reinforced by buttresses and measures with them 1.50 m wide. Some minor modifications were observed between the two occupation phases of the building, also characterized by two different floors, carefully prepared with pebbles. Under the earliest, we excavated pipes covered with flat stones. A fine cleaning has attested that the floors were laid before walls were erected. The buttress wall thus lies on the layer of pebbles without any foundations.

In Area D1, the northern part of a small building with thin walls (maximum 0.85 m in thickness) made of irregular blocks was surrounded by a lane (Fig. 8). To the west another wall was uncovered but its surface exposure is too limited to know to which kind of construction, whether another building or an enclosure wall, it may have belonged.

In Area B, we discovered, below the monumental building of Kunara II, an older wall, covered by a pebble layer associated with Kunara II. Its thickness (ca. 1.60 m) but also its different orientation suggest a monumental

building preceded the edifice visible on the magnetic map.

In Area C, several rooms, whose walls 1m wide were built with mud bricks on stone foundations probably belong to that period too. Their state of preservation is exceptional, because the vault which covered one of them was still in its original position. A sounding has revealed storage jars broken in situ.

Finds

Generally speaking the ceramic assemblages seem to show a great continuity between level II and level I. There are numerous parallels with sites from the Diyala region, such as Yelkhi (Bergamini 2002-3) or Tell Sabra (Tünca 1987). This assemblage also shows good comparisons with material from southern Mesopotamian sites, such as Nippur (McCown *et al.* 1967; McMahon 2006), Tell ed Der (Gasche in Meyer 1971, 29-51; 1978, 57-131) or Uruk (Van Ess 1988). By contrast, ceramics from Kunara III differ from Kunara II and display a number of distinct wares and shapes.

As for the small finds, apart from stone tools, flints, grinders and buffers, we found several carnelian beads, one with incisions, rare obsidian flints, a bronze pendant, an arrowhead from a type known during the Akkadian

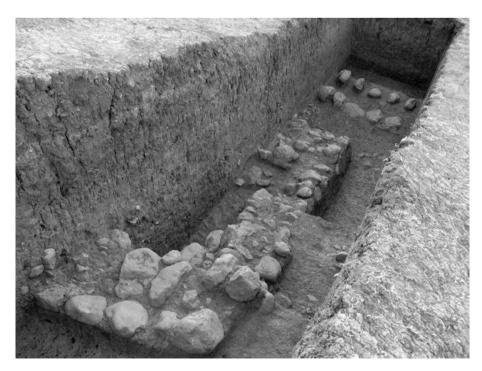


FIGURE 8. KUNARA, AREA D1.

period (Fig. 9), several bronze pins and needles, and a cylinder seal found in the monumental building of area B (Fig. 10) displaying a religious scene with two worshippers and a goddess, a crescent moon and an eight-pointed star.



FIGURE 9. KUNARA, ARROWHEAD.



FIGURE 10. KUNARA, CYLINDER SEAL.

Conclusion

Our finds conjure up the image of a small city with a number of monumental buildings, partly fortified. Hints of domestic architecture have been uncovered, investigation of which will be included in our program for the next season. Some parts of the city were possibly surrounded by an enclosure wall but no strong defensive system has been discovered.

It is argued that Kunara would belong to the land of Lullubum but this hypothesis will have to be confirmed in the future (Kepinski *et al.*, *forthcoming*). In the 'Sargon Geography', a scholarly treatise dealing with the conquests of the Akkadian empire composed in the Neo-Assyrian period, it is written that the Lullubi had no skills with building techniques. When one sees these monumental edifices one can at least attest that their building materials are quite unusual and innovative.

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Excavations of the Chalcolithic Occupations at Salat Tepe on the Upper Tigris, Southeastern Anatolia

Tatsundo Koizumi, Minoru Yoneda, Shigeru Ітон and Koichi Ковауаsні

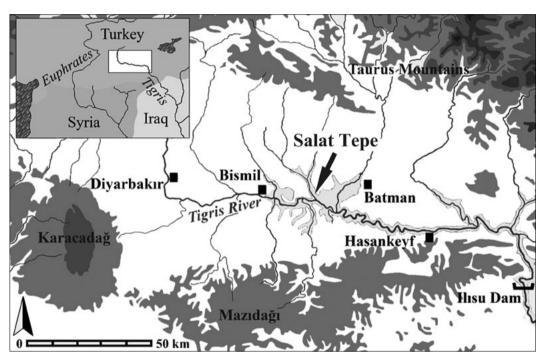


FIGURE 1. LOCATION OF SALAT TEPE.

Salat Tepe is located on the left bank of Salat River, a tributary of the upper Tigris in southeastern Turkey (Fig. 1). The site measures ca. 180 m in diameter and ca. 24 m in height showing a silhouette of trapezoid shape. After 2000 Tuba Ökse¹ and Ahmet Görmüş² conducted the archaeological excavations as the Ilisu Baraji-Salat Tepe Kurtarma Kazisi Projesi (Ökse 2004; Ökse *et al.* 2006). They excavated several occupations accompanied with mud-brick constructions of the Middle Bronze to Early Iron Ages on the Summit Trench as well as those of the Chalcolithic in the Step Trench on the southern slope of the mound.

All the excavated grids were laid out as ten by ten meter squares (I12, H12, G12, F12 and E12), further divided in the Step Trench into a northern and a southern part

measuring five by ten meters (I12/N and I12/S). The bedrock was found at 528 to 529 m above sea level in Trenches F12/S and E12 (Fig. 2). Painted Half sherds were found but no actual occupation of this period was uncovered. However a huge volume of Ubaid and Late Chalcolithic sherds were recovered as well as the related mud brick architectures with plenty of pits in the Step Trench.

Since the 2010 season the author joined this project, charged with excavating the Step Trench, and every season several Turkish students helped the excavations in the field and in the works at the house. At first we concentrated on excavating Trenches I12 and H12, and then expanded into Trenches G12 and F12 (Ökse *et al.* 2012, 2013), uncovering several constructions made of mud brick dating to the Ubaid to Late Chalcolithic periods.

Professor, Dr, Kocaeli University, Turkey.

² Lecturer, Mustafa Kemal University, Turkey.



FIGURE 2. KITE PHOTO OF EXCAVATED TRENCHES ON SALAT TEPE, VIEWED FROM THE SOUTH.

Through all the seasons, we intended to establish a tentatively chronological sequence from the Early Ubaid to the Late Chalcolithic or the Uruk-related periods. In this brief paper we submit a preliminary report on some of the remarkable results of the 2010 to 2012 seasons in the Step Trench at Salat Tepe.

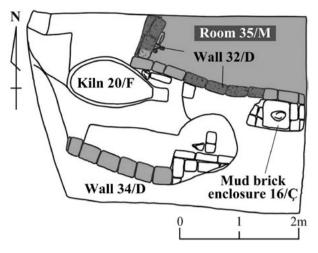
Trench I12

2010 and 2011 Seasons

In the first season we started to remove several pits and mud brick walls of periods later than the Late Chalcolithic in Trench I12/N. Under the subsurface there were found mud brick walls 32/D and 34/D. Wall 32/D was realized to extend in a NW-SE direction and might be connected with both the mud brick enclosure 16/Ç and the mud brick wall just northeast of a kiln 20/F which had been uncovered in previous seasons (Fig. 3). We dug an enclosure of the mud brick walls, Room 35/M, and found that there were preserved burned clay blocks 1 to 3 cm in size and larger sherds in slightly upright

positions. Using a single mud brick line as the enclosure of a pottery workshop is popular in Northern Syria and Mesopotamia (Koizumi *et al.* 2001). It is hypothetically assumed, then, that the architectural unit composed of Room 35/M and Kiln 20/F in Trench I12 might have been used as a workshop for pottery production. Most of the sherds werere covered from a couple of loci, fills probably related to Room 35/M, are the Late Chalcolithic period (Fig. 4).

In the next season, 2011, just below an altitude of 543.00 m we discovered some features and small finds. From investigating the western part of Trench I12/N, especially around Wall 36/D exposed at the beginning of the season and Wall 44/D preserved at the eastern end of the previous trench in Trench I12/N, we recognized the partly preserved floor cut by pits 23/Ç, 26/Ç and 43/Ç (Fig. 5). The floor remains with fills were observed mainly north of Wall 44/D as well as around Wall 36/D. On the floor and in the fill northeast of Wall 44/D there were found flint chipped stones including long blades I12/0140/N/02 (Fig. 6a), a stone axe



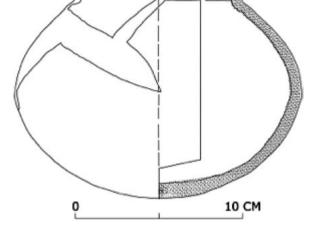


Figure 3. Plan of architecture in Trench I12 (the 2010 season).

FIGURE 4. NEARLY COMPLETE GLOBULAR JAR FROM THE FILL OF ROOM 35/M IN TRENCH I12 (2010).

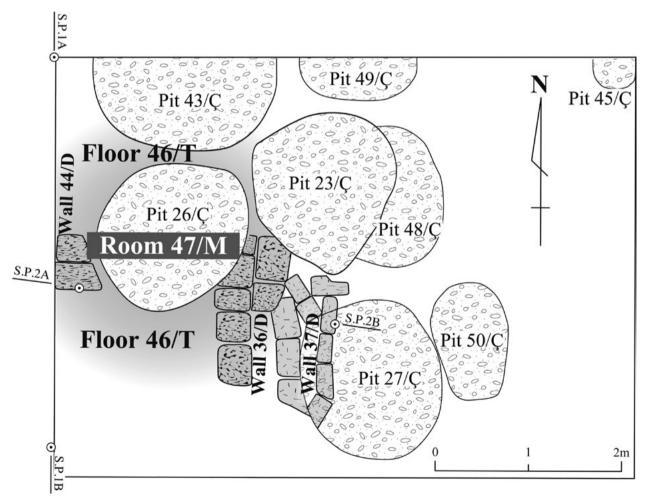


FIGURE 5. FLOOR 46/T OF ROOM 47/M CUT BY PIT 26/Ç IN TRENCH I12 (2001).

I12/0140/ R/03 (Fig. 6b), a grinding stone and plenty of sherds. Therefore, the narrowly remained context

between Walls 44/D and 36/D is designated as Floor 46/T, ca. 542.80 m above sea level, which might have



FIGURE 6. REMARKABLE ARTEFACTS FROM FLOOR 46/T IN TRENCH I12 (2011): (A) 'CANAANEAN BLADE'; (B) STONE AXE; (C) 'GRAY BURNISHED WARE'.

been related to mud brick made Room 47/M composed of these walls.

The flint long blades found in Floor 46/T could be broken pieces of 'Canaanean Blades' popular during the fourth to third millennia BC (Rosen 1997, 59; Anderson et al. 2004, 88). At the same time we uncovered several sherds of 'Grey Burnished Ware', one of which is a 'jar with oval body' or 'globular jar with round base' (Fig. 6c). It might be estimated that Floor 46/T of Room 47/M in Trench I12 is ascribed to the Post-Ubaid period,3 an earlier phase of the Late Chalcolithic period (Akkermans 1988b; Koizumi 1993; Koizumi et al. 2001). Because such other artefacts as one broken stone axe, a piece of multi-perforated pottery, sherds of coarse ware such as cooking pots and plenty of obsidian flakes were discovered on the floor, the context of Room 47/M might have had an everyday life function rather than a kind of special workshop like pottery production.

Below an altitude of ca. 542.40 m we recognized that top end lines of Walls 51/D and 52/D partly preserved in the western part of Trench I12/N, and that the northern extension of 51/D up to the northern wall of the trench was parallel to that of Wall 54/D, not joined (Fig. 7). At

the same time we observed that Wall 54/D extending southward is actually connected with Wall 52/D. Thus, it could be designated that there is a northwestern compartment surrounded by Wall 51/D and a western extended wall as Room 56/M; the southwestern part consisting of 51/D and the western extension as Room 57/M; the compartment in the middle of the trench composed of Walls 52/D and 54/D as Room 58/M. All of Rooms 56/M, 57/M and 58/M would have been built within only a short term in construction process, as both the baseline levels of 51/D and 52/D were located nearly around 542.00 m. As reddish colour pigments were present on the surface of the spindle whorl (I12/0176/P/02) from the northeastern part of Room 58/M, the building complex composed of Rooms 56/M, 57/M and 58/M in Trench I12 might have been functioned as workshop.

2012 Season

In the 2012 season, we excavated the building complex consisting of Rooms 56/M, 57/M and 58/M in Trench I12/N which had been partly uncovered until the last season, and identified at least two occupied levels: Floor 71/T in Room 58/M (Fig. 7) and Floor 81/T in Room 84/M (Fig. 8). Although the latter complex might have been arranged in nearly the same area as the former, the location of mud brick walls forming each room actually differed. According to stratigraphical observation on section of the trench walls, Room 58/M, consisting of Walls 52/D and 54/D, around

³ The most remarkable attribute of the manufacturing technique in the Post-Ubaid period is a development of a slow turning whee: very fine parallel striations equal to hairline restricted on rim to upper body without any visible finger impressions for clay joints on the upper interior. This characteristic is different from regularly narrow or hairline-like fine striations in the Terminal Ubaid period, which marks first appearance of the new technique with slow turning wheel.

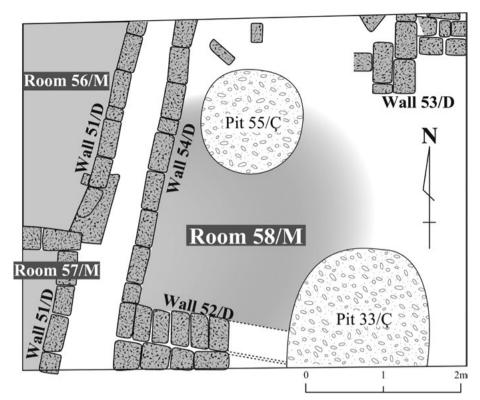


FIGURE 7. PLAN OF ROOMS 56/M, 57/M AND 58/M IN TRENCH I12 (2011).

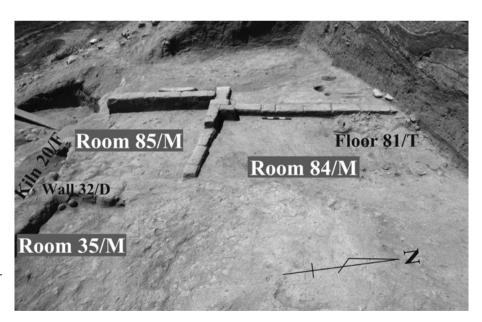


FIGURE 8. FLOORS 81/T AND 82/T OF ROOMS 84/M AND 85/M IN TRENCH 112 (2012).

542.00 m above sea level, was located above Room 84 of Walls 80/D and 83/D, ca. 541.75 m, which could be connected with Room 35/M surrounded by Wall

32/D uncovered in the 2010 season. It is estimated, moreover, that Room 35/M might have been connected to Kiln 20/F, because small clay blocks and pieces of

mud bricks were packed behind Wall 32/D, and then the kiln wall was constructed.

From Room 35/M of Trench I12 in the 2010 season we had already discovered sherds of the Post-Ubaid period like 'Grey Burnished Ware', and burned clay blocks, ca. 5 cm in diameter, which may have resulted from firing manufacturing processes at the workshop. In the 2012 season we uncovered pieces of reddish brown (10R5/4) pigment on Floor 81/T in the northwestern part of Room 84/M, so that the floor could have functioned as a workshop handling the pigments for paint or wash in pottery production. Additionally, a piece of a clay ring scraper tool for the surface treatment on pottery was discovered in the fills of Room 35/M, similar to the pottery workshop in Levels 6 - 5 of Sector B at Tell Kosak Shamali (Nishiaki et al. 1999, Fig. 17. 6; Koizumi et al. 2001, 135). Thus, the evidence of pigments and pottery-making tool confirms the above hypothesis that the building complex made up of Rooms 35/M, 84/M, 85/M and Kiln 20/F was used as a workshop of pottery production.

Investigating stratum under Locus I12-165, the south of Wall 34/D in Trench I12/S, we also excavated Floor 65/T of Room 96/M, at altitude of ca. 540.00 m, as hard surface of orange colour with Pits 67/Ç, 68/Ç, 69/Ç and 70/Ç (Fig. 9). On the eastern wall of the trench we recognized that Kiln 66/F on Floor 65/T was composed both of mud bricks in the north and south ends, and of unbaked clay blocks depressed over burned clays between the end

bricks, which could indicate a kind of cover falling down on the floor. The floor of 65/T seemed to have been used as a kind of workshop, partly because of the hard surface burned into light orange colour.

Trench H12

As well as the excavations of Trench I12 in the 2010 season we began to excavate Trench H12/N. This trench is located on the southern side of the above trench. We dug the fills of the enclosed space between mud brick Walls 10/D and 49/D as Room 53/M (cf. Fig. 12). There were alternating compact layers of fine light-colored clays (10YR6/2) and similar ones including slight amounts of ash (2.5Y6/2). The former mainly contained small sherds and stones of about 5 cm in diameter, the latter plenty of carbonized and burned particles of less than 2 mm in diameter. Both of these deposits showed that there had been scattered obsidian flakes and larger flint ones. Among these deposits we discovered a wellpreserved Floor 57/T, around 537.50 m above sea level, just under Floor 56/T with three sub-divided levels. Both the floors displayed concentrations of artifacts such as sherds, lithics, bones and stones.

On the northwestern side of Floor 57/T, it was recognized, remarkably, that lots of sherds had been paved in an oval area with a slightly shallow depression, and that the surface seemed to have been fired at a low temperature. This structure appears to have been used as hearth or oven for daily life cooking. We revealed

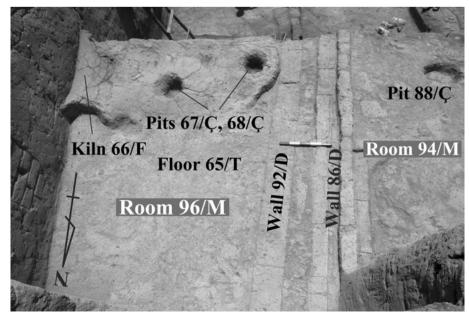


FIGURE 9. KILN 66/F AND PITS 67/Ç, 68/Ç ON FLOOR 65/T IN TRENCH 112 (2012).

that the edges of Hearth 58/F was slightly sloped as a plan of shallow pit, although the northern end was not uncovered due to limit of the trench, which was going to be excavated in the 2012 season. Due to the additional evidence of such household utensils as pieces of coarse ware and perforated vessels, spindle wheels and an axe in the fill and floor loci, Room 53/M might have been used in residential context as a part of an ordinary house. Sherds from the Floor 57/T and Hearth 58/F are mostly ascribed to the Late to Terminal Ubaid periods according to observations on techniques of the pottery production.

Two years later, in 2012, in order to clarify the northward extension of the Late Ubaid house, we dug the northeastern corner of Trench H12. Soon after removing the subsurface we discovered the upper end line of a grave 64/G, at an altitude of ca. 538.80 m. The grave, made up of mud bricks, had an infant burial

accompanied with more than 2500 beads, most of which are whitish and blue to blackish stones (Fig. 10). This grave was the first identified example of the Chalcolithic period at Salat Tepe. The plan of Grave 64/G looks like the Ubaidian standard type, mud brick wall and shaft behind it, showing the subterranean structure with mud brick wall and shaft on the southern side (Fig. 11). It seems an exceptional example comparing to the standard Ubaidian grave uncovered at Tell Kashkashok II in the northeastern Syria where mud brick walls and shafts are commonly located on the northern side (Koizumi 1991).

After removing thick layers of ash and debris under the Ubaid grave in Trench H12/N, we excavated the northern extension of the Ubaidian house that had been partly uncovered in the 2010 season. The total building complex was identified as 'Ubaidian Tripartite



FIGURE 10. GRAVE 64/G IN TRENCH H12 (2012).

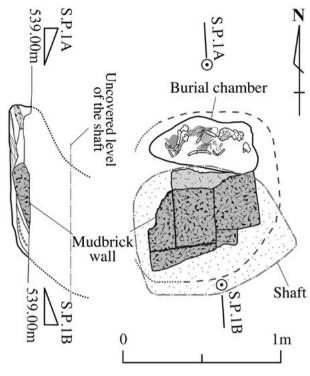


FIGURE 11. PLAN AND SECTION OF GRAVE 64/G I N TRENCH H12 (2012).

Plan' made up of Rooms 53/M, 68/M, 69/M and 72/M, around 537.10 m above sea level (Figs. 12, 13). The northern extension of the building complex was not to be excavated due to the limit of trench, and the western unit had been undermined in the 2008 season. Although not all the architectures was well preserved, we might estimate another symmetrical unit in the western area of the building complex. The 'Ubaidian Tripartite Plan' complex consisting of the centre and eastern units with western one might have functioned as a residence.

We recognized that the middle part of Walls 49/D and 76/D, connected to Floor 57/T and Hearth 58/F in the centre unit and the floor of Rooms 68/M and 72/M in the eastern unit respectively, consists of tauf or mud blocks with a few mud bricks in about 60 cm height wall, ca. 537.00 m above sea level at the baseline. On a section through the two units, the earlier floor, ca. 537.10 m, above the baseline of the mud brick walls related to Rooms 68/M, 69/M and 72/M of the eastern unit is located below the level of Floor 57/T and Hearth 58/F in Room 53/M of the centre unit, at altitude of ca. 537.50 m. Thus, the eastern unit would have been constructed earlier, and then the centre and western units joined to the former.

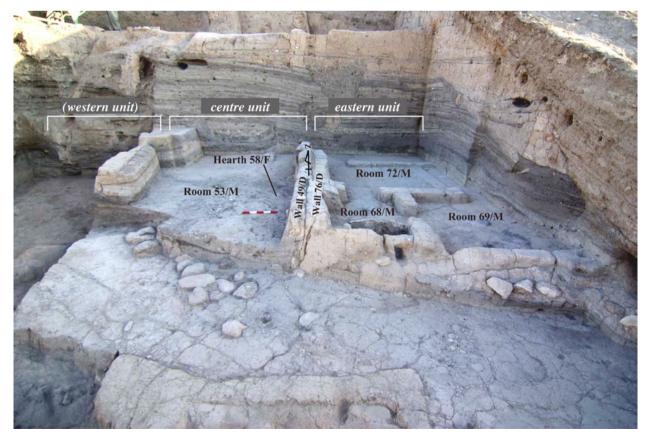


FIGURE 12. ROOMS 53/M, 68/M, 69/M, 72/M IN TRENCH H12 (2012), VIEWED FROM THE SOUTH.

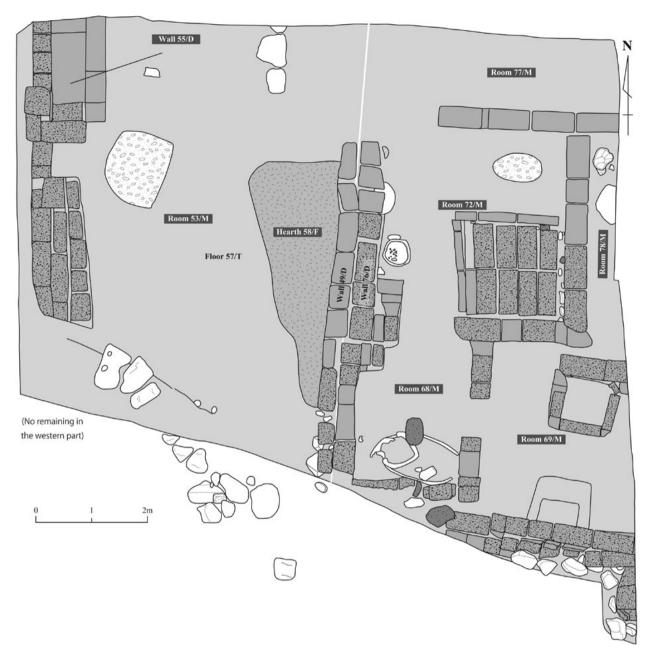


FIGURE 13. PLAN OF A TRIPARTITE BUILDING COMPLEX (2012).

Room 53/M as the central unit of the building complex could have been used as a kind of sitting room with Hearth 58/F; the eastern unit of the building composed of Rooms 68/M, 69/M, 72/M, 77/M and 78/M as other functional rooms like bedroom, storage room and so on. We discovered such utensils as cooking pots, sickle blades and spindle whorls both in Room 53/M of the centre unit and in Rooms 69/M and 72/M of the eastern (Fig. 14). As we discovered much scraping technique

on the surface as well as common Late Ubaid painting from fills and floors of the building complex including both of the centre and eastern units, it might be said that the tripartite building complex is the latter half of the Late Ubaid to Terminal Ubaid periods, contemporary with Hammam IVC-IVD and Levels 6-4/3-1 of Sector A at Kosak Shamali (Akkermans 1988a, 194-5, Tab. 24; Nishiaki *et al.* 1999, 29-30).



FIGURE 14. REMARKABLE ARTEFACTS FROM THE TRIPARTITE BUILDING COMPLEX (2012).

Trench G12

In the 2012 season, adding to the trenches mentioned above we also excavated Trench G12 in order to investigate the chronological sequence of the Step Trench at Salat Tepe. In Trench G12/N we found stone pavements 89/T consisting of small stones and sherds extending southward, around 535.20-30 m above sea level in the northern part, and 534.80-90 m in the southern (Fig. 15). The pavements seemed to be the Late Ubaid period according to painted sherds like 'negative eye motif' comparable with that of the Late Ubaid pottery from graves at Tell Kashkashok II in the Khabur (Koizumi 1991; 1993). From the pavements in Trench G12 at Salat Tepe we also discovered a metal object (G12/0147/A/01).4

In order to smooth the chronological sequence of the settlement, furthermore, we set sub-trenches, with that along the western wall of Trench G12/N 2 x 5 m in size, along the eastern trench wall of I12/S 2 x 2 m, and that of H12/S 2 x 5 m. In the sub-trench G12 we discovered painted sherds from the first part of the Late

Ubaid period. We recognized that the context would have been related to a room with mud brick walls observed in the section of the western wall of Trench G12 at an altitude of ca. 533.30 m. For the purpose of making clear the architecture uncovered in this season, we were planning to excavate the remaining areas of Trench G12 as well as those three trenches in the next season.

Remarks on the Ubaid and Late Chalcolithic sherds from the 2010 to 2012 seasons

Late Chalcolithic pottery of Trench I12

In the course of the 2010 to 2012 seasons we found 25,528 sherds from plenty of contexts from a stratigraphical sequence of approximately 10 m in depth, from ca. 533.00 m to 543.00 m above sea level, in Trenches I12, H12 and G12. At first we sorted the pottery into diagnostic and body sherds. The diagnostic sherds, which included rims, carinated bodies, bases and others, made up 5821 pieces, the remaining sherds 19,707. Next, from these we selected the sherds from meaningful contexts such as floors or the fills of structures in order to make careful observations and drawings, and to take photos. Most of the excavated artifacts have been deposited for ongoing study in Diyarbakır.

⁴ This metal object has come to be known as absolutely true copper according to X-ray Fluorescence (XRF) and X-ray diffraction (XRD) analyses for verdigris formed on the surface, which is going to be reported near future.

In Trench I12 total sherds were calculated at 9978, among which diagnostic sherds for study in detail from meaningful contexts were 1338 pieces consisting of 1129 rims and 52 bases. The studied sherds in Trench I12, generally, show such varieties of ware with tiny straw inclusions as 'bowls with hammerhead rims', 'ridged bowls with hammer-head rims', 'flint-scraped bowls', 'bowls with inner-everted rims', 'Red/Brownish Burnished Ware' and 'Grey Burnished Ware'. Most of these sherds might be post-Ubaid period contemporary with Hammam et-Turkman VA-VB in the Balikh of the northern Syria and to Tepe Gawra XI-XA (Akkermans 1988b, 304-9, 312-4, Pls. 100. 3-5, 104. 76, 77-8; Tobler 1950, 155, Pl. CXLIV. 382).



FIGURE 15. PAVEMENT 89/T IN TRENCH G12N (2012).

Although the study is to be continued, some remarkable patterns of the Late Chalcolithic pottery can be described here. For example, studied sherds from Floor 46/T and the fills of Room 47/M in Trench I12/N are almost the standard Late Chalcolithic with vegetal inclusions (cf. Fig. 7). Total diagnostic sherds in the contexts (I12-140, 143-4 and 146) are 53 rims, 2 bases and 1 other form, a perforated vessel, among which 'Grey Burnished Ware' is the most remarkable (11%: 6/53). There are some forms in the same context too: 'bowls with hammer-head rims', 'bowls with protruded rims', 'bowls with innereverted rims', 'ridged bowls with hammer-head rims' and 'ridged bowls with protruded rims'. Most of these sherds from Floor 46/T of Room 47/M in Trench I12 could belong to the latter half of the post-Ubaid period, ie the earlier phase of the Late Chalcolithic period, similar to Hammam VB in the Balikh, Level 5 of Sector B at Kosak Shamali in the Upper Euphrates and Gawra XI in the Upper Tigris (Akkermans 1988b, 308-9, 313-4; Koizumi et al. 2001, Fig. 4. 15. 5; Tobler 1950, 155).

From the contexts of Room 58/M and related material, we found some examples of 'interior swag painting' as 'Gawra Ware', so to speak. A simliar motif has been reported from Post-Ubaid contexts at Gawra XA, Telul eth-Thalathat II: Level II and Tell Musharifa A: Levels I-III (Tobler 1950, Pl. CXLIV. 375, 383; Egami 1958, Fig. 50. 4; Oguchi 1987, Fig. 14. 11, 14, 25). As a consequence, the building complex of Rooms 56/M, 57/M and 58/M in Trench I12 at Salat Tepe might be ascribed to the latter half of the Post-Ubaid period almost contemporary with Gawra XA.

Below the building level in Trench I12, from contexts of Rooms 35/M, 84/M and 85/M there were observed

plenty of sherds of the Late Chalcolithic pottery: 'Grey Burnished Ware', 'bowls with inner-everted rims', 'bowls with tightly everted rims' and 'ridged bowls with inclined rims'. A complete 'Coba bowl' (I12/0101/S/01) was also discovered from the fill of Kiln 20/F in the 2008 season (Fig. 16). 'Coba bowls', firstly recognized at Sakçe Gözü (Coba Hüyük) in southeastern Anatolia, have been observed at many sites of the Post-Ubaid to Northern Middle Uruk periods through the southeastern Anatolian to the northern Mesopotamian and Syrian regions, although this pottery form has been sometimes called 'flint-scraped bowls' (du Plat-Taylor et al. 1950, 95-6, 100, Figs. 16. 1, 2, 18. 5; Brown 1967, 132, Fig. 5; Akkermans 1988b, 304-5, Pl. 99. 24-7). It can be roughly said, therefore, that the context of the pottery workshop of these rooms accompanied with Kiln 20/F in Trench I12 at Salat Tepe is nearly same as that of Floor 46/T of Room 47/M in the same trench.

We also excavated another workshop consisting of Floor 65/T and related contexts in Trench I12/S. A notable group in all sherds picked up there is 'Red/Brownish Burnished Ware', but 'Gray Burnished Ware' is rare: the latter has been frequently observed in the latter half of the Post-Ubaid period like Hammam VB and Gawra XI. Thus, we can say that Floor 65/T of Room 96/M and related contexts in Trench I12 at Salat Tepe belongs to the first half of the Post-Ubaid period comparable with Hammam VA, Gawra XIA and Levels 14-13 of Area CH in Tell Brak (Akkermans 1988b, 297, 312-3; Tobler 1950, 152; Oates 1986, 251, Fig. 2. 33).

⁵ The ware has grey-black core tempered with straw and white grits, roughly smoothed surface showing marks of grass or straw and flat base or sometimes round.





FIGURE 16. 'COBA BOWL' FROM KILN 20/F IN TRENCH I12 (2008): (LEFT) INSIDE OF THE VESSEL; (RIGHT) OUTSIDE OF THE BASE.

Ubaid pottery of Trenches H12 and G12

In Trench H12, on the other hand, total sherds were calculated at 10,890, among which diagnostic sherds for study in detail from meaningful contexts were 2027 pieces made up of 1784 rims and 20 bases. The studied sherds in Trench H12, in general, indicate tiny and fine straw inclusions, with a notable decrease in painted ware compared with previous levels at Salat Tepe, and traces of regularly narrow or hairline-like fine striations on the surface achieved by a slow turning wheel, a new pottery-making technique. Accordingly, most of the sherds excavated in Trench H12 at Salat Tepe during the 2010 and 2012 seasons could be ascribed to the Terminal Ubaid period contemporary with Hammam IVD, Gawra XIIA-XII and Levels 3-1 of Sector A in Kosak Shamali (Akkermans 1988a, 203; Tobler 1950, 146; Nishiaki et al. 1999, 31).

Total diagnostic sherds in the contexts particularly excavated in fills and/or floors of Room 53/M are 429 rims and 7 bases; all diagnostic sherds related to the residential building composed of Rooms 53/M, 68/M, 69/M, 72/M, 77/M and 78/M are more than one thousand rims. Plenty of the sherds show fine straw inclusions in paste or none visible ones, often with sand or white mineral like limestone particles. Most of the rim sherds indicate traces of regularly narrow or hairline-like fine striations on the surface; as regards varieties of pottery,

popular forms are 'cooking pots', 'cup-like vessels' and 'flint-scraped bowls'. Such tendencies as a rapid increase of scraping treatment and very low amount of painting is comparable to that of Hammam IVC-IVD and Levels 9-7 to 3-1 of Sector A at Kosak Shamali (Akkermans 1988a, 193, 203, Tabs. 24, 30; Nishiaki *et al.* 1999, 29-30). Other frequent forms of the Ubaid pottery in the building complex are 'bowls with sharply incurved or incurved vessel walls', 'hemispherical bowls', 'open bowls with incurved or straight vessel walls', 'shallow bowls with incurved or straight vessel walls' and 'jars with simple necks'.

Additionally, by tentative checking sherds uncovered from the pavements in Trench G12 at Salat Tepe, we have recognized such remarkable examples as negative motif paintings and 'cup-like vessels'. The appearance of negative painting technique and cup-like form is identical to Hammam IVB, Gawra XV and Levels 9-7 of Sector A at Kosak Shamali⁷ (Akkermans 1988a, 202, 207, 223, Pls. 77. 126-8, 130-1, 78. 137; Tobler 1950, 139, Pl. CXXVI-151; Nishiaki *et al.* 1999, 28-9). We can, therefore, say that the contexts of Trench G12 at

⁶ This pottery form is absolutely different from so called 'Coba bowls' in the Late Chalcolithic period mentioned above: the former has thinner vessel wall and the fired surface in higher temperature than the latter.

⁷ The author has observed the nearly same component of the pottery forms from Levels 9-7 of Sector A at Tell Kosak Shamali in the Upper Euphrates of the northern Syria.

Salat Tepe are comparable to the first half of the Late Ubaid period.

Radiocarbon dating of charcoal samples

The charcoal samples were treated with the conventional AAA (acid-alkali-acid) method to removed adhering soil organic matters (de Vries and Barendsen 1954). First, the surface was physically cleared with ultra-sonication in pure water. Then, secondary carbonate was dissolved with 1.2 M HCL for 12 hours at a temperature of 80°C. Next the soil organic matter (i.e. humic acids and fulvic acids) was dissolved with weak NaOH (see Table 1 for detailed information). Finally, the samples were soaked in 1.2 M HCL again for 12 hours at 80°C, following the neutralization with pure water.

To synthesize graphite for radiocarbon dating, CO₂ was purified in an evacuated dual tube with CuO and sulfix and cryogenically purified in a vacuum line (Minagawa *et al.* 1984). The CO₂ was converted to graphite with H₂ and

iron powder catalyst for AMS measurement (Kitagawa *et al.* 1993). The ¹⁴C content in the synthesized graphite was measured with AMS by the Paleo Labo, Co., Ltd. (PLD; Kobayashi *et al.* 2007; Table 2). The ¹⁴C count was corrected by the IAEA-C1, NBS SRM4990C, and IAEA-C6, which are international standard materials.

The conventional radiocarbon ages were corrected for isotope fractionation with $\delta^{13}C$ measured by AMS simultaneously (Stuiver and Polack 1977; Table 3). Tables 4 and 5 show the calibrated ages estimated for one standard deviation range (1 s.d.; 68.2%) and 2 s.d. (95.4%).

Brief conclusions

According to the radiocarbon dating reported above, one well-preserved carbon sample (ST2012_2/ PLD-25724) from the fills between Walls 51/D and 54/D (I12-184) related to Room 58/M above Room 84/M in Trench I12 shows 4075 cal. BC (76.8%) 3977 cal.

Sample	Weight before treatment	Weight after treatment	Yield	Alkali treatment
ST2012_1	55.83 mg	13.57 mg	24.3%	20ºC / 0.01 M / 10 min
ST2012_2	95.51 mg	49.92 mg	52.3%	80ºC / 1 M / 60 min
ST2012_3	274.32 mg	203.31 mg	74.1%	80ºC / 1 M / 90 min
ST2012_4	77.38 mg	30.73 mg	39.7%	20ºC / 0.01 M / 15 min
ST2012_5	41.92 mg	14.66 mg	35.0%	20ºC / 0.01 M / 5 min

TABLE 1. LIST OF CHARCOAL SAMPLES AND THE CONDITION FOR ALKALI TREATMENT.

Sample	Graphite ID	Yield	Weight of C	Fe powder	C/Fe ratio
ST2012_1	GR-474	76.7%	1.16 mg	1.93 mg	0.601
ST2012_2	GR-516	72.8%	1.16 mg	1.97 mg	0.589
ST2012_3	GR-476	71.3%	1.00 mg	2.03 mg	0.493
ST2012_4	GR-477	70.4%	1.13 mg	1.88 mg	0.601
ST2012_5	GR-478	74.8%	1.18 mg	1.98 mg	0.596

TABLE 2. THE RESULTS OF GRAPHITIZATION.

Sample	Lab ID #1	Lab ID #2	Conventional ¹⁴ C age (BP w/ 1 s.d.)	δ¹³C for correction
ST2012_1	PLD-25723	TKa-15982	5841 ± 24 BP	-25.6 ± 0.3‰
ST2012_2	PLD-25724	TKa-15983	5245 ± 24 BP	-26.2 ± 0.3‰
ST2012_3	PLD-25725	TKa-15984	34,179 ± 150 BP	-27.5 ± 0.3‰
ST2012_4	PLD-25726	TKa-15985	5807 ± 24 BP	-25.3 ± 0.3‰
ST2012_5	PLD-25727	TKa-15986	5807 ± 24 BP	-24.6 ± 0.3‰

TABLE 3. RESULTS OF CONVENTIONAL RADIOCARBON DATING.

Sample	Calibrated age (1 s.d.)	Calibrated age (2 s.d.)
ST2012_1	4767 BC (7.0%) 4756 BC 4742 BC (2.0%) 4738 BC 4729 BC (59.2%) 4687 BC	4786 BC (89.6%) 4655 BC 4639 BC (5.8%) 4617 BC
ST2012_2	4054 BC (68.2%) 3988 BC	4226 BC (5.7%) 4205 BC 4166 BC (11.7%) 4129 BC 4113 BC (1.3%) 4101 BC 4075 BC (76.8%) 3977 BC
ST2012_3	36866 BC (68.2%) 36546 BC	37066 BC (95.4%) 36405 BC
ST2012_4	4711 BC (48.7%) 4653 BC 4640 BC (19.5%) 4617 BC	4724 BC (95.1%) 4582 BC 4563 BC (0.3%) 4560 BC
ST2012_5	4711 BC (48.7%) 4653 BC 4640 BC (19.5%) 4617 BC	4724 BC (95.1%) 4582 BC 4563 BC (0.3%) 4560 BC

TABLE 4. CALIBRATED 14C AGES.

Sample	Calibrated age (1 s.d.)	Calibrated age (2 s.d.)
ST2012_1	6716 calPB (7.0%) 6705 calPB 6691 calPB (2.0%) 6687 calPB 6678 calPB (59.2%) 6636 calPB	6735 calPB (89.6%) 6604 calPB 6588 calPB (5.8%) 6566 calPB
ST2012_2	6003 calPB (68.2%) 5937 calPB	6175 calPB (5.7%) 6154 calPB 6115 calPB (11.7%) 6078 calPB 6062 calPB (1.3%) 6050 calPB 6024 calPB (76.8%) 5926 calPB
ST2012_3	38,815 calPB (68.2%) 38,495 calPB	39,015 calPB (95.4%) 38,354 calPB
ST2012_4	6660 calPB (48.7%) 6602 calPB 6589 calPB (19.5%) 6566 calPB	6673 calPB (95.1%) 6531 calPB 6512 calPB (0.3%) 6509 calPB
ST2012_5	6660 calPB (48.7%) 6602 calPB 6589 calPB (19.5%) 6566 calPB	6673 calPB (95.1%) 6531 calPB 6512 calPB (0.3%) 6509 calPB

TABLE 5. CALIBRATED 14C AGES.

BC. We can, consequently, estimate that Room 84/M accompanied with 'Grey Burnished Ware' as a pottery workshop in Trench I12 at Salat Tepe is earlier than 4000 BC. 'Grey Burnished Ware' is particularly reliable for a chronological index of the beginning of skilled techniques for pottery production in the Uruk period as the reduction firing in kiln of the ware, which was very likely produced by professional potters, is considerably different from that of the preceding immature technique of the Ubaid period (Nishiaki et al. 1999; Koizumi 2000; Koizumi et al. 2001). It might be said, therefore, that the appearance of 'Grey Burnished Ware' at Salat Tepe up until 4000 BC matches the threshold of a new cultural entity such as the Uruk Expansion and to the early phases of the period comparable with LC1 – LC2 in the SAR chronological scheme (Rothman 2001).

In Trench H12 a carbon sample (ST2012_1/ PLD-25723) from the lowest level of Floor 56/T of Room 53/M (H12-186) indicates 4786 cal. BC (89.6%) 4655 cal. BC according to the radiocarbon dating. At the same

time another sample (ST2012 4/ PLD-25726) from foundations under Floor 57/T of Room 53/M (H12-216) shows 4724 cal. BC (95.1%) 4582 cal. BC. Furthermore, an additional carbon sample (ST2012 5/ PLD-25727) from foundations under Floor of Room 68/M (H12-220) related to the same building made up of Rooms 53/M, 69/M and 72/M indicates 4727 cal. BC (95.1%) 4582 cal. BC. The tripartite building complex made up of Rooms 53/M, 68/M and others in Trench H12 at Salat Tepe probably fits in ca. 4700 BC. Because sherds uncovered from the contexts of the building complex indicate not only a typical Late Ubaidian technique of scraping, but also Terminal Ubaidian ones of slow-turning wheel construction and a marked reduction in painting, the tripartite plan building might be ascribed to between the latter half of the Late Ubaid and Terminal Ubaid periods.

The preliminary results from excavations on Salat Tepe along the Upper Tigris in Southeastern Anatolia presented in this article can contribute to establishing a temporary chronological sequence for the Ubaid to Late Chalcolithic periods. Further study of Northern Mesopotamia and neighboring regions such as Southeastern Anatolia and Northern Kurdistan will bring more comprehensive perspectives on the cultural diversity and continuity at this time.

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Insights into the settlement history of Iraqi Kurdistan from the Upper Greater Zab Archaeological Reconnaissance Project

Rafał Koliński

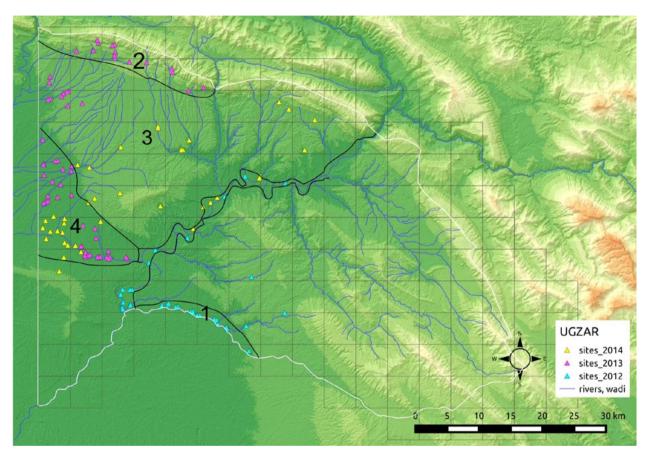


FIGURE 1. A MAP SHOWING THE DISTRIBUTION OF SITES DOCUMENTED DURING THE 2012-14 FIELD SEASONS AND THE EXTENT OF FOUR DISTINGUISHED SETTLEMENT ZONES (DRAWN BY J. MARDAS AND R. KOLIŃSKI).

The Upper Greater Zab Archeological Reconnaissance project is one of several field surveys undertaken in the northern part of Iraqi Kurdistan. The name UGZAR stands for the field activities of project no. 2011/03/B/HS3/01472 'Settlement History of Iraqi Kurdistan,' financed by a generous grant of the National Science Centre (NCN) of the Republic of Poland, scheduled for the years 2012-14.

The work permit issued by the Kurdistan Regional Government covers 3058 km² of a piedmont area on both banks of the Greater Zab river, south of the mountain ranges of the Şaxi Akrĕ, Şaxi Birat and Şaxi Xarir (Fig. 1). The UGZAR team owes a debt of gratitude for friendly cooperation to *kak* Abubakir Zanedin Othman (Mala Awat), the Director General of Antiquities of Kurdistan, *kak* Haidar A. Hussein and *kak* Nader M. Babakr, the former and present Director of Antiquities of Hawler province, and Dr Hasan A. Qasim, Director of Antiquities of Duhok Province. We have also enjoyed

¹ The author has been recently awarded a further grant which will allow continuation of the research in 2015-17.

Season	Atlas	Satellite imagery	Interviews	Transects	Others
2012	12	9	10	13	4
2013	14	21	27	12	3
General	26	30	37	25	7

FIGURE 2. THE EFFICIENCY OF VARIOUS METHODS OF IDENTIFICATION OF ARCHAEOLOGICAL SITES IN THE UGZAR PROJECT SEASONS 2012-2013 COMPARED WITH THE EVIDENCE FROM THE ATLAS OF THE ARCHAEOLOGICAL SITES IN IRAQ (SALMAN 1976).

continued support and cooperation from our Kurdish colleagues working with us in the field: in 2012, *kak* Khalil Barzanji and *kak* Rozhgar Ali from Hawler, and in 2013, *kak* Omar Sharif and *kak* Hiwa Shimal, from the Akrê Office of Antiquities.

Methodology of the project

The two seasons of fieldwork, conducted in Erbil/Hawler province in the fall of 2012 and in Duhok province in the fall of 2013, allowed us to register 99 archaeological sites, of which 92 were fully documented.2 What is very important, most of those sites were previously unknown to the Iraqi Antiquity Service, as the Atlas of the Archaeological Sites in Iraq lists only 30 sites in the surveyed territory (Salman 1976); the presence of as many as 26 of these was confirmed in the field (Fig. 2). The new sites were identified in various ways. One of the methods was based on the analysis of the satellite imagery of the area, mainly from the CORONA spy satellite program mission 1039, conducted in February 1967, provided kindly by Dr Jason Ur, and from missions 1104 and 1107, conducted in August 1968, accessible on the CORONA Atlas of the Middle East website;³ more recent imagery, available from GoogleEarth and Bing Maps services, was also studied. A list of tentative identifications was already composed in Poland and verified during the subsequent field seasons in Iraq (Koliński in press). In this way as many as 30 archaeological sites were identified, mostly settlement mounds already evidenced in the Atlas. A further efficient method that allowed us to identify unknown settlements involved interviews with the local population, first of all with the mokhtars of villages. In this manner 37 archaeological sites were evidenced. Finally, transects executed along the valleys of seasonal streams revealed as many as 25 sites, almost exclusively of flat morphology. These sites were also previously unknown to the authorities.

Most of the identified sites were extensively documented by the UGZAR team. Each site was plotted on the map of the area according to GPS measurements (using geographic coordinates grid, and UTM 38S system). A contour plan of each site was made using a Leica T407 total station, and Quantum GIS 1.8 software. The extent of each site was determined on the basis of the artifact surface scatter. The material present on the surface of the site was collected according to collection areas, which usually followed the morphology of the site. In the case of small sites, most of their extent was covered with collection areas, but larger ones were only sampled, especially in the case of the extensive, flat 'lower town' areas located around mounded sites. The collected material was documented by drawings, technological description, and, if necessary, by photography; it was dated according to the Working Ceramic Typology (Ur 2013). Consequently, the dated material was divided into 20 periods, from the earliest Pottery Neolithic to Ottoman times (Fig. 3). The typology referred to above has been adopted by four large field survey projects run in the northern part of Iraqi Kurdistan – the Eastern Habur Archaeological Survey, the Land of Nineveh Regional Project, the Erbil Plain Archaeological Survey, and the UGZAR project – with the aim of maintaining the compatibility of chronological determinations.

Results Settlement history of the UGZAR area

The first conclusions from the fieldwork suggest that the settlement history of this part of Kurdistan is much more complicated than it might be assumed at first sight. In fact, four zones could presently be distinguished within the surveyed area (Fig. 1), each showing different morphological and environmental features, as well as different settlement development trajectories. These zones can be defined as:

- a narrow alluvial valley on the northern bank of the Bastora Cai⁴;
- 2. a series of mountain valley oases at the foot of the Şaxi Akrê, between Akrê and the Khazir river;
- 3. a rolling plain south of the Akrê Mountains;
- 4. a triangular area of the alluvial plain between the Khazir and the Greater Zab (forming in fact the eastern extension of the Navkur plain).

² Basic information on the surveyed sites and their distribution can be accessed on the website of the project: http://archeo.amu.edu.pl/ugzar/catalogue_of_sites.htm.

³ Provided by the Center for Advanced Spatial Technologies, University of Arkansas/U.S. Geological Survey.

⁴ The southern bank is within the work permit area of the EPAS project and will be surveyed in the future.

Period	Designation
PALEO	Paleolithic
PPN	Pre-Pottery Neolithic
0	Proto-Hassuna
1	Hassuna, Samarra
2	Halaf
3	Ubaid
4	LC1-2, Early Northern Uruk, Post-Ubaid
5	LC3-5, Northern Middle Uruk, Southern Middle and Late Uruk
6	Ninevite V, EJ I-II, ED I-II
7	Mid- and Late 3rd millennium, EJ III-V, ED III, Akkadian, Post-Akkadian, Ur III
8	Old Babylonian, Khabur Ware, Middle Bronze Age
9	Mitanni
10	Middle Assyrian, Late Bronze Age
11	Neo-Late Assyrian, Iron Age,
12	Post-Assyrian, Neo-Babylonian, Achaemenid
13	Seleucid, Hellenistic
14	Parthian, Roman
15	Sassanian
16	Late Sassanian – Early Islamic
17	Early Islamic (Abbasid)
18	Middle Islamic
19	Middle-Late Islamic
20	Late Islamic
21	Undifferentiated Islamic

FIGURE 3. PERIODIZATION
USED IN CHRONOLOGICAL
DETERMINATIONS OF THE
UGZAR PROJECT (UR 2013: 2).

Period	1	2	3	4	5b	5a	6	7	8	10	11	12	13	14	15	16	17	18	19	20
Bastora (17)	0,0	0,0	0,0	0,5	1,0	1,0	6,0	2,0	5,5	6,0	8,0	2,5	6,5	8,0	6,0	4,5	5,5	3,0	4,5	0,0
Akre (15)	0,0	0,0	0,0	0,5	1,0	0,0	0,5	0,0	1,5	1,0	3,5	0,5	1,5	1,0	2,5	2,5	0,0	1,5	5,0	2,0
rolling plain (10)	1,0	3,0	3,0	1,5	2,0	0,5	2,0	1,0	3,0	0,5	1,5	0,5	0,5	0,5	2,5	1,0	1,0	0,0	0,0	0,0
Navkur plain (57)	2,0	9,0	6,0	13,0	8,0	2,5	12,5	10,0	19,5	21,0	28,5	7,0	19,5	24,5	25,5	31,5	22,0	3,0	15,5	16,0
Total (99) ⁵	3,0	12,0	9,0	15,5	12,0	4,0	21,0	13,0	29,5	28,5	41,5	10,5	28,0	34,0	36,5	39,5	29,5	7,5	25,0	18,0

FIGURE 4. THE NUMBER OF SETTLEMENTS PER CULTURAL PERIOD IN EACH OF THE ENVIRONMENTAL ZONES DISCUSSED (SITES THAT YIELDED A SINGLE SHERD IDENTIFIED IN THE *WORKING CERAMIC TYPOLOGY* FOR A PERIOD ARE COUNTED AS 0.5, SITES WHICH YIELDED TWO OR MORE SUCH SHERDS ARE COUNTED AS 1).

The data on the distribution of sites (Figs. 4-5) reflect the complicated character of the settlement history of the region. Firstly, the settlement density is highly diverse. The Şaxi Akrê valleys and the rolling plain seem to be much more sparsely settled than the Bastora Çai area, while the alluvial plain of Navkur reveals the most intensive settlement, with 57 archaeological sites in an area of approximately 150 square kilometres,⁶ ie an

avergae density 0.37 site per square kilometre. This is a value comparable to the settlement density evidenced in some of the other survey projects carried out in the North Mesopotamian plains, including the Land of Nineveh Regional Project, which covering, *inter alia*, the remaining part of the Navkur plain (Morandi Bonacossi 2012-13, fig. 5; cf. Morandi Bonacossi, *this volime*). However, the settlement density in the Navkur plain is still much lower than that attested in the Erbil plain (Ur *et al.* 2013, fig. 16). Interestingly, there is a strip of land south of the mountains in the Navkur plain where not even a single ancient settlement was identified (Fig.

The total includes sites on the Navkur surveyed in 2014, and excludes sites located on the eastern bank of the Greater Zab outside of Bastora valley, surveyed 2012.

⁶ These data include the results of the 2014 field season, when the remaining part of the Navkur plain was surveyed.

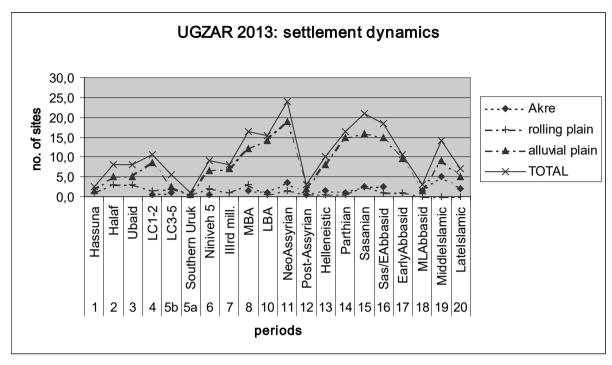


FIGURE 5. A HISTOGRAM ILLUSTRATING THE DISTRIBUTION OF SITES PER HISTORICAL PERIOD IN FOUR ENVIRONMENTAL ZONES DISTINGUISHED IN THE PRESENT PAPER.

1). Secondly, prehistoric sites are almost completely absent in the area around Akrê and along the Bastora Çai. Conversely, settlements of the historical period are very scarce in the rolling plain zone. Finally, the Southern Uruk sites (period 5a) are present only on the eastern bank of the Zab, where three settlements with abundant collections of characteristic pottery of this kind were found (S002, S027 and S037). On the western bank only nine sherds belonging to this pottery assemblage were identified, distributed on four sites (four sherds at S080, a site only 3 km away from the Greater Zab, three at S085, and a single sherd at S052 and S098).

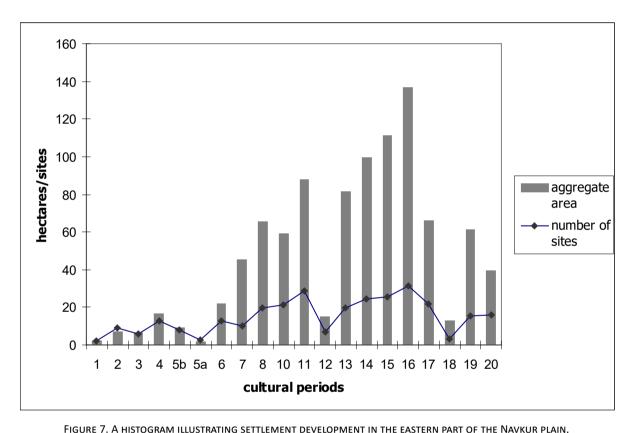
As the survey is still ongoing the general remarks offered above are of preliminary character. More conclusive observations can be made only in the case of the eastern part of the Navkur plain, which was surveyed by the UGZAR team in its entirety. The 57 sites discovered in this area cover the entire spectrum of North Mesopotamian cultures from the Pottery Neolithic to the present (Figs. 6-7), with each period manifesting very clear differences in settlement intensity and density. Neolithic settlements are represented exclusively by small sites, but in several cases they are perfectly observable, because the sites in

question were not re-settled in later times. Consequently, there is at least one site with Hassuna period settlement (S086), and three others of the Halaf period (S070, S084, and S094); all four sites are present just under the surface. The number of settlements steadily increases up until the Late Chalcolithic 1-3, for which as many as 11 intensively occupied sites are evidenced. The Late Chalcolithic 4-5 brings a decrease in the number of sites, but they display a remarkable settlement continuity. Three sites in the Navkur plain yielded a small amount of the Southern Uruk pottery, and, most characteristically, those sites are located at a small distance from the Greater Zab. Given the fact that on the eastern bank of the river there were found three sites with typical Southern Uruk assemblages, it is tempting to assume that the western bank of the Greater Zab was not 'colonized' by the Urukians (Morandi Bonacossi, pers. comm.), and the presence of the vessels that yielded the above discussed sherds was a result of trade exchange. The Early Bronze Age is moderately evidenced, with a considerable number of small Ninevite V sites, but with very limited material from the mid-3rd millennium BC. Only towards the end of the millennium (the Akkadian and the Ur III period) can there be observed a remarkable increase in the number of settlements (one of them, S074, covering an area of c. 30 ha, was most likely a local administrative center). A relatively dense settlement in the area continues

⁷ Cf. note 6, above.

Period	1	2	3	4	5b	5a	6	7	8	10	11	12	13	14	15	16	17	18	19	20
ha	2,31	7,06	6,4	16,5	8,84	1,5	21,68	45,2	65,64	59,2	87,94	14,96	81,31	99,65	110,97	136,47	65,74	12,6	61,33	39,31
no.	2,0	9,0	6,0	13,0	8,0	2,5	12,5	10,0	19,5	21,0	28,5	7,0	19,5	24,5	25,5	31,5	22,0	3,0	15,5	16,0

FIGURE 6. THE AGGREGATE SETTLEMENT AREA AND THE NUMBER OF SITES IN THE EASTERN NAVKUR PLAIN (UGZAR FIELD SEASONS 2013-14).



SHOWING THE NUMBER OF SETTLEMENT DEVELOPMENT IN THE EASTERN PART OF THE NAVKUR PLAIN,
SHOWING THE NUMBER OF SETTLEMENTS AND THEIR AGGREGATE AREA PER PERIOD.

during the Middle and Late Bronze Age, featuring a stable number of sites (19 and 21, respectively), and a similar aggregate settlement area (c. 60 ha). The Neo-Assyrian period witnesses a further increase both in the number of sites (28) and in their aggregate area (88 ha). After a short decrease in the Post-Assyrian period, dense settlement continues through the Seleucid and Roman-Parthian periods, reaching its apex in the Late Sasanian/Early Islamic period, for which more than 30 sites are in evidence. Moreover, there is a significant change in the size of the settlement in this period. The

presence of several large sites (10-15 ha in area), which usually include flat tracts of land adjacent to the Bronze Age settlement mounds, is responsible for a significant increase in the aggregate settlement area (over 136 ha). In the later Islamic Period, the number of settlements decreases to a level typical for the later third millennium BC. It should be noted, however, that the Late Islamic period is weakly represented (three sites, 12 ha in area altogether), but this may be due to the small number of characteristic pottery types selected for this period in the *Working Ceramic Typology*.

A comparison of the above discussed results with those of other surveys carried out in the region indicates basic similarities, but also some interesting differences. A graph illustrating the preliminary distribution of sites in the LoNRP project after the 2012 field season shows that the sites of the late third millennium and of the Neo-Assyrian period are much more numerous in the studied area, while Sasanian and Islamic sites are proportionally less abundant (Morandi Bonacossi 2012-13, 185-94, fig. 12). Similar differences may be observed in a histogram illustrating sites registered during the first field campaign of the EPAS project in the Erbil plain, where the Neo-Assyrian and Parthian sites are the most abundant ones, while Sasanian and Early Islamic sites are rare (Ur et al. 2013, 97-103, fig. 15). However, one of the sites belonging to the latter period is an urban site c. 90 ha in area, consequently, the aggregate settlement area for this period is the third in rank, after that of the Middle Bronze Age and the Neo-Assyrian period.

These remarks are tentative, mainly because they refer to preliminary results of the first season of field activities of the two above mentioned projects and an increase in the number of surveyed sites may considerably change the picture. In this situation, I would like to draw attention to two more particular subjects, one because of its scientific significance, and the other because of its importance for the preservation of the cultural heritage of Kurdistan.

The Gunduk reliefs

The village of Gunduk is renowned because of three reliefs carved on the rock face in a large cave looming over the valley in a rocky slope of a mountain. The monuments were documented by Layard (1853, 368-9), Bachmann (1927, 28-31, pl. 32) and al-Amin (1948); they were also discussed by Börker-Klahn in her monograph on relief stele and rock reliefs of Mesopotamia (1982, 75-6, 234, nos. 174-6). Recently, the reliefs were a subject of a more thorough study by Reade and Anderson (2013, 77-96), according to which they are dated to the mid-third millennium BC. Moreover, Reade and Anderson were unable to confirm the presence of a substantial Neo-Assyrian site, measuring 700 by 300 m, in the vicinity of the reliefs, observed by Bachmann in 1914 (Reade and Anderson 2013, 78).

Unfortunately, towards the end of the twentith century the reliefs were partly destroyed by treasure hunters.⁸ Panel 1 was damaged in more than 50%, panel 2 was destroyed in its entirety, and only panel 3, located inside the cave itself, avoided destruction. Panel 2 is presently known only from a few photographs and drawings that were produced by various authors over the last 130 years and which differ significantly from one another.

The most important discovery made by the UGZAR team in Gunduk was a recovery of two relief fragments from the scree below the cave. The larger piece, measuring c. 37 by 35 cm, shows a semicircular item on which there are visible legs of two standing figures, and a leg partly covered with a robe, belonging to a seated person to the right of the item. The smaller one, measuring 24 by 16 cm, depicts a fragment of a back of a standing figure wearing a long robe. Both fragments must have originally been parts of the entirely destroyed panel 2. The first fragment belonged beyond any doubt to the center of the destroyed scene. The second piece could be a part of any standing figure, but I am convinced that it belonged to the last person on the left. The reconstruction of the original position of the recovered fragments (Fig. 8) allows to evaluate the accuracy of four previously published renderings of panel 2, and leads to the conclusion that only two of the representations, the one by Cooper, published by Layard, and the other by al-Amin are satisfactory; the drawings by Bachmann and by Börker-Klahn, which were probably based on hastily taken pictures, are far from accurate (Reade and Anderson 2013, fig. 24). The scene shown on panel 2 may, in my opinion, represent an illustration of the myth of Enki, Namma and Nintu making humankind. The myth states that these gods fashioned the first humans out of clay (Klein 2003, 517, lines 30-5). Panel 2 shows a person who is possibly digging for clay on the far right, then, on the left, a person directed towards the two seated figures, who carries the clay in a basket held on the head. The man on the right and the female on the left are engaged in some activity concerning the two smaller figures standing on the semi-circular item, illustrating, in my opinion, the act of shaping the man on a stand. The next person to the left is holding a figure corresponding in size to those on the support, which appears to be a fully shaped human. The last depicted figure simply stands on the far left of the scene. If my interpretation of the meaning of the scene is correct, the destroyed relief would depict one of the Sumerian myths, a motive extremely rare in the Mesopotamian art.

Another important achievement of the UGZAR team in Gunduk was taking a high resolution photograph of panel 3 (Fig. 9). It is located deep inside the rock-shelter, and for this reason it escaped the attention of treasure hunters, as well as early travelers (it was illustrated for the first time by al-Amin in 1948). The published photographs are unsatisfactory mainly because of bad lighting conditions inside the cave. As for the most part of the year the scene remains in the shade, taking a clear picture is next to impossible. The UGZAR photographer profited from more favorable conditions towards the end of October and obtained a photo clearly showing the elements of the scene which had previously gone unnoticed: the suckling animal on the right has a bent knee, in a manner typical for Mesopotamian depictions; the iconography of a bird depicted over the scene is

⁸ In 1994, according to Reade and Anderson (2013, 82), or in 1996, according to the information obtained by the UGZAR team.

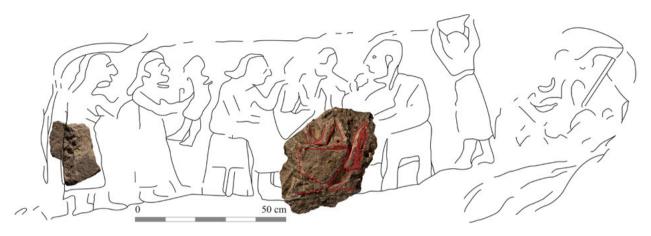


FIGURE 8. RECONSTRUCTED POSITION OF THE TWO RELIEF FRAGMENTS OF PANEL 2 AT GUNDUK RECOVERED BY THE UGZAR TEAM (DRAWN BY X. KOLIŃSKA, BASED ON AL-AMIN 1948: FIG. 8).



FIGURE 9. PANEL 3 OF THE GUNDUK RELIEF (PHOTOGRAPH: D. PIASECKI).

typical for the Mesopotamian Anzu-bird representations, with a lion's head and with talons resting on two other animals; finally, the seated person in the middle wears a head-gear with two horns and holds a palm leave in an upright position. The horned head-gear is obviously an early version of a horned tiara worn as a rule by Mesopotamian gods; similar examples can be found on mid-third millennium BC representations from South Mesopotamia (Braun-Holzinger 2013, 142-6). The

identity of the depicted god is a mystery, but the presence of various wild and tamed animals may suggest a deity related to animals and wilderness, for instance Sumuqan/Šakkan, 'the king of the mountain' (Wiggermann 2012).

The survey has also offered insight into the settlement history of the Gunduk area. No archaeological site was identified in the immediate vicinity of the reliefs, but three archaeological sites were discovered further south,



FIGURE 10. A VIEW TOWARDS THE ŞAXI AKRÊ WITH THE GUNDUK PASS CLEARLY VISIBLE FROM A DISTANCE OF 25 KM. SITE S074, XARABA KALAŞIN, IN THE FOREGROUND (PHOTOGRAPH: R. KOLIŃSKI).

on the opposite side of a low mountain range constituting the southern limit of the Gunduk valley. All these sites are of limited size and of later date, therefore they are not contemporary with the execution of the reliefs. What is surprising is that the closest site of the mid to late third millennium BC is located in the village of Bedrike, 12 km to the south-west of Gunduk (S055), suggesting that the reliefs existed in isolation. However, it is very unlikely that the population of such a small site as S055 (1.5 ha at the most) would have been able to execute three rock reliefs at the distant site of Gunduk. A more likely candidate seems to be the site of Xaraba Kalaşin (S074), despite the fact that it is located further away from Gunduk. It covered 30 ha in area towards the end of the third millennium BC and was most likely an urban site and a seat of a local ruler. Its location c. 25 km to the south of Gunduk does not exclude this assumption, as the Gunduk pass is clearly visible from a distance as an indentation in the continuous mountain range and it obviously attracts the attention of people living in the plain (Fig. 10).

Preservation of archaeological sites

The other subject I would like to raise concerns the state of preservation of the archeological sites in the surveyed area. Most of the mounded sites show a varying extent of damages resulting from human activities. It is noteworthy that only exceptionally do sites seem to be the object of illicit excavations (three sites in particular: S003, S035, S048; in two more cases, the local people claimed that there had been digging for antiquities in the past, but no trace of such activities was observable). Most damaged sites can be divided into two groups: those located in

villages and those situated in ploughlands, sometimes several kilometers away from the closest settlement.

The first group comprises nearly all the mounded sites located within villages. They are either cut into on one or more sides, partly leveled, or terraced, typically with the aim of obtaining space for the construction of new domestic structures, roads, and water installations (usually water towers). The extent of damages varies greatly. In some places only small, marginal areas of the site have been affected. In other cases, leveling and terracing have destroyed a significant part of the mound (S037, S110; cf. Fig. 11). In one case the UGZAR team visited a site (S055) which, according to villagers, was once 4 meters high, but when surveyed in 2013 it was found to be entirely leveled (Fig. 12). There is no doubt that the constant development of villages constitute a threat to the preservation of these sites.

The second group consists of sites located mainly in the Navkur plain. Most of the mounds located at a distance from villages were used as a source for clay, either for building new houses or for maintaining old ones. Again, the extent of damage varies from site to site. The most affected one, Xaraba Çiaskan (S098), lost probably about 1/3 of its volume (Fig. 13), while others, especially the larger ones, lost proportionally a much less significant part. On 13 October 2013 the UGZAR team photographed a villager from Daratu digging at site S089 (Fig. 14), proving that this kind of damage is suffered by archaeological sites even today.

The ongoing devastation of the mounded sites evidenced by the UGZAR team throughout the surveyed area



FIGURE 11. SITE S037, GIRDI MIKRDAN, DAMAGED BY LEVELING AND CONSTRUCTION OF HOUSES (PHOTOGRAPH: M. SZABŁOWSKI).



FIGURE 12. SITE S055, GIRDI KALAKE 3, ENTIRELY LEVELED FOR CONSTRUCTION PURPOSES (PHOTOGRAPH: R. KOLIŃSKI).



FIGURE 13. SITE S098, XARABA ÇIASKAN, WITH VISIBLE DAMAGES DUE TO CLAY DIGGING (PHOTOGRAPH: X. KOLIŃSKA).



FIGURE 14. A MAN FROM DARATU DIGGING FOR CLAY AT S089, GIRDI AŞI GAWRE, 13 OCTOBER 2013 (PHOTOGRAPH: M. KOSTYRKO).

demands an immediate action from the authorities of the Kurdistan Regional Government. I am glad to see that the issue of heritage management will be considered in one of the later session of this convention. An increased protection of archaeological sites in Iraqi Kurdistan is a matter of the utmost importance not only for a better understanding of the history of the land, but also for the future generations of the people of Kurdistan, whose common heritage is at risk.

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Two Ottoman Trade Buildings (*Qaisariya*) in the Bazaar of Erbil. From Building Archaeology to Refurbishment Planning

Dietmar KURAPKAT

in memory of Mam Khalil*

The Bazaar of Erbil incorporates two traditional trade buildings that were built during the late Ottoman era and are still in use today despite being in a state of acute disrepair. The fact that these two Qaisariya buildings are amongst the very few remains of historic architecture in the buffer zone surrounding the Citadel of Erbil inscribed on UNESCO's World Heritage List in June 2014 – gives them major importance as testimony of Erbil's urban growth in the 19th century. The urban, functional and historic connectivity inside the bazaar area, between this and the citadel, as well as between Erbil and its hinterland has been presented elsewhere.1 The paper by M. Müller-Wiener and A. Mollenhauer in this volume also offers some preliminary comparisons with bazaar buildings in other towns of Iraqi Kurdistan. This paper focuses on the two *Qaisariya* buildings themselves and presents selected results of a research and refurbishment planning project that was conducted in 2012 and 2013 during four working visits to Erbil and subsequent examinations.2 Given the complexity

The teahouse of Mam Khalil is situated at the northern entrance to the Eastern *Qaisariya* and for around six decades has been one of the most important socio-economic meeting places in the bazaar of Erbil. With the death of Mam Khalil at the age of 77 in early 2015 Erbil lost a venerable witness and a part of its living history. Mam Khalil – we will always remember your hospitality, and your strong and very sweet tea.

¹ Mollenhauer and Müller-Wiener 2014a; 2014b; Müller-Wiener and Mollenhauer (in this volume).

and diversity of the questions to be dealt with, the team incorporated representatives of a wide range of disciplines ranging from applied geodesy, engineering, conservation science, heritage conservation, and architectural design, to *Bauforschung* (building archaeology), Islamic art history, Near Eastern archaeology, and 3D visualisation.³

The development of a scientifically sound refurbishment concept required first of all a detailed record of the built structures in their current state. This included the creation of true-to-deformation plans at scales of 1:100 and 1:25, as well as written and photographic documentation in systematic room logs which served as the basis for subsequent processing such as damage mapping and structural analysis. All this work was executed while the bazaar was in active use (Fig. 1). On the one hand this complicated the documentation procedure because the articles for sale hindered access to the architecture behind and prohibited the application of more sophisticated measurement technologies such as laser scanners, but on the other hand the inevitable close contact with the merchants enabled us to benefit from their personal knowledge about many aspects of the buildings.4 Furthermore, the documentation comprised the investigation of archive material such as historical plans and photographs and interviews with contemporary witnesses as well, which all together provided evidence for the graphical reconstruction of the original shape and appearance of the buildings. But the research objective was not only to understand the original design and functionality of both buildings but also to enlarge our

parts of this paper are extracts from two unpublished reports that were submitted to the Governorate of Erbil in 2013 (Eastern *Qaisariya*) and 2014 (Western *Qaisariya*) respectively.

The project is named 'Denkmalgerechte Sanierungsplanung für historische Handelsbauten im Basar von Erbil (Nordirak)' and has been financed by the Cultural Preservation Programme of the German Ministry of Foreign Affairs. It was conducted as a cooperation between the Technical University of Berlin and the German Archaeological Institute under the co-direction of Martina Müller-Wiener (Islamic art history, urban history and historical sources), Anne Mollenhauer (architectural history and heritage conservation) and the author (building archaeology and heritage conservation). In Iraq and Kurdistan the project cooperated with the Governorate of Erbil district (governor Nawzad Hadi) and the Directorate of Antiquities in Erbil (directors Haydar Hussein and Muhammad Nader Babakr assisted by Sabir Hasan Hussein) and was assisted by the Iraqi Institute for the Conservation of Antiquities and Heritage (director Abdullah Khorsheed and academic director Jessica Johnson), the High Commission for Erbil Citadel Revitalization (director Dara al-Yaqubi, chief architect Ranan Khasraw Tawfiq and cultural heritage/conservation advisor David Michelmore), the Ministry of Municipality and Tourism (Abdul Mumen Maruf) and the city council of Erbil (mayor Nihad Salim Kodscha) with several of its municipalities. The work would not have been possible without the manifold support from numerous representatives of the aforementioned institutions. Therefore this is the place to express our gratitude to all of them and not least to the warm-hearted and hospitable people of Erbil. Some initial project outlines have already been published (Kurapkat et al. 2013; 2014; Arera and Saleh 2013; Kurapkat 2014). A comprehensive publication of the project is in preparation. Some

³ The project benefited from the contributions of the following partners, associates and trainees: Ziegert – Roswag – Seiler Architekten Ingenieure (civil engineering and evaluation of seismic damage); Sebastian Speiser (conservation/restoration); Juliane Goischke (applied geodesy); Ulrike Siegel (building archaeology); Lana Haddad (Near Eastern archaeology); Mada Saleh (heritage conservation) Anne-Marie Arera and Olga Zenker (architectural design); Sarah Mürmann and Christina Wolf (heritage conservation) and Claas von Bargen (3D visualisation). Furthermore the project members thank Dorothée Sack and Margarete van Ess for their advice as senior consultants.

⁴ The merchants, tailors, and many of their customers very kindly supported our work in multiple ways. Furthermore it is noteworthy that especially the tailors of the Eastern Qaisariya identify strongly with the building, where their family enterprises have been based for decades. They show a remarkable awareness of the building's historic value and repeatedly expressed their desire for a sensitive refurbishment of the building without too much alteration.



FIGURE 1. SURVEY WORK, EXECUTED WHILE THE BAZAAR WAS IN ACTIVE USE, IN THE BACKGROUND THE NORTHERN GATES TO THE WESTERN *QAISARIYA* (2013, TU BERLIN/DAI, D. KURAPKAT).

knowledge of all alterations, damage and repairs which have occurred since they were built.

The design and history of the Eastern Qaisariya – the Qaisariyat al-Khayyatin

The dating of the Eastern *Qaisariya* is not absolutely clear as there is no building inscription or other source that gives exact information about its erection. At least a *terminus ante quem* is provided by the German traveller Ernst Herzfeld who visited Erbil in 1916 and had the impression that the building was 'quite new' at that time (Sarre and Herzfeld 1920, 314). Also, the British officer Rupert Hay who came to Erbil in 1918 reported about '[...] *the bazaar, which is very extensive, and contains two fine arcades in good repair* [...]' (Hay 1921, 117). It is beyond doubt that the term 'arcades' refers to the two *Qaisariya* buildings, as their principal appearance much resembles the commercial buildings by this name that Hay knew from his home country. On the other hand it is

obvious, from comparisons with other bazaar buildings and against the background of the socio-economic history of the area, that the two Qaisariya buildings in Erbil cannot have been erected before the second half of the 19th century. Another source is the oral transmission of the Chalabi family that erected the buildings. All this evidence makes it most likely that the Eastern Qaisariya was built around the end of the 19th century, probably between 1890 and 1900. Its irregular ground plan indicates that it was not constructed outside the built environment of that time but in the context of an already existing urban fabric (Fig. 2).7 However, no physical remains of this preceding phase seem to have survived, having been replaced by younger structures. This became clear when some small vaulted shops connected with the Oaisariva on the east side were demolished in October 2012 in the course of construction work in the adjacent street. The then possible observation that these shops used the perimeter wall of the *Qaisariya* as their rear wall proved that they were added secondarily. Most probably this occurred shortly after the erection of the Qaisariya at the turn of the 20th century. It is highly regrettable that these small shops – authentic relics of traditionally built independent trade buildings – disappeared recently. The oldest part of the Eastern *Qaisariya* is situated in the south-western sector of the building and is only one storey high. The shops in this section are a little smaller than those in the rest of the building and the walls are thinner. The architectural survey showed beyond doubt that this part of the structure was erected first and later on integrated into the secondarily built two-storey building that forms the major part of the Eastern Qaisariya. This edifice is more than 60 m long and 30 m wide. It is organised along four vaulted two-storey hallways and several single-storey connecting corridors. Originally all seven entrances were lockable by double-leaf gates. Only three of these wooden leaves with metal coating remain in situ today, though they are no longer in use. The configuration with lockable gates that separate the building from the surrounding bazaar area is characteristic for *Qaisariya* buildings all over the Oriental world and is motivated by the need for safety for particular precious goods, most notably textiles.8 This fits well with the continuous function of the Eastern Qaisariya as the tailors' Qaisariya (Qaisariyat al-Khayyatin) where traditional Kurdish men's suits - called Jilekurde - are manufactured in dozens of individual workshops (Fig. 3).9 Today the ground floor comprises 138 shop units,

blocks, connecting streets for pedestrians and flanked by numerous small shops. But in contrast to the vaulted hallways of the Qaisariya buildings, the corridors of 'arcades' and 'passages' are covered by glass roofs on iron constructions.

⁵ In France quite similar trade buildings are called passages. Both categories – the 'arcades' in Great Britain and the 'passages' in France – have in common that they are arranged along corridors inside

⁶ See the paper of M. Müller-Wiener and A. Mollenhauer (in this volume), esp. n. 6-7.

⁷ See Müller-Wiener and Mollenhauer (in this volume) n. 21-2.

⁸ Scharabi 1985, 64; Wirth 2000, 277-81.

⁹ For a short description of the single elements of the Jilekurde see Kurapkat (2015: 58). A thorough ethnographic analysis of the traditional Kurdish men's suits including their tribal and political connotations awaits future research.



FIGURE 2. EASTERN *QAISARIYA*, GROUND PLANS OF THE GROUND FLOOR AND THE UPPER STOREY (2012, TU BERLIN/DAI, ORIGINAL DRAWINGS D. KURAPKAT, DIGITISATION M. SALEH AND O. ZENKER).

most of them run by tailors, some by related enterprises such as haberdashers, completed by the tea house at the northern entrance. Each shop is entered through a single arched entrance from the hallway, occupying a floor space of approximately 4 m², and was originally covered by a flat cloister-vault. Like the main gates, the arched openings to the shops are constructed of a soft but beautifully grained natural stone, called Mosul marble, whereas all the walls and vaults are built of tough baked bricks. Originally the floor level inside the shops was significantly higher than in the hallways and most of the shops were equipped with underground storage rooms that were accessed individually through small entrances and stairs leading down from the front of each workshop. These entrances were integrated into massive counters called mastabas – that once defined a clear barrier between the tailor's workspace and his customers, who stayed in front of the mastaba in the hallway. Around the middle of the 20th century almost all cellars were filled in, the floor level inside the shops was lowered and the *mastabas* were demolished, thus changing the functionality of the building and allowing the customers to enter the workshops. Today only one single cellar is preserved under a shop in the one-storey part of the building.

The functionality of the upper floor was completely independent of the ground floor. Via seven narrow and extremely steep staircases it was possible to reach wooden galleries that stretched along the upper-floor walls of the hallways, resting on protruding beams (compare the virtual reconstruction in the paper by A. Mollenhauer and M. Müller-Wiener (in this volume, fig. 5). These galleries afforded access to the separate upper-floor rooms most of which are twice the size of the workshops below (Fig. 2). These observations indicate that the upper-floor rooms never had a functional connectivity to individual workshops on ground floor. Furthermore the



FIGURE 3. EASTERN *QAISARIYA*, TAILORS' WORKSHOPS ALONG THE EASTERN HALLWAY UNDER A TEMPORARY SHELTER WHICH REPLACED THE COLLAPSED BARREL VAULT, ALSO THE WOODEN GALLERY IS MISSING AND THE UPPER-FLOOR ROOMS ARE NOT ACCESSIBLE ANY MORE (2012, TU BERLIN/DAI, D. KURAPKAT).

dimensions of the doors and windows and especially the extremely low railings of the galleries suggest that these rooms were not intended for the circulation of customers. Instead they served as storerooms for the goods of the Chalabi family's long distance trade activities. ¹⁰ Around the middle of the 20th century major changes were made to some rooms in the southwest of the upper floor. The original layout with individual doors for each room was changed by connecting some rooms, thus creating groups of two or three rooms with new inner openings. Each group of rooms is accessible from the wooden gallery only through one door. The other doors, now obsolete, were transformed into windows, which can easily be distinguished from the original windows by the different shape and dimension of their grilles. Another addition

¹⁰ Müller-Wiener and Mollenhauer (in this volume) n. 25.

from this time is the installation of a first electric power grid within the building. A few relics of this are preserved near the base of the vaulting in the hallways. During this period the rooms of the upper floor were still fully in use, which definitely was not the case in the later part of the 20th century. As the architectural survey and the static analysis revealed, there was a failure to maintain the earthen cover of the roofs above the upper-floor rooms. The rainwater that thus seeped in caused damage to the roof beams. In combination with termite infestation this resulted in the collapse of most flat roofs over the upperfloor rooms. Indeed these roofs also had to fulfil an important static function in order to counter the shearing forces transmitted from the nearby barrel vaults over the hallways.¹¹ Consequently the vaults pushed the upperfloor walls outward and serious cracks appeared in the vaults. In the case of the eastern hallway of the Eastern Qaisariya this ultimately resulted in the collapse of its vaulting in the 1970s.¹² Probably the bricks crashing down also destroyed the biggest portion of the wooden galleries in this hallway which are completely missing today (Fig. 3). Since then these upper-floor rooms have not been accessible any more and at least since that time they have not been used. The vaulting was subsequently replaced by a provisional steel binder construction with corrugated iron sheeting that is still in place today. The binders integrate the second electric power grid of the building. Inside the other three hallways with still existing vaults the corresponding parts of the same power grid are fixed just above the railing of the wooden gallery. This blocks any traffic on the galleries, thus indicating that also in these parts of the building the upper storey was already out of use by the 1970s.13 Furthermore, the renewal of the floor in all the hallways and corridors with tiles measuring 30 x 30 cm must be dated to this time, because any earlier floor would have been damaged by the falling bricks of the vault in the long hallway.

All further changes to the building have been initiated and conducted separately by the individual shopkeepers since the 1980s. Most of the measures have been aimed at the enlarging of the shops. For the most part this was achieved by reducing the thickness of the walls between the shops and by extending the shop area into the hallways. The most obvious modification, however, affected the shutters in front of the shops. None of

¹¹ According to the static analysis by the civil engineer Christof Ziegert (Ziegert/Roswag/Seiler – Architekten – Ingenieure, Berlin)

⁽Ziegert/Roswag/Seiler – Architekten – Ingenieure, Berlin).
¹² Maybe this damaging event was additionally triggered by the slight seismic activities that regularly occur in the Taurus region. In the spring campaign of 2013 our team personally witnessed such earth tremors in Erbil causing maladjustment of our tachymeter. Furthermore the vaulting of this eastern hallway was slightly wider than the others, had transverse arches, and was lit by dormer windows on both sides in contrast to the other barrel vaults which have skylights. Possibly these constructive differences also weakened the vaulting of the eastern hallway and contributed to its collapse.

¹³ Probably the difficult access to the small upper-floor storerooms via steep staircases and narrow galleries was not practicable any more under shifting economic conditions.

the original horizontally folded wooden shutters are preserved. The majority have been replaced by metal roller shutters, some others by vertically folded steel shutters. Additionally some parts of the hallways have been modified by newly built shop façades as well as by the installation of huge advertising panels and air conditioning systems. The section of the tea-house at the northern end of the eastern hallway has been affected by the erection of a new façade and radical changes to the division of its interior space. Another alteration concerns the spatial organisation in the one-storey-part of the building: originally this was connected to the adjacent western street through a further corridor. This corridor is currently blocked and divided by a chipboard wall and both parts have been converted into shops.

Even the roof has been transformed by a series of provisional changes and repairs. In some parts the barrel vaults over the hallways and the flat roofs over single rooms have been covered with cement. Most of these later changes have led to an incoherent appearance of the building and hinder its perception as a self-contained building that was planned and built as a functional and architectural unit.

The design and history of the Western Qaisariya

The general layout and construction details of the Western *Qaisariya* with its close parallels to the Eastern Qaisariya indicate that it was built at about the same time around the end of the 19th century, although some minor differences suggest that it could have been built slightly later than the other edifice. For example the Western *Qaisariya* was never equipped with the cellars that proved to be not so functional in the Eastern Qaisarya. In comparison the Western Qaisariya is also a little smaller, covering a ground area of approximately 40 x 40 m (Fig. 4). The irregular layout of the building's ground plan, especially on its northern and southern sides, with a series of projections and recesses gives evidence that its design also had to respect an already existing surrounding building fabric. The building is organised along five two-storey hallways, three of them running north-south, and two others west-east. These hallways were originally covered by barrel vaults, three of which are still intact; the westernmost and the northernmost ones collapsed and were replaced by steel binder constructions with corrugated iron sheeting.¹⁴ In part the hallways are connected by additional singlestorey corridors, one of them also providing access from the eastern façade. Altogether the building has nine entrance gates of essentially the same design and dimensions as those in the Eastern Qaisariya. The ground floor comprised originally 107 shop-units, covered by flat cloister-vaults. The upper floor was accessed via five staircases - three of them still intact today - and

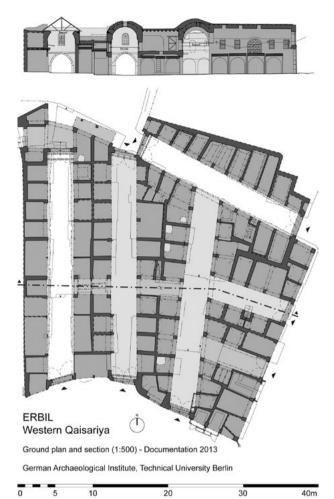


FIGURE 4. WESTERN *QAISARIYA*, GROUND PLAN OF THE GROUND FLOOR AND SECTION DRAWING (2013, TU BERLIN/DAI, ORIGINAL DRAWINGS D. KURAPKAT AND U. SIEGEL, DIGITISATION A.-M. ARERA AND O. ZENKER).

wooden galleries along the hallways from which it was possible to enter most of the storerooms located there. None of these galleries have survived but their former positions are evident from the empty holes in the walls where their projecting beams were once inserted. Only the eastern part of the upper floor shows a different organisation: These rooms are accessed without galleries via internal staircases and through doors that connect groups of rooms, indicating that this part of the building may have had a different functionality. This hypothesis is supported by the fact that these upper-floor rooms were equipped with more and bigger windows than the others — especially in the eastern façade — which are blocked today. Also some rooms in the north-western corner of the upper storey seem to have served a special purpose

¹⁴ According to oral tradition and aerial photographs the collapse of these two vaults must have occurred in the 1980s.

as they had a balcony and opened onto the citadel and a small square in front of the Western *Qaisariya* where three of its entrance gates are arranged close to one another (compare the historic photograph in the paper by A. Mollenhauer and M. Müller-Wiener in this volume, fig. 2). Possibly these upper-floor rooms were the location of the building manager's office.

During the early 1990s an artillery shell is said to have destroyed the southern entrance gate to the westernmost hallway, which was repaired with steel profiles forming a horizontal lintel instead of the original pointed arch. Since the late 1990s especially the shops along the westernmost hallway have been changed dramatically by the individual shopkeepers. Here most of the original ground floor walls including the arcades of Mosul marble have been removed and replaced by steel constructions. Also the cloister-vaults over the shops have been destroyed almost completely and replaced by flat steel and concrete ceilings of much greater height. As a result the upper storey of this part of the building is almost non-existent, although some fragments of its original walls are still preserved, held in place by the constructions of the 1990s. These fundamental changes to the westernmost hallway make it nearly impossible to recognize it as a part of the historic Qaisariya, and it constitutes a special challenge to the refurbishment concept.

Evaluation and preservation of heritage values

The findings about the building's original state and later history exemplified above have been the basis for the evaluation of the *Qaisariya*'s heritage characteristics and the establishment of a systematic plan of heritage values that formulates binding guidelines for all future refurbishment work. The heritage values of the *Qaisariyas* can be defined in five categories:

- Historic value: the *Qaisariyas* are witnesses to Erbil's urban growth in the 19th century and its regaining regional importance and wealth. They testify to the importance of the city as a crossing point of trade routes and a regional market place.
- 2. Urbanistic value: the *Qaisariyas* are two of the few preserved historical buildings in the lower town of Erbil. They form the core of the busy bazaar area. Together with the residential quarters on the citadel, the bazaar area forms a constituent part of the urban fabric. Therefore the preservation of this urban complex and its components is essential.
- 3. Architectural and art historical value: the *Qaisariyas* are of outstanding architectural and art historical value since they combine different types of bazaar buildings, thus creating a new and distinctive type. Like the traditional *Bedestan*, the core of Ottoman market places, where precious textiles were stored and sold, the *Qaisariyas*

- are self-contained buildings, which originally could be closed by large wooden doors. As in the *Kapalı Çarşı*, the closed bazaar in Istanbul, or the traditional *Arasta*, the *Qaisariyas* of Erbil consist of vaulted alleys that are connected with the remaining bazaar area. In comparison to other bazaar buildings the wooden galleries in the upper floors are an outstanding feature of these two bazaar buildings in Erbil.
- 4. Technical value: both *Qaisariyas* provide evidence of the traditional local craftsmanship involved in masonry work, construction of brick vaults, carpentry, and ironwork.
- 5. Socio-historic value: the buildings gain distinctive socio-historic value through their continuous use as a market place where citizens of Erbil from all social, ethnic, religious and gender groups meet with foreigners as well. Especially the uninterrupted functionality of the Eastern *Qaisariya* as a tailors' production facility for traditional Kurdish men's suits combines the building's architectural heritage values with Kurdish textile heritage and the intangible heritage of its traditional production process in a unique way.¹⁵

The plan for heritage values establishes seven different categories that are mapped systematically for all elements of the buildings. ¹⁶ All future refurbishment work has to comply with these binding guidelines. The seven categories are: Category 1 (preservation absolutely required), Category 2 (preservation desired), Category 3 (deconstruction required), Category 4 (deconstruction desired), Category 5 (reconstruction required), Category 6 (reconstruction possible), and Category 7 (unspecified).

Damage evaluation, structural analysis and proposal of a heritage conservation master plan

Irrespective of the heritage values, all parts of the existing buildings have been evaluated in regard to any damage and risks that are crucial to determine the safety and suitability for future occupancy.

All damage is documented photographically and mapped in systematic plans.¹⁷ This includes, for example, damage to the brickwork, such as pronounced and less pronounced cracks; reduced thickness of walls; uncontrolled wall openings and walls without coping; damaged or collapsed vaults and roofs; and damage to wooden galleries. Furthermore the reasons for the damage have been analysed and appropriate solutions for a sustainable refurbishment have been proposed in

¹⁵ See n. 9.

¹⁶ These colour-coded plans cannot be presented in this paper but were submitted to and approved by the Governorate of Erbil and the Department of Antiquities of Erbil in two detailed reports in 2013 and 2014.

¹⁷ See n. 16.

the heritage conservation master plans submitted to the Kurdish authorities.

Conservation and restoration work

In order to test the proposed measures under the local conditions practically and to produce examples for further discussions with the shopkeepers in the bazaar, as well as decision making with the Kurdish authorities, two limited areas have been chosen for the exemplary implementation of conservation and restoration work.

In the year 2012 the vertical axis of one shop in the Eastern *Qaisariya* was refurbished from the floor of the hallway up to its barrel vault (Fig. 5). The work comprised the conservation and repair of the gypsum wall plaster, the reconstruction and supplementation of a section of the wooden gallery including the restoration of its iron fittings, the cleaning and conservation of the Mosul marble stonework, and the design and installation

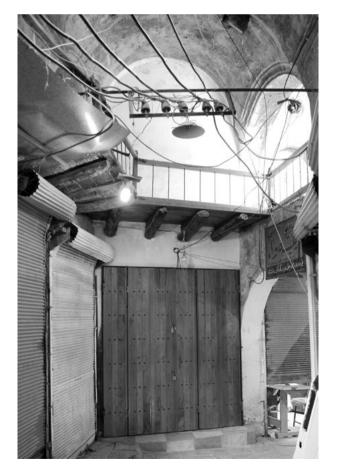


FIGURE 5. EASTERN *QAISARIYA*, VERTICAL AXIS OF ONE SHOP AFTER THE COMPLETION OF CONSERVATION AND RESTORATION WORK (2012, TU BERLIN/DAI, D. KURAPKAT).

of a new folding shutter prototype. All this work was conducted by an experienced restorer from Germany in collaboration with local craftsmen. Additionally a temporary steel shelter was installed over a nearby upper-floor room in order to protect the newly restored zone from incoming rainwater.

In order to supplement the experiences and results from this work suitably, in the year 2013 a second axis was refurbished at the eastern façade of the Western *Qaisariya* that also incorporates one of its entrance gates. In addition this work comprised the conservation and completion of brickwork and the restoration of a window with a wooden frame and iron grill.

Design proposal and outlook

As already mentioned, the westernmost hallway of the Western *Qaisariya* is damaged and altered so much that a refurbishment is not sufficient but there is a need to rebuild substantial parts. In order to find an appropriate answer to this challenge a special design proposal for this part of the building was drawn up (Fig. 6).¹⁸

After the presentation of the research results to the Erbil Governorate and the Department of Antiquities of Erbil, these authorities agreed completely to the project's heritage conservation master plans and the measures proposed therein. The project members are grateful for the confidence demonstrated in and appreciation of our work. Furthermore the Kurdish authorities promised to initiate the complete refurbishment of both *Qaisariyas*, according to the guidelines of the conservation master plans. Understandably the dramatic events of the year 2014 shifted priorities in Kurdistan to other urgent problems. We feel with all people in Kurdistan and hope that a better future is near when it will be possible to once again put the focus on questions of heritage conservation.

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¹⁸ Anne-Marie Arera and Olga Zenker developed this design proposal on the Architecture Master Course at the Technical University Berlin under the supervision of Prof. Philipp Misselwitz.



FIGURE 6. DESIGN PROPOSAL FOR THE REFURBISHMENT OF THE IRREVERSIBLY ALTERED WESTERN HALLWAY OF THE WESTERN *QAISARIYA* (2013/14, TU BERLIN, A.-M. ARERA AND O. ZENKER).

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Ninevite 5 – culture or regional pottery style?

Dorota ŁAWECKA

The Ninevite 5 period spans nearly the whole first half of the 3rd millennium BC (ca 3000-2550, ETG2-4 according to the ARCANE project periodization). Most distinctive, and relatively well known is the pottery of this period, with its easily recognizable patterns of painted, incised and excised decoration. Undoubtedly, the Ninevite 5 pottery assemblage is a local, northern development characteristic mainly for the upper Tigris area. But what else do we really know about this period, apart from the pots? Are the remains of its material culture coherent and abundant enough to see clear typical cultural patterns? And is our data sufficient and adequate to identify the Ninevite 5 phenomenon as 'a culture' meeting the criteria of archaeological definitions? In this brief overview I will try to point out those aspects of the material remains of which we are relatively well informed, identify instances in which we are at least able to suggest the existence of certain unique patterns or stylistic peculiarities, and draw attention to areas of our complete ignorance. The inevitable conclusion is that much field work (and publishing) has to be done before we are able to gain a satisfactory recognition of this intriguing and still poorly known period.

As is very well known, the term 'Ninevite 5' has been introduced as an outcome of Max Mallowan's excavations in Nineveh, where in the fifth stratum of a deep sounding (the so-called Prehistoric Pit) at Kuyunjik he found characteristic painted pottery.1 The Ninevite 5 assemblage of early painted, and later incised and excised pottery is relatively well known, owing to excavations at Tell Mohammad Arab, where it was found in a well stratified sequence, and due to other excavations and analyses it can be deemed distinctive and typical for a particular period and region.² The Ninevite 5 pottery assemblage lasted from circa 3000 to 2550 BC, a period almost as long as that which has elapsed since Francisco Pizarro conquered the Inca empire. In the ARCANE (Associated Regional Chronologies for the Ancient Near East and the Eastern Mediterranean) terminology, consecutive stages of the Ninevite 5 span Early Tigridian (ETG) 2 to 4 phases, from the first transitional period to the late excised variety.

The Ninevite 5 pottery style is characteristic for Northern Iraq and the eastern part of the Upper Khabur area in Syria. The map in Fig. 1 illustrating its extent was

published by Elena Rova back in 1988, and it needs to be corrected and revised, which will be possible after the conclusion of ongoing survey projects and publication of their results. Naturally, also recent finds from southern Turkey have not been marked on the map. Although a few examples of transitional Late Uruk/Ninevite 5 pottery are known from Syrian sites (the most important being Tell Brak), it seems that the core area, the heartland of the Ninevite 5, is the Iraqi Kurdistan area, where the early stages of indigenous development of this pottery were found on many sites. Although Ninevite 5 painted pottery occurs (albeit rather infrequently and together with vessels of different traditions) also in the eastern part of the Upper Khabur drainage area, I will concentrate here on this core region. Even if we take into consideration the eastern upper Khabur region, most of the important data from this area come from layers with the so-called Early and, especially Late, Excised pottery, which seems to be a regional western variation dating from the close of the Ninevite 5 sequence, hardly present in northern Iraq.3

Some authors regarded the Ninevite 5 as an 'archaeological culture'.⁴ A sound negative conclusion was formulated by M. Roaf already in 2003 (see below). Still, when we were working in the Tigridian Regional Group of the ARCANE project, despite not being newcomers to this field of study we were struck by the paucity of published material remains, structures as well as small finds, especially ones from good, primary archeological contexts.⁵

The very term 'archaeological culture' is still much debated, especially when viewed in a broader perspective of culture history or ethnic approach.⁶ According to the classical definition conceived by V. G. Childe: 'We find certain types of remains – pots, implements, ornaments, burial rites, house forms – constantly recurring together. Such a complex of regularly associated traits we shall term a "cultural group" or just a "culture".⁷

I will use here the term 'archaeological culture' in a basic meaning, only as a taxonomic unit helping to sort

¹ Thompson and Mallowan 1933.

² Arrivabeni forthcoming; Grossman 2014; for a brief overview of Ninevite 5 pottery: Roaf 2000, 434-7.

³ On post-LC 5 North Mesopotamian pottery development: Rova 2014; for the Jezirah region: Rova 2011, 51-7.

⁴ Eg., Akkermans and Schwartz 2003, 211; Forest 2003, 563.

⁵ Tigridian Regional Group of the ARCANE project, lead by P. Bieliński and F. Roya.

⁶ Jones 1997, 106-10; Johnson 2010, 15-21; Roberts and Vander Linden 2011.

⁷ Childe 1929, v-vi.

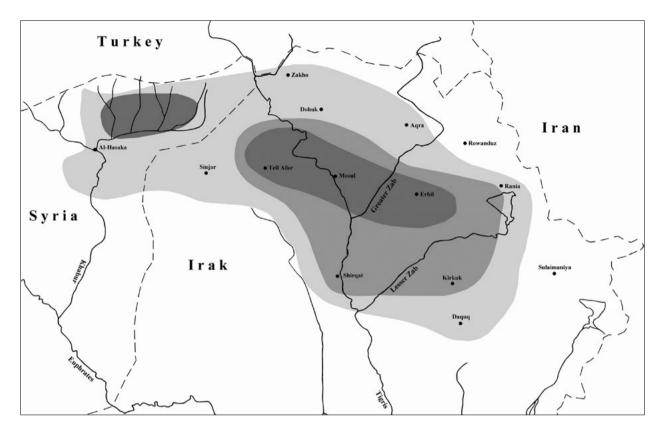


FIGURE 1. DISTRIBUTION OF NINIVITE 5 POTTERY, AFTER ROVA, E. 1988, PL. II - MAP II.

and classify data (that is, material remains – artefacts and objects) into coherent assemblages according to the accepted criteria. Such a polythetic concept depends on a number of various coexisting features. We need a whole range of different remains, a complex of regularly associated traits constantly recurring together.

So, we have the pottery, abundant and distinctive, typical for a particular region and period – but what else do we have, even if we treat the whole period as one entity?

Let us first consider the architecture.⁸ This type of evidence is scarce, and examples of individual types of structures are still few and isolated. Most of our scanty evidence comes from small sites in the region of the Eski Mosul Dam Salvage Project in the Tigris River valley. A few settlements (such as, for example, Tell Jikan, Tell al-Hawa or Nineveh) apparently had urban proportions, but either have not been excavated at all or were explored only to a limited extent. So far, in the core area, no temples or public buildings are known from excavations, but one has to keep in mind that almost

nothing is known about architecture of larger sites where prestigious buildings were more likely to have been built. Several one-room buildings, that most probably served as temples or shrines, belonging to the later part of the Ninevite 5 pottery sequence (Early Jezirah 2 corresponding to ETG 4) were found in the Khabur region, but since they have no counterpart in the east, it is not known if they are typical for the Ninevite 5 as such, or only for the Khabur region.

A unique large building was discovered at Tell en-Nemel in the southern periphery area, where Ninevite 5 pottery was found together with Scarlet ware. However, this circular structure, with no analogies in the Tigridian area, is the northernmost example of an Early Dynastic I round buildings tradition characteristic for the region of the Adhaim River and Jebel Hamrin and cannot be regarded as a typical feature of the Ninevite 5 assemblage.¹⁰

The only regularity can perhaps be observed in domestic architecture. In Tell Mohammed 'Arab a typical house

⁸ Roaf 2003; Ławecka forthcoming.

⁹ Pfälzner 2011, 177-9; Bieliński 2010, 548-51.

 $^{^{\}rm 10}\,\rm On\;ED$ Round Buildings in general: Heil 2011.

consisted of one large rectangular room, sometimes with external buttresses (Fig. 2a).11 The entrance is always located on a long side, close to a corner. A distinctive feature of the interior is a fireplace on a plastered floor in the central part of the room with an adjacent rectangular mud-brick platform. In some cases, a second room abuts the main one. Similar houses have been discovered in Tell Kutan. Although not a single building was cleared entirely (the plan on Fig. 2b shows remains belonging to at least two layers), the excavators state: 'among the fragmentary plans we cleared, large rectangular rooms seem to be typical, in the centre of which was lying a plastered fire-place associated with an adjoining low bench'.12 Comparable mud-brick houses, with narrow external buttresses and rectangular hearths and platforms, were also reported from Tell Selal.¹³ It seems that such a plan of a village house, with one main room and a hearth abutting a low brick platform, might be typical for the early Ninevite 5 period,14 but we lack comparative data from other sites outside the Eski Mosul Project Area. Early Jazira 1 single-room houses from Tell 'Atij in the Middle Khabur area, although similar in layout, differ in details of internal fittings. 15 This site is one of the few in the region where some Ninevite 5 pottery was found together with local ceramics, and its ties with the core region of the Ninevite 5 are still unclear.

Another characteristic feature are so-called 'grill structures' consisting of a few parallel, usually thin and low mud-brick walls. At Tell Karrana these constructions were raised in open spaces between houses. Preserved imprints of reeds, in some cases covered with clay, indicate that originally a reed floor was set upon the parallel walls. Remains of these structures suggest that the parallel walls were a kind of substructure providing ventilation and protection against humidity. Whether they were platforms for drying foodstuffs, or small stores, is not clear. However, 'grill structures' are not restricted to the Ninevite 5 period or to the region of its occurrence. Similar arrangements are known from numerous Near and Middle Eastern sites since the 7th millennium BC until ca 2800 BC. In the Tigridian region, they were found already in Late Uruk layers at Tell Mohammed 'Arab, Tell Rijim and Siyana Ulya. They are also known from Early Jezirah 1 period levels at Tell Ziyade, Tell 'Atij and Tell Raqa'i in the Middle Khabur region. An outstanding grain store, built on a trapezoidal plan with external buttresses on three sides, was excavated at Telul eth-Thalathat V (Fig. 3). Its substructure consists of fourteen parallel walls, ca 0.5 m high. Above, on a layer of tightly placed reed stalks covered with clay, forming the floor, walls of its upper structure were erected. The building consisted of ten compartments, some

with additional interior partitions. Two entrances led through doors with over half a meter high sills to rooms unconnected with the rest of the building. The walls of the upper structure are preserved to a maximum height of one meter. No entrances or passageways leading to the other compartments were revealed. It seems that they had either been connected at a higher level, or accessible only through the roof. The building served as a granary, probably for a village community. It had been burnt and its function was confirmed by the discovery of carbonized grain deposits. This granary was constructed according to the same principles as the 'grill structures', but on a different scale, and is so far unique. 16

The next feature to be considered are burials. They constitute a rather coherent group, but there are no apparent distinctive traits which can be taken as a cultural hallmark characteristic exclusively of the Ninevite 5 area¹⁷. With the exception of Tell Mohammed Arab, where a relatively large sample has been excavated, the evidence from other sites is scanty. Most of the graves are simple shaft inhumations, with typical grave goods, the body lying on the side in flexed position. The orientation of the body, even if consistent within a particular site. is not uniform across different assemblages. Moreover, when Dianna Bolt and Anthony Green analyzed Ninevite 5 graves, they wrote: '...the main problem with funerary analysis for the Ninevite "culture" is certainly the small size of the sample, for even in ideal circumstances it has been calculated that for divisions within burial groups to be statistically valid it requires a very large sample of graves'.18 There was no sudden increase in the number of known Ninevite 5 graves since then.

Glyptic finds (except for a few seals and several dozen seal impressions from Niniveh¹⁹) are not numerous. At the beginning of the period, the Late Uruk glyptic tradition is still discernible, but later an overwhelming majority of patterns either belonged to or derived from the socalled 'Fired steatite' or 'Piedmont' style. This style most probably originates from the environs of Susa. Fired steatite seals were widely distributed: scarce in southern Mesopotamia, they constitute a significant component of the corpora of seals in the Diyala and Hamrin regions, and in northern Iraq along the foothills of the Zagros mountains, and were also found in the Upper Khabur area. This distribution pattern is indicative of contacts between the inhabitants of that zone, which are usually interpreted as a result of long-distance trade.20 Since a few actual seals were found on small sites, such as Mohammed Arab or Tell Rijim, which most probably did not participate directly in the wider distribution network, it seems that they were also (or exclusively) used for

¹¹Roaf 2003, 317-9, 327 sq. (fig. 14-5).

¹² Forest 1987, 85 sq. See also Bachelot 2003, 153.

¹³ Roaf 2003, 320.

¹⁴ Roaf 2003, 320.

¹⁵ Pfälzner 2011, 147.

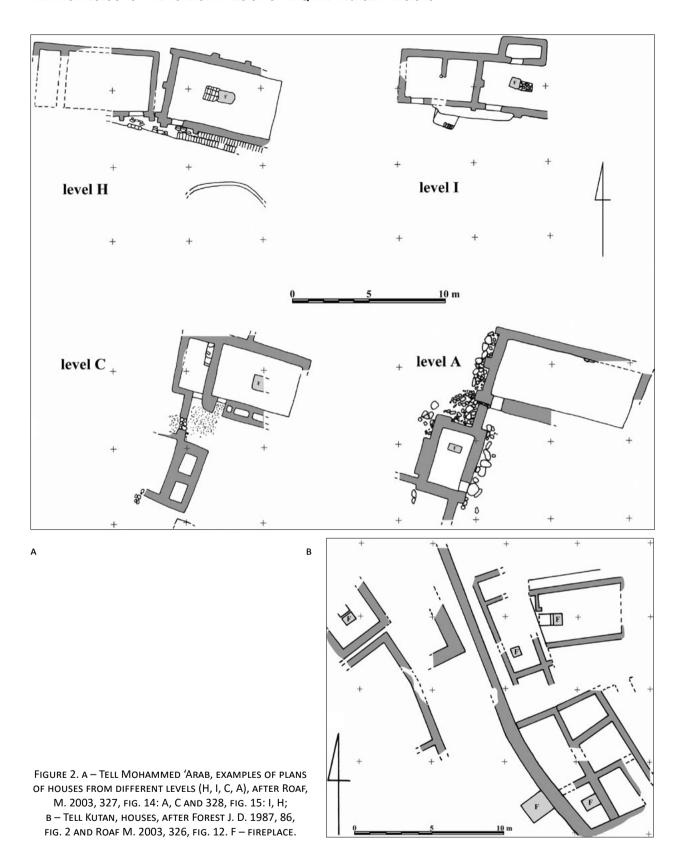
¹⁶ Description in Horiuchi 1974, 18-25.

¹⁷ For an overview of Ninevite 5 graves and burial customs: Bolt and Green 2003.

¹⁸ Bolt and Green 2003, 520.

¹⁹ Collon 2003.

²⁰ Pittman 1994.



local administrative purposes. Even if local variations occur, it is clear that the Fired Steatite style was not

native to the Ninevite 5 region and must have been transferred there from the south-east. Still, another small

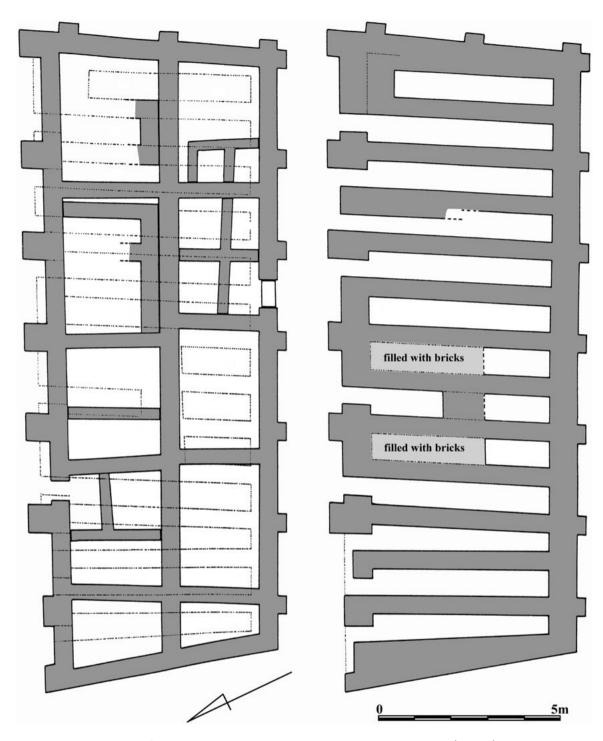


Figure 3. Tulul eth-Thalathat V, grain store: left – superstructure (in gray) on foundations (dotted lines), right – foundations, after Fukai, S. *et al.* 1974, pl. XLV.

group of designs does not belong to the Fired Steatite style and has no analogies elsewhere.²¹ Some Ninevite

5 seals were probably locally made, but they are rather few and do not constitute a coherent group. According to Elena Rova 'No distinctive Ninevite 5 glyptic style can be recognised..., since different styles were in use at the

²¹ e.g. Collon 2003, 257.

same time, and none of them is exclusive of the Ninevite 5 area'.²² Perhaps closest to what we are looking for is a set of unusual, large stamp seals made of baked clay with the design on the narrow end. They seem to be distinctive, but only seven or eight (one case is unclear) are known from two, or possibly three, sites.²³

Small finds will not help us either. Published figurines and other artefacts, mainly of terracotta, were studied for the Tigridian group of the ARCANE project by Monica Tonussi. Only three types among all such objects coming from Upper Tigris third millennium levels are present in ETG 2-4. They are represented by one, or possibly two model tables (the dating of the second one is uncertain) and a few figurines of bulls and rams. Among the metal objects, collected and examined by Łukasz Rutkowski, a small number is dated to ETG 2-4, and only pins were represented by more than two specimens. This small collection is not homogenous, with less than a dozen pins of several types, some of them quite simple or with a distribution wider than the Upper Tigris area.

The picture presented here is in agreement with the statement of Michael Roaf in his 2003 article: 'It now seems to me... that the term Ninevite 5 should be restricted to various styles of decorated pottery... The term Ninevite 5 should never be used to describe other aspects of material culture, nor should it be used to refer to a period or culture'.26 I would like to underscore here that it is not my aim to try to prove that the Ninevite 5 was not an 'archaeological culture' in a sense described above. I intended only to offer a short outline of the current state of research, to show how dramatically little we know about this long period, and to highlight the fact that finding distinctive traits attributable to the Ninevite 5 'archaeological culture' is still hardly possible. Not all the results of excavations are fully known, and obviously there is more material to be published, but I think that even if every bit of information were available, it would not substantially change the picture outlined above. We simply still do not know enough. So the only possible concluding remark is: let's dig Ninevite 5 sites!

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²⁶ Roaf 2003, 333.

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²² Rova 2013, 115.

²³ Roaf 2000, 437.

²⁴ Tonussi forthcoming, pl. 1-3.

²⁵ Rutkowski forthcoming, pl. 2, 6. I thank M. Tonussi and Ł. Rutkowski for permission to mention the results of their research.

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Back to the Land of Muşaşir/Ardini: Preliminary report on fieldwork (2005-2012)

DIshad MARE

Introduction

Since the 14th century, and particularly from the early 19th century AD to the late 1970s, many travelers, archaeologists and epigraphers have visited the borderland area (of Bradost-Sidekan) which was called the land of Muṣaṣir during the Iron Age. After the 1970s, due to military unrest the area remained virtually closed to archaeological activities. Since 2005, as a local archaeologist I have started a fieldwork project in this area. The initial aim of this fieldwork was to survey and record the Late Bronze Age and Iron Age sites and artefacts which have been uncovered by chance in the area during the period of military unrest, and much new archaeological evidence has come to light (Fig. 1).

Architectural remains

In 1899 when Lehmann-Haupt was looking for the remains of ancient Musasir/Ardini,3 he described architectural remains at Shkene in Sidekan.4 Al-Amin also recorded details of architectural remains and foundations from Sidekan-Topzawa, and he confirmed what had been recorded by Lehmann-Haupt.5 During my recent fieldwork, I have seen these sites described by Al-Amin, but apart from a few stone remains, which might be the foundations of walls, in Shkene there is nothing else. This may be a result of both agricultural activities and looting during the period of military unrest. There is another mound to the southeast of Shkene, in modern Sidekan, called by the local villagers Baina-nahrain/Newan-du-rubar - 'Between the two rivers' - where the Topzawa flowing down from the northeast meets the Bora flowing from the east at the western foot of the mound. The western and southern slopes of the mound are steep while on the eastern and

northern side there is a medieval Islamic graveyard.⁶ In the 1970s, Rainer M. Boehmer recorded details of fortifications and architectural remains at the Kala-Mdjêser (Mdjêser castle) and Ashkene.⁷ Boehmer also recorded two column bases found in the Kala-Mdjêser. He dated most of these architectural remains and even a group of ceramics collected from Ashkene and Mdjêser to the Iron Age, specifically to the 8th-7th centuries BC or earlier;⁸ he also considered one of the column bases, which was 90-93 cm in diameter, as Urartian and another one, with a bell shaped base, as Achaemenid.⁹ Boehmer compared the Urartian column exposed at Mdjêser with the columns of the temple of Çavuštepe.¹⁰

Column bases from an Urartian public building

I recorded and studied 17 Urartian column bases, which have been reused by the local villagers in Mdjêser during the last 40 years as column bases, stairs and seats in front of or inside the courtyards of their houses. Some of these we found in the vineyards of the village and others in the ruins of the destroyed houses (Figs. 2-4).11 Most of the columns are made from green basalt, though some are made of sandstone, limestone or marble. The columns are generally similar in size. The diameter of most of these is in the region 56-66 cm, but two are different. Of these the smaller one is 33 cm and the larger one 95 cm in diameter. Most of the columns are 32 or 33 cm high, but again two are different - one is 50 cm high and the other is 61 cm high. These differences relate to the type of stone, since the different columns are carved from different stone (marble and limestone). Unfortunately, there are no inscriptions, marks or other symbols on the columns. However, one is incised with two horizontal lines around its diameter and another has an incomplete

¹ For the details of the previous archaeological discoveries in the land of Muşaşir before 1980s, see Marf 2014, 13-29; al-Qalqashandi 1922, 4:376; Lehmann-Haupt 1926, 288-308; Lehmann-Haupt 1910, 241-61; Al-Amin, 1952, 61, 69; 1955, 224; Boehmer 1993-7, 446ff.

² For the first results of this fieldwork announced locally in 2009, see Marf 2009. 60-74. The preliminary report of this fieldwork has been presented by the author in July 2013 as 'New Archaeological Evidence from the Land of Muşaşir,' at the 59th *Rencontre Assyriologique Internationale* in Ghent, Belgium.

³ Lehmann-Haupt 1910, 241-61; 1926, 288-308. See also Al-Amin 1952, 61, 69; Marf 2014, 14.

⁴ Lehmann-Haupt 1926, 288-308.

⁵ Al-Amin 1952, 70; Al-Amin also visited the area of Rowanduz and described architectual ruins there, see Al-Amin 1952, 69; for further details about the previous records and the present remains see Marf 2014, 14.

⁶ Marf 2014, 14-5, 2527.

⁷ Boehmer 1973, 31-40; 1979, 50-1; 1993-7, fig. 2. A point to be noted is the name of the village and the castle (the Kale) are called Mdjêser by the local people. Boehmer registered the name as Mudjesir, but this pronunciation gives 'artificial similarities' between the name of the ancient toponym and the name of the modern village, although in reality the village is called by the local people Mdjêser or simply Mdjêse. The modern name does not have any meaning in the language of the local Kurdish people, so that it seems to be derived from an ancient toponym (Marf 2014, 13).

⁸ Boehmer 1993-7, 446ff.

⁹ Boehmer 1993-7, 447, fig. 4.

¹⁰ Boehmer 1993-7. 447, fig. 3.

¹¹ Villagers had re-used some of the column bases before the genocide of 1987-88. Mdjêser was one of more than 4000 Kurdish villages which were destroyed during the genocide; the column bases were found in the remains of houses which have not yet been rebuilt.



FIGURE 1. THE LAND OF MUŞAŞIR.

horizontal line incised parallel to the other lines (Fig. 3a-b).

Parallels and dating of the columns of Mdjêser

These columns are comparable to other column bases. As already mentioned, most are made from basalt, similar to traditional Urartian column bases, as used in Urartian temples such as the column bases at the Haldi temple in Altin Tepe. Similar columns also come from Van. However, among all the 17 columns of Mdjêser none is parallel to the bell shaped column base from Kala Mdjêser, which was considered by Boehmer as Achaemenid. The incised column of Mdjêser is unique among its group. These incised lines are probably traces of what might have been metal bands around the column; an identical column base with incised horizontal lines around its diameter comes from Altin Tepe (Fig. 3a-b). On the basis of the above mentioned parallels with the

columns of the Urartian temples in Urartu, the column bases of Mdjêser can be considered as contemporary with the kingdom of Bainili/Urartu. The Mdjêser column bases form a group of 17 columns of Urartian style from the 9th-8th centuries BC. The column bases of Mdjêser very probably come from the ruins of an Urartian public building and as these type of column bases have, as far as I know, only been recorded at the sites of Urartian temples, it is very probable that these column bases from Mdjêser also come from the remains of a temple: if this is correct, it should be the long lost temple of Haldi of Musasir. 16

Funerary statues

In the 1950s Mahmood al-Amin for the first time published two stone statues which had been found by villagers in the vicinity of Mdjêser. He also carried out a number of soundings at the location, recovering some potsherds. Al-Amin dated one of the statues, which represents a bearded male figure, to the Late Assyrian period.¹⁷ In

¹² Özgüç 1966, pl. XI; 1969, pl. XXXI; Cilingiroğlu 2011, 343.

¹³ The column of Van bears an inscription of the Urartian king Ishpuini son of Sarduri from Patnos (Van Museum): for further details see: *CTU* III, A 2-10.

¹⁴ Boehmer 1993-7, fig. 3-4; Marf 2014, 15.

¹⁵ Özgüç 1966, 40; Cilingiroğlu 2011, 343.

¹⁶ For further details concerning the analysis of these materials on the basis of evidence from Urartian and Assyrian inscriptions, see Marf 2014, 17-27.

¹⁷ Al-Amin 1955, 224.



FIGURE 2. REUSED COLUMN BASES FROM THE VILLAGE OF MDJESER.





FIGURE 3. INCISED COLUMN BASES, (A) FROM THE VILLAGE OF MDJESER, (B) FROM THE URARTIAN TEMPLE AT ALTINTEPE.



FIGURE 4. COLUMN BASES FROM THE VILLAGE OF MDJESER.

the 1970s, in two very short visits to Sidekan-Mdjêser, Boehmer recorded another four statues which had been discovered by the villagers.¹⁸ Boehmer considered two of these statues (which are now in Slemani museum) as a local style dating to the time of Assurnasirpal II (883-859 BC) and Shalmaneser III (859-824 BC).19 Later, scholars commented 'the very weathered and apparently crude statues at Mdjêser, a site identified by Boehmer with Muşaşir/Ardini, are not reliably dated and it is a matter of conjecture whether they are contemporary with the Bianili kingdom or not."20 After the 1970s, in the north-northeastern areas of modern Erbil governorate, in Harir, the Diyana plains and the Sidekan-Bradost valleys (the locations of ancient Habruri/Kirruri, Hiptun, and Musasir), seven more male life-size stone statues/steles have been uncovered by local inhabitants, mostly in the course of cultivation, road building and construction.²¹ Some of these statues were later sent to the museums of Erbil and Slemani, while one of them was sent to the collection of the Archaeology Department of Salahaddin

University in Erbil. During my fieldwork I have studied all the statues which were sent to the museums. Moreover, we can add to this collection another two statues which were uncovered and reused by the local villagers22 and retrieved and studied by the present author, with the support of the local the Directorate of Antiquities of Soran, in the course of fieldwork, and which were later sent to the Directorate of Antiquities of Soran and to Erbil Museum. The total number of statues/steles uncovered in the area from 1980 until now is seven, in addition to a stele uncovered in Makirdan in Harir plain in the first decade of this century. The statues are lifesize human images measuring 150-230 cm tall. They are made of limestone, basalt or sandstone, and some are now partly broken. In some cases the end tapers to a point, and in most cases the feet are not carved. Because these monuments were fixed into the ground, they must be interpreted as funerary statues erected on graves or tombs. There are two statues where the knees and legs are clearly carved, on one of which the feet are depicted

¹⁸Boehmer 1973, pl. 11-4; 1979, pl. 26.b, 27.

¹⁹ Boehmer 1973, pl. 11-4; 1993-7, 446ff.

²⁰ Kroll et al. 2012, 34.

²¹ Marf 2009, 60-74.

²² One of the statues was discovered in a burial chamber by a farmer who reused it as a seat in front of his house in the village of Bewas, the other was uncovered with a burial in Mdjêser village and reused by a villager as a column base for his house.



FIGURE 5. FUNERARY STATUES RECOVERED FROM THE LANDS OF MUŞAŞIR AND KIRRURI.

in relief. The heads are clearly though abstractly depicted and sometimes the ears are also carved; the back sides are on the other hand mainly neglected – treated and carved but without giving any specific feature of the back side of the head or body. Accordingly, some of the statues, in which the male figure is only depicted in relief carving on the front side, can be called steles; in some other cases the sculpture is a combination between relief and three-dimensional carving. All show bearded males, some of whom are holding a cup in their right hand,²³

with their left hand resting on their belly. This is identical with the iconography of the Scythian funeral statues uncovered in Ukraine, Caucasia and Central Asia.²⁴ One of the statues of Mdjêser holds a hand axe,²⁵ – in which context it should be noted that hand axes were one of the main weapons of the Scythians and they are depicted in the Iron Age art of the Zagros, Iran and Caucasia.²⁶ A torso from the burial of Mdjêser wears a dagger: this too is something seen on Scythian statues uncovered

²³ Also, one of the statues which published by al-Amin (1955, 224) is holding a cup in his right hand.

²⁴ CHI 2, fig. 1 a-c; Rice 1965, 66, fig. 54-5.

²⁵ Boehmer 1973, pl. 13.

²⁶ For example, the Scythian delegation at Persepolis: Potts 2012, fig. 5.

in Ukraine and the daggers depicted there look like the dagger on the torso of Mdjêser. It is a representation of the well-known kind of long dagger/short sword called acinaces/akinaka which was mainly used by the Medes and the Scythians, as seen in art from the Zagros and Persepolis, and later used by the Greeks.²⁷ Another point which supports the suggestion that the torso of Mdjeser can date back to the 6th century BC is that it is wearing a short tunic/skirt above the knees, reminiscent of the tunics/skirts worn by some of the defeated leaders depicted on the Behistun relief of Darius I: among these, incidentally, is the Sagartian leader Shitrantekhma, the ruler of Arbail who revolted against Darius I in 522 BC.²⁸ Another statue represents a bearded nude male. Among these statues there are two, however, which are carved in the similar abstract style of the rest of the above mentioned statues but which differ in some details. One of these represents a bearded male who holds what could be a circle (perhaps a necklace or the round mouth of a cup) with his right hand; his face, ears and legs are clearly carved. For clothing he only wears a 'jockstrap, a detail identical with that in one of the steles uncovered in the chamber burial below the citadel of Hakkari; Hakkari is located to the northwest of Muşaşir and has recently been identified with the ancient neighbouring Iron Age kingdom of Ukku.²⁹ The Hakkari statue dates back to the Iron Age I, so we can expect that if not the same, at least a similar tradition of making funerary statues existed in the neighboring kingdoms of Ukku (Hakkari) and Musasir (Sidekan-Bradost).30 Another statue, actually a bust, was discovered by chance, apparently at Dêlizian in the Diyana plain near the Balakian river. The iconography of this statue is different from the rest of the other statues, the only similarities being that this one is also carved of sandstone and that, like the rest of the statues, its back side is not carved. The face is depicted and the shoulders are carved in a very abstract style. As far as I know, there is no parallel to the iconography of this bust in the art of Mesopotamia and the Zagros. However, there is a small bust uncovered by Sağlamtimur and Ozan in Siirt-Türbe Höyük, to the south west of Van Lake, which they refer to as a 'Spirit Stone',31 which in both shape and style is similar to the one of the Diyana plain. The issue here

is that the bust from Siirt-Türbe Höyük was found in a level dating to the Middle Bronze Age.³² This does not however mean that the Diyana plain bust necessarily dates to the same time: the iconography of the Siirt-Türbe Höyük bust may be similar but it is small compared to the bust of Diyana plain; nor do we know the context from which the latter came.

The purposes of carving these statues have not been discussed by scholars so far. As a result of weathering and human agency most of these statues have been moved from their original context. Villagers from Mdjêser and Bewas informed me that the statue of Bewas was discovered in or on a chamber tomb, and that the torso of Mdjêser was uncovered on or beside a burial mound.³³ As mentioned above, the statues uncovered in this area are identical in iconography with the Scythian statues, including the thirteen steles found in a burial chamber in Hakkari.³⁴ So there is no doubt that the statues of Musasir and the surrounding area were mainly made as funeral statues to be erected over burial mounds. The statues must have had a relation to funerary rituals, and those holding a cup indeed have a rather mournful appearance. Similar statues are found in Central Asia, Caucasia and Eastern Europe.35 They are characteristic of the representational art and the funerary rituals of nomads and pastoralists, especially the Scythians who buried their warrior leaders in graves covered by a mound with a statue erected on the top. Archaeologists call these statues 'Mountain burial statues/steles'. Although the statues all differ from each other in detail, giving each its own 'character', the statues do not represent the buried persons or any specific person in reality. They represent human figures in an abstract style in the sad bearing of a funeral ritual. I assume that the majority of the statues uncovered in the area of Musasir date back to the Iron Age III. This dating is supported by the nearly identical style and iconography of the Scythian statues, which can be dated to the 7th-6th centuries BC. A fragment of 'Urartian?' red polished ware which I found with the burial of the torso of Mdjeser also supports this dating. Moreover, Assyrian inscriptions record the advance of

²⁷ Godard 1950, 16, fig. 7; Yates 2005, 6; Porada 1965, fig. 87; Potts 2012, fig. 5.

²⁸ Wiesehöfer 1978, fig. 22.

²⁹ Radner 2012, 257ff.

³⁰ In 2012 what might be a 'Scythian graveyard' was uncovered in the city of Duhok north of the Nineveh plain. The material recovered in these graves, in addition to a number of life-size funeral statues with iconography similar to some of the statues from Musasir, included ceramics and seals. Unfortunately, the results of this excavation are not yet published, but in a personal communication the excavation field director, Hussein Hamza al-Amri, informed me that the site and the objects recovered can preliminarily be dated to the Iron Age I-III, with some objects from the Islamic period. The Directorate of Antiquities of Duhok has opened the site for visitors as an open air museum, and in a tour with Kovan Ehsan, from the Directorate, I was able to view the exposed statues and the graves. This important discovery demonstrates that 'Scythian' funerary statues were also erected on burials this far southwest in Duhok, near the Nineveh plain.

³¹ Sağlamtimur 2007, 22, fig. 7.

³² Sağlamtimur and Ozan 2007, 22, fig. 7.

³³ The torso of Mdjêser was also found in/on a burial on a mountain slope. The burial was partly damaged and villagers told me that it was looted and some metal objects taken. It seems that the burial was of an important person, especially in consideration of the fact that the torso is different from other statues of the area in dress and that it wears a short sword. We therefore decided with the Directorate of Antiquities of Soran to excavate the burial. Another mountain slope burial was discovered in 2012 when its burial chamber was cut by a mechanical excavator in the course of construction work being carried out by the local authorities on the road from Sidekan to Kele-Shin pass. Due to the fact that the burial needed immediate salvage excavation, the director of Soran Antiquities asked me to participate in this salvage excavation; however as I was abroad at that time, and other archaeologists of the directorate were already committed, I suggested asking the team of Boston University if they would like to document the burial. Fortunately they excavated the chamber and for the results of this salvage work see Danti 2014, 50-72.

³⁴ Sevin 2005, 163-5.

³⁵ Sulimirski 1985, 72, 158-161, fig. 1a-c.



FIGURE 6. JARS WITH EXCISED LINE DECORATION FROM THE DIYANA PLAIN, FROM (A) TELL HAUDIAN AND (B) DÊLIZIAN.

the Cimmerio-Scythians into Urartu, the Northern Zagros and the frontier of Assyria northeast of Arbail. This penetration into Urartu is well recorded in letters from the reign of Sargon II (722-704 BC), especially after 710 BC.³⁶ The Scythians and Cimmerians also invaded Urartu and the northern Zagros in the reigns of Sennacherib and Esarhaddon. In Esarhaddon's queries to the sungod, the king's worries regarding the Scythian penetration and their attack on the northern Zagros kingdoms of Mannea and Media and on the eastern frontier of Assyria are clear.³⁷ Herodotus also referred to the Scythian invasion of Media.³⁸ Moreover, the presence of Scythian material culture during the 7th century in the northern Zagros has been noted by previous scholars.³⁹

Ceramics

Assemblages of ceramics, both intact jars and potsherds, have been collected from a number of archaeological sites. Below I will try to summarise the size, shape, decoration, function and location of these recovered ceramics. In the Diyana plain, at sites on the east bank of the Balkian river such as Gird-e-Desht and its lower town Gird-e-Meer, and also at Dêlizian, and at sites on the west bank such as Tell Haudian, ⁴⁰ fragments of Iron Age pottery as well as two middle size jars have been uncovered by the local people. ⁴¹ These jars are semi-spherical in shape, hand made, similar in size and decorated with projecting vertical lines. The jar from Tell Haudian has in addition vertical excised lines and is also decorated with wild goats (Fig. 6a-b). ⁴² These jars are identical in shape, decoration and style with jars found

³⁶ Lanfranchi and Parpola 1990, 92, 144, 145, 174.

 ³⁷ Sulimirski 1954, 282-318; Szmerényi 1980, 5ff; Starr 1990, 23-4,
 36, 38; Macgregor 2012, 69-70; ARAB II 517, 533; Reade 1995, 41;
 Postgate 1987-90, 341.

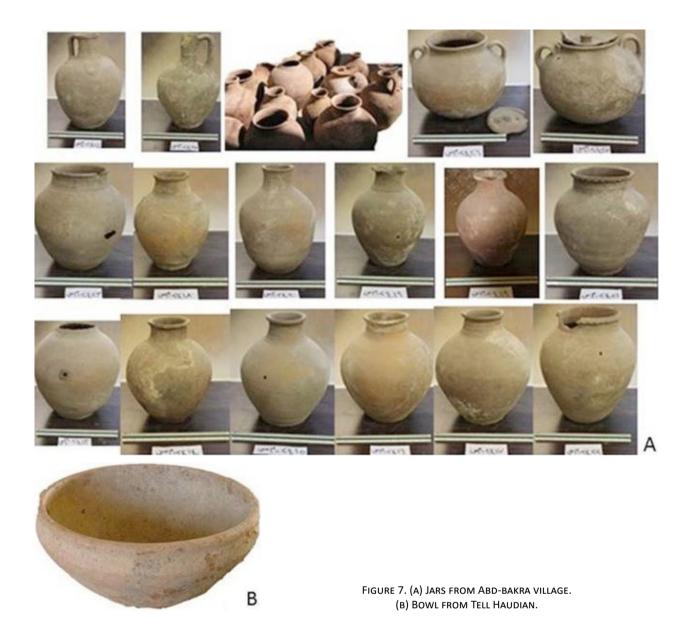
³⁸ Godley 1975, 89-90; Szmerényi 1980, 6ff.

³⁹ e.g. Ghirshman 1979, 19ff.

⁴⁰The Iron Age town Ḥiptunu (medieval Tell Ḥaftun), which was between Muṣaṣir/Ardini and Assyria has been re-identified by the author with modern Tell Haudian. Further details will be found in Marf 2015.

⁴¹ The dimensions of the jar of Dêlizian are 14.7 cm in diameter and its 14 cm in height, those of the Haudian jar 16 cm in diameter and 17 cm in height.

⁴² In a personal communication Ms. Akhir told me that the jars from Tell Haudian, which are now in her collection in Haudian village in Diyana plain, were uncovered by the villagers in Tell Haudian. The jar from Dêlizian was delivered by Mahmod Dêlizi to the Collection of the Department of Archaeology of Salahaddin University in Erbil: Marf 2009, 65-7.



in the burials and buildings of Tepe Hasanlu and Dinkhe Tepe in the Urmia Basin.⁴³ The jars of Hasanlu and Dinkhe Tepe date to the Iron Age I, precisely to the 9th century BC.⁴⁴ In the light of this dating we can date the jars of the Diyana plain to the same period. These jars present important evidence on cultural interactions between the land of Muṣaṣir and Ḥiptunu with Hasanlu and Mannea in the Urmia Basin, transmitted through the passes linking the plain of Urmia Basin to Assyria such as those at Kel-e-Shin, Barbazin, Minber and Gowre-Shinke.⁴⁵ As a result these jars in Hasanlu style are important not

only for proving cultural contact between the Diyana plain and Hasanlu, but also in explaining the role of Diyana-Sidekan-Bradost as a link with an intermediary role in the interaction between Assyria and Hasanlu in the 9th century BC.⁴⁶ Turning to the bowl uncovered in

⁴³ Schauensee 2011, pl. 3.26a; Stein 1940, pl. XXIV. 12, p. 399 pl. XXIV 9-10, 12; Muscarrella 1966, fig. 17.

⁴⁴ Muscarrella, 1966, fig. 17; Muscarella 1994, 143 pl. 12.1.2.

⁴⁵ Levine 1973, 1-27 fig. 1; Bendict 1961, 359-85, esp. 360-1.

⁴⁶ In addition to these similarities between jars the Urmia Basin and the Diyana plain in the 9th century BC, there were other links of interaction between Mannea and Muṣaṣir, for example the Muṣaṣirian elite who are depicted on the tower of Muṣaṣir on the relief of Khorsabad showing Sargon II plundering the city in 714 BC are depicted wearing skin cloaks similar to the Mannean dress depicted on other reliefs of Sargon II from Khorsabad of the same time (Botta and Flandin 1972, pl. 141, Room XIII, slab 4). Also, the god Haldi, whose main center was in Muṣaṣir, is also recorded on the Aramaic stele of Qlaichi/Bukan (perhaps to be identified with the Mannean capital Izirtu: Fales 2003, 131-47). Moreover, the name of the wife of Haldi in Muṣaṣir/Ardini,

Tell Haudian (Fig. 7b), there are a number of bowls in similar shape, size and style, all having a similar rounded rim. However, the bowl has the best parallels with bowls from Hasanlu,⁴⁷ the 'Median/Post-Assyrian' bowl from the tomb in the lower town of Erbil,⁴⁸ the 'Median/Post-Assyrian' bowl from Kherbet Qasrij in the Eski Mosul Dam area, a bowl from Nimrud,⁴⁹ and a bowl recently uncovered in Tell Bakrawa in Halabja which dates to the 8th-6th centuries BC.⁵⁰

The jar storage cellar of Abu-Bakra village

In the course of the construction of a road to Abu-Bakra village a mechanical excavator removed a slab covering a subterranean storage room 1.8 m deep and containing sixteen jars. The jars, which would have been used for storing food and drink, were taken to the local police station and I conducted a sounding in the narrow chamber as far as virgin soil.51 The jars are of middle size and in a number of shapes – two have a handle, two others have two handles⁵² and two others have lids. Most of the jars have a flat base, some of them oval. Some of the jars are incised with geometric decorations and marks reminiscent of the Urartian symbols for measurements on ceramics.⁵³ By their shape and style the jars date to multiple periods, some Habur type, some Iron Age Iranian/Urartian and some middle size Parthian jars (Fig. 7a). The location where they were found is cold even in summer, there is a spring nearby with icy water even in July!54 Also, it is located on the caravan route which led southwestward to the Lower Zab valley and Raniya plain, northwest to the Rowanduz valley and eastwards to the Iranian border through the Gowre-Shinke pass.⁵⁵ Among the ceramics recovered there was also a small red burnished potsherd of a similar type to the Urartian red burnished /Toprakkale Ware.56

Baghbartu, originated in Mannea, there is for example also a Mannean prince from this same period called Baghdati (*ARAB* II 10, 56). So the links between the two areas were strong; given the closeness of the two regions strong cultural interactions are indeed is to be expected.

Stamp seal impression

Villagers from Mdjêser found a large jar with a stamp seal impression on the external surface of the upper shoulder.⁵⁷ The impression, which is probably of a round stamp seal, is 3 cm in diameter. The scene depicts in the center a single plant (probably a tree) with three branches, one to the right, one to the left and one straight upward. There are smaller branches at the end of each main branch, at the tips of which are granulations which probably represent fruit (Fig. 8). Urartian jars occasionally bears stamp seal impressions.⁵⁸ However, for the impression on the jar of Mdjêser, there is no exact parallel among the Urartian stamp seals known to me. This impression is larger than most Urartian stamp and cylinders seals and impressions discovered to date, and also larger than late Assyrian stamp seal impressions.⁵⁹ It seems to be that the scenes of stamp seals of the 8th-7th centuries BC in Urartu,60 Muşaşir, the northern Zagros,61 and Assyria actually have an element in common, which is the scene of this impression. The scene usually has a single figure or an animal, but in some cases with the animal there is the branch of a plant.⁶² Based on these arguments, the Mdjêser stamp seal impression might be tentatively identified as belonging to the classical Urartian stamp seal style, particularly with regard to the depiction of the plant, which is similar to the local style of sacred tree in Urartian seal impressions and metalwork. 63 However, its iconography is unusual, and probably represents a local style. Unfortunately there is no direct indication allowing us to identify the owner of the seal, or whether it was private or official – could it, for example, have been the seal of a priest or of the temple of Haldi?⁶⁴ Similar motifs

⁴⁷ Muscarella 2012, 272 fig. 18.09.

⁴⁸ Van Ess et al. 2012, 133.

⁴⁹ Lines 1954, pl. XXXVII, 6; Curtis 1989, fig. 23, 9.

 $^{^{50}\,}Miglus$ 2013, 47-8 fig. 7a.

⁵¹ At the time in 2005, the area was not safe because of Iranian and Turkish air attacks on Kurdish fighters and villages in Qandil Mountain, so our teams (the author, Mr. Muhamad, Mr. Handrên and Mr. Salih) had to come back with the jars in the same day to Slemani museum.

⁵² The handles are similar to some Iron Age handles in the Urmia Basin: Muscarella 1994, 143 pl. 12.2.2.

⁵³ e.g. Payne 2005, 253 pl. 79.

⁵⁴Regarding the suggestion that the jars may have been used for the long term storage of foodstuffs, a parallel is provided by modern seminomads of the area who told me that they still keep their surplus foods, including *qauirma* (a kind of semi-cooked beef which can be kept for several months in this way), cheese and drink (*do/ayran*) in mountain caves in skins, jars and metal containers; it is their equivalent of a fridge. So this is probably one of the reasons why these ancient jars were stored in this well by owners who for unknown were unable to

⁵⁵ Levine 1973, 1-27 fig. 1.

⁵⁶ Kroll et al. 2012, 37; it was also called 'Bianili Pottery': Erdem and Konyar 2011, 270.

⁵⁷ Although there is no exact parallel for this kind of large jar in the area, on the base of an incised meandering line decoration around the shoulder of the jar, which is similar to the decoration on the shoulders of the storage jars which have been uncovered in Abu-Bakra-Qalatukan, these jars might be dated to the Iron Age II-III; I would tentatively also date this large jar to that period.

⁵⁸ Kroll *et al*. 2012, 37.

This type of Assyrian royal stamp seal, which is around 3 cm in diameter, mainly depicts the Assyrian king killing a lion with a dagger; these stamp seals are mainly used as 'the official signer' from the reign of Shalmaneser III (858-824 BC) to the Late Assyria period: Mallowan 1966, 1:181, 189 fig. 116; also Marcus 1996, pl. 43a.

⁶⁰ For the details of scenes on Urartian stamp seals: Ter-Martirosov 2009, 128 fig. 2; Ter-Martirosov 2012, pl. Iic; Kroll 2012, pl. IIc; for the stamp heads of Urartian stamp-cylinder seals: e.g. Collon 1987, 87, 401-2; Özdem 2003,145-54; van Loon 1966, 156-7.

⁶¹ For the Northern Zagros seals (especially from Hasanlu): e.g. Marcus 1996, 103ff. fig. 49-52.

⁶² Ter-Martirosov 2009, 128 fig. 2; Ter-Martirosov 2012, 522 pl. IIc.a; Marcus 1996, pl. 43a, 103ff. fig. 49-52; Mallowan 1966, 189 fig. 116; Collon 1987, 87, 401-2; Özdem 2003, 145-54; van Loon 1966, 156-7 fig. 20, G1, G2.

⁶³ Van Loon 1966, 156-7 fig. 19; Batmaz 2012, 39-50; see also Azarpay 1968, 45-6, 105 n. 156.

⁶⁴ The lines of evidence which support identifying the seal as a temple seal are that the jar bears traces of bitumen and that the scene of the impression shows what might be a sacred tree. The bitumen jar of Mdjêser can be compared to the bitumen jar of Ayanis. Both are probably related to rituals – the jar of Ayanis was found in the temple (Cilingiroğlu 2011, 354) while the jar of Mdjêser bears an impression of a 'sacred tree,' and it was also uncovered accidentally by villagers

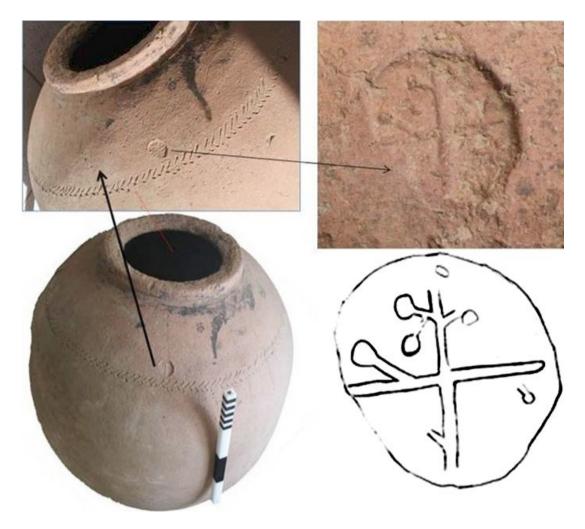


FIGURE 8. LARGE STORAGE JAR FROM MDJESER WITH STAMP SEAL IMPRESSION.

can be seen on certain other Urartian seal impressions on ceramics.⁶⁵ In Urartian art a plant motif can be a symbol of Haldi, and even the spear-like stick on the top of the temple of Haldi in Muşaşir/Ardini has sometimes been considered to represent a plant.66

Conclusion

The seventeen column bases of Mdjêser very probably come from the ruins of an Urartian public building. As, to my knowledge, in Urartian tradition this type of column base is only found with temples, the building in Mdjêser must very likely also be the remains of a temple. If this is correct, it must indeed be the long lost temple of Haldi of Muşaşir/Ardini. Turning to the funeral statues, these can be divided into three main groups: first of all, the bust from the Diyana plain which can so far only be dated to the Middle Bronze Age-Iron Age III (to give an exact dating we would need additional evidence); secondly, the naked statue in a 'jockstrap' which is similar in iconography and other details to the stele of Hakkari and can thus dated

in Mdjêser near the area where the column bases were uncovered and which might well be the location of the temple of Haldi. As with the bitumen jar from Ayanis, it is probable that the bitumen jar from Muşaşir was also used for fuel in the temple, especially during the winter time, or for ritual purposes. From the epigraphic evidence of the eighth campaign of Sargon II we know that stamp seals were used by the deity in the temple of Muşaşir/Ardini. For instance, Sargon II says that among the booties there was '1 seal ring of gold (used) for validating (lit., completing) the decrees of Baghbartu, the spouse of Haldia, was completely covered (full) with precious stones' (ARAB II

⁶⁵ For details concerning stamp seal impressions on jars in the Urartian period: Ter-Martirosov 2009, 128, fig. 2.

66 For details concerning plants altar in Urartian art: Roaf 2012, 363.

to the Iron Age I;67 and finally a third group comprising all other remaining statues, which are mainly Scythian in iconography and style can be dated to the Iron Age III (late 8th-6th centuries BC) and were used as funeral statues on or beside the 'Mountain slope burials' in the valleys of the land of Musasir. These form material evidence for the Scythian penetration into the northern Zagros recorded in Assyrian inscriptions of the late 8th century and 7th century BC: the Scythians brought with them their tradition of mountain burial statues to that area. The assemblage of ceramics recovered in the area shows important evidence concerning the Urmia Basin, and especially the contact between Hasanlu and Dinkhe and the Land of Musasir, which can also be explained as a link in the interaction between Assyria and the Urmia Basin, and Hasanlu in particular. There is furthermore a hint at the presence of Urartian ceramics, though on the base of the assemblage studied Assyrian ceramics are rare. However, these cannot be considered as principal arguments due to the fact that there is still no excavated Iron Age site in the land of Muşaşir which could serve as a type site for establishing the chronology and ceramic, artistic, architectural and metallurgical traditions of the region.

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⁶⁷ With the steles in the chamber some fragments of ceramic considered as 'Habur Ware' were discovered – if this evidence can be used for dating the steles then they date back to the Late Bronze Age: Sevin 2005, 163-5.

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New Researches on the Assyrian Heartland: The Bash Tapa Excavation Project

Lionel MARTI and Christophe NICOLLE

Introduction

The recent inauguration of archaeological activity in Iraqi Kurdistan has given us the opportunity to undertake a new research project about which we have been thinking for some time: to study the formation of the Assyrian heartland in the long-term, from the first and short-lived reunification of the region under the reign of Samsi-Addu during the eighteenth century BC up until the creation of the land of Assur, probably as a reaction to Mittanni domination. With this new archaeological project we aim to develop the means to understand this process. We also want to evaluate the regional impact of the emergence of Assyrian imperialism on the territorial organization and the evolutions of material culture in this part of the 'Assyrian triangle'.

During the spring of 2012, thanks to an invitation of the Department of Archaeology of Salahaddin University of Erbil, and with the valuable help of the General Directorate of Antiquities of Erbil, we carried out a rapid survey in the plain of Erbil. This plain is not a homogeneous geographical entity (Fig. 1). South of Erbil it is possible to distinguish two different geographical sectors related to major river systems. The first hydrological system is composed of the Chai Siwasor and the Chai Kurdara. It stretches for approximately forty-five kilometers, beginning in Qala'at Shurbash, flowing into the Chai Siwasor and then on into the Greater Zab. The second water system, which has been the focus of our attention, begins in the region of Hana and flows twenty kilometers to the East and thence on into the Lesser Zab. This southeastern hydrological system covers an area of about 430 km².

In this southern plain of Erbil we identified two morphological categories of tells: (i) large tells which were themselves apparently fortified and with an unfortified lower town, (ii) and small tells, also apparently fortified but without a lower town. The first category consists of massive tells with steep slopes. They reach over twenty meters in height and cover an area of about four hectares. These tells are spaced regularly across the landscape about ten to fifteen kilometers from each other. Relatively high (more than 10 m high) tells of a smaller size represent the second category: they cover between half a hectare and two hectares. Obviously, these two categories of tells constitute only the most visible part of the regional settlement system. Undoubtedly many other

sites occupied for shorter spans of time existed but they are much less visible in the landscape and sometimes even invisible due to massive erosion.

During our survey we observed that tells located in the second wadi system are regularly spaced across the landscape at intervals of about 2.5 to 4 kilometers from each other. Most of these are clearly visible in the landscape, with heights exceeding 10 m. They are still relatively small, covering an area of no more than two hectares.1 We think that these are the remains of a recurrent infrastructure, a settlement system that saw little change over the centuries both because of the plain landscape, the limited possibilities for variation in the location of settlements. Among these tells Bash Tapa was remarkable for its size and height. It is one of these sites with recurrent occupations. It offers a good chance of uncovering archaeological remains of multiple eras, allowing us to appraise not only the regional organization but also material cultures, especially as concerns the second millennium.² Here, we present the main results of our first campaign which took place in September 2013 over a period of just eighteen days. We would particularly like to thank Dr. Kawa Shawaly, co-director of this project for his invaluable assistance.³

The Site of Bash Tapa

Bash Tapa is situated thirty-five kilometers southeast of Erbil. The tell measures by 200 m by 240 m, making an area of circa. 5 ha, and it rises more than 25 meters above the surrounding plain (Fig. 2). It sits at the confluence of two rivers, the Chai Bash Tapa and its tributary the Chai Chohle. The east edge of the tell has a concave appearance, indicating a significant destruction by the Chai Bash Tapa. Moreover, erosion on the eastern part of the tell has created a natural trench revealing a stratigraphical section of the occupational levels, similar

¹ For example Qal'at Quarshaqlu: 0.4 ha; Qal'at Surbash: 0.49 ha; Girdi Shina A: 0.87 ha; Girdi Lanka: 0.60 ha; Tell Qurghan: 1.88 ha.

² The Bash Tapa excavation is a renewable four-year project funded principally by the French Ministry of Foreign Affairs and with the collaboration of the General Direction of Antiquities of Erbil.

³ The team was composed of: Dr. Kawah Shawali (epigraphist, UMR 7192), Dr. Christophe Nicolle (archaeologist, CNRS UMR 7192), Dr. Lionel Marti (director of the mission, archaeologist, epigraphist, CNRS UMR 7192), Dr. Millena Frouin (geomorphologist, CNRS UMR 8591), Dr. Juliette Mas (archaeologist, Université Liège), Raphael Angevin, (archaeologist, cultural heritage officer), Ségolène Vermeulen (student in archaeology, Université Paris 1), two representatives of the General Directorate of Antiquities of Erbil (Goran Mahamad Amen and Hiba Mahamad Abdulmajed), and nine workers.

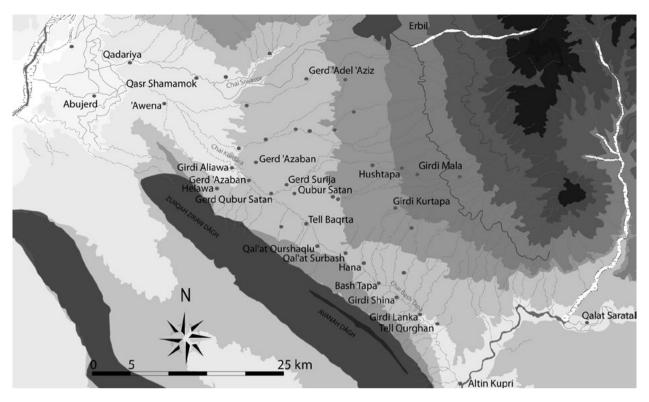


FIGURE 1. DISTRIBUTION OF PRINCIPAL MOUNDS IN THE SOUTH ERBIL PLAIN.



FIGURE 2. THE MOUND OF BASH TAPA FROM THE SOUTHEAST.

like to 'Ravine 1' which penetrates more than 30 m into the tell on an east-west orientation (Fig. 3). Furthermore, a preliminary examination of the morphology of the tell suggests the presence of several fortification elements. In the southeast corner there is probably a huge tower belonging to a fort built on both sides of a northern gate.

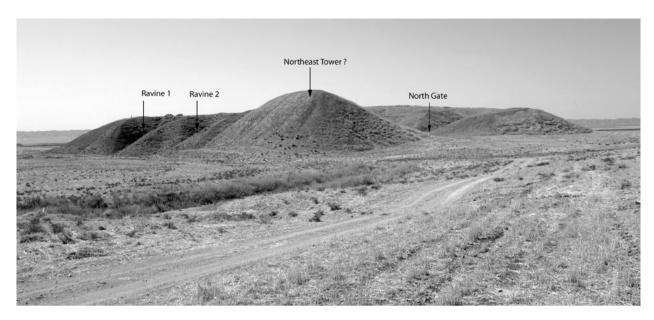


FIGURE 3. THE MOUND OF BASH TAPA FROM THE NORTHEAST.

On the southern edge of the mound we identify an access ramp leading to the top of the tell with a small mound which could be a tower protecting this entrance. And finally, the very steep southwest slope could indicate the presence of a glacis. Of course it is not certain these hypothetical, undated items are all contemporary.

The tell survey

In order to evaluate the different occupation periods of the site, a survey was carried out on the tell (24 sectors) and in a 22 ha area in its immediate vicinity (6 sectors) (Fig. 4). Over 1500 diagnostic sherds were collected in this way. A preliminary analysis of this surface material indicates that Bash Tapa was occupied from the beginning of the Third Millennium to the Hellenistic period.4 The main occupational periods are Ninevite V to Ur III and the entire Second millennium with some examples of Late Khabur Ware (pedestal cups and goblets with horizontal painted bands). One also notices occupation during the beginning of the Middle Assyrian period. But the Assyrian period as a whole - Middle Assyrian and Neo-Assyrian - seems to represent one of the main occupational layers. Some fragments of handled jugs and some glazed sherds found mostly south and east of the tell must stem from a Parthian period occupation following a Hellenistic occupation that one can locate mainly in the northern part of the tell. Concerning the settlements surrounding the tell, a preliminary

geomorphologic analysis⁵ indicates that changes in the course of the wadis could distort our perception of the ancient settlement framework by destroying or concealing small surrounding settlements. For example, in the eastern sector, in the steep side of the main wadi we discovered a line of potsherd sixty centimeters below the surface extending over a length of eighty meters. This feature should be interpreted as the remains of an ancient settlement covered by river sediments. In the same section, we also discovered half of a grave, indicating the probable existence of a necropolis in this location. Both features were invisible from the surface. Such a process of aggradation could also explain why there were no sherds at the surface along the eastern side of the tell in sector 28. It also helps explain why a recent bulldozer scraping 550 m northwest of the tell revealed the presence of ceramics which were similarly invisible from the surface. For these reasons, it is obvious that the sherds visible today should be considered as an imperfect and incomplete witness of the ancient settlements. In the case of the surroundings of Bash Tapa, the scattered sherds and the apparent lack of fortification suggests that these are not urban settlements.

The soundings

Two soundings were carried out in order to explore the earliest and the latest occupations on the tell. The first

 $^{^4\,}$ For a preliminary study of the Bash Tapa ceramics see Mas 2015.

Under the direction of Millena Frouin. For the first results see Frouin 2015.



FIGURE 4. BASH TAPA SURVEY SECTORS.

sounding was located at the base of the southern slope of the tell while the second was positioned at the top of the slope on a relief that suggested the presence of a large building near the surface.

Sounding 16

Sounding 1 measures 3 m by 12 m and exposed a stratigraphic sequence more than 4.5 m ranging from the Ninevite V to Early Dynastic III periods (Fig. 5).

For the Ninevite V period, five architectural phases (BTS1-9 to BTS1-5) were identified according to different wall levels. In the southern limit of the trench, just under the surface, the team partly excavated a large *pisé* wall (loc. 84) which had been completely leveled. Its date is confirmed by the discovery of a Ninevite V burial jar (loc. 133) sunk into the surface. As none of the limits have been identified we do not know whether it belongs to an enclosure wall or a terrace system. One must note that further towards the eastern base of the tell, in 'Ravine 1', we identified the presence of a layer three meters thick devoid of sherds, floors or any other remains. It may be part of a platform or terrace of earth or mud brick of the sort found in other sites of the same period in northern Mesopotamia. Immediately above, there is a

Sounding 28

Seventeen meters higher, at the top of the tell, a second sounding was open. It included a east-west trench measuring 3 m by 10 m and a southern extension measuring 3 x 5 m at the edge of the slope. Seven

occupational layer of the Early Dynastic III period 1.5 m thick (BTS1-3). The most striking element of this layer is a large wall more than 1.5 m thick (loc. 76). It may be part of a rampart or, perhaps more probably, belong to a system of terracing. Fifty centimeters above, apparently without stratigraphical connection, one finds a second similar massive wall (loc. 88) which again most probably belongs to the same kind of architectural device. At the present time we are of the opinion that the construction should be dated to the Early Dynastic III since there are several layers and floors against the southern face of wall 88 (for example, floors 72, 74) which contain Early Dynastic III pots and sherds. However, we must keep in mind the possibility that this wall 88, as well as perhaps wall 76, should be seen as intrusive, having been made out of cultural materials recycled from other parts of the mound, as often happened in the construction Assyrian terraces. Thus, the date of these walls have to be confirmed.

⁶ For more details see Angevin and Mas 2015.

⁷ For example, in the Syrian Jezirah mostly during the final EJZ 2 period, as at Tell Ziyada (Buccellati *et al.* 1991, 54-8), Tell Abu Hujeira

I (Suleiman and Quenet 2004, 2) and Tell Mohammed Diyab (Nicolle 2006, 33-4).

⁸ For more details see Marti and Vermeulen 2015.

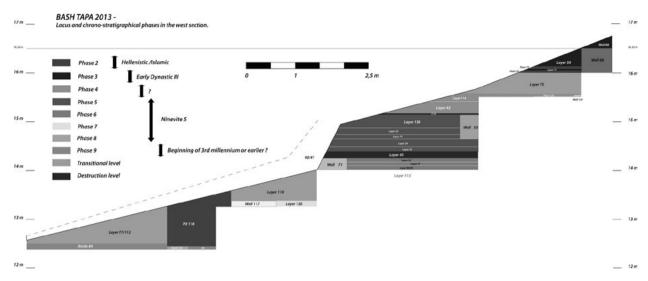


FIGURE 5. SOUNDING 1, LOCUS AND CHRONO-STRATIGRAPHICAL PHASES (WEST SECTION).

Bash Tapa Sounding 1 Phase	Period	Locus			
BTS1-0	Surface	40-41			
BTS1-1	Modern	48			
BTS1-2	Islamic	44-45-46-47-86-87-111-116			
BTS1-3	ED III	50-72-73-74-88-132			
BTS1-3/4	ED III	75			
BTS1-4	?	42-49-76-114-134-135			
BTS1-4/5	?	115			
BTS1-5	Ninevite V	43-53-54-55-79-83-136- 137-138			
BTS1-5/6	Ninevite V	43			
BTS1-6	Ninevite V	56-57-71-80/85-113			
BTS1-6/7	Ninevite V	119-120			
BTS1-7	Ninevite V	117-118-128129-130-131			
BTS1-7/8	Ninevite V	77/112			
BTS1-8	Ninevite V	133			
BTS1-9	Ninevite V or earlier	84			

FIGURE 6. CHRONO-STRATIGRAPHICAL SEQUENCE OF SOUNDING 1 (2013 CAMPAIGN).

occupational phases have been identified here, ranging in date from the present to the end of the Second millennium BC (BTS2-1 to BTS2-7). Just below the surface of the tell, under some evanescent and undated occupational levels, and disturbed by several Islamic graves, we discovered the remains of a Middle Assyrian building (BTS2-5) (Fig. 7).

One can identify three areas of this building, including the corner of a room (loc. 144), perhaps a kitchen or storage room with its material. It contained three bins made of sun-dried clay, two circular and one quadrangular, which were probably used for the storage of grain or other kinds of food. Three large storage jars were aligned against the eastern wall M.92. One of them (ware 96-P-3) was partially covered by this wall, possibly indicating that there is an earlier room still to be discovered. Under the collapsed walls other ceramics were found smashed in situ on the floor of the room. All these ceramics are from the Middle Assyrian period. In the southeastern corner of room 144, after removing jars 96-P-1 and 96-P-2 we found seven cuneiform tablets. The context of the discovery indicates clearly that they do not belong to a living archive but that they were dispersed on the floor of the room prior to its final its latest phase or during its destruction. The texts all date to the Middle Assyrian period. Three of them have eponymous from the very beginning of the reign of Tukulti-Ninurta I (1233-1197 B.C.). Two tablets (BT-96 I-3 and I-5 are still in their envelopes). Three others (BT-96-I-1, I-4, I-6) are administrative texts concerning transfers of sheepThe remaining tablets are still waiting to be cleaned (Fig. 9). The discovery of a cylinder seal⁹ in the western part of Sounding 2 against the southern wall (M.123) confirms a Middle Assyrian date: the confrontation scene between a sphinx protecting a small animal and a lion is well attested in the Assyrian glyptic of the 13th-12th centuries BC. The earliest level, which is only partly excavated in the southern part of the area, consists of a mud brick terrace. Its close proximity to the Middle Assyrian

⁹ Marti 2015.

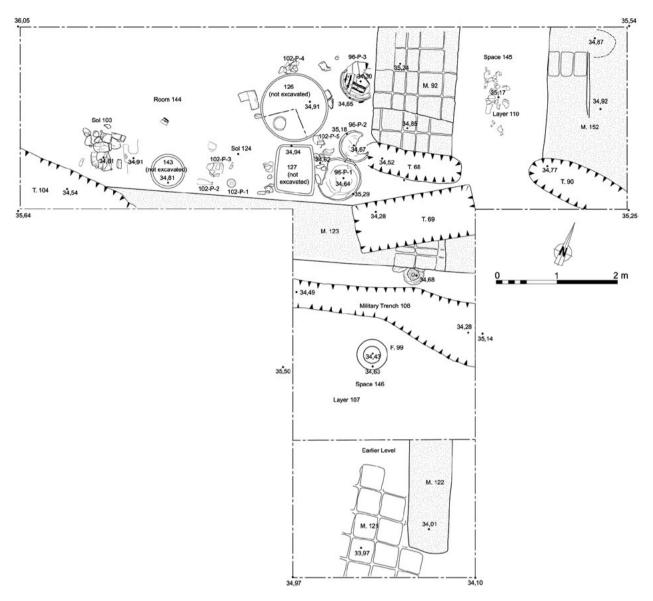


FIGURE 7. SOUNDING 2, LEVEL 5 PLAN.

Bash Tapa Sounding 2 Phase	Period		
BTS2-1	Twentieth century		
BTS2-2	Islamic		
BTS2-3	Unspecified		
BTS2-4	Unspecified		
BTS2-5	Middle Assyrian		
BTS2-6	Unspecified		
BTS2-7	Unspecified		

FIGURE 8. CHRONO-STRATIGRAPHICAL SEQUENCE OF SOUNDING 2 (2013 CAMPAIGN).

building, only 50 cm higher up, suggests that this too is a Middle Assyrian construction.

Conclusion

To conclude, the first results presented here confirm the potential of Bash Tapa for contributing to a better knowledge of the Erbil region as a part of the Assyrian heartland. In the long term the site will be critical for the understanding of the regional settlement system, whether at the beginning of the third millennium or at



FIGURE 9. OBVERSE OF TABLET BT96-I-1.

the end of the second millennium. This is made clear by the seventeen meters of stratigraphy that remain to be excavated between the Early Dynastic III levels of Sounding 1 and the Middle Assyrian levels of Sounding 2. The settlement system seems for the most part to have remained rural and only rarely to have been urban. In particular, the potential which Bash Tapa has for researching the emergence of the Assyrian empire through the study of both material culture and site planning is confirmed by the accessibility of the Middle Assyrian levels just beneath the surface. For all

these reasons we greatly look to returning to the field to continue our excavations.

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Materials from French Excavations in Erbil Area (2011-2013): Qasr Shemamok

Maria Grazia MASETTI-ROUAULT and Ilaria CALINI

Qasr Shemamok, a large tell (figure 1) of more than 70h, considering also its 'Lower town', situated 25 km South-West of Erbil (figure 2), was identified a long time ago as the Neo-Assyrian town of *Kakzu*, now read Kilizu. The site has already produced a certain amount of archaeological and epigraphic material, the result of Italian archaeological excavations carried out in 1932 by Giuseppe Furlani.

A part of this material, deposited in the Archaeological Museum of Florence, has been recently published by Stefano Anastasio,³ offering important evidence for the study of this large urban site, capital of a province of the Neo-Assyrian Empire at least since the 8th century. However, in the absence of information about its archaeological context and stratigraphic record, this collection is not enough to reconstruct the long occupation history of the site.

The Neo-Assyrian control and governance of the Kilizu region, situated between Calah and Arbail, are evident, attested by official sources in the archives from Nineveh, as well as by one of Sennacherib's inscriptions found at the site, advertising the construction, at the same time, of the walls of both the citadel and around the main wall surrounding the lower town.⁴ It is less clear how, and by which political means, the rich agricultural plain between the Tigris and the piedmont of the northern Zagros Mountains in the Late Bronze Age came to be integrated into the Middle Assyrian State and Empire, after the collapse of the Mitanni federation. We know

¹ The French archaeological Mission in Qasr Shemamok would like to thank for their trust and their active support the French Ministry of Foreign Affairs and its Excavations Committee, the General Direction of Antiquities of Iraqi Kurdistan, as well as the Direction of the Erbil Region; the State Board of Antiquities and Heritage of Iraq; the French General Consulate in Erbil; the French CNRS teams UMR 5133 in Lyons, and UMR 8167 in Paris; Lyon2 University and Ecole Pratique des Hautes Etudes, Sorbonne University, Paris. Our deep gratitude goes also to the colleagues who collaborated with us since the beginning of the project, especially Dr. Narmin Ali Mohamed Amen (Salaheddin University, Erbil and UMR 8167), M. Qadri (Direction of Antiquities in Erbil); Dr. Omar Mahmoud (Soran University); Prof. Jacek Tomczyk (Warsaw University); Dr. Stefano Anastasio (Direction of Antiquities and Museums, Florence), Dr. John MacGinnis (Macdonald Institute, Cambridge University), Prof. Karel Novacek (Pilsen University, Czech Republic); Prof. Jason Ur (Harvard University); Dr. Jessica Giraud (Institut Français du Proche-Orient, Erbil).

of a reconstruction of the Ishtar temple and of the ziggurat in Arbail already by Shalmaneser I, an event suggesting, at least, that the control of the region was one of the political goals of the Assyrian kings since the early days of the Empire.⁵ This situation is confirmed by the discovery, since our first mission in Kilizu in 2013, of fragments of foundation documents from the time of Adad-nārārī I and, in 2013, of the remains of a royal construction – a 'palace' – of the same king.

But there is more to know about the formation of the core itself of the Assyrian state since its beginning – how, and also up to which point, the Kilizu region has been, or needed to be, 'Assyrianized', and also how, at a certain point, it stopped being Assyrian, to become something else. Moreover, already among Furlani's findings, there is evidence of a longer and more complex history of the occupations of the site, from the Chalcolithic down to the Parthian and Sasanian periods, which needs to be documented.

Since 2011, under the direction of Olivier Rouault, the French archaeological mission working in Qasr Shemamok has been trying to reconstruct the evolution of this urban occupation, and its relations not only with the Assyrian state system but also, and mainly, with its own natural and political landscape as it changed through time.⁶ We will present here a selection of the ceramic material collected during our first three years of excavations (2011-2013), first in a trench (A) established with a North-South orientation in the south-eastern slope of the 'Citadel', and later on in two main excavation areas, A and B (figure 1).

Work in Area A was organized in order to increase our knowledge of levels and structures first identified in trench A. Therefore, we enlarged it as a new sector of excavation in the southern slope of the Citadel, with an East/West orientation, mainly to the West of trench A. Area B was opened on the North-Eastern corner of the flat surface on the top of the citadel mound, oriented to

²Furlani 1934.

³ Anastasio 2008; Anastasio *et al.* 2012.

⁴Postgate 1980.

⁵ Grayson 1987, 204, text RIMA 1 A.O.77.16, l. 11'-12'; MacGinnis 2014, 56

⁶For the presentation, with photographs and plans, of the archaeological work of the French Mission in Qasr Shemamok since 2010, see Rouault, under press; Rouault and Masetti-Rouault under press a-d. Detailed reports are in preparation to be published in a new series, EMMS (Etudes Mésopotamiennes – Mesopotamian Studies), by Brepols.



FIGURE 1. GENERAL VIEW OF THE TELL LOOKING NORTH.

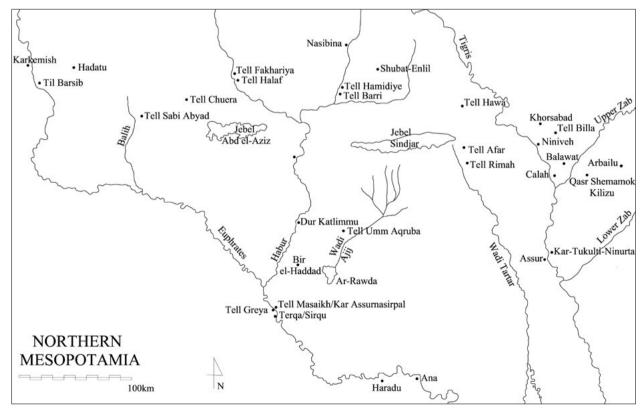
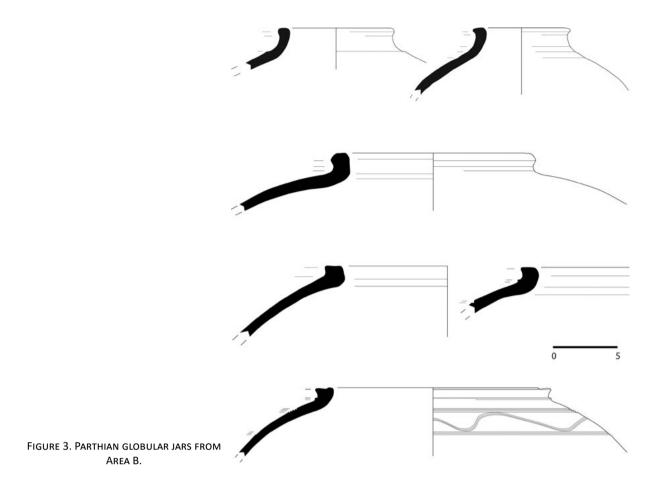


FIGURE 2. MAP OF NORTHERN MESOPOTAMIA.



the West of the prolongation of trench A. For the moment, the study of the Lower town of Kilizu has been carried out mainly by geomagnetic surveys. Our mission also participates in a larger project of regional surface survey in Erbil area (EPAS) developed under the direction of J. Ur.7

Parthian-Sasanian Levels

The first built levels identified both in trench A and in area B are to be dated to the Parthian/Sasanian periods, without real traces of the Early Middle ages or Early Islamic period settlements, even if some material of these periods has been collected on the surface of the tell. The Parthian/Sasanian structures were found directly under the remains and the pits associated with a modern military occupation situated on the top of the site. Its destruction by bombing, and eventually the removal of its ruins by bulldozing, have seriously disrupted the stratigraphy for the more recent levels.

In area B, in the NE corner of the Acropolis, we discovered the remains of a large Parthian-Sasanian

building, with a complex plan, showing at least three different phases of construction. The situation revealed in the upper part of trench A, in the southern slope, is different, this level being attested only by the remains of domestic units, possibly with two phases. Concerning the ceramic material associated with this building, we have found a considerable number of diagnostic fragments for typologies of the Parthian/ Sasanian periods, just from the surface and through all the different phases of construction of this level. This material is characterized by a considerable quantity of mineral temper, often clearly visible on the exterior surface of the sherds, whereas vegetal inclusions are almost absent.

Firstly, we were able to recognize an unglazed ware, which consists principally of closed shapes, represented mainly by short neck or neckless jars with a grooved rim,8 often characterized by combed or incised wavy line decorations on their mostly globular bodies (figure 3). There were also several fragments of a glazed ware in blue, light green, yellow or white color, sometimes with incised geometrical motifs (figure 4) or applied

⁷Ur et alii 2013, 96 fig. 4, 99-100 and fig. 8.

⁸ Keall and Keall 1981.



FIGURE 4. FRAGMENT OF PARTHIAN GLAZED WARE WITH INCISED DECORATION FROM AREA B.

'pastille' decorations.9 Small fragments showing the socalled 'diamond ware' decoration, characterized by a rhomboidal stamped pattern, 10 were present too: they are quite typical of the last phase of the Parthian settlement in northern Mesopotamia, during the first half of the 3rd century AD. They are however attested also during the first phase of the Sasanian period. 11 Open shapes are very few, mostly small hemispherical bowls covered by glaze on the inside and outside walls, or bowls with an outfolded rim grooved on the top. 12

Hellenistic Levels

The first Parthian building to the North of the site seems to have been built over an ancient, much eroded tell surface, possibly the ruins of previously abandoned Hellenistic occupations. We found here some fragments of an unpainted ware with several types of stamped decorations, often used in conjunction with impressed or incised triangles, circles and dots. Thanks to some comparisons with very similar examples from Nimrud and Nineveh,13 this material seems to correspond to that found in the Hellenistic levels excavated in these sites. Of particular note is a shard characterized by a dark brown-reddish color and a concentric circle pattern (QS03 2604), which might be dated to the end of the Hellenistic occupation (figure 5).¹⁴

OS03 2641





FIGURE 5. HELLENISTIC FRAGMENTS WITH STAMPED AND INCISED DECORATIONS FROM AREA B.

The sequence identified in trench A, and subsequent excavations in area A, have shown that Parthian structures cover a clear Hellenistic level. This occupation is documented mainly by well-built houses, still quite

⁹ Anastasio 2008, pl. IX; Anastasio et al. 2012, 100, n. 57; Ricciardi Venco 2007, 243, n. 207, 208.

¹⁰ Anastasio 2008, pl. XII, n. 5, 6; Anastasio *et al.* 2012, 102-103, n. 62, 63; Oates and Oates 1959, pl. LVII. ¹¹ Ricciardi Venco 1970.

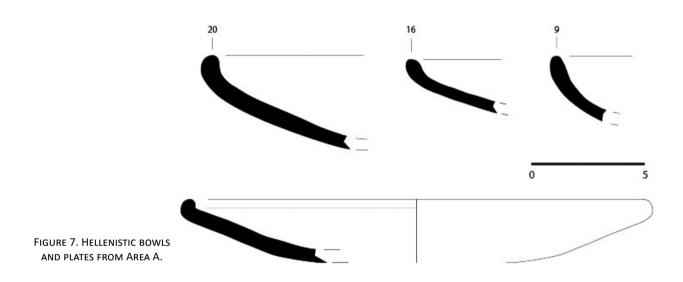
¹²Oates and Oates 1959, pl. LVI.

¹³Oates 2005; Oates and Oates 1958.

¹⁴ Oates and Oates 1958, 129; pl. XXII.



FIGURE 6. HELLENISTIC FISH-PLATES FROM AREA A.



identifiable in their plans, with some structures for domestic use. The Hellenistic material found in this area shows a lot of fragments of typical 'fish-plates', open shapes with a characteristic depression in the ring-base, ¹⁵ a geometrical 'palmette' stamp decoration around it ¹⁶ and the surface painted in red, orange or brown (figure 6). These open shapes, which include shallow and deep bowls, or also smaller hemispherical bowls with inturned rims (figure 7), often have a band of orange-red paint at the rim, which seems to be carelessly applied

¹⁶Roaf 1984, 145, pl. 3.

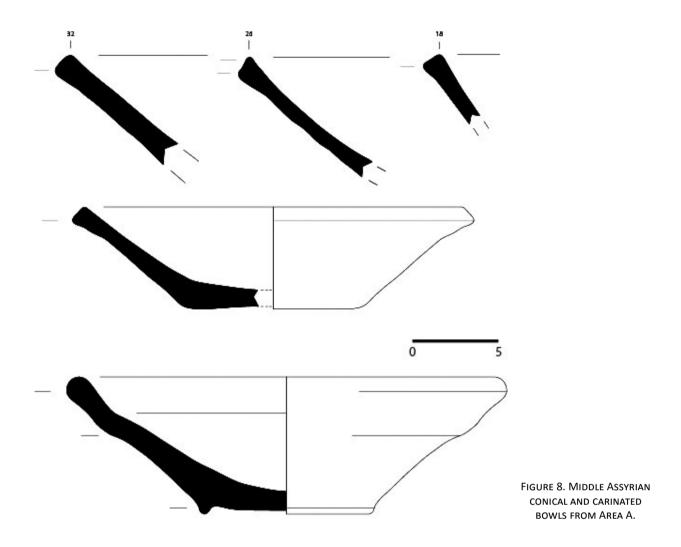
around it: it occasionally covers almost the entire vessel or goes along its sides producing a sort of uneven line.¹⁷ This assemblage is also characterized by a more finegrained mineral temper than the one we observed for the Parthian material.

Assyrian Levels

In trench A and in area A, the Hellenistic houses have been built over the remains of a large reddish mudbrick terrace. For the moment this terrace – which could also

¹⁵ Nováček et al. 2008, pl. 22, n. 47, 48.

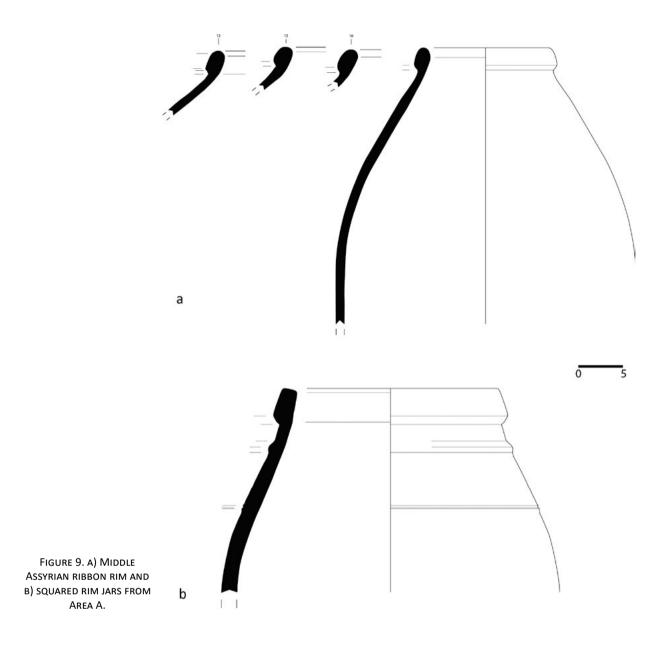
¹⁷ Oates 2005, 130, pl. 15.



integrate the foundation of a wall encircling the Citadel itself - covers and seals a large part of the southern slope of the citadel, separating it from the limits of the lower town. Associated with this platform, we found a monumental baked brick ramp, with the usual inscription integrated in one of the steps, attributing the construction of the double system of walls of Kilizu to Sennacherib. Further excavations in area A have shown that this 'reddish' terrace and its ramp have been built upon the remains of a previous Iron I-II level. This level too is marked, in a sounding, by a baked brick floor, covering another mud brick platform or terrace, however built with a different kind of bricks. In order to level the ground and set correctly the foundation of this earlier platform into the slope of the Citadel, large quantities of earth and sherds fills were brought here from other parts of the site.

In this fill we have found not only ceramic materials, but also fragments of inscriptions and of other cuneiform documents, to be dated to the end of the Late Bronze Age and to the early Middle Assyrian period, namely to the reign of Adad-nārārī I. The series of fill layers in area A gave us the largest quantity of ceramic assemblages since the beginning of the excavation, with many diagnostic sherds for the Middle Assyrian period.¹⁸ The most important and constant elements of these homogeneous assemblages are vessels of common quality, with very distinctive and standardized shapes and dimensions, and a fabric strongly characterized by the almost exclusive presence of chaff temper. Notably, among the undecorated wares, we have many shallow bowls, either conical or with a high and slight carination close to the rim (figure 8). Among Middle-Assyrian common ware material we have ribbon-rim jars, and big jars with squared rim; neckless jars with a round ribbon-rim, an ovoid body and a ring base; and big jars with a diameter of approximately 40-50 cm, a convex, sometimes ribbed, body and a squared thickened rim (figure 9).

¹⁸ Pfälzner 1995; Postgate et al. 1997.



Middle Assyrian fine wares were also present, mostly nipple or foot base beakers with a cylindrical and slightly flaring walls, which are around 3mm thick (figure 10). These fine vessels, with very small mineral inclusions and sand particles in the fabric, are at the same time examples of painted ware.¹⁹ A dark brown-reddish band is always painted, in different nuances, at the bottom of the body, and sometimes can be noticed on the rim too, while in one case traces of a decoration painted in black and white alternated lines, typical of Nuzi style,²⁰ are still visible on a fragment belonging to the same

kind of shape. These particular examples of association between fine and painted ware seem to have very similar characteristics, for example, to the so-called 'younger' Habur ware²¹ or its Mitanni variant in Tell Barri, where the styles of Nuzi and Late Habur appear together, and are reciprocally influenced. However, in the fills of area A, this material is always mixed with the standard Middle Assyrian types of much more common quality, while in the case of Tell Barri this coexistence is rather absent, so it may be that the interaction between Mitanni and Middle Assyrian ceramics functioned in a different way.²²

 ¹⁹ Anastasio 2008, pl. XIII, n. 3-6; Anastasio *et al.* 2012, 84, n. 21, 22.
 ²⁰ Anastasio 2008, pl. XII, n. 1; Anastasio *et al.* 2012, 85, n. 24;
 Cecchini 1965; Oates, Oates, and McDonald 1997; Pfälzner 1995, pl. 66; Postgate *et al.* 1997, 54-55; Soldi 2006.

²¹ Pfälzner 2007.

²²D'Agostino 2008.

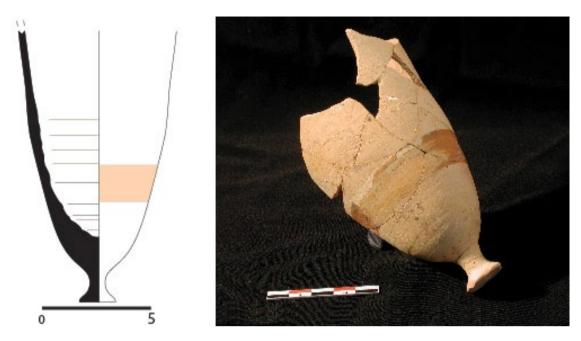


FIGURE 10. MITANNI PAINTED BEAKER FROM AREA A.

No archaeological structures of this period have been identified in area A up to now. However, the importance of the occupation of the site at the end of the second Millennium has been revealed, during our 2013 spring mission, by the discovery of a Middle Assyrian palace found in area B, at a low elevation of the slope located in the northeastern part of the Citadel. At least three floors belonging to the Middle Assyrian building have been identified in a gully, and the baked bricks of the more ancient one bear an inscription celebrating the construction of a palace in Kilizu by Adad-nārārī I. Among the ceramic material associated with this level, we have found some of the same diagnostic Middle Assyrian shapes already observed in area A, but also some fragments of piecrust pot-stands with a waveshaped modeled rim (figure 11). This typology, which we found in Late Bronze Age assemblage in Kilik Mishik, can be compared to the examples found in Nineveh, Tell Rimah, Tell Mohammed 'Arab, Tell al-Hamīdīya and Tell Rijim.²³ However, the Qasr Shemamok findings are clearly associated with Middle Assyrian standard material and show slightly different features from the examples we observed in Kilik Mishik, notably with regard to the general execution of the object. This is of rather coarse quality: the shaping of the rim is much less



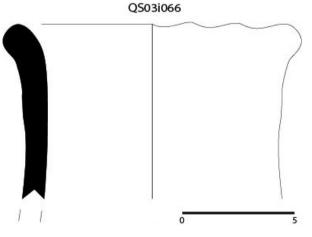


FIGURE 11. MITANNI / MIDDLE ASSYRIAN PIECRUST POT-STAND FROM AREA B WEST.

²³ For Kilik Mishik see Rouault and Calini in this volume. See also comparisons in Anastasio 2007, pl. 90, n. 11; Ball, Tucker, and Wilkinson 1989; Eichler *et al.* 1990, pl. 20; Hamlin 1974; Kolinski 1997; McMahon 1998, pl. 11, n. 22; Oates, Oates, and McDonald 1997, 230-233, pl. 215-216; Pfälzner 1995, pl. 178, 190; Pfälzner 2007, pl. XV, n. 147; Postgate *et alii* 1997, 236-239, pl. 93-94.

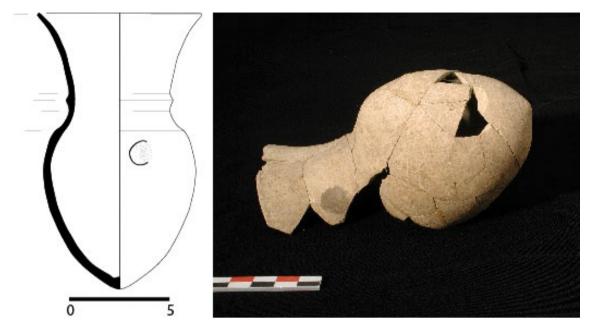


FIGURE 12. NEO-ASSYRIAN PALACE WARE BEAKER FROM AREA A.

accurate, the outer surface is not smoothed and vegetal inclusions are present in good quantity.

While G. Furlani found during his excavations many Neo-Assyrian vessels, this is not yet the case for our mission, but we hope that we will also soon come down into the Neo-Assyrian provincial capital. We have already some examples of the ceramic production of this period, such as a pointed base beaker with a wide, almost cylindrical flaring neck, an everted rim and a very thin wall marked on the outside by a small dimples made by fingerprints, which are characteristic features of the famous Neo-Assyrian Palace Ware (figure 12).²⁴ So, the Iron II levels shouldn't be far away!

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²⁴ Anastasio 2010, 132-133, pl. 28; Hausleiter 2010.

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Current Investigations into the Early Neolithic of the Zagros Foothills of Iraqi Kurdistan

Roger MATTHEWS, Wendy MATTHEWS, Kamal Rasheed RAHEEM and Kamal Rauf Aziz

Sedentism and resource management in the Neolithic of the Central Zagros

One of the most significant transformations in history took place after the last Ice Age, from c. 12,000 BC (all dates calibrated BC), when human communities changed from being mobile hunter-foragers to more settled farmers and stock-keepers, with domesticated crops and animals. This Neolithic transformation was a fundamental development in the human condition across much of the world and led ultimately, through surplus accumulation and social differentiation, to the emergence of towns, cities, and empires, shaping the modern world.

Neolithic developments occurred very early in Southwest Asia. In recent decades there has been much work on Neolithic developments in this region through excavations in Turkey, the northern plains of Iraq, Syria, Jordan, and the Levant, which have together demonstrated great variability in local trajectories of development from hunter-forager to villager-farmer. By contrast, one area that until recently has been little investigated since the 1970s is the Zagros Mountain region and hilly flanks of western Iran and eastern Iraq, the so-called eastern Fertile Crescent. Earlier work in this region was of key importance in developing studies of the Neolithic transformation, with excavations at sites such as Jarmo, Asiab, Sarab, Ali Kosh, and Ganj Dareh in the 1950s-70s (Braidwood and Howe 1960; Hole et al. 1969; Smith 1990). These researches indicated that Neolithic communities changed to sedentary lifestyles and began using fired ceramics, the earliest in Southwest Asia, by c. 7900 BC at sites such as Ganj Dareh in western Iran. Study of the plant and animal remains indicates that the earliest Neolithic communities in the Zagros favoured use of lentils, peas, and nuts over cereals, that wild goat were intensively hunted, and there is evidence for domestication of goat by c. 7900 BC (Zeder 2006).

For approximately 25 years after 1979, there was almost no fieldwork concerning the Neolithic of the eastern Fertile Crescent, and there is less up to date evidence compared to the rest of Southwest Asia and beyond. A wide range of more recent studies, however, is steadily correcting this imbalance (Matthews and Fazeli Nashli 2013; Riehl et al. 2013). The Central Zagros Archaeological Project (CZAP) is a collaborative programme, whose main partners are the University of Reading, Sulaimaniyah and

Erbil Antiquities Directorates, Bu Ali Sina University, Hamedan, and the Iranian Centre for Archaeological Research. The objectives are to investigate research questions within the Early Neolithic of the Central Zagros region. What was the nature of early sedentism and how did it develop from temporary and seasonal to permanent and year-round? How was architecture constructed and how was early village space used and socialised? What was the role of ritual and human burial in social cohesion at this time? What modes of animal husbandry were employed, including intensive hunting, herding, management and domestication of goats, native in the wild to the Zagros? What plant resources were exploited and how? What is the absolute chronology of development in the Zagros Neolithic? These and many other questions are being addressed by excavation and inter-disciplinary analysis at four sites on a transect from the lowland to the highland Zagros, in order to study local and regional variation in the development of the Neolithic (Fig. 1). In the lowland piedmont zone in Iraqi Kurdistan, the sites comprise Bestansur and Shimshara as well as regional survey in Zarzi valley. In the highland zone, the sites comprise Sheikh-e Abad and Jani in the Central Zagros region of western Iran (Matthews et al. 2013; Matthews and Fazeli Nashli 2013).

The analyses and results from this research, involving the application of inter-disciplinary approaches to archaeological questions, are of value in situating the Central Zagros within the Neolithic transformation in Southwest Asia. The research assists in placing our own species within a rich context of ecological and social change that characterised the Neolithic transformation following the end of the last Ice Age, one of the most impactful episodes in human history.

Research questions: an agenda for research into the Early Neolithic of the eastern Fertile Crescent

Climate and environment

The importance of climate and environment has been re-emphasised in recent research on the Neolithic more widely as significant factors in spatial and temporal variability in biomes and thereby in the histories of early sedentism and the inter-relationships between humans, plants and animals (Zeder 2011). There is increasing evidence for local and regional variation in environment

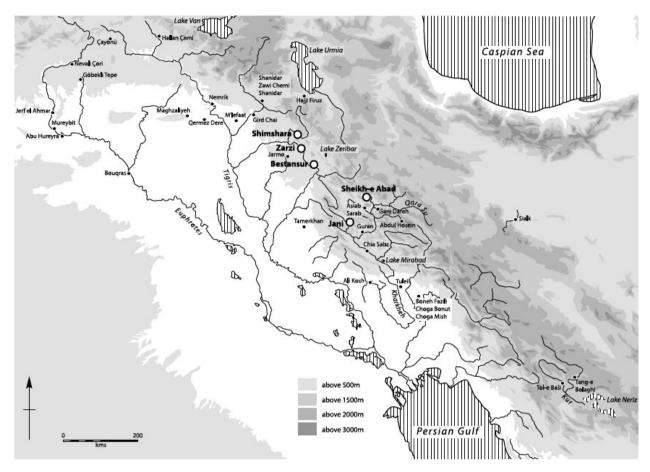


FIGURE 1. MAP TO SHOW LOCATION OF KEY CZAP SITES.

and ecological strategies in the development of villages and agriculture across Southwest Asia, as well as globally (Willcox 2005), and in the choices made by specific communities.

Current interpretations of lake cores from Lake Zeribar, 45 km to the east of Bestansur, suggest the environment included grasslands and pistachio and almond trees in the Zagros region in the Early Holocene (Wasylikowa and Witkowski 2008). There needs to be inter-disciplinary investigation of the specific trajectories of environmental interaction followed by human communities in the Zagros region. Within the remit of CZAP, initial research has begun through collection of speleothem palaeoclimate records from local cave sites in the Iraqi Zagros, for study under the direction of Professor Dominik Fleitmann of the University of Reading in collaboration with Dr Mark Altaweel of UCL.

Sedentism

The issue of how communities become more sedentary through the Early Holocene is one of the fundamental research issues for the Neolithic period. The extent to which initial activities at Central Zagros Neolithic sites were associated with periodic hunting/gathering or with year-round settlement remains to be established. It is likely that there was periodic fission and fusion of populations in order to obtain and share resources and to socialise, as increasingly evident at other sites in Southwest Asia. High-resolution microstratigraphic and micro-archaeological evidence is being recovered and examined from CZAP sites in order to investigate the nature, seasonality and periodicity of activities.

Social roles and relations

As yet we know little about the nature of social organisation in Early Neolithic communities of the eastern Fertile Crescent. Was the household a key social unit, as studies of Neolithic sites in other regions have suggested (Kuijt 2000), or is there evidence of varying social units and networks as emerging at a number of sites, such as Çatalhöyük? How was space structured and organised at short and longer term timescales,

and what indicators are there of social actions, roles and interaction and exclusion during the life-cycle of individual features, spaces and buildings across the community and generations, at the scale of single deposits, sequences, site levels and the history of the settlement? These questions are being addressed through targeted excavation of intact Early Neolithic deposits, in particular at the site of Bestansur in Iraqi Kurdistan.

Technological choices and material cultural traditions

There is considerable evidence for shared knowledge of materials and technology across Southwest Asia in the Neolithic as well as for local and regional variation. Material evidence from Neolithic sites of the region includes architecture, ground stone and chipped stone tools as well as special items that have clearly been traded or exchanged over considerable distances, such as beads of carnelian and sea-shell, and tools of obsidian. What were the socio-economic practices and trans-regional connections that underpinned such long-distance movements of materials? What choices were made at Bestansur and what was the site's role in innovation more widely?

Symbolism and ritual

Finally, we consider whether there are traces of ritual and activities such as feasting, which are often argued to have played a key role in Neolithic society and life-ways (Hodder 2010). Some have argued that the Neolithic of the eastern Fertile Crescent is rather lacking in evidence for elaborate cultic or ritual activity (Bernbeck 2004) but how valid is this interpretation in the light of recent work?

Methods

The main approach in CZAP in Iraqi Kurdistan is excavation at the Neolithic sites of Bestansur and Shimshara, to investigate socio-economic and cultural strategies through the Early Neolithic. Recording and processing are managed through the webbased Integrated Archaeological Data-Base (IADB). Excavation is being conducted, employing trenches for diachronic investigation and open-area trenches to examine buildings, external areas, middens and streets/corridors. Excavated deposits are quantified, sieved, floated, sampled, and processed for recovery of lithics, ground-stone, clay tokens, figurines, faunal and botanical remains (macro and micro), phytoliths, molluscs, and architectural materials.

A consistent methodology is applied in the excavation of all trenches at Bestansur and Shimshara. Excavations begin by removal of topsoil and upper eroded and wash deposits by large pick and shovels. At Bestansur, where most of our excavation has taken place, intact Neolithic deposits are encountered at depths of 30-50 cm below the modern field and mound surfaces. Excavation of these deposits proceeds with small pick and trowel with occasional use of large tools. We employ systematic sampling procedures, collecting 250 g archive samples and 50 l whole-earth flotation samples from every context, where the deposits provide sufficient material. Additional samples are taken as required for a range of specialist purposes. Dry-sieving with 4 mm mesh is conducted on deposits once samples have been collected, except in cases where the heavy clay content of deposits makes dry-sieving unfeasible. In these cases a sample of the deposit is processed through dry-sieving and the remainder is shovelled into wheel-barrows and checked by hand before disposal on the spoil-heap, with a tally of buckets and barrows being maintained for each context. The local workmen are highly adept at hand recovery of the smallest fragments of cultural material from broken soil on the ground and in the wheel-barrow. All excavation and sampling activities are recorded on a range of forms for entry into the Integrated Archaeological Data-Base. At the end of each season all soundings are lined with organic sacking and back-filled with the original excavated material.

Additionally, intensive field survey has been conducted during 2013 in the vicinity of Zarzi cave, in the Iraqi Central Zagros, in order to investigate the prehistoric settlement of this fertile region.

Excavations at Bestansur

The mound of Bestansur is located 33 km southeast of Sulaimaniyah city, on the western edge of the Shahrizor Plain. The site was first located by Iraqi archaeologists and was more recently surveyed by a German team, catalogued as site number SSP6 and assigned to the Neolithic period on the basis of surface finds (Altaweel et al. 2012, 20-1). From our own work it is now clear that the upper layers of the mound belong to the Iron Age, in particular to the Neo-Assyrian period, and the Sassanian period. Preliminary excavations, by Dr Lisa Cooper of the University of British Columbia, of stone walls identified in geophysical survey in the fields to the southeast of the mound have revealed a significant Neo-Assyrian destruction layer.

Preliminary surface walking and artefact collection in 2011-2012 of the mound at Bestansur and the fields surrounding the mound identified Neolithic chert and obsidian scatters over an area of c. 250 m around the visible mound, suggesting that intact Neolithic levels could be excavated in the fields on all sides of the mound. Guided by the surface finds and the mound's topography we have so far excavated 13 trenches, located on the lower slopes of the mound and in the surrounding fields (Fig. 2). Neolithic architecture was identified in nine of these 13 trenches. Five trenches (Trenches 7, 9, 10

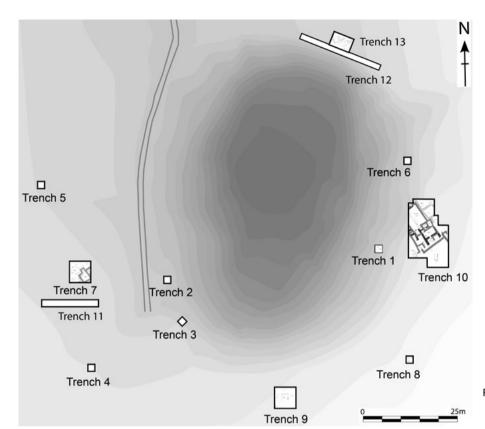


FIGURE 2. PLAN OF BESTANSUR TO SHOW LOCATION OF EXCAVATED TRENCHES.

and 12-13) have been expanded in order to investigate extensive Neolithic deposits and structures.

As excavation proceeded it became clear that intact Neolithic deposits survive below the modern plough soil at almost all locations and are readily accessible for excavation. Considering the overall picture from all 13 trenches, intact Neolithic deposits are preserved across an excavated area of more than 100 m north-south and 100 m east-west, in fields on all sides of the archaeological mound and under the Iron Age mound too. If contiguous and contemporary, this spread of occupation indicates a Neolithic site of at least 1.0 hectare, but the precise limits of the surface lithic spread have yet to be defined and it is likely that the Neolithic site is significantly larger, possibly >250 m in diameter. The modern surface in the fields slopes gently down from northwest to southeast.

Probable Neolithic deposits were also revealed in the base of the mound itself, in Trenches 1 and 2, in the form of deposits with Neolithic lithics and without later pottery. These basal levels without pottery, moreover, are similar in absolute height to intact Neolithic levels in the adjacent fields, further suggesting that they are Neolithic in date, at *c*. 93 m above site datum in the west in Trench

2, and at 92.13-92.05 m above site datum in the east in Trench 1. The similarity in absolute levels suggests the Neolithic site at Bestansur may have been relatively flat with a gentle northwest-southeast slope. This apparent flatness may be due to erosion and activities at the site since the Neolithic, including possible levelling for construction in later periods and modern ploughing. There could be a small Neolithic raised mound in the c. 52 m distance between Trenches 1 and 2, below the top of the current 7-10 m high mound, as suggested by Neolithic deposits in Trenches 12-13 which form at least the basal 1m of this mound above the fields. Further excavations on the mound will continue to investigate the nature and date of occupation levels on the mound.

Although Neolithic ceramics were identified in survey at the northwest of the site (Nieuwenhuyse *et al.* 2012), the Neolithic deposits excavated in the fields around Bestansur all appear date to the Pre-Pottery Neolithic as no definitely identifiable sherds of Neolithic pottery have been recovered in excavation. The site appears to have been abandoned for a long time at some stage after the Neolithic, with a resumption of human presence at the site only in the Iron Age several millennia later. No Chalcolithic or Bronze Age materials were found

at Bestansur, but the existence of Chalcolithic and Bronze Age sites in the vicinity of the site shows that the abandonment was local to the site and not part of a regional episode. Such shifts in precise settlement locations may have been connected with episodic movements of the major spring at Bestansur or of the river flowing from it. Future geomorphological and palaeo-environmental research in the area will address this and related questions.

Bestansur, Trench 10 architecture

Excavations in Trench 10, to the east of the mound, have revealed a cluster of multi-roomed buildings that form a Neolithic neighbourhood (Fig. 3). Radiocarbon dates from these structures and associated deposits firmly date them to 7700-7600 BC (Fig. 4). The earliest building revealed in Trench 10 is Building 8, not yet excavated. This building is constructed of boat-shaped mud-bricks set in layers of mortar, and many of the wall faces are covered in multiple layers of fine plaster with some evidence for painting.

Building 5 in Trench 10 has been almost completely revealed and excavated. This structure is constructed of reddish-brown pisé with calcitic inclusions and many of the wall faces are also plastered. The layout of Building 5 is distinctive, with a large rectangular ante-room, Space 55, a stone threshold leading into the main room, Space 50, and smaller adjacent rooms. A very unusual large carved and incised stone (Fig. 5) was set against the wall face at one side of the entrance to the building. This stone was clearly used in craft activities involving repeating cutting with sharp tools.

One of the most significant features of the building is the high number of disarticulated human remains deposited under the floors of Space 50, currently being studied by Dr Sam Walsh (Fig. 6). At least 55 individuals, many of them children and infants, have so far been excavated from Space 50. Grave goods in the form of beads of dentalium, clay, crab claw and, rarely, carnelian and jasper, were deposited with the human remains. We recovered two cowrie shells in close proximity to one human skull. The large number of interred individuals, mainly in the form of secondary burials, suggests that Building 5 had a social significance well beyond that of a single resident family.

Bestansur, Trenches 12-13

In Trenches 12-13, at the northern edge of the mound, we excavated Neolithic architecture and finely stratified deposits (Fig. 2). A single radiocarbon date from Trench 13 indicates that the latest of at least three phases of occupation here may date to *c*. 7100 BC, approximately 500 years later than the Trench 10 occupation (Fig. 4). Earlier architecture in Trenches 12-13 comprises small

rooms bounded by pisé walls (Fig. 7) with some external spaces. We found significant quantities of fish bones and possible stone net-weights in this part of the site, in marked contrast to other trenches at Bestansur.

Chipped stone assemblages from Bestansur

Chipped stone tools and debitage were recovered in large quantities from all trenches at Bestansur. The tool assemblage attested at Bestansur can be broadly characterised as Mlefatian as defined by Kozlowski (1999), with an emphasis on blades and bladelets, and production of a repertoire of tool types on locally available cherts with usage of imported obsidian. Blades occur in large numbers, and the vast majority of them are broken at either one or both ends. All blade tools may have been used for a wide variety of cutting and slicing activities. Apart from blades and tools made on blades, other tool types include scrapers, drills, and borers. There are rare occurrences of microliths in the form of trapezes and crescents. A common tool form at Bestansur is the diagonal-ended bladelet, which is likely to have been set into a bone or wooden haft to serve as a barb, perhaps for fishing or spearing small game.

One of the most diagnostic tool types found at Bestansur is the so-called Çayönü tool (Fig. 8). These tools have a distinctive morphology, with thick blades showing steep, dense retouch on both edges, and often with a flaring or hooked end. In cross-section they are frequently angular and rhomboid. On their flat obverse faces they often show clear use-wear traces in the form of radial lines etched into the obsidian, interpreted by Anderson (1994) as evidence for their use in final finishing or decorating of stone objects such as marble bracelets and limestone plaques or bowls. Çayönü tools appear in a broad band of territory spanning southeast Anatolia, upper Mesopotamia and the central Zagros, and are dated to the later eighth and seventh millennia calibrated BC (Kozlowski and Aurenche 2005, 143). At Çayönü itself these tools are associated in particular with the Cell Building and subsequent sub-phases (Caneva et al. 1994, 263), from c. 7600 calibrated BC onwards.

Excavations at Shimshara

The site of Shimshara was selected for excavation within the remit of CZAP as it was known to have Neolithic levels from Mortensen's (1970) excavations in the 1950s. Shimshara is located on the Rania Plain (Fig. 1) in Sulaimaniyah Province, the second most fertile plain in Iraqi Kurdistan after the Shahrizor Plain. Since the late 1950s and the construction of the Dokan Dam, Shimshara has been periodically flooded according to seasonal water levels. At the moment, the site is at least periodically above water and accessible for excavation for part of each year. Located on a large fertile plain, 110 km northwest of Bestansur, Shimshara participated

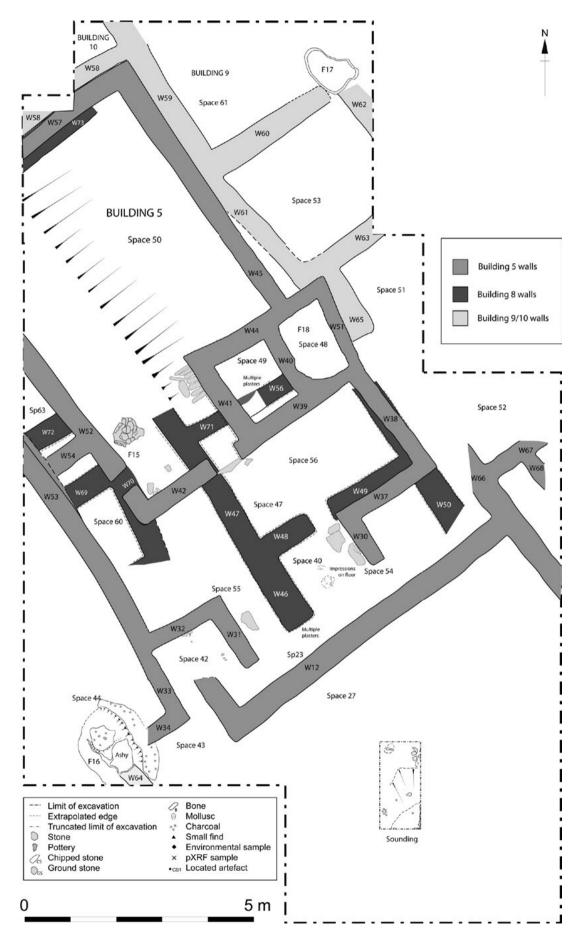


FIGURE 3. BESTANSUR, TRENCH 10 COMPOSITE PLAN OF ARCHITECTURE.

Site	Trench	Context no.	Material	Lab no.	Conventional date BP	Intercept with calibration curve Cal BC	Calibrated date BC 2 sigma (95.4%)
Bestansur	5	1078	Mollusc shell	Beta-326883	9570±40	9120-8840	9170-9160 and 9160-8780
Bestansur	10	1772	Animal bone	Beta-406556	8620±30	7595	7645-7585
Bestansur	10	1412	Goat tibia	Beta-368934	8610±50	7600	7720-7580
Bestansur	12-13	1386	Pig carpal	Beta-408868	8130±30	7075	7175-7055
Shimshara	Section		Pistacia sp.	Beta-342484	8230±40	7300 and 7220 and 7190	7450-7440 and 7420-7410 and 7360-7120 and 7110-7080

FIGURE 4. RADIOCARBON DATES FROM BESTANSUR AND SHIMSHARA.



FIGURE 5. LARGE STONE AT ENTRANCE TO BUILDING 5.

in different regional networks and thus provides an important comparison to Bestansur, for investigation of local and regional variation in Neolithic ecological and social strategies, a key CZAP research issue. Bestansur is close to a perennial spring while Shimshara is on the banks of a major river, the Lesser Zab (Fig. 9).

Initial assessment of the Neolithic levels at Shimshara established that there are at least 2.5 m depth of extant Neolithic deposits above natural. A radiocarbon date on charred plant material from the base of our excavations indicates occupation at c. 7300-7200 BC (Fig. 4). Two

trenches were excavated at Shimshara in 2012-13 (Fig. 10). An important discovery is the identification of grey silty clay deposits with well-preserved plant remains that represent the earliest activities in this area of the site. Neolithic occupation and activities in Trench 1 include a flat working area at the edge of a break in slope, and adjacent discard deposits containing burnt stones, aggregates and animal bones. In Trench 2, the earliest excavated deposits represent diverse activities on a series of small pebble and stone surfaces, with artefact fragments such as carved marble bracelet fragments and an incised stone bowl sherd. In future investigations it would be valuable to extend excavations to the west of Trench 1 to enable open-area excavation of Neolithic levels.

The chipped stone assemblage from Shimshara includes a much greater representation of obsidian, with multiple Çayönü tools (Fig. 8). Sickle blades are also well represented, and there are examples of diagonal-ended bladelets in chert and obsidian.

Conclusions: exploring the Neolithic of the eastern Fertile Crescent

In addition to the issues discussed above, CZAP specialists are currently studying the full range of material culture and ecological evidence from the sites of Bestansur and Shimshara, including architecture, stratigraphy, micro-archaeology, animal bones, human remains, charred plants, ground-stone, chipped stone, clay objects, networks of material and resource use, radiocarbon dating, and molluscs. The CZAP team is currently preparing reports and analyses of all these aspects for publication as volume 2 of the project's final publications. Additionally, an ambitious plan of local



FIGURE 6. EXCAVATION OF HUMAN REMAINS FROM BUILDING 5, SPACE 50.

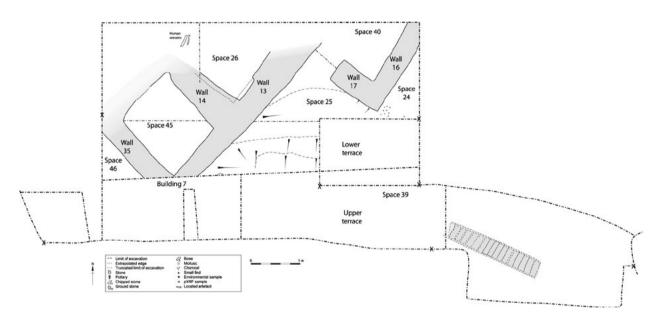


FIGURE 7. BESTANSUR, TRENCHES 12-13 ARCHITECTURE.

and regional outreach and engagement is being planned in consultation with colleagues in Sulaimaniyah and beyond.

For the first time, our excavations at Bestansur and Shimshara are shedding light on the Pre-Pottery Neolithic period of the eastern Fertile Crescent, in particular during



FIGURE 8. OBSIDIAN ÇAYÖNÜ TOOL FROM SHIMSHARA,
RE-USED AS BLADE CORE.

the eighth millennium BC. Excavated levels at both sites pre-date and are contemporary with the earliest Neolithic levels excavated by Braidwood at Jarmo, in the same region, and they provide new insights into the origins of sedentism, the early development of sophisticated architecture, the elaboration of human burial practices, the engagement of local communities in networks of trans-regional interaction, and local diversity in ecological, environmental and social pathways through the transition from hunter-forager to villager-herder.



FIGURE 9. VIEW OF SHIMSHARA, LOOKING SOUTH TO THE DOKAN DAM LAKE.



FIGURE 10. SHIMSHARA, LOCATION OF TRENCH 1 (LEFT) AND TRENCH 2 (RIGHT), LOOKING NORTH.

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About Bakr Awa

Peter A. MIGLUS

The site of Bakr Awa (35°13'14'N, 45°56'26"E) situated on the outskirts of the city of Halabja is one of the biggest ancient settlements in the western foothills of the Zagros in Iraqi Kurdistan (AAI 1970, 335 no. 54; AASI 1975-76, map 77 no. 14). It consists of a c. 800 x 600 m large lower city (max. +579 m a.s.l.) and a steep citadel mound (max. +595 m a.s.l.) dominating the plain (approx. +565 m a.s.l.). The citadel is crowned by an earthen parapet wall while the mound is surrounded by a moat dug probably in the Islamic period (Fig. 1).

Bakr Awa is located in the southern part of the Shahrizor Plain near the junction of the Tanjaro river into the Diyala. It was a highly advantageous position since the Diyala, which creates a corridor between central Mesopotamia and the Iranian Highland, in this area crosses the transversal route of the Shahrizor coming from the lands accessed by the Lesser Zab. Moreover, the conspicuous feature of this landscape is its economic potential and flexibility. The population of this region used agriculture, pastoralism, and mixed farming as subsistence basis.



FIGURE 1. BAKR AWA ON SATELLITE IMAGE (QUICKBIRD 11TH OCTOBER, 2010, DIGITAL GLOBE INC.) WITH MARKED EXCAVATION AREAS.

The earliest reference to Bakr Awa was given by James Felix Jones (1857, 205-6) who visited this place in 1844. In 1927 the site was initially investigated by Ephraim Speiser (1926/27, 13), but the first extensive excavation by Iraqi archaeologists took place in the years 1960 and 1961 (Al-Husaini 1962; Madhloum 1965). The new excavation at Bakr Awa by the University of Heidelberg was carried out during four seasons 2010-11 (Miglus *et al.* 2011; 2013) and 2013-14 (Bürger *et al.* 2015; Bürger *forthcoming*; Miglus 2015a). It succeeded a survey in the southern part of Shahrizor Plain led by the author in 2009.

In the time that passed between the two excavations the site underwent several changes. The top of the main mound has been disturbed and reshaped in the course of the 1980-88 Iraq-Iran war, and a wide ramp at its eastern slope has been bulldozed for military purpose. Afterwards, around 1993, the whole area of the lower city has been badly damaged by heavy looting which destroyed the upper layers up to 2.5 m deep. Finally, the modern village of Bakr Awa eliminated in the 1980s was has undergone reconstruction from 2011 onwards.

During the Iraqi investigation two trenches were opened, one on the southwestern slope of the main mound, a second one in the eastern part of the lower city. The 17

layers uncovered in the first trench were reported to be from the Akkadian to Islamic periods, but the published information concerns only the uppermost Islamic Levels I-V (Madhloum 1965). The excavation in the lower city provided a slightly different stratigraphy: The uppermost layers (Levels I-II) have been recognize as Islamic, the third (Level III) as an Iron Age horizon dating to c. 800 BC, and the lower deposits (Levels IV-VIII) as settlement remains from the 2nd millennium BC (Al-Husaini 1962).

The new excavation started 2010 in Area 1 situated on a hilltop in the southeastern part of the lower city, and also the former Iraqi eastern trench, now called Area 2, was reopened. In season 2011 the new excavation Areas 3 and 4 have been established on the top of citadel mound, and two years later Area 5 has been set up at the edge of the citadel moat in the center of the site. The work in the Iraqi trench on the slope of the citadel mound, called here Area 6, should be continued in the next seasons.

Excavation results

The current stage of research in the Areas 1-6 is presented by the following stratigraphy table (Fig. 2) which illustrates the investigated occupation periods reached at the site from the Early Bronze Age to the Ottoman period.

Horizon	Period	Area 1	Area 2	Area 3	Area 4	Area 5	Area 6	
	Modern	village and	cemetery					
	Ottoman	*						
Islamic	Middle Age							
	Abbasid							
Pre-Islamic	Sasanian (?)			*	*	*	*	
	hiatus (?)	N.	*					
	Achaemenid			*			*	
Iron Age	Neo-Assyrian							
LBA	Hurrian/Kassite				/			
МВА	Late Old Babylonian				\ /			
	Isin-Larsa							
	Post-Akkadian (Ur III?)				l X			
EBA	Akkadian			ΙX	/\			
	hiatus (?)	*			//	/ \		
	Older Early Dynastic		E.		/ \		\angle	
	strong evidence			occasio	onal evide	nce		
* no evidence			not excavated					

FIGURE 2. OCCUPATION PERIODS REACHED IN THE EXCAVATION AREAS 1 TO 6 DURING SEASONS 2010-11 AND 2013-14.

1. Early Bronze Age (Early Tigridian) Horizon

The 3rd millennium BC remains excavated in the eastern part of the lower city date from the beginning of the Early Dynastic as well as from the Akkadian and Post-Akkadian periods. The Akkadian and Ur III layers had also been reached in the former Iraqi trench, Area 6, on the main mound (Levels XVI-XVII), but no details of the material found at this location were reported.

1.1. Early Dynastic I layers

In two deep soundings in Area 2 the earliest layers of the site consisted of several floors and a few sparse wall remains (Miglus *et al.* 2013, 65-7). This deposit was in total c. 1.5 m thick and contained numerous *Scarlet Ware* sherds and related painted pottery. Although the *Scarlet Ware* is characteristic in the eastern Tigris region for the Early Dynastic I-II (following the ARCANE terminology: Early Tigridian 2-4 / Early Central Mesopotamian 1-3) period, up to now the lands on the Tanjero and upper Diyala did not appear on the painted pottery distribution maps (cf. Rova 2014; Del Bravo 2014). The new finds from Bakr Awa fill this gap.

Two radiocarbon samples taken from the oldest and third oldest floor levels confirm the dating of the earliest settlement in the lower city to 2890-2860 respectively 2830-2820 cal BC. On the latter floor a jar rim bearing an imprint of a cylinder seal came to light (Miglus et al. 2013, 65-6 fig 30d) (fig. 3 a). Sealed storage jars like this specimen were found on several sites with Jemdet Nasr and Early Dynastic I occupation in the Hamrin region: Tell Gubba (Ii 1988, figs. 6-23 pls. 29-38), Tell Ahmed al-Hattu (Sürenhagen 1984, fig. 7; 2011, fig. 18. 9 a, b and 20 no. 1-7), Kheit Qasim (Lebeau 1984, fig. 3-5), Tell Madhhur (Watson 1984, fig. 24 no. 10-4), Tell Sabra (Tunca 1987, pl. 106-7), and Tell Yelkhi (Boehmer 1985, fig. 2). Furthermore, two sealings on clay and terracotta fragments of similar date have been found in the deep soundings.

Surprisingly, the painted pottery from both deep soundings was associated with numerous fragments of beveled rim bowls. Initially, pieces were thought be later intrusions in the younger layers. However, it later became apparent that the lowermost Early Dynastic occupation layer in the eastern area of Bakr Awa rests directly on the virgin soil (at c. 570.30 m a.s.l.). An alternative supposition, that this material was transferred from another location, is hardly probable because apart from the beveled rim bowls no other Uruk pottery types have been found here. It looks as if this particular kind of pottery was still produced in the early 3rd millennium BC in the Shahrizor region, a phenomenon which was already observed at Tell Gubba in the Hamrin region (Fuji 1981, 160-1). This fact is contrary to the opinion that in the Tigris region the beveled rim bowl production must have come to an end already in the outgoing Uruk period (cf. Rova 2014; Helwing 2014).

Neither during the old nor the new excavation at Bakr Awa were any Uruk settlement layers uncovered. A few well preserved Uruk specimens have been published by Al-Soof (1985, 90, 183 chart III, 186 pl. III bottom) as found in Levels II-V of this site, but these levels date to the 1st respectively 2nd millennium BC. Therefore, it must be supposed that the pottery Al-Soof referred to originates in another site. The entries in the inventory of the Iraq Museum in Baghdad specifying its location as 'Shahrizor' (without mentioning Bakr Awa) seem to support this assumption.

1.2. Akkadian and Post-Akkadian layers

In the higher layers of the 3rd millennium BC no specific evidence for the late Early Dynastic (Early Tigridian 4-5) was discovered. It could be a regional problem (cf. Lebeau 2014, table on p. xi), and probably the late Early Dynastic settlement at the site was less intensive than in the beginning and in the last centuries of the 3rd millennium BC. But the Akkadian occupation is striking: In Areas 1 and 2 foundations laid with large stones were excavated in layers containing the typical Akkadian and Post-Akkadian pottery known from the lower Diyala and central Tigris region (Miglus et al. 2013, 62-5). In Area 2 they constituted three building levels having a total thickness of c. 1 m (between +573.40 and +572.30 m a.s.l.). The only partially preserved wall sections do not allow reconstructing any building plans, and a freestanding single-room unit about 3.10 m wide and 5.30 m long, presumably a small shrine, was the only exception. Its ground plan brings to mind small single-room temples built in the eastern Tigris region during the 3rd millennium BC. The best comparative examples are the sanctuaries in strata V and IV at Tepe Gawra (Akkadian / Ur III) which also had foundations constructed of stones (Speiser 1935, 14-8 pls. V-VI).

The entrance to the supposed shrine equipped with a pivot stone was located in the southern wall. It was walled up in the final occupation phase. The original floor of the room was paved with large flagstones, the younger one, separated from the first by a thin layer of white organic substance, was of beaten mud. On the inner and outer walls remains of clay plaster were observed. The only fixed installation in the room was a mud bench or table in the northeastern corner. In the northwestern corner, a round flat basin with a spout (a libation installation?) was placed on the younger floor. Sediment accumulated under its bottom has been dated between 2270 and 2040 cal BC. In the area outside the building, which was paved with pebbles and pottery sherds, some fireplaces were excavated. A production zone with several ovens and fire places surrounded by thick ash deposits extended further to the East.

In Area 1 only the uppermost stone foundations have been excavated (in the first preliminary report, Miglus *et al.* 2011, 147-8, they were wrongly regarded as Middle Bronze Age structures). It consisted of four big rooms and a stone paved courtyard with an open sewer which seem to belong to two separated building units. Between them two big ovens were located. The ¹⁴C date from the southern one ranges between 2140 and 2030 cal BC. Another radiocarbon sample collected in the layer covering the stone foundations provided a possible dating from 2030 to 1890 cal BC. In this latter archaeological context dated to the turn of the Early to Middle Bronze Age a previously unknown burnished pottery painted with reddish vertical stripes came to light.

Concerning the political situation of Bakr Awa in the late 3rd millennium BC one can only speculate. At this time in the western Zagros foothills two political entities, the principalities of Lullubum and Simurrum, are attested. Bakr Awa and the Shahrizor Plain were presumably under the control of one of these states co-existing in this region for some centuries. For a while the region was dominated by the Akkadian rulers, and afterwards the Gutian king Erridu-pizir led a campaign against Lullubum and Simurrum (Altaweel *et al.* 2012, 10; Kepinski *et al.* 2015, 53-5; Sallaberger and Schrakamp 2015, 42, 45, 127-9).

2. Middle Bronze Age (Ur III / Isin-Larsa / Old Babylonian) Horizon

Towards the end of the 3rd and at the beginning of the 2nd millennium BC archaeological remains at Bakr Awa testify to a remarkable economic prosperity. The material culture was related to those in other Mesopotamian regions. According to the textual evidence at the turn of the 3rd millennium BC the region around the city of Bakr Awa was firmly embedded in the political landscape of Mesopotamia. The regional principalities Simurrum and Lullubum were target of several military operations of the rulers of the Ur III Dynasty, and their territory was temporarily under the political control of Ur (cf. Altaweel et al. 2012, 10-1; Kepinski et al. 2015; Sallaberger and Schrakamp 2015, 50-1). During the demise of Ur the Shahrizor region belonged for a time to Simurrum having a large territorial extension under the rule of Iddi-Sîn und (An)Zabazuna (Frayne 1990, 19.1, 19.2; Shaffer et al. 2003; Frayne 2009-11).

This prosperous period of the city and its situation thereafter are reflected in the deposits in Areas 1, 2 and 6. In the first two areas architectural remains and numerous burials have been excavated. Results concerning the corresponding layers in Area 6 investigated by the former excavators have not been reported, but the material is at least partly known from the inventory of the Iraq Museum.

2.1. Building remains from the Ur III to Isin-Larsa periods

The early 2nd millennium BC architecture at Bakr Awa shows a new trend in building plans and construction techniques obviously adopted from Babylonia and the lower Diyala region. The stone foundation method was abandoned, and the houses were built wholly of sun dried mud bricks instead. Occasionally for special constructions burnt bricks were used. The best example is the main architectural unit excavated in Area 2 showing three occupation levels. The upper parts of its walls and the uppermost pavements had already been uncovered by Iraqi archaeologists, and because of its areal extent and the mud brick altar installed in the main room the building was thought to have been a temple (Al-Husaini 1962, 153-4). The results of the re-investigation of the original occupation level and a comparison with contemporary private architecture of southern Mesopotamian cities (Miglus 1999, 23-56) shows that the building has definitely to be regarded as a large residence of a wealthy family or an official (Miglus et al. 2013, 53-5; Miglus 2015a). Measuring not less than 660 sqm it was even bigger than the comparable large houses from the same period uncovered at Larsa and Ur (Miglus 2015a, 234-6).

The house was completely built of mud bricks. Only its western part, where the ground was uneven, and beneath the courtyard where a gravel layer was laid, and a few wall sections had stone enhancements or were partially founded on older stone structures. The location of the entrance proposed by Iraqi excavators in the eastern façade is uncertain. A central courtyard of c. 11 x 10.5 m paved with pebbles and mud plaster was surrounded by rooms. The most important of these were the reception room and the main hall forming the western part of the building. The first one was originally paved with burnt bricks, the second with small pebbles. The main hall had two significant installations: a mud brick table at the rear wall similar to the altars known from the main rooms at Ur (Woolley and Mallowan 1976, 29-30 pls. 43-6) or Tell Harmal (Bürger and Miglus forthcoming) and a large rectangular hearth constructed of clay and pottery sherds and bordered by bricks in the center of the room of a kind found at Tell Jokha (Al-Harbi et al. 2011, 61-2 fig. 14, 29), Nippur (McCown et al. 1967, 38-9), and Tell Halawa (Yaseen 1995, 30 pl. 6, 9A). Smaller rooms at the other sides of the courtyard contained ovens, fireplaces and ceramic jars serving for storage, supply, and production purposes. A doorway in the northern wall of the biggest northern room gave access to a second only partially excavated courtyard in sideon position indicating that the house could have had a bigger extension than previously supposed.

Architectural remains in Area 1 presumably belonged to two rather large building units, but since they have been only partially recovered no complete plans can be worked out. Nevertheless, the building technique, installations, pottery and artefacts found inside correspond with those from the houses in Area 2. Among the objects excavated on two floors directly beneath the eastern building unit, two cylinder seals providing connections of Bakr Awa residents to the lower Diyala and southern Babylonia deserve special attention. Both seals are made of chlorite and bear a similar representation. The first one, coming from the younger building floor (Miglus et al. 2013, fig. 18), shows a date-palm altar flanked by two worshippers who raise one hand, and additionally a crescent and two vertical depicted snakes (Fig. 3b). The second seal, found on the older floor, offers a similar worship scene completed by different elements: two crescents, a waterfowl (goose?) and a scorpion (Fig. 3c).

Comparable specimens from Ur were dated to the Ur III period by Collon (1982, 139-43 no. 338-55 pl. XLII) who presumed, that the date-palm symbol could derive from the Urnamma stela. Gailani Werr (1988, 27 cat. 130k, 131j pl. XVII) gave the same opinion in case of Isin-Larsa seal impressions from Tell ed-Dhibai. Another seal from Tell Bismayah in the lower Diyala region came to light in a building complex (Level II) together with a mace head bearing an Urnamma inscription (Khairi and Ahmed 1987-88, 29 fig. 87). Frankfort (1955, pl. 67 no. 716) suggested for a related seal with erased inscription found on the surface at Tell Asmar the Isin-Larsa style. Another seal with worshipper at date-palm altar representation from Susa dated by Amiet (1972, 220 pl. 159 no. 1702) to the Ur III/Shimaski period could be younger, according to Roach's (2008, no. 2725) 'Popular Elamite (Old Babylonian/Sukkalmah) Style'.

2.2. Burials

Until now human remains of 40-43 individuals in 30 burials have been excavated in the recent fieldwork in layers from the first half of the 2nd millennium BC. About 20 more graves came to light during the Iraqi excavations. Among these different burial practices are attested: single and collective burials, burials in pit graves, pot graves, brick tombs, and burials under the floors of private houses and outside of the living quarters. Most of the grave goods, especially bronze weapons and toggle pins, jewelry as well as pottery vessels found inside, display close affinities to middle and northern Mesopotamian types, but also connections to Babylonia and Iran. The burials are studied in detail by U. Bürger (forthcoming) and R. Fetner (2011; 2014a; 2014b; 2015).

2.2.1. Brick tombs from the Ur III to Isin-Larsa Periods

Under the early Middle Bronze Age houses some burials have been excavated in different locations. In the large house in Area 2 there was a pot burial of a baby found under the lowermost floor in one of the service rooms

and at least two individuals buried in a vaulted brick tomb beneath the courtyard (Fig. 4). This latter position is unusual in terms of Babylonian practice, since in the south the tombs were normally located beneath main halls (Miglus 1999, 74). The tomb contained pottery from the Ur III / early Isin-Larsa period, bronze weapons, and a bronze bowl. A skeleton of a dog, probably a sacrifice, lay in the shaft beside four ceramic bottles and a bowl (Bürger forthcoming).

Another brick tomb dating to the early 2nd millennium BC with remains of at least eight individuals has been excavated in Area 1 (Miglus *et al.* 2011, 149-53; 2013, 56-62). Their skeletons were scattered by looting and badly damaged by fallen bricks. The tomb inventory consisted of pottery and cooper vessels, bronze weapons, toggle pins of bronze and silver, and numerous stone beads. In this case, too, the tomb was located under the courtyard and in its entrance shaft three sacrifice animals (two goats and a pig) had been deposited. Furthermore, a baby pot burial has been found on the bottom of the shaft right at the bricked-up entrance to the tomb chamber.

An especially interesting feature of the Bakr Awa tombs is their construction. They were roofed by a pitchedbrick vault resting on a base of limestones. The burnt bricks used were specially formed for vaulting. The pitched-brick vault technique which is already known from the late 3rd millennium BC constructions at Tell ar-Rimah seems to have found its way into the Mesopotamian sepulchral architecture in the early 2nd millennium BC. The tombs at Bakr Awa are among the oldest constructions of this type. Two other tombs roofed by a pitched-brick vault dating from the 20th century BC have been found at Tutub (Khafajah Mound D) on the lower Diyala (Hill et al. 1990, 222-3 pl. 58b). Between the 19th and 17th century BC such tombs were built in the Sinkašid-Palace at Uruk, in large houses at Larsa, at Umma, Sippar/Tell ed-Der, Tell Mohammad on the lower Diyala river, and Tell Mohammed Diyab on the Khabur (see Miglus 2015b).

2.2.2. Graves from the later Isin-Larsa to Old Babylonian Periods

During the Isin-Larsa period the cityscape of Bakr Awa changed. The built-up area decreased, and in the eastern periphery in the place of the former private houses a cemetery arose. The shift from the house burial tradition to the new burial custom reflects a sudden social change on the part of the population of Bakr Awa at this time. This development can be observed in both eastern excavation areas. Most of the graves were pit burials with modest grave goods. Better equipped burials have been found above the large building in Area 2, which can be understood as an indication that in subsequent times this location was still related to a higher social status (Bürger forthcoming).

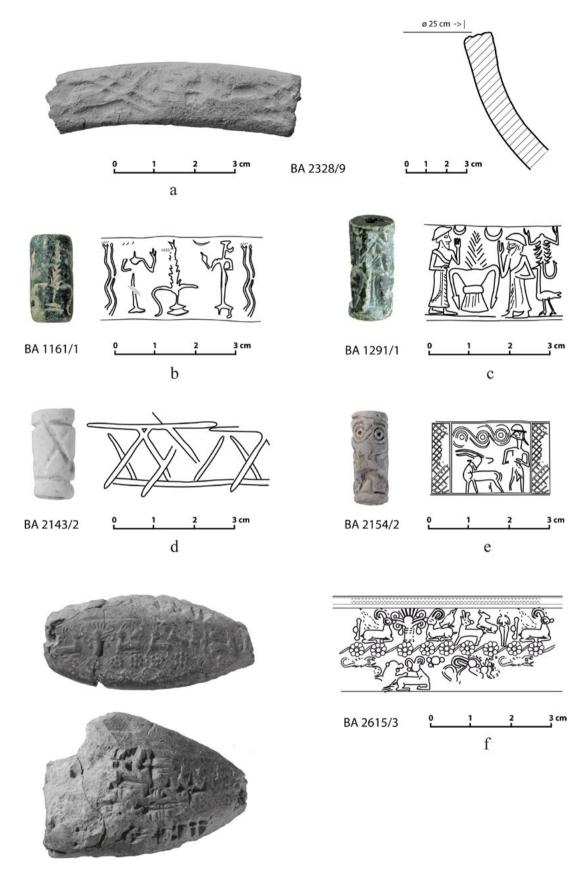


Figure 3. Cylinder seals and sealings from the 3rd and 2nd millennium BC: a) BA 2328/9 – Early Dynastic sealed vessel rim, 1.4 cm wide; b) BA 1161/1 – Ur III/Early Isin Larsa chlorite seal, 2.1 x 1.1 cm; c) BA 1291/1 – Ur III/Early Isin Larsa chlorite seal, 2.3 x 1.1 cm; d) BA 1143/2 – Late Bronze Age seal of frit, 2.1 x 1.0 cm; e) BA 1143/2 – 15th-13th cent. BC seal of frit, 2.2 x 0.9 cm; f) BA 1143/2 – Clay bulla, 4.9 x 3.4 x 2.1 cm, sealed with a 1141/2 cent. BC cylinder seal.



FIGURE 4. ENTRANCE TO BRICK TOMB BA 2500.

2.3. Cuneiform tablets

A small Old Babylonian cuneiform tablet inscribed on one side was found in room 104 of the large building in Area 2 (Level VIII) during the Iraqi excavation. Another document which came out in a higher layer (Level VI) could be younger. According to the entries in the inventory of the Iraq Museum, three more tablets which were excavated in Area 6 on the citadel mound in the uppermost Old Babylonian layer (Level XI) can be dated to a similar period to the latter document. The content of these texts is unknown, and until now it was not possible to trace these documents in the Iraq Museum collection.

3. Late Bronze Age (Kassite/Hurrian) Horizon

3.1. Building remains and finds

The settlement transition of Bakr Awa in the mid-second millennium BC is up to now unclear, but it obviously depended on political changes in the region. In the following period the city was at least temporarily under Kassite domination (Fuchs 2011, 255; Altaweel *et al.* 2012, 11-2), possibly at times it could also have been controlled by Hurrian rulers of the kingdom of Arrapha. The ceramic repertoire reflects this Hurrian-Kassite

neighborhood. Some vessel shapes and other small finds are still in the northern Mesopotamian tradition of material culture. Surprisingly, no examples of painted Mittani ware (Nuzi Ware or younger Khabur Ware) were attested. Instead, some forms have their best comparisons in the Hamrin region (the late Kassite occupation at Tell Yelkhi and Tell Zubeidi). Even fragments of the bases of Kassite goblets were among the pottery.

In Area 1 the Late Bronze Age horizon was relatively indistinct and without any significant architecture. On the other hand, Area 2 provided remains of solidly built architecture. Ten rooms have been uncovered during the Iraqi excavation (Al-Hussaini 1962: 147-8); they were completely made of mud bricks, with the floors of beaten mud, and in one case, of burnt bricks. However, the remains were not sufficiently well preserved to construe a comprehensible building plan. The recently excavated architectural remains in the western part of Area 2 belonged apparently to two building units. The eastern one consisted of two rooms - one was a storage room containing broken storage jars and numerous smaller vessels; in the other two cylinder seals of frit (Fig. 3de). were found in the fill above the pebble floor (Miglus et al. 2013, 49-51). The latter are distinctive examples of the contemporary North Mesopotamian glyptic (Miglus et al. 2011, 156 fig. 32-3). A thick façade with buttresses and an adjoining courtyard or square belong to the second building unit in the western section of Area 2. The only partly excavated room behind the wall was filled with ash deposits and burnt debris. This structure seems to have been part of an official building, and a group of secondary burnt cuneiform tablets found in the close proximity are presumed to be a part of its archive.

3.2. Cuneiform tablets

In the eastern part of Area 2 Iraqi archaeologists found twenty cuneiform tablets lying in a few rooms of Level IV (mostly in rooms 54-56, above the large building of Isin-Larsa period; cf. Al-Husaini 1962, 160 plan 2). Only one tablet, a copy of the Babylonian Almanac, has been published (Matouš 1961, 17-66 pl. I-II). During the last two seasons 17 more tablets, originally belonging to the same archive, were uncovered in the western section of Area 2. They were found in a secondary context disturbed by the early Islamic occupation, but approximately in line with the Late Bronze Age building layer. The paleography and the contents show that the texts must have been written in the second half of the 2nd millennium BC.

The collection comprises administrative documents, one letter, fragments of divination texts (extispicy omina), the almanac tablet already mentioned, and other fragments with unclear content, as well as two sealed bullae. The administration documents mention different procedures concerning fields, villages, people, crops, livestock, and copper, for example delivery of ploughs, grain supply, organization of harvest work. A number of towns and villages under the supervision of administrative officials are listed.

The bullae, which were originally fixed to a string, had been sealed with the same cylinder seal (Fig. 3f). The seal representation is divided horizontally by a row of eight-petalled rosettes. In the upper field two goats lie opposite each other flanking a volute tree. Other elements are birds, a straight-horned animal, a calf, a nude female figure, and a 'ball-and-staff'. Below, a lying goat reverses its head to the left towards an attacking lion, and another goat with its head reversed right and a scorpion are also shown. At the top of the impression a groove and traces of a fine guilloche pattern were left by a metal cap of the seal. The style and the motifs of the seal are comparable to the iconography on the tablets from the Šilwa-Teššup archive at Nuzi (Stein 1993). The one complete preserved bulla bears a short inscription referring to male kids.

In some texts there are personal names with the element 'Teššup', indicating the presence of Hurrians at Bakr Awa, but names of Babylonian origin, such as Warad-Uruk and probably Iddin-Marduk are also mentioned. A

small group of texts deserves special attention because they appear to be written in an undetermined language.

The ethnic and linguistic background of Bakr Awa is still not well known. The city was probably inhabited by different population groups, but the Hurrians were obviously one of the predominating. Already in the Akkadian and Ur III periods rulers or high officials of Simurrum bore Hurrian names (Puttim-atal, Tappan-Daraḫ, Kirib-ulme). Hurrians were also among the servants of Iddi-Sîn and (An)Zabazuna (Teḫeš-atal and Zili-ewri).

4. Iron Age (Assyrian/Median-Achaemenid) Horizon

4.1. Assyrian / Median level

The 1st millennium BC horizon in the eastern part of the lower city corresponds with the Iron Age II-III und is composed of two layers (Al-Hussaini 1962, 146; Miglus *et al.* 2011, 143-7; 2013: 47-9). The older one dates from the 8th to 6th century BC. The excavated remains contained only a few architectural structures, most notably extended stone pavements lying in the similar height in Areas 1, 2 and 5. In Area 3 a strong mud brick wall came to light in a depth of 5-6 m, but no related occupation floor has been recognized. In Area 6 at the southern slope of the citadel mound the former excavators did not ascertain any Iron Age remains.

In Area 4, in the upper part of the eastern citadel slope, a wall of red mud brick which was exposed by the modern ramp has been investigated (Miglus *et al.* 2013, 79-81). It was a foundation at least 6.5 m thick which presumably carried a pre-Islamic fortification wall. Both the brick size and pottery sherds found within the wall and indicate a dating to the Iron Age, but it is still unclear whether it was built in the Late Assyrian or Post-Assyrian period.

From the 9th to 7th century BC the Shahrizor Plain belonged to Assyria as a part of its province of Mazamua/Zamua (Radner 2006-08, 51-2; Altaweel *et al.* 2012, 12-4). According to Speiser, Bakr Awa may possibly be identified as Dūr-Aššur, an Assyrian fortress founded upon the conquered city of Atlila c. 880 BC by Ashurnasirpal II. (Grayson 1991. A.0.101.1 ii 85-6). However, the proposed identification is not confirmed by any evidence. Neither artefacts nor pottery from the Iron Age occupation layers prove Assyrian presence at Bakr Awa. They reflect a local, Non-Assyrian tradition.

The diagnostic pottery are two types of bowls made of a fine reddish slipped clay. The first type is a carinated bowl with flat base (Miglus *et al.* 2011, pl. 1a-c) which can be compared with similar vessel forms from south Urartian sites, corresponding to type 20 distinguished by Kroll (1976: 118-119). The second type with rounded

body (Miglus *et al.* 2011, pl. 1a-c) has analogies in Urartian and Median material (Kroll 1976, 111 – type 1; Young and Levine 1974, fig. 45 no. 23). Fragments of this latter bowl with applied bovid heads are especially remarkable (Miglus *et al.* 2011, pl. 2a-d).

4.2. Achaemenid level

In the younger Iron Age layer in Areas 1 and 2 human remains of c. 10 individuals have been excavated buried outside of the living quarters in graveyards. Most of the individuals had been buried in simple earth graves, only two, one adult and one child, in vessels. The individuals lay in crouched position without any regular orientation. They were provided with a few grave goods, among them a small handled jar and a bronze kohl tube dating them into the Achaemenid Period (Miglus et al. 2011, fig. 16; 2013, fig. 9). It was impossible to determine either the level from which the burials were dug or the grave cuts. The occupation level of this period seems to have been exposed to erosion on the surface for a long time. As a result, the next layer with its Early Islamic walls and installations lay directly above the skeletons.

5. Sasanian / Parthian period

There was no evidence for Parthian presence at Bakr Awa. Some Sasanian pottery occurred in secondary context, but it was not possible to identify any related occupation layers. Also the Iraqi excavators did not report any finds or architectural remains between Iron Age and Islamic levels. The former assumption of Sasanian and Parthian layers (Levels 9 and 10) in Area 3 on the citadel, suggested in the second preliminary report (Miglus *et al.* 2013, 75-6), must be corrected. The pottery collected in the layers concerned was Early Islamic, and a 14C sample from burnt beams in Level 10 provided a 2-sigma dating 675-725 AD or 740-770 AD, i.e. the period of the Umayyad or early Abbasid Caliphate.

6. Islamic Horizon

The most impressive evidence from the Islamic period was provided by the excavations in areas 3 and 6 on the main mound. In Area 6, during the old excavation seven building levels have been cut on the southern slope. Five are published (Madhloum 1965). They show a densely built edge zone of the citadel joining the fortification wall. The excavation in Area 3 in the center of the citadel resulted in a stratigraphic sequence of ten main layers from Early Islamic times to the most recent past (Miglus *et al.* 2013, 69-78). The modern and Ottoman remains were poorly preserved and damaged by several pits. Substantial architectural structures appeared in the Middle Islamic horizon (Level 6) approximately 2.5-3 m deep, and probably a large building complex built of burnt bricks existed here during this time. The Early

Islamic Levels 8-10 contained stone architecture with monumental features.

In contrast, the lower city Islamic horizon consisted of up to four occupation layers. Scanty building remains were perforated by a vast number of modern looting pits as well as old storage and garbage pits. These latter installations, scattered buildings with poorly constructed walls, and a large number of bread ovens between them gave the impression of a rural settlement around the citadel.

Some areas of the lower city were also used as cemeteries. Graves of 32 individuals buried on two cemeteries have been excavated in Area 2 and Area 5 (Fetner 2011; 2014a; 2014b). Graves in Area 2 were very destroyed. They lay directly below the surface and the upper parts of the burial pits were not recognizable because of lootings. In Area 5 the grave pits were protected by coverings of flat stones, and the skeletons stayed intact. According to the Islamic burial custom all individuals were buried in extended position on a side and facing Mecca, in this case to south-west, and they did not contain any grave goods. For this reason, and because of unclear stratigraphic position, the accurate dating of the cemeteries was not possible.

The repertoire of pottery involves coarse ware and storage jars as well as thin ware, modeled fine ware, and different sorts of glazed pottery vessels with *sgraffito* decoration, and painted porcelain. Among the excavated finds there was a large number of glass artefacts, especially arm rings and vessels in different forms, and metal objects like iron nails and blades. The dated coins came from secondary contexts: a cooper coin of the Atabeg of Erbil, Muzaffar ad-Din Gökböri (1190-1233), from the uppermost layer of the Iraqi trench on the citadel, and a silver coin of the Ilkhanid ruler Taghaytimur (1336-1353) from the surface close to Area 3.

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Illustration credits

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Magnetic investigations in the Shahrizor Plain: Revealing the unseen in survey prospections

Simone Mühl and Jörg FASSBINDER

Prospection by magnetometer in urban environments outside the limits of excavation offers the possibility to unveil the layout of entire settlements, including street networks and residential and other architectural features, without the use of a spade. Questions about city planning, the use of built and open space and the organization of religious and other architecture at sites can all be addressed (cf. Fassbinder 2002; Fassbinder et al. 2005; Benech 2007). Magnetic prospections of sites in the Shahrizor Plain, which have been conducted since October 2013, have the potential to provide insights into the diachronic use of rural space in the region. This paper will focus on the results of investigations which were carried out at Gird-i Shatwan (bečuk - 'the small mound Shatwan'; SSP-51 & 52), a small Parthian site in the rural environment of Wadi Shamlu in the center of the Shahrizor Plain.

Magnetometer Survey in the Shahrizor Plain: Avoided Spaces

The archaeology of urban spaces in the Shahrizor Plain (Fig. 1.) remains difficult to assess by magnetometer surveys. Due to the degree of settlement continuity, half of the detected sites in the Shahrizor Plain are elevated tell sites. The top layers of the region's biggest sites date to Islamic periods (cf. Altaweel *et al.* 2012; Miglus *et al.* 2013), a time of growth and prosperity in the Shahrizor Plain when major building programs such as hydraulic features such as canals and qanats, which nowadays come to light during construction work in the expanding cities (pers. comm. Kamal Rasheed), shaped this urban landscape. These layers cover older periods and therefore it is difficult to gain information on pre-Islamic periods by magnetic investigations at these sites.

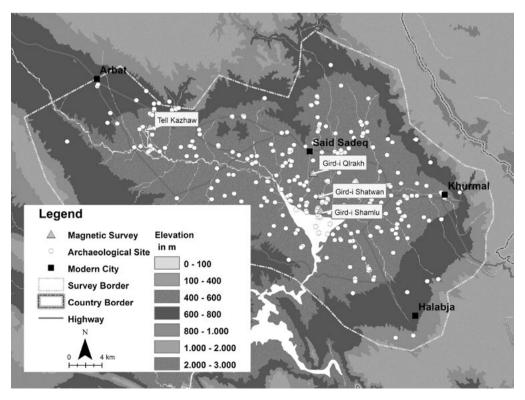


FIGURE 1. MAP OF SITES IN THE SHAHRIZOR PLAIN.

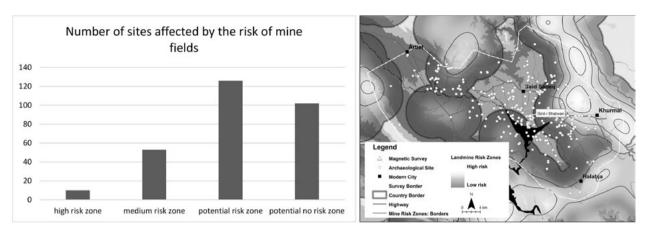


FIGURE 2. SITES AFFECTED BY LANDMINE DEPOSITIONS.

Furthermore large sites as well as middle sized tells are often affected by the region's recent history. Many sites have not only been badly damaged by looting during the time of the Iran-Iraq war, but have also been damaged by the excavation of tank or gun emplacements. These and other military structures from that time have destroyed the upper levels of many archaeological sites in a region where until recently only very little research had been carried out since the Iraqi salvage projects of the 1960s (Directorate General of Antiquities Baghdad 1960; 1961; Wahbi 1961; Janabi 1961; Husaini 1962; Abu al-Soof 1964; Madhloom 1965; Hijara 1975; 1976). Tell sites were used as strategic positions which often served as observation posts or military positions. Metal shrapnel from both exploded bombs and grenades and from unexploded ordnance (UXO) are commonly found at sites where fighting took place.

Large and small calibre shells and even live ammunition are scattered widely over sites in the entire plain. Within the framework of the Shahrizor Survey Project, which is investigating the past landscapes of the Shahrizor Plain in southern Iraqi Kurdistan, these traces are recorded and documented as part of the historical landscape of the valley. However, the project is careful to only gather this information if the security of the team members is guaranteed. Nevertheless these remains also affect archaeological recording in many ways. For instance, they make it more difficult to apply magnetometer prospection in such areas since the metal pieces and disturbed surfaces cause strong spike anomalies in the

magnetic field and thus mask the faint magnetic signal of archaeological features. Additionally, a fifth of the sites in the Shahrizor Plain are not safe to investigate due to the distribution of antipersonnel mines, even though these do not disturb the magnetic field dramatically (Fig. 2). The application of other geophysical prospecting methods such as ground penetrating radar or resistivity would encounter even more difficulties. The penetration depth of ground radar is limited by the consistency of the loamy soil which is rich in clay. The use of resistivity prospecting is in general restricted to stone buildings.

Small flat sites in the Shahrizor Plain: Investigation of the rural spaces

Between 2009 and 2011, larger and middle sized sites of the Sharizor Plain were investigated in order to determine the distribution of settlements through the ages as well as their relationship to each other. Starting in 2011, the project's efforts were focused on the investigation of small flat sites which had been detected on satellite images prior to the survey. These sites, which have only one or a very small number of occupation layers, provide key data for the establishment of a preliminary regional pottery sequence, which is characterised by a large number of until recently unknown or little understood pottery types and chronological developments (cf. Altaweel et al. 2012). Additionally, high density survey methods are applied to examine these sites and to help understand the formation history of individual sites (cf. Nieuwenhuyse et al. forthcoming). Nevertheless, it is not possible to gain information on the use of rural space during certain periods without excavations, which of course remain the best method to examine households and small communal structures in rural regions. Interdisciplinary research teams can reveal not only the

Security measures also include reading mine reports in advance. In the field it is required to ask for the guidance of a local person from the village nearest to the site. In accordance with security standards for landmine monitoring survey teams (Information Management & Mine Action Programmes 9.11.2007, 132), if no sufficient information is available, sites in high risk areas are avoided and not surveyed.

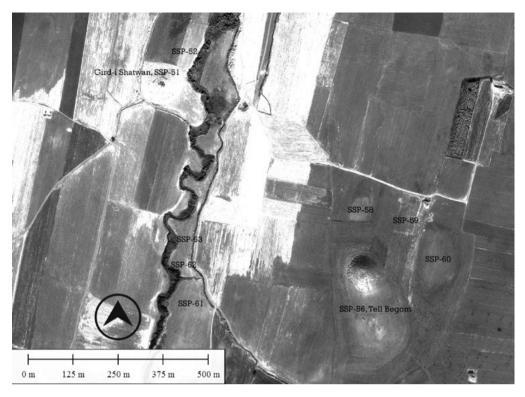


FIGURE 3. GIRD-I SHATWAN AT WADI SHAMLU (DIGITAL GLOBE IMAGE, 23.11.2013).

physical layout of houses and other structures, they can also – by employing archaeobotanical, archeozoological and chemical analyzes, as well as micromorphology – help in reconstructing communal life in its economic setting. Excavations are costly and destructive by nature, though, limiting the degree to which this method of investigation can be applied.

Total field caesium-magnetometers enable us to cover large areas in a reasonable amount of time, while offering high sensitivity as well as a high degree of spatial resolution (25 x 20 cm). Therefore, it is possible to analyze settlement structures of specific periods at selected sites. With the financial support of the Ludwig-Maximilians University of Munich as well as the Johann Wolfgang Goethe University of Frankfurt am Main² and in collaboration with the Directorate of Antiquities of Sulaymaniyah³ (Mühl and Fassbinder 2015; Fassbinder et al. 2015), four sites were investigated with this method in October 2014 and April 2015 (Fig. 1). One of the sites was Gird-i Shatwan (bečuk; SSP-51 & 52), south of the modern village Said Sadeq in the center of the Shahrizor

Plain, northwest of Tell Begum on the western bank of Wadi Shamlu (Fig. 3). It consists of a small tell site which can be dated to the Ubaid period with, on the top of the mound, a concentration of Parthian pottery fragments including bowls (Fig. 4.1-3), jars with narrow (Fig. 4.4-7) and wide necks (Fig. 4.8-11) and whole mouth jars (Fig. 4.12-14). The prehistoric occupation did not extend beyond the eroded limits of the tell. A small area (SSP-52) measuring 0.3 ha which stretches up to 100 m to the north exhibits a noticeable change in the color of the ploughed soil, indicating ancient settlement traces. Collected sherds from this area also date to the Parthian period. In April 2015 the site was revisited to carry out a magnetometer survey on the top of the mound. An area of 0.3 ha was prospected within one complete 40 x 40 m grid and three areas within that grid. For the magnetometer survey we applied a Caesium magnetometer in a so called 'Duo sensor configuration'. This offers the highest possible sensitivity while allowing the prospection to be executed at a high speed (Fassbinder and Gorka 2009; Fassbinder 2015). At this configuration normally more than 98% percent of the magnetometer data in a 40 m grid will vary in the range of ±20 nT from the corrected mean value of the geomagnetic field. The stronger anomalies can typically be ascribed to burnt structures, to lightning strikes, to pieces of iron containing slag or to

The authors would like to express their gratitude to Adelheid Otto (Munich) and Dirk Wicke (Frankfurt).

³ The project is funded and supported by the German Research Foundation (MU3354/1-1).

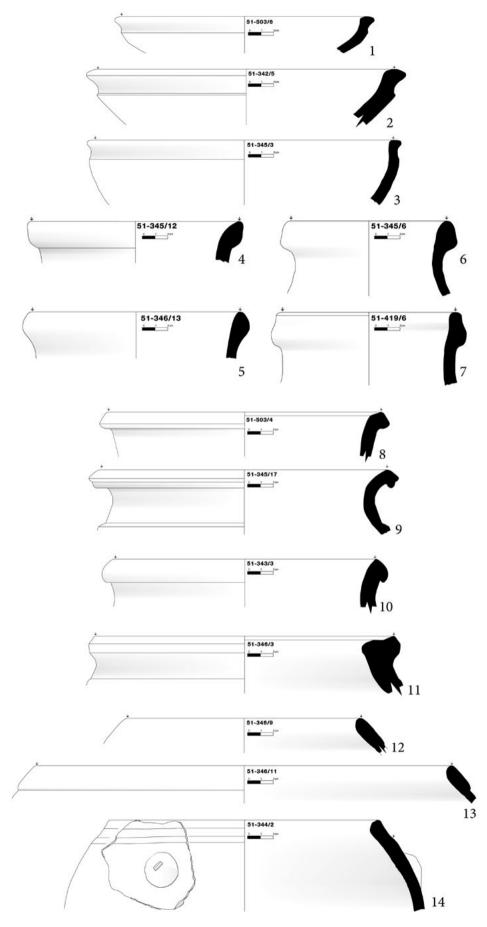


FIGURE 4. SELECTION OF PARTHIAN POTTERY FROM GIRD-I SHATWAN (SSP-51 & 52).

Fig. 2 no.	Object no.	Diam.	Diam. Preserv.	Organic temper	Mineral temper	Color surf.	Color sect.	Matrix	Treatm.
1	51-503/6	21 cm	7.5%	<1 mm, 5%		10YR8/2	10YR7/3	fine	
2	51-342/5	23 cm	5%	1 mm, 10%	red sand 1 mm, 20 mm	7.5YR8/3	7.5YR6/3	middle	thin slip
3	51-345/3	23 cm	6%	<1 mm, 10%		2.5YR6/6	7.5YR6/6	fine	
4	51-345/12	12 cm	8%	<1 mm, 60%	1 mm, 10%	7.5YR7/4	7.5YR7/4	middle	
5	51-346/13	12 cm	6%	1 mm, 20%		10YR7/3	10YR5/2	middle	polished
6	51-345/6	9 cm	12%	1 mm, 10%	red sand 1 mm, 20%	2.5YR6/6	2.5YR5/8	middle	
7	51-419/6	10 cm	14.5%	<1 mm, 5%	sand, mudstone 2 mm, 10%	10YR7/4	10YR7/4	middle	
8	51-503/4	21 cm	7.5%	1 mm, 20%		10YR8/3	10YR/7/4	middle	
9	51-345/17	22 cm	5%		lime 1 mm, 30%	10YR7/3	10YR5/3	middle	
10	51-343/3	20 cm	7.5%		quartz, lime 1 mm, 30%	7.5YR7/4	2.5Y/2	middle	
11	51-34/3	23 cm	7%	1 mm, 20%		5YR6/3	10YR3/1	middle	
12	51-346/9	18 cm	2%	1 mm, 20%	quartz 1 mm, 30%	7.5YR6/3	7.5YR5/2	middle	
13	51-346/11	32 cm	2%	1 mm, 20%	quartz 1 mm, 20%	7.5YR7/3	7.5YR7/6	middle	
14	51-344/2	20 cm	7.5%	1 mm, 10%	quartz, sand 1 mm, 20%	7.5YR7/3	5Y5/4	middle	

TABLE 1. POTTERY DESCRIPTION.

iron rubbish, and these are easily distinguishable both by their different direction of magnetic dipole anomalies as well as by their high intensities ($> \pm 50$ nT). To cancel the natural micro-pulsations of the Earth's magnetic field, a band pass filter in the magnetometer processor was used. The advantage of the 'duo-sensor' configuration is that the resulting image provides more information on a site, especially from its deeper parts, thus revealing additional archaeological structures. The instrument measures the Earth's magnetic field with a sensitivity of ± 10.0 pT (Picotesla) with a sampling rate of ten measurements per second; in April 2015, the Earth's magnetic field in the Shahrizor Plain varied in the range of 47,300±20.0 nT (Nanotesla). For a more sophisticated interpretation we applied a high-pass filter on the data and fused both magnetograms into one image. This procedure allows us to discriminate single features in large anomalies but at the same time also to trace ancient ground floors by their slightly higher magnetic susceptibility. A control unit allows fading in and out of the different magnetogram layers and thus optimizes the interpretation. Moreover the procedure can remove the deeper and mainly geological features and thus provides supplemental information on the type of the anomalies. The results are then displayed in a second grey scale magnetogram image.

At Shatwan, the complete surface of the mound was heavily disturbed by fresh plowing. A watermelon field, pump irrigated with the help of plastic tubes taking water from Wadi Shamlu, extended over the whole eroded mound. We were able to detect lines of broken mudbricks at the same level around the top of the mound with our bare eyes. A limestone pillar base, presumably ploughed out from the vicinity or from a higher spot on the mound, was found at the western border of the assumed mudbrick structure (Fig. 5). The pillar base has a round drum resting on a carved-out protrusion. The upper part has an elevated base for the pillar, which has a decorated torus at the bottom. With the segmented top it shows similarities with simple Ionian pillar bases and can be roughly compared to pillar bases from Azerbaijan which are assumed to have belonged to Parthian buildings (Kleiss 1972). The structure on top of the mound was at least partly constructed of fired bricks. Fragments of bricks, two examples of which showed deep finger imprints and a deep wedge shaped impression (Fig. 6), indicate that at least parts of the architectural remains on top of the mound were built of fired bricks.

Interpretation of the magnetometry image

The analysis of the magnetometer image, combined with soil magnetic measurements of selected samples from the top of Gird-i Shatwan, revealed a long rectangular structure measuring 35 x 25 m in a nearly perfect eastwestern orientation (Figs. 7 and 8). The building seems to rest upon a rectangular mudbrick platform (55 x 38 m), visible on the magnetic image to the north, west,

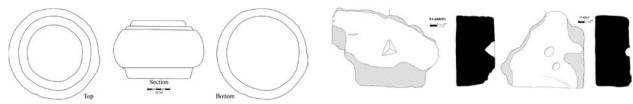


FIGURE 5. LIMESTONE PILLAR BASE FROM GIRD-I SHATWAN.

FIGURE 6. MARKED BRICK FRAGMENTS FROM GIRD-I SHATWAN.

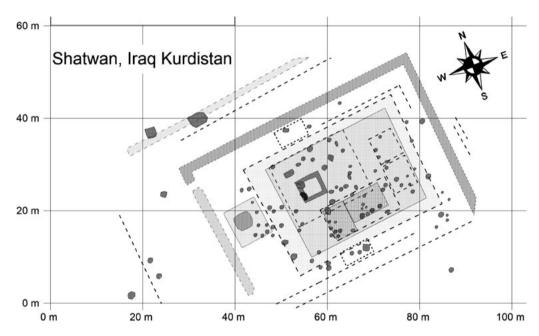


FIGURE 7. INTERPRETATION OF THE MAGNETOMER IMAGE OF GIRD-I SHATWAN.

east and partly also south of the structure. The southern side of the mound is the face most heavily affected by weather related erosion, which is accelerated by the agricultural activities on the mound today. Therefore the observed structures are not as well preserved as on this side. It is difficult to assess the internal structure of the detected building from the magnetometry image. We can discern some linear features as well as the rectangular layout of the ground plan. The fact that the pillar base was ploughed out of the ground shows that the use of the tractor caused damage at the floor level of the structure. Very interesting is the discovery of a square shaped pit measuring ca. 3 x 3 m in the western part of the building. It is very likely that this pit contains burnt in situ material, as indicated by the high intensity of the magnetic remnant magnetization of the anomaly (Fig. 7). Structures protruding from the façade of the

central structure might represent staircases leading up to the building or smaller protrusions like towers or semipilasters.

During the Parthian Period it was quite common to erect sacral buildings on platforms at elevated places. Therefore it is not unlikely that the structure at Gird-i Shatwan might have served as a sanctuary of a small rural settlement in the vicinity. The ground plan revealed shows multiple enclosures on top of the platform as well as, despite heavy disturbances, traces of a subdivision of the inner part of the structure on Gird-i Shatwan. The outline of the structure is reminiscent of *liwans*, or smaller temples found in the western sphere of the Parthian empire. The shrines X and XI at Hatra (Safar and Mustafa 1974, fig. 19, 20, plan XXI) are examples of Parthian sacral buildings with long rectangular outer



FIGURE 8. THE PROSPECTED AREA ON TOP OF THE MOUND OF SHATWAN.

walls, accessed from one of the longer sides and a cella protruding from the backside of the building. If the interpretation of the detected protrusions as stairways is correct, the Shatwan structure had a regular rectangular shape. This outline with simple internal subdivisions corresponds to a plan known from shrines VI and VIII at Hatra (Lenzen 1955, fig. 7; Safar and Mustafa 1974, fig. 16, 19), where two chambers face each side of a forecourt of the cella, which in this case has a position corresponding to the liwan of Parthian residential and palatial architecture as known, for example, from Ashur (Andrae and Lenzen 1933) or Abu Qubur (Wright 1991). The reconstruction of the *liwan* or the general position of the cult image is also important for the reconstruction of the entrance to the building. Parthian architecture gives a variety of examples for both models: access from the long side of the building with a direct line of sight to the image or the centralized square plan (e.g. Jandial temple in Taxila (Colledge 1977, 44 fig. 16 E). If the fired structure in the western part of the Shatwan building is interpreted as a small altar, the reconstruction of a

'Breitraum' plan can also be suggested (see also Stein 1940, fig. 11). This reconstruction is favoured here. In the end, the true nature of this site can only be revealed by the spade. But we have to fear that the damage to the building is severe. The magnetic image of Gird-i Shatwan might be all that is left from this structure that once covered the top of the mound. Nevertheless, it provides us with a glimpse of Parthian material culture and represents an additional piece of information that will hopefully contribute to a better understanding of the classical history of southern Kurdistan.

Acknowledgements

The authors would like to thank the colleagues of the Directorate of Antiquities Sulaymaniyah for their support and collaboration, especially its director, Kamal Rasheed. In the field we were joined by the archaeologists Saber Ahmed Saber and Hero Saleh. Kak Saleh, the driver of the directorate, saved the campaign after the battery charger of the instrument had exploded

and his car turned out to be the only possibility to charge the batteries of the magnetometer. In fate's ungrateful exchange his car was broken by the harsh environment on a mud track near Gird-i Shatwan. We want to express our deepest gratitude to our colleagues who always work with us with patience and dedication.

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The Bazaar of Erbil within the Context of Islamic Trade Routes and Trade Buildings

Martina MÜLLER-WIENER and Anne MOLLENHAUER

The present article and the paper by D. Kurapkat in this volume refer to the same project: The documentation, architectural survey, historical research and proposal for a heritage conservation plan for two late Ottoman buildings in the bazaar of Erbil dating to the end of the 19th century. The investigation of the two Oaisariya buildings was conducted in 2012 and 2013 by a team of architects, art-historians and heritage conservators from the Technical University of Berlin and the German Archaeological Institute. The Cultural Preservation Programme of the Federal Foreign Office of Germany funded the work.1 The investigation of the historical and topographical context of the buildings was part of the project. The present paper gives a brief summary of the results of this research, while the second contribution focuses on the documentation and buildings themselves.

The major source of income for the inhabitants of nineteenth century Erbil was trade, agriculture and livestock production. The city is located favourably in the midst of a fertile plain and connected by one of the major caravan routes with Baghdad and Aleppo. This route was part of a network of overland routes that connected Baghdad with central towns in Syria and Persia. Major stops and entrepôts on the way from Baghdad to Aleppo were Kifri, Kirkuk, Erbil, Mosul, Nisibin, Mardin and Urfa. Most of these routes were used for centuries, their course being determined by the terrain and the availability of resources, but also by considerations of safety. Accordingly, the course of routes might change.2 Thus, in 1847 the most important of the desert routes, the Baghdad-Damascus connection, ran along the left bank of the Euphrates up to Ana, where the caravans crossed the river and continued through the desert via Palmyra to Damascus. Sixty years later the course of the route had changed and took a more northerly course via Deir ez-Zor. Notwithstanding these dynamics of temporary shifting, the general course of the

Toutes and their major importance remained stable over

A detailed list of the project staff and cooperation partners is given in the article by D. Kurapkat in this volume. For publications of the first results on the Erbil Qaisariyas see Mollenhauer et al. 2012, 33; Kurapkat et al. 2013, 36; Arera and Saleh 2013, 73; Kurapkat et al. 2014, 61. The investigation of the two Qaisariya buildings in Erbil is part of a more comprehensive research interest focussing on trade buildings, administrative buildings and their urban context from the Late Ottoman and Mandatory period in Northern Iraq. We are planning further research on buildings from this period that are preserved in Koya, Sulaimaniya, Kifri, Kirkuk and Khanaqin; see Mollenhauer and Müller-Wiener 2014b, 62.

the centuries. It was only in the second half of the 20th century that the incorporation of the Ottoman Empire into the world economy led to fundamental changes that also affected the transportation network. The opening of the Suez Canal in 1869 diverted much transit trade from the Persian Gulf to the Red Sea. Furthermore, Iran's trade shifted radically. The traditional East-West axis linking Tabriz to Erzerum and Mosul, Hamadan and Kermanshah to Baghdad and Mashhad with Afghanistan was replaced by routes running north-south. Thus by the end of the 19th century most trade flowed from Tabriz overland to Russia or through Bushire or other Gulf ports to India and Europe.3 In the case of Erbil, the negative consequences of these developments were compensated for by the growth of demand for Iraqi products on the world market – in particular dates, wool, wheat and barley⁴ – and by the reforms of the Ottoman administration (tanzimat), implemented by Midhat Pasha, the Ottoman governor of Baghdad from 1869 to 1871. He paid particular attention to the construction of roads, the development of a railroad system and the introduction of steam boats for riverine transport.⁵ The reports of European travellers from the 19th century suggest that Erbil benefited from these reform policies. When the British officer J. Shiel travelled through Kurdistan in 1836, five years after the disastrous plague of 1831, which carried off most of the population of Iraq,6 he still describes a depopulated town in decay. He reports that a great part of both the upper and the lower town of Erbil were in ruins and in particular the lower town was almost desolate.7 E. Sachau, however, who passed through Erbil in the spring of 1898 on his way from Baghdad via Mosul to Aleppo, mentions that the lower town was densely populated and much larger than the upper town.8 That Erbil prospered in the last decades of the 19th century is also corroborated by several mosques and taqiyas preserved in the Arab quarter to the southwest of the citadel, which were built in the 1880s.9

² Tabak 1988, 192.

³ Issawi 1988, 140.

Other exports included rice, gall nuts, horses, hides and skins (Owen 1981, 274).

Sissawi 1988, 117-8; Owen 1981, 277-8.

⁶ Issawi 1988, 101-4.

⁷ Shiel 1838, 99.

⁸ Sachau 1900, 112

⁹ Jami' Pāshā 1308/1887, Taqīya Shaikh 'Arīf 1300/1879, Taqīya and Masjid Shaikh Muḥī al-Dīn al-Shaikh Ṣāliḥ al-Barzanjī 1312/1892. According to Lifchez *tekke* (Arabic *taqīya*) is the generic term for any dervish facility. Generally speaking *tekkes* comprised small and modest buildings achieved through the individual or collective efforts of ordinary people. *Tekke* buildings took no particular size or form



FIGURE 1. AERIAL PHOTO OF ERBIL, 1951 (© PITT RIVERS MUSEUM, UNIVERSITY OF OXFORD).

One reason that Erbil was less affected by the changes in the direction and composition of long-distance trade than were, for instance, Baghdad or Basra lies in the fact that the city was also a centre of regional and interregional trade. In 1873 the engineer J. Cernik describes Erbil as an important regional trading centre with ca. 6000 inhabitants serving as a transit-station for the trade between the Kurdish highlands and Mesopotamia. The most important commodities were different kinds of wood, leather goods, woollen cloth, gall nuts, sumac and rifles.¹⁰

The regional and interregional trade and its interlinkage with lanes of long distance trade created a multiplicity of commercial movements within and across the region. This becomes obvious from the urban pattern of historic Erbil. The map created by the Prussian cartographic department in 1917 shows seven major and two minor

(Lifchez 1992, 75-6). On the history and role of the dervish orders in 19th c. Ottoman empire see the collected essays in Lifchez 1992.

roads radiating from the town in the direction of Mosul (to the west), Rowanduz and Koysinjag (north and east) and Kirkuk (south).11 In the city itself the major overland roads intertwine with the intra-urban network of streets and alleys. The course of the major intra-urban thoroughfares can be reconstructed using historical aerial photographs (Fig. 1). Today the major thoroughfares of the Ottoman period can still be identified in the area surrounding the citadel. They show very clearly that the network of streets was arranged radially and that they converged at the gate leading in and out of the citadel. The bazaar was located below the major, southern gate of the citadel. It was closely connected with the historical residential quarters of the wealthy Muslim traders on the citadel as well as with the residential quarters to the south. The major alleys of the bazaar extended into the quarters of Khanaqa, Yahud and Arab.¹²

¹⁰ Schweiger-Lerchenfeld 1876, 2.

¹¹ Karte von Mesopotamien (Vorläufige Ausgabe), Kartographische Abteilung der Kgl. Preuss. Landesaufnahme. 1917.

Abteilung der Kgl. Preuss. Landesaufnahme, 1917.

¹² For a detailed discussion of the road system see Mollenhauer and Müller-Wiener 2014a.

The approximate boundaries of 19th century Erbil as seen on aerial photos are indicated by two still existing cemeteries that were in use in the 19th century. Originally they were situated in the southeast and in the west at the edge of the town, along the major roads leading out of the city. 13 Also in the southeast, in the area of the present day Saidawa quarter, was the Jewish cemetery, which was then located outside the remains of the medieval city wall.¹⁴ Likewise at the edge of the town, along the major roads leading in the direction of Mosul, military facilities were situated. One preserved structure that is probably of a late Ottoman date is the so called qishla sawari 'Sawari-barracks'. 15 Still another historical ensemble is preserved along the main road of the Khanagah quarter to the east of the citadel. A group of residential houses, the Hamam and the Tagiya Abd al-Karim, visible on this photograph dating to the year 1938, are still standing, albeit much in decay.¹⁶

To the south of the bazaar was located the Jewish quarter, the Tajil Yahud. It was inhabited by Jewish traders who had their shops in the nearby bazaar. Some large courtyard houses indicate that at least some of the Jews of Erbil were wealthy tradesmen, a situation that reminds one of the major importance of Jewish merchants in 19th century Baghdad. Joseph Benjamin, who visited the city between 1846 and 1855 mentions that 'the lower town, which is the seat of trade and industry, is inhabited by 150 Jewish families¹⁷...although their situation is not a pleasant one, they find compensation within the unlimited freedom of trade, they are completely free and unrestricted.'18 Interviews carried out during our stay suggest that the connection between the residential quarter of the Jews and their shops manifested itself also in the layout of the bazaar. Thus the coffeehouse of the Jews in the second floor of a trade building and the shop of a Jewish butcher were both situated at the major alley leading into the Jewish quarter. Furthermore, many workshops in the Tailors-Qaisariya were owned by Jewish merchants, testifying to the activity of Jewish traders until the mid 1950s, when, following the foundation of Israel, they had to leave the country.19

¹³ The earliest tombstones that can be found in the graveyard currently situated behind Nishtiman-Mall are dated to the 1830ies. Novacek proposes that this cemetery is the counterpart to the medieval one mentioned by Ibn Khallikan (Novacek 2013, 10).

As to the built environment of the mid 19th century bazaar area, only very little is known and still less preserved. The only exceptions are two undated graves, which can be found amidst the shops today and which probably reach back to an earlier period.²⁰ Some additional information can be gleaned from the accounts of contemporary travellers. Thus James Phillips Fletcher, who visited Erbil in the middle of the 19th century, notes: 'As we returned, we passed through the bazaar in the lower town. It was a miserable collection of stalls arranged in rows, forming alleys partly open and partly covered with boughs and dry leaves.'21 A more atmospheric description is given a decade earlier by Horatio Southgate: 'The bazaars which are below had a very picturesque appearance from their being covered with branches, which gave them an airiness and lightness more agreeable, though less imposing, than solid arches of brick or stone.'22 Not one of these shops, however, has survived until today.

The earliest preserved structures testifying to the historic layout of the bazaar are the Qaisariya-buildings (Fig. 2). They were erected in the late nineteenth and early twentieth centuries. This dating is supported by a remark by the British officer Rupert Hay, who was dispatched to Kurdistan between 1918 and 1920. He mentions '[...] the bazaar, which is very extensive, and contains two fine arcades in good repair, and two others in ruins, but likely soon to be rebuilt.'23 The construction of the buildings was financed by the Chalabi family, a form of entrepreneurship that is characteristic for the economic structures of 19th century Ottoman Empire.²⁴ The Chalabi belong to the group of major merchant families operating in the Near East during this period, its members were active in long-distance trade in wool and sugar. Whereas wool was a regional export product, sugar was imported from France via Latakia, Aleppo and Mosul to Erbil. From there it was transported via Sulaimaniya to Persia.²⁵

Both buildings are two-storey brick structures. Historical photographs show clearly that they were landmarks dominating the surrounding lanes which were flanked by single-storey bazaar blocks (Fig. 3). Each Qaisariya building was accessible through a number of arched

¹⁴ Personal communication by Muhammad Dabbagh.

¹⁵ The structure consists of a central courtyard surrounded by rooms opening onto the courtyard. Today it is unoccupied and severely threatened by decay.

¹⁶A more detailed reconstruction of the structure of the residential quarters is the subject of a dissertation by Mada Saleh, who will also develop strategies of urban rehabilitation and heritage conservation.

¹⁷ Benjamin 1858, 108.

¹⁸ Benjamin 1858, 110-1.

¹⁹ This was contested by several tailors working in the Eastern Qaisariya. They reported a friendly atmosphere between the communities while working together (Interviews conducted in spring 2012). See also: Schwartz-Be'eri 2000, 25.

²⁰ Further graves can be found in the residential quarter to the south of the bazaar. This might suggest that the medieval graveyard described in the sources and identified by Novacek (Novacek 2013, 10) with the present graveyard to the south of the Nishtiman Mall was perhaps situated farther to the west.

²¹ Fletcher 1850, 19.

²² Southgate 1840, 22.

²³ Rich 2008, 85.

²⁴ The Ottoman and the Qajar Empire showed little interest in foreign trade which was controlled by the private sector. Subsequently the major local and foreign merchants became important entrepreneurs, investing money in agriculture, manufacture, transportation and social services (Gilbar 2003).

²⁵ Personal communication by Muhammad Dabbagh. Later the route changed to Baghdad, because the route to Iran was not safe – another indication of the shifting of trade routes mentioned before.

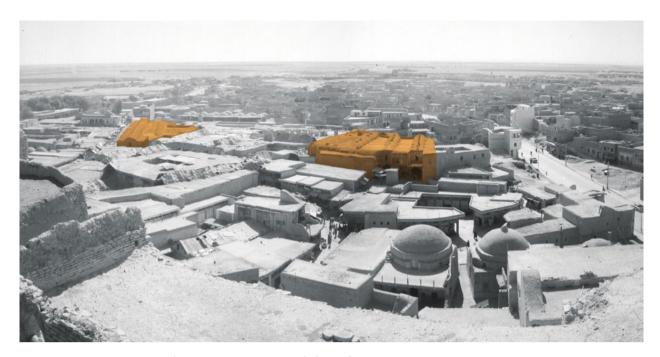


FIGURE 2. THE BAZAAR OF ERBIL IN 1953. THE QAISARIYA BUILDINGS ARE HIGHLIGHTED (© CONSTANTINOS AND EMMA DOXIADES FOUNDATION).



FIGURE 3. THE BAZAAR OF ERBIL IN 1927. (© HARDING COLLECTION, UNIVERSITY COLLEGE LONDON).

entrances with wooden door leaves (Fig. 4). Originally the doors were closed during the night to protect the precious goods stored and sold in the buildings. Some original door-leaves are still in place but not in use anymore. Narrow, barrel vaulted lanes lead through the buildings. They are flanked by rows of shops and

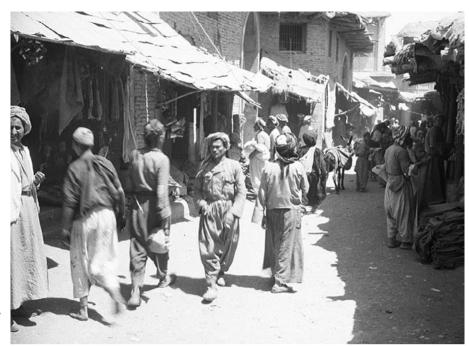


FIGURE 4. ERBIL, SOUTHERN FACADE OF THE EASTERN QAISARIYA IN 1944 (A. KERSTING, © CONWAY LIBRARY, COURTAULD INSTITUTE).

workshops. The upper floor was accessible through narrows stairs and a wooden gallery placed in front of the rooms (Fig. 5).²⁶

Next to the two Qaisariya buildings a mosque-madrasa complex at the northern edge of the bazaar and a number of simple vaulted bazaar boxes scattered within the area bear testimony to the layout of the bazaar during the late 19th and early 20th centuries. Other sources that help us to reconstruct the organization of the bazaar at the turn of the century are aerial photos and interviews (oral history). On a vertical aerial photo from 1919²⁷ several bazaar buildings are clearly identifiable: The two qaisariya-buildings and the madrasa, which still exists, although modernized. Nearby to the madrasa another vaulted building can be distinguished, as well as a large structure further to the west. According to the knowledge and memory of Mohammed Dabbagh²⁸ the vaulted building was a hammam and the large building a khan called 'Khan el-Abyad' (the white khan), which according him - was reserved for trade in rice and salt. In addition to this another khan existed in the vicinity of the two *qaisariya*-buildings, the so-called 'Khan al-Mawsil', which however cannot be precisely located. Adjacent to

the western edge of the western *qaisariya*-building the photo reveals a courtyard building. It was identified as a police station (*polishane*). The open space to the south of the police station once housed the *dallalhane*, a market place where poor people from the surroundings of Erbil sold their products and goods. Another open market place was the grain-market. Its location is still marked by an open space in the bazaar area, although the surrounding architecture is of a much younger date.

The bazaar of the late 19th and early 20th century was already a densely built area, even if parts were either under construction or in decay, as is the case with the Great Mosque in the south of the bazaar. It was an agglomeration of large self-contained structures including the *qaisariya* buildings, khans, a *hammam*, *mosques*, a *madrasa*, and a *polishane* situated in the midst of a dense network of narrow lanes flanked by rows of small shops.

In the first half of the 20th century the bazaar area underwent another major period of expansion and reshaping. Shops were either enlarged or rebuilt, with wide openings towards the street and a rectangular window above. The roofs were constructed as jackarches made of iron beams and bricks protruding into the street. Iron grills, probably concealing a mezzanine, closed the windows above the openings. This detail, however, could not be verified, since all shops have undergone major changes during the last decades.

²⁶ A detailed analysis is given in the paper by Dietmar Kurapkat.

²⁷ Vertical Aerial Photograph (1919, provenance unknown, kindly provided by David Michelmore).

provided by David Michemore). ²⁸ Mohammad Dabbagh is a local historian and descendant of the original building of the *qaisariya*-buildings.

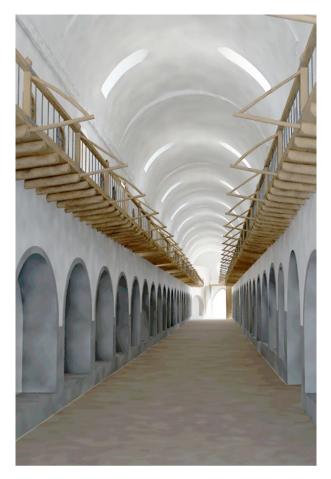


FIGURE 5. VIRTUAL RECONSTRUCTION OF THE ORIGINAL APPEARANCE OF THE MAIN ALLEY OF THE EASTERN QAISARIYA (3D-MODEL: CLAAS VON BARGEN).

A homogeneous structure of younger date, probably dating back to the second half of the 20th century, was built around the former grain market. A row of shops embraces the open space, with cast fundaments, cement pillars and brick walls and a small window above the opening. Unfortunately most of these historic structures and witnesses of the historic layout and development of the bazaar were destroyed recently in the course of the comprehensive refurbishment program of the whole area.

An analysis of the current assortment of goods within the bazaar reveals a clear separation according to branches, which agrees with the traditional structure of historic bazaars. As to the historic usage of the area, interviews suggest that the patterns did not change essentially since the 19th century. Household articles, the wood market with cradles for babies and grocery shops (sweets, honey, nuts, milk products) are placed at the northern edge; precious goods, gold and expensive cloths are sold in the south-western part; and less expensive dresses, clothes and shoes in the area adjoining to the north and northwest. The tailors of the traditional Kurdish costumes still have their workshops in the eastern *qaisariya*, and further clothes for men are sold adjacent to it.

A preliminary comparative analysis of bazaar areas in present day Iraqi Kurdistan reveals clear differences regarding the integration into the general urban pattern, the layout of the bazaar area and the shape of individual buildings.²⁹

In Koysinjaq, a small town located about 80 km southeast of Erbil, the bazaar area stretches along a main axis leading east-west. The street is lined by rows of singlestorey bazaar stalls. Two historic khan buildings are located at the eastern and western edge of the area, while two qaisariya-buildings are situated in between, to the north and south of the road respectively.³⁰ According to an inscription over the major entrance of the southern qaisariya-building it was erected in 1658/1840 and is named 'Qaysariyat Hajji Bakr Agha Huwaizi'. The qaisariya buildings are single-storey buildings, connected with the network of bazaar streets by several entrances. Each entrance could be closed with large wooden doors, as with the *qaisariya* buildings of Erbil. Cloister vaults separated by tipped transverse arches span the alleyways.

The situation is quite different in Kifri, a small town in the very south of Iraqi Kurdistan. During the Ottoman period the city centre shifted to a new site (Fig. 6). The bazaar occupies large parts of the historic urban centre. In contrast to Koysinjaq the bazaar covers a continuous area and did not develop along the sides of a historic street.³¹ At the western side two hallways, perpendicular to each other, house small stalls for retail sale. The hallways are single-storeyed and covered by vaults with pointed transverse arches. Their elevation closely resembles the qaisariya buildings in Koysinjaq but with the significant difference that there are no traces that the entrances were originally closed with gates. Another specific feature is the emphasis of the intersection of the hallways by means of a dome. This is a characteristic feature of Iranian bazaars, an observation that requires further research. The main hallway leads to an open street flanked by further small retail shops. To the right and left of this street several large khan ensembles are located. Apart

²⁹ A preliminary survey of the bazaars of Koysinjaq, Sulaimaniya and Kifri was undertaken by the authors in spring 2014 (Mollenhauer and Müller-Wiener 2014b). The results of this survey will be presented in detail elsewhere.

³⁰ According to the seminal model of bazaar-areas of the late German geographer Eugen Wirth, the bazaar would be categorized as 'Linienbazaar' (line-bazaar). Wirth 2000, 124.

³¹ According to Eugen Wirth's model the bazaar would be categorized as 'Flächenbazaar' (area-bazaar): Wirth 2000, 124-5.



FIGURE 6. KIFRI, KHAN BUILDING
IN THE BAZAAR IN
SEPTEMBER 2013
(PHOTO M. MÜLLER-WIENER).

from one, they consist of a central courtyard surrounded by vaulted rooms on two floors. One structure, however, is designed as a large hall covered with domes resting on massive pillars.

On the eastern edge of the area, close to a vaulted gateway leading out into the residential quarters, two tea-houses were located; unfortunately no trace of these now remains.³²

Parts of yet another historic bazaar are preserved in Sulaimaniya. The city was founded in 1783-1784 by the ruler of a local Emirate Ibrahim Pasha of Baban and became the capital of the Emirate. The historic bazaar is located in the heart of the city and surrounded by residential quarters. The existing fabric dates back to the late 19th century. A hotel and a hamam are still preserved, next to a public square, which is said to have been the local bus terminal. Adjoining this is the spread of the main bazaar. Most of its parts were renewed in the last decades, but according to a modern inscription above its entrance one building, the 'Qaisariya Naqib', dates back to the year 1900. The *gaisariya* is accessible through several entrances which are still locked after sunset and on holidays. Inside the building, several narrow passageways are flanked by stalls housing the shops of retail sellers. Similar to the qaisariya buildings

of Koysinjaq and Kifri, the structure of the Sulaimaniya bazaar is also single-storey, but due to the narrowness of the lanes and the shops the general impression is entirely different.

A fourth *qaisariya* dated to the second half of the 19th century is preserved in Kirkuk, on the road from Baghdad to Mosul via Erbil. It is situated on the citadel mound and was originally part of a heavily built-up area.³³ Due to the destruction of most of the surrounding historic city under Saddam Hussein this building cannot be analysed in its urban context. The building has one floor and its hallways are spanned by tipped transverse arches which abut decorated consoles. Barrel vaults cover the lanes. Compared to the height of the vaults the shops flanking the lanes are very low; this may be the result of a recent change of the floor level during restoration works undertaken in the *qaisariya* building.

To sum up, this cursory description of bazaar areas and bazaar buildings of selected towns in Iraqi-Kurdistan testifies to the existence of a variety of layouts. This indicates that topographic and economic preconditions were significant factors determining the shape of the bazaar areas. On the other hand, with the

³² Personal communication of Abdullah Sabir, Kifri, April 2014.

³³ Due to security reasons, we could not survey the Qaisariya ourselves, but we thank Dr. Karel Novacek for providing us with his personal photographs taken in 2009.

exception of the one in Erbil, the *qaisariya* buildings are of a more homogenous shape. The structures in Koysinjaq, Kirkuk, Kifri, and Sulaimaniya are singlestorey buildings with vaulted lanes flanked by small boxes. With the exception of the *qaisariya* of Kifri, all buildings were originally closed by large wooden doors. Within this context, the layout of the two *qaisariya* buildings in Erbil is outstanding. The design of the building with two storeys accessible by narrow stairs and galleries protruding onto the lanes are region-specific features, which will be topic of a more detailed study.

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Halaf Settlement in the Iraqi Kurdistan: the Shahrizor Survey Project

Olivier NIEUWENHUYSE, Takahiro ODAKA and Simone MÜHL

1. Introduction

The archaeology of the Halaf period has seen a very significant increase over the past decades. This recent work almost exclusively focussed on Northern Syria and Southeastern Turkey, or Upper Mesopotamia (Akkermans and Schwartz 2003; Nieuwenhuyse et al. 2013). As scholarship returns to Iraqi Kurdistan, prehistorians bring implicit expectations and assumptions that are shaped to a large extent by the latest work in Upper Mesopotamia. At the same time, the various new projects are taking up the challenge of adapting the existing models to local expressions of the Halaf cultural idiom (Altaweel et al. 2012; Bonacossi and Iamoni 2015; Gavagnin et al. (forthcoming); Nieuwenhuyse et al. 2016; Saber et al. 2014; Tsuneki et al. 2015; Ur et al. 2013). For the Halaf period, it is necessary to develop a fine-tuned chronological system that is sensitive to local internal sub-divisions in order to assess the significance of fluctuating site densities through time. The coarsegrained chronological framework currently available only permits a generalized slicing-up of later prehistory into 'Pre-Halaf', 'Halaf' and 'Ubaid'. Such broad chronological boundaries may well turn out to be less significant if these long periods can be split into more nuanced images of change and continuity. The ultimate aim is to develop local frameworks based on explicitly described parameters so as to facilitate inter-regional comparisons (Ball et al. 1989; Dittmann 1992; Ur 2010, 214-5; Wilkinson and Tucker 1995).

In this paper we would like to present the preliminary results from our ongoing investigation of the Halaf period in the Shahrizor Valley, situated on the eastern side of Iraqi Kurdistan. Our work forms part of the Shahrizor Survey Project (Altaweel *et al.* 2012; Nieuwenhuyse *et al.* 2016). As a preliminary conclusion we argue that Late Neolithic communities in the Shahrizor actively participated in, and contributed to, the broader, supralocal Halaf stream of tradition, but did so in a regionally distinct manner. At the same time, we wish to highlight some methodological issues in the usage of survey data for later prehistoric periods such as the Halaf. We start with very briefly reviewing some recent work on Halaf settlement.

2. Recent Developments in Halaf Archaeology

The past decades have seen important shifts in the geographic focus of archaeological research into the

Halaf period (5900-5300 cal. BC)., Serious explorations of Halaf period sites had taken place in northern Syria already in the early decades of the 20th century, with excavations at Tell Halaf, Chagar Bazar and Carchemish (Mallowan 1936; Von Oppenheim and Schmidt 1943; Woolley 1934). However, until the 1980's, many archaeologists primarily based their interpretations of the Halaf cultural tradition on work in Northern Iraq. Important excavations had been conducted at Arpachiyah, Nineveh, Banahilk, Gawra and Songor, among others (Campbell 1995; Fujii 1981; Gut 1995; Kamada and Ohtsu 1993; Matsumoto and Yokoyama 1995; Tobler 1950; Watson 1983). Soon after the Second World War, Iraqi archaeologists for the first time began to systematically collect crucial information on Halaf settlement patterns, mapping the regional distribution, densities and size range of Halaf sites (Directorate General of Antiquities Baghdad 1970, 1976; Vértesalji et al. 1982). Ismail Hijara's magnum opus perhaps represents the culmination of this body of work (Hijara 1997).

Since the mid 1980's, political instability in Iraq has firmly swung the regional focus back to Upper Mesopotamia. The past three decades have seen an unprecedented wave of concerted research projects focussing explicitly on the Late Neolithic (Nieuwenhuyse et al. 2013). Tremendous progress was made in understanding localized material culture sequences. For the first time since Mallowan devised his classic tri-partite chronology for the Halaf period, and in spite of continuing debates and a profound lack of consensus on specifics, Halaf scholars have been relatively successful in integrating relative chronologies with sound absolute dates (Akkermans 2014; Bernbeck and Nieuwenhuyse 2013; Campbell 1992; Cruells 2004, 2006, 2009, Cruells and Nieuwenhuyse 2005; Cruells et al. 2004). As a result, the temporal dimension of the Halaf period in Upper Mesopotamia is now relatively well understood, at least in its broad outlines.

The new wave of research addressed a suite of long-standing research issues. These included the question of Halaf origins, and its relations with contemporaneous cultural traditions such as the Hassuna and the Samarra (Akkermans 1989; Akkermans and Le Mière 1992; Akkermans and Verhoeven 1995; Cruells and Nieuwenhuyse 2005; Le Mière and Picon 2008; Nieuwenhuyse 2007; Tekin 2013). Much of this work addressed changes in ceramic style. This showed that in the broader Upper Mesopotamian area, ceramic

assemblages were transformed from being dominated by mostly plain, plant-tempered Coarse Ware, through a short-lived Transitional stage, to an assemblage dominated by fine, mineral-tempered Halaf Fine Ware (Le Mière and Nieuwenhuyse 1996). Intriguingly, during the Transitional (or Proto-Halaf) stage, the painted pottery closely resembled Hassuna and Samarra painted wares known from northern Iraq (Akkermans 1993; Campbell 1992; Nieuwenhuyse 2013). The final stages of the Halaf and its transformation into the Ubaid, too, were investigated with renewed vigour (Campbell and Fletcher 2010; Karsgaard 2010; Özbal 2010; Özbal and Gerritsen 2013). At several sites scholars excavated contexts attributed to the enigmatic Halaf Ubaid Transitional period, including Tell Aqab, Tell Halula, Chagar Bazar, and Tell Zaidan (Davidson 1977; Gomez Bach 2009, 2011; Gomez Bach et al. 2012; Stein 2009, 2012; Tunca and Baghdo 2006).

Others research projects explored Halaf settlement. Innovatively, regional surveys adopted systematic site sampling and artefact analysis to explicitly focus on the Halaf as a distinct cultural-chronological entity with its own diachronic sub-divisions (Akkermans 1993; Becker 2015; Campbell 1992; Kozbe 2013; Nieuwenhuyse 2000; Nieuwenhuyse and Wilkinson 2007; Ur 2010). As a result, we now understand the Halaf cultural landscape in Upper Mesopotamia as very heterogeneous, mostly inhabited by mobile, semi-pastoralist groups that were politically organized in a non-centralized fashion. Halaf settlement in Upper Mesopotamia was characterised by a dispersed, low-density pattern of small (<1 ha), often inconspicuous and short-lived sites. Sub-regional settlement systems included a few larger mounds (ca. 4-6 ha) with more permanent inhabitation, while across the region there are a few 'mega sites' (>15 ha). Rather than representing densely-inhabited 'proto-urban' villages, however, the latter have been interpreted as palimpsests of shifting site locations over the long term (Akkermans 2013). Finally, Upper Mesopotamian surveys suggest increasing site densities, a sharper sitesize differentiation, and a more prominent tell formation by the later Halaf period (Akkermans 1993, 179-85; Becker 2015; Campbell 1992; Nieuwenhuyse 2000). So how does all this relate to Iraqi Kurdistan?

3. The Shahrizor Project

The study area presented here is the Shahrizor Plain, an intermountain valley at the headwaters of the Diyala River, bordering the *chaîne magistrale* of the western Zagros Mountains (see Mühl and Fassbinder, this vol., fig. 1.1). The valley extends between the modern towns of Arbat, Said Sadeq, Khurmal, and Halabja. The central and southern parts of the plain are seasonally covered by the Darband-i Khan Lake. Several perennial and seasonal water streams drain the plain and unite in the lake. The biggest of these is the Tanjero River, which

runs in a northwestern-southeastern direction. Several small streams are fed by artesian and karstic springs, the latter containing sulphur in the north-eastern part of the plain. With an average precipitation of about 550 mm, the region provides conditions eminently suitable for rain-fed agriculture, which is why it is also known as the 'breadbasket of Kurdistan'.

The archaeological and historical remains of the plain were first described by adventurers, travellers and historians of the early 19th century, who often had a research interest mainly in ancient Assyria. Archaeological survey investigations and salvage excavations were carried out during the late 1950s and early 1960s by members of the Directorate General of Antiquities in Baghdad at prominent urban sites such as Yasin Tepe and Bakrawa, but also at prehistoric mounds like Girda Rash and Tell Begom (also Begum). After decades of gruesome conflict caused by the Iran-Iraq war and the Anfal campaign, renewed salvage projects began in 2003 and 2004 by the local Directorate of Antiquities in Sulaymaniyah (Saber *et al.* 2014).

Since 2009 the Directorate of Antiquities in Sulaymaniyah has been cooperating with an international team from the University of Munich, UCL London, University of Leiden and Heidelberg to survey archaeological sites in the Shahrizor Plain (Mühl and Fassbinder, this vol., Figure 1.1). The project focuses on the archaeology, history, and the past environmental conditions of this region and aims to reconstruct a viable material culture sequence for the later prehistoric periods (Altaweel et al. 2012; Mühl 2010, 2012, 2013). This includes the systematic surface collection of diagnostic sherds and small finds, as well as carrying out limited soundings at strategic sites to obtain sequences from stratigraphic contexts. The reconstruction of the paleoenvironment includes geomorphological studies, off-site and onsite sampling of paleobotanical remains, and involves the analysis of speleothems. From a total of 295 sites detected with remote sensing, eighty multi-period and single occupation sites were selected for physical surveying. Of these, seven can be attributed to the Halaf period with certainty (Fig. 1).

4. Reconstructing a Local Material Culture Assemblage

A first, essential step towards reconstructing the prehistory of the Shahrizor is building a *local* framework for the interpretation of the material evidence collected from the survey, mostly pottery sherds. Our team began with the classificatory framework for Late Neolithic ceramics developed in Upper Mesopotamia (Le Mière 2000; Nieuwenhuyse 2000; Ur 2010, 214-5), adopting it to the Shahrizor evidence. Evidently, some of the ceramic types characteristic for Upper Mesopotamia may not be present in the Shahrizor at all, or if they do occur they may show locally distinct properties. The

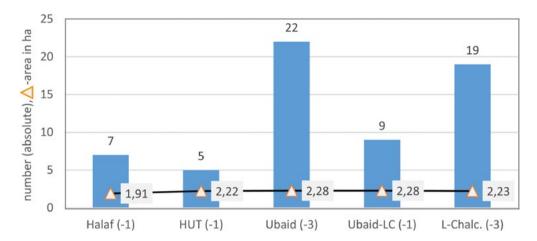


FIGURE 1. NUMBERS OF LATER PREHISTORIC SITES PER PERIOD IN THE SHAHRIZOR PLAIN AND ESTIMATED AVERAGE SITE SIZE ACCORDING TO THE SHAHRIZOR SURVEY (SSP)

(AFTER MÜHL AND NIEUWENHUYSE IN PRESS).

Shahrizor has yielded diagnostic types not identified elsewhere. Finally, excavations at Halaf sites in Iraqi Kurdistan sometimes contained Late Neolithic wares that as of now have no parallel in the Shahrizor surface finds. This holds especially for the coarse, mineral-tempered wares occurring at several Halafian sites (e.g. Watson 1983, 549), which are difficult to distinguish from the grit-tempered hand-made wares from other periods when found in non-stratified contexts. In preliminary fashion we distinguish the following ceramic categories for the Halaf period in the Shahrizor: *Plant-tempered Coarse Ware*, *Halaf Fine Ware*, *Halaf Coarse Ware*, and, potentially, *Halaf-Ubaid-Transitional Fine Ware*.

Plant-tempered Coarse Ware

Coarse, plant-tempered ceramics characterise the earliest horizon in Iraqi Kurdistan but they continued into the Hassuna/Samarra period (Lloyd and Safar 1945; Mortensen 1970; Tsuneki et al. 2015, 13). This thickwalled category was prepared from clay containing visible quantities of plant inclusions, typically leaving incompletely oxidized dark-coloured cores. Mostly roughly finished, it was sometimes decorated with red slips or paints. The Shahrizor Survey project yielded an enigmatic Plant-tempered Coarse Ware base fragment from Bestan Sur carrying an impression of coiled basketry (Nieuwenhuyse et al. 2012). This pottery is not commonly attributed to the Halaf period. However, in Upper Mesopotamia it certainly continued into the initial stages of the Halaf period (Akkermans 1993; Le Mière and Nieuwenhuyse 1996). As we still do not know how the transition to the Halaf manifested itself locally, this category may therefore be relevant for identifying the very early stages of the Halaf period.

Halaf Fine Ware

Similar to Halaf sites across northern Iraq and the Upper Mesopotamian plains, the HFW from the Shahrizor was made of a relatively compact clay with few visible inclusions (Fig. 2). This ware was mostly fully oxidized in the firing, resulting in buffish to orange surface colours. Vessel shapes include a range of mostly convex-sided bowls but also bowls with a carinated contour or with S-shaped walls. Halaf Fine Ware was very often painted, but additional decorative techniques found in the Shahrizor include various sorts of surface manipulation (Nieuwenhuyse *et al.* 2016; Wengrow *et al.* 2016).

Interestingly, preliminary impressions suggest that the Halaf pottery from the Shahrizor mostly dates to the Middle to Late Halaf. If corroborated by further study, this would fit with impressions emerging from renewed survey work on the Rania Plain, where the collected Halaf Fine Wares all seems to belong to a later Halaf horizon (Tsuneki et al. 2015). In stark contrast to northern Syria, the Shahrizor survey has so far not revealed any 'transitional' material between the Hassuna/Samarra and the Halaf. None of the Shahrizor sites presently investigated have yielded any examples of the rather distinctive Early Halaf (Halaf Ia), as is known from excavations at Tell Sabi Abyad, Tell Arbid Abyad and many other sites in Northern Syria. Nor can we unequivocally confirm the presence of the traditional Early Halaf (Halaf Ib), as is known from



FIGURE 2. SHAHRIZOR SURVEY PROJECT. EXAMPLES OF LATE NEOLITHIC POTTERY COLLECTED IN THE SURVEY (TELL QORTAS=SSP73) SHOWING EXAMPLES OF HALAF FINE WARE AND HUT FINE WARE (PHOTO S. MÜHL, SHAHRIZOR SURVEY PROJECT).

Tell Arpachiyah. Possible explanations may include one or several of the following: 1) a pattern of small, low Early Halaf mounds buried and invisible to modern surveys; 2) a lack of cultural continuity and a short-lived abandonment of the valley; or, perhaps more likely, 3) a different type of transition not yet understood (and hence, not yet visible). Local communities may have held on to Hassuna-Samarran styles for a longer period of time, only adopting Halafian stylistic traits in their ceramic repertoire at a later stage.

Halaf Coarse Ware

HCW sherds are thicker compared to HFW and often have incompletely oxidised cores. The containers were made of clay having many small mineral inclusions and, occasionally, small plant particles. This category may be difficult to identify with certainty in surface collections because it may resemble Ubaid and Late Chalcolithic materials. So far it has been recovered from stratified contexts only at Tell Begom (or Begum) and

Tepe Marani (Nieuwenhuyse *et al.* 2016; Wengrow *et al.* 2016). At these sites it comes from layers dated to the final stages of the Halaf period and the so-called Halaf-Ubaid-Transitional.

HUT Fine Ware

A locally well-attested ceramic category may be the polychrome-painted pottery that Ismail Hijara (1997) already dated to a Halaf-Ubaid Transitional stage on comparative grounds (Fig. 2). While it resembled in many respects the iconic Late Halaf pottery from Tell Arpachiyah (Mallowan and Cruickshank-Rose 1935), it was sufficiently distinct to warrant a separate chronological slot post in dating the Arpachiyah finds. Hijara's interpretation has recently found support in a series of radiocarbon dates from Tepe Marani and Qalat Said Ahmadan that place this category in the mid-late sixth millennium BC (Tsuneki *et al.* 2015; Wengrow *et al.* 2016). It should be emphasized here that sherds classified in this group do not always carry polychrome

painted decoration; monochrome paint also occurs, while some HUT-FW sherds do not carry any decoration at all. Incised and impressed decoration is also found occasionally (Nieuwenhuyse *et al.* 2016; Tsuneki *et al.* 2015).

At first sight, the range of HUT-FW vessel shapes and decorative designs fall within the incredibly diverse range of Halaf-Ubaid-Transitional painted Fine Ware styles known from sites across northern Iraq and northern Syria (Cruells et al. 2013; Davidson 1977; Gomez Bach 2009, 2011; Tobler 1950). However, certain ceramictechnological choices make this material distinctive, in particular the use of clay containing *plant* inclusions. Clearly visible to the naked eye, these do not appear to be accidental inclusions forming part of the natural clays selected by the potters, but intentionally added as a temper. For making Halaf Fine Ware this has so far not been recorded from any of the Upper Mesopotamian Halaf sites. As well, the extraordinary versatility of the polychrome-painted designs known so far find no close match elsewhere apart from in Iraqi Kurdistan itself. Within the Shahrizor, surface collections at Tell Qortas produced very similar pottery (Mühl and Nieuwenhuyse

in press), as have the excavations at Gurga Chiya and Tepe Marani (Wengrow *et al.* 2016). Qalat Said Ahmadan on the Rania Plain produced closely comparable pottery (Tsuneki *et al.* 2015).

5. Emerging Halaf Settlement

Previous surveys of the Shahrizor region resulted in the identification of just two Halaf sites, Tell Begom and Tell Sragon (Fig. 3); the Shahrizor Survey Project increased this to a total of seven (Fig. 4). With a total of twenty-two identified sites, the Ubaid period sites are much better represented by comparison. Taking into account the number of sites that have both Halaf and Ubaid period occupation, we estimate that several 'transitional' sites, both in a chronological and a ceramic-typological sense, will be discovered in the future.

Interestingly enough, only the *number* of sites increases after the Halaf period, and not their estimated *size* (Fig. 1). The average site size fluctuates within a rather narrow margin at ca. 2 ha; at single occupation sites it is mostly less than 1 ha. Some Halaf sites that continue into the Ubaid cover areas up to 3, and rarely 5 ha. Tell Begom

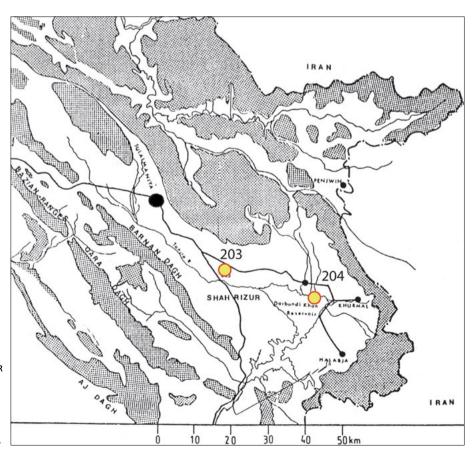


FIGURE 3. MAP OF THE SHAHRIZOR SHOWING THE LOCATIONS OF HALAF SITES KNOWN IN THE 1980'S. NO. 203: TELL SRAGON; NO. 204; TELL BEGOM (AFTER HIJARA 1997: 90, FIG. 99).

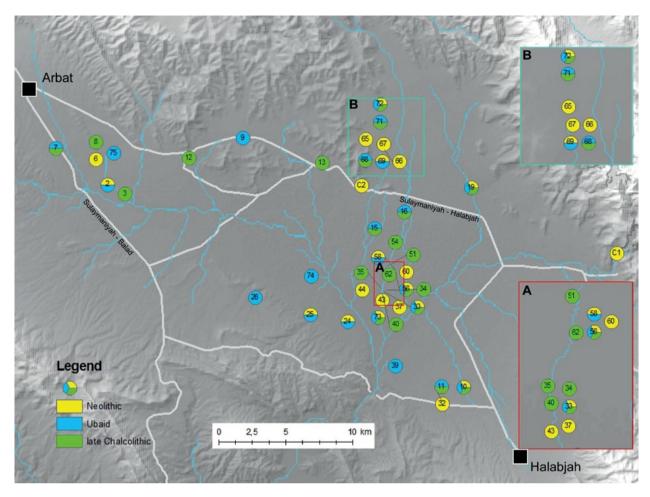


FIGURE 4. MAP OF THE SHAHRIZOR SHOWING THE LOCATIONS OF LATER PREHISTORIC (NEOLITHIC, HALAF, UBAID AND LATE CHALCOLITHIC) SITES ATTESTED IN THE SHAHRIZOR SURVEY PROJECT (AFTER MÜHL AND NIEUWENHUYSE IN PRESS).

would be an example of the latter. Such continuity in settlement size might suggest a continuity in the overall village lay out and building traditions. However, as no architectural remains dated to the Halaf period have so far been properly excavated in our region, we remain ill informed on the use of space, the size of the households or the layout of the local Halaf village in comparison with Ubaid and Late Chalcolithic buildings and settlements (Forest 1999; Jasim 1985; Kubba 1998; Rothman 2002).

Typically, sherd quantities for Neolithic sites are often minimal. Five pieces or even less are not uncommon at multi-period settlement mounds (Altaweel *et al.* 2012, 20). Prehistoric flat sites, which comprise only one or few phases of occupation, usually produce more pieces but never as much as later, historic sites. This raises the key issue of visibility of early sites.

Ongoing geomorphological work in the region attests to a very significant Holocene sedimentation in the plain (Nieuwenhuyse et al. 2016). This may have caused the burial of a significant number of low settlement mounds that were probably characteristic for Halaf settlement. Following the Upper Mesopotamian model, most of these would have been fairly small (less than 0.5 ha) and easily covered. The category of buried settlements may include large but relatively low mounds resulting from prolonged, but shifting, human settlement within a circumscribed location (Akkermans 2013; Bernbeck 2013). In other words, even a local Halaf 'mega site' might be easily missed (Iamoni forthcoming). More prominent tell sites such as Tell Begom may or may not be typical for Halaf settlement in the Shahrizor: preliminary investigations suggest that this site may sit on a natural elevation in an early Holocene landscape that was

less flat than today. Future geomorphological study is essential to understand more fully the complex interplay between landscape formation, human settlement and archaeological visibility.

Taking the evidence for what it is, settlement intensity appears to have been very low throughout the Late Neolithic. Presently our analysis has not reached sufficient chronological sensitivity to allow for the identification of time trends during the Halaf. What we can say presently is that the majority of the painted Halaf Fine Ware studied appears to date to the Middle-Late phases of the Halaf period according to the Upper Mesopotamian framework, also termed Halaf II (Campbell 1992). Possibly this suggests an increase in Halaf site density during the later Halaf, similar to the picture in Upper Mesopotamia (Akkermans 1993; Becker 2015; Campbell 1992; Nieuwenhuyse 2000). It may also mean, alternatively, that Halaf cultural influences reached our region relatively late.

The number of sites where transitional Halaf-Ubaid pottery is tentatively identified remains rather low. So far just two sites yielded 'Transitional' diagnostics: Tell Begom and Qortas. This low number may reflect the low visibility of Halaf sites in general. It is also possible, simply, that this image is realistic. The Shahrizor may have been very sparsely inhabited during this phase. However, a perhaps more likely explanation may lie in our struggle with identifying the corresponding transitional pottery. In northern Syria, too, the HUT has been difficult to identify in regional surveys (Nieuwenhuyse 2000). Many potentially diagnostic types persisted over long periods while distinctive, chronologically sensitive transitional types may be the exception.

Unequivocal evidence of 'Halaf centers' - as provisionally defined by sites of more than 5 ha in size surrounded by smaller sites (Iamoni forthcoming) - is rare. Yet, even if we emphasize that only excavation can inform us about relationships between sites, several more intensely-surveyed sample areas exhibit distinct, perhaps clustered occupation patterns. One of these is situated along Wadi Shamlu on the northern edge of the Darband-i Khan Lake (Fig. 4: area A). Previous work had identified just three sites; the Shahrizor Survey Project showed an additional 27 mounds on both banks of Wadi Shamlu. They seem to have formed smaller clusters surrounding the middle-sized tell sites of Tell Begom, Gird-i Shamlu and Tell Qortas. The cluster around Tell Begom and the main site of Tell Qortas can in their entirety be dated to the Halaf period, and continuing into the Ubaid and Late Chalcolithic periods.

Tell Begom in fact consists of several small, low sites clustering around the main mound of Tell Begom. The pottery collected from this cluster mostly dates to the Halaf, Ubaid, and Late Chalcolithic periods (Nieuwenhuyse *et al.* 2016). Tell Begom itself is made up of a conical mound and a long elevated saddle-shaped lower town. A surface collection yielded a ceramic assemblage that in many respects closely reflects the sequence attested both in earlier Iraqi excavations and in more recent soundings (Nieuwenhuyse *et al.* 2016). In addition to medieval and Bronze Age materials from the uppermost layers, both the surface collection and the excavations yielded material dating to the Late Halaf and the Ubaid periods, as well as levels dating to an early stage of the Late Chalcolithic. There can be little doubt that Tell Begom was a regionally important place in Late Halaf times.

6. Concluding Remarks

The Shahrizor plain holds great promise for researching the Halaf period. At the same time, the renewed survey work now ongoing in the Shahrizor, as in other parts of Iraqi Kurdistan, highlights the challenges in further interpretation. Archaeologists are facing an urgent need for local material sequences to make sense of accumulating survey data (Tsuneki *et al.* 2015, 31). The issues of landscape formation and site visibility are particularly pertinent to the interpretation of Halaf settlement. Compared to later periods, Halaf sites are relatively 'invisible'. In landscapes characterised by significant Holocene sedimentation, such as the Shahrizor, smaller, lower tell sites may be completely overlooked, biasing socio-economic reconstructions based on site densities and inter-site relationships.

Situated on the eastern parts of the classic Mesopotamian realm, later prehistoric communities in the Shahrizor certainly participated in the Halaf cultural tradition. However, they appear to have done so in a locally distinct manner. For one, the local chronologies likely differ from those in Upper Mesopotamia, especially at the onset of the Halaf. The absence so far of any signs of cultural continuity between the Hasuna/Samarra and Halaf phases, and the apparent absence of unequivocally dated Early Halaf materials are intriguing given abundant visibility of these stylistic horizons across the Northern Syrian plains. The absence of these diagnostics in the Shahrizor invites several explanations, certainly not mutually exclusive, including: a prevalence of mobile groups resulting in the spread of small, low sites that now lie deeply buried below later sedimentation; a temporary abandonment of the valley during the Early Halaf; or a local transitional horizon that we cannot yet identify. Tsuneki et al. (2015, 31) have recently suggested that Halaf cultural influences reached the Rania Plain relatively late in the Halaf cultural sequence. Might a similar scenario apply to the Shahrizor?

As to the later Halaf, the stunning polychrome-painted Halaf Fine Ware pottery from Tell Begom and Qortas perhaps suggests a locally distinct approach to the production and consumption of painted ceramics during the final stages of the period. Such local variability operating within a shared repertoire of cultural forms during the Halaf should of course not surprise us entirely. Archaeologists working in the westernmost provinces of the extraordinary Halaf distribution are familiar with a suite of 'western' or 'Northern-Levantine' local expressions of the Halaf idiom (Nieuwenhuyse *forthcoming*; Özbal and Geritsen 2013; Tsuneki *et al.* 2000). Further archaeometric studies of this intriguing ceramic tradition is called for, in order to situate this 'Zagros' tradition within the broader repertoire of the Mesopotamian Halaf.

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Contextualizing Arbīl: Medieval urbanism in Adiabene

Karel Nováček

Background of the research

Nearly one century ago medieval urbanism became one of the key issues of Islamic studies, a point of intersection of several disciplines, i.e. social and economic history, architectural history, archaeology, anthropology and sociology. From modest beginnings, the engagement of Islamic archaeology in scholarly debates concerning various aspect of towns' evolution, morphology and life has gradually increased. In the last two decades, archaeology has finally demonstrated its unique capacity to address key research topics, such as the question of the continuity of towns in the period of the Late Antique/Early Islamic transition in the Near East, and the problem of Early Islamic town foundations: both themes, confronted recently with a bulk of new archaeological material, can now be viewed in a radically different perspective than was hitherto possible. Archaeological inquiry remains, however, rather particularistic in its reliance on the data taken from research on the most important residential cities of the Early Islamic Period. These exceptional sites are either considered as solitary case studies or are compared to one another over long distances without taking into account the whole of the urban landscape in their hinterland. A study of the complex network of urban sites in a defined region remains a great desideratum of Islamic archaeology, though some exceptions deserve to be mentioned (Pradines 2004; Petersen 2005). The lack of such regionally defined urban research strongly biases several key social and economic models of the caliphate, and even their political generalizations. It is probably a case of a concept of isolated, nearly independent citystates in the Post-Seljuq to Ayyubid Syria and Northern Mesopotamia (e.g., Humphreys 1977, 42), which appears to be in contrast to the obvious commercial interconnection and economic growth of the cities in this period.

In recent years, the project supported by Czech Science Foundation has given us an opportunity to reconstruct the past topography of the city of Arbīl in Northeastern Mesopotamia, a centre with an extremely long continuity of urban life, reaching back as far as to the 5th millennium BC. Drawing attention to the immediate hinterland of the famous citadel mound of Arbīl, the complementary use of written sources, remote sensing and archaeological surveys has mediated a view of the long-term evolution of the lower town, whose remains have entirely disappeared due to modern urban sprawl. Arbīl is ranked as the most important royal residence and sacral centre of the 'Land

of Aššur' and its reconstructed pattern and size confirm its remarkable position among Assyrian royal capitals. After the fall of the Assyrian Empire, Arbīl retained the status of a regional capital and its extensive Assyrian fortification, albeit possibly in a ruined state, sustained the structuring principle of the city. Furthermore, our research revealed abundant remains of the medieval city with its landmarks, fortifications, road network and funerary areas, which led us to consider the development of the medieval regional centre to be the next climactic point in the fascinating continuity of the city. Arbīl witnessed an Islamic transformation in two successive phases: first after the Muslim conquest, most probably just in the 7th century AD, and then throughout the rule of local Begteginid dynasty in the 12th and first third of the 13th century. The area of the city, newly fortified in the latter period, exceeded 3 km². At the same time, an energetic programme of building activity increased the proportion of notable architectural features, creating both high status official buildings and formal spaces in the city (Nováček et al. 2013).

From the little that we know about the topography of the city, several peculiar elements in the evolution of medieval Arbīl may be highlighted: first of all, the longterm, agglomerative urban development without visible discontinuities, resulted in a remarkably extensive centre of the 13th century. Furthermore, the sources offer hints of a high degree of social complexity in the city population, whether ethnic or denominational, in which, besides the Sunni majority, a very influential Christian community needs to be taken into account, as well as Shi'ite and Jewish minorities. As in the case of Aleppo, the analysis of the urban structure of Arbīl confirmed the decisive role of the citadel (actually an independent, massively fortified town quarter with common urban facilities and élite residences) and of its southern forefront with a large maydān (a parade venue). Evidence for the collapse of urban life during the Early Ottoman period can be seen in the substantial decline and/or complete abandonment of the lower city.

It has become clear that the distinctive elements in the development of Arbīl cannot be fully explained without placing the inquiry into the context of long-term changes of other urban settlement in a regional context. Adiabene (Hidyab), a region bounded by the rivers Tigris, Great and Little Zābs and Zagros Piedmonts, whose traditional capital was Arbīl, used to be a very stable, historical administrative unit whose boundaries may have been

established as early as in the 11th century BC (Postgate 1992, fig, 1; Radner 2006-8; Marciak 2011). The region, although extremely rich in archaeological heritage, escaped intensive scholarly attention until very recently and the sites of Sasanian and Islamic periods were largely overlooked, although with several exceptions (Sarre and Herzfeld 1911, 210-2; Sarre and Herzfeld 1920, 322-9; Edmonds 1932; Venco Ricciardi 1971; Córdoba 2005).

According to our preliminary survey, which combined the published historical topographies with the analysis of satellite imagery, more than fifteen sites of either confirmed or conjectured urban status appeared in the region in the period from the 6th to the 17th century AD (Fig. 1). All of these (with the exception of two: Arbīl and Altun Köprü) were abandoned during the Ottoman era at the latest. This concentration of mostly well-preserved

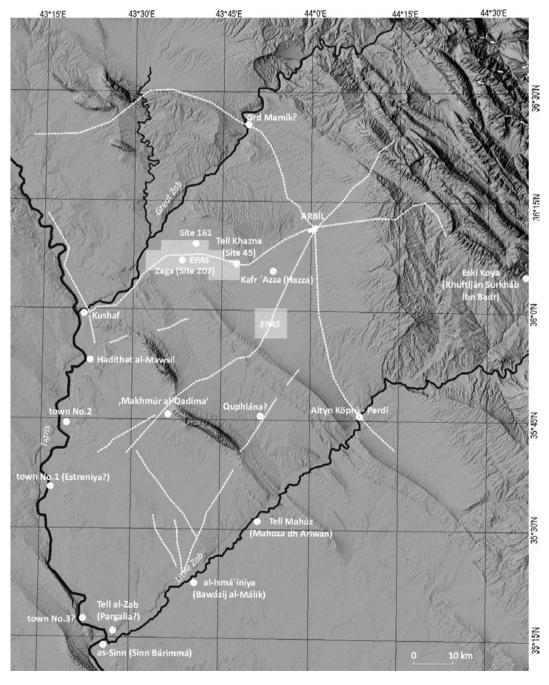


FIGURE 1. MAP OF THE REGION OF ADIABENE SHOWING URBAN SITES UNDER STUDY AND THE RECONSTRUCTED COURSES OF MEDIEVAL ROUTES (DRAWING BY L. STARKOVÁ AND K. NOVÁČEK).

medieval urban areas was decisive for the selection of Adiabene as a case-study for regionally defined archaeological research of 'Islamic' cities. The nature of medieval urbanization in NE Mesopotamia is not well understood and the study of this relevant urban landscape can contribute much to our knowledge of cities and urban processes of the Islamic period. A diachronic view should enable us to assess the responses of the city network to political changes, as well as changes of economic and social conditions in northeast Mesopotamia. The history of the region in the last two millennia is characterized by a succession of cyclically changing 'sedentary' and 'nomadic' polities, which implies different attitudes to the existing urban landscape. We would like to challenge the traditional description of such different strategies with the conceptual dichotomy of 'rise' and 'decline', for it seems to be obvious from the first glance at the sources that the urban transformative processes did not immediately follow the changes of political systems. On the other hand, a synchronous research perspective might ask if an interconnected, hierarchical network of cooperating towns existed in Adiabene, particularly during the Abbasid to Post-Seljuq Periods, or whether one should suppose that the regional economic space disintegrated into segmentary catchments of local cities. Some aspects of urban planning, which will be analyzed, have connections with political practices for constructing power relationships: urban locations, city fortifications, sacred places, power centres (citadels), architectural landmarks, articulation of space and inner communication system. Other aspects can give an idea of economic relationships, goods exchange and production specialization within the urban system (e.g. communication networks, pottery distribution etc.).

Data and Methods

The project is based on three equivalent, intertwined sources of data: analysis of textual evidence (M. Melčák, Oriental Institute of Czech Academy of Sciences, Prague), aerial/satellite imagery analysis (L. Starková, University of West Bohemia Plzeň) and archaeological survey (in cooperation with N. A. M. Amin, Salahaddin University Arbīl and CNRS Paris). Early Christian chronicles and accounts of the Arab geographers are by no means the main source for the history of individual sites, and have only partially been exploited in historical topographies so far. Biographical dictionaries composed by Islamic historians interconnected with the region (such as Ibn al-Mustawfi, Ibn Khallikān etc.) can add more detail about intellectuals living in the cities and about buildings connected with them. A survey of Ottoman archival and literary sources, particularly the Tapu Tahrir tax registers of the 16th century is also planned, in cooperation with E. Neumeier of the University of Pennsylvania, as an important addition to the latest topography of the region and the chronology of the urban collapse. Remote sensing data has played a decisive role in the identification of sites and continues to be the principal tool for study of the general layout of the abandoned cities. We rely on a variety of image types: aerial images taken during British RAF missions, the declasssified system of CORONA satellite imagery from the late 1960s, as well as up-to-date high resolution satellite imagery. We also intend to use radar satellite systems (TerraSar-X) as an innovative tool for study of detailed morphology of sites and for their three-dimensional visualization. The archaeological fieldwork hence aims on the one hand to revise town plans produced by remote sensing, and on the other hand to obtain detailed data concerning the architectural remains and pottery distributions. Surface pottery is used as a point of departure for considerations about settlement dynamics, as well as the social and economical articulation of the urban areas. Apart from deserted sites, attention is also paid to the archaeological survey of living towns (Altun Köprü).

An overview of the first results

During the first two field seasons (October 2013 and April 2014), we have devoted our attention to a systematic survey or field reconnaissance of the following sites: Kafr 'Azza (Arbīl Governorate),¹ Altun Köprü (Pirdi), Soran and Qaprān / historic Quphlāna? (all in the Kirkuk Governorate), Kušāf and Eski Makhmūr (both Ninuwa Governorate).

The site of Kafr 'Azza (Hazza), situated 15 km SW of Arbīl, became a parallel provincial centre during the Late Sasanian Period and retained its position still during the Early Abbasid period (Morony 2005, 132-3). Yaqut al-Hamawi and Ibn al-Mustawfi, both writing in the first quarter of the 13th century, mentioned Kafr 'Azza as nothing more than village, while Ibn al-Mustawfi added an important note about local congregational mosque where a foundation inscription from the second half of the 10th century were visible. The CORONA images as well as the field reconnaissance recovered evidence of a large, c. 80-hectares settlement with several subdivisions, located to the north of the village of 'Azza. A central mound, occupied to date by an isolated farmstead, is surrounded by dozens of low mounds, some covered by scatters of fired-brick fragments, with an abundance of Late Sasanian and Early Islamic pottery. The remains of the settlement stretch almost up to the village of Quniyan, some 2 km NE of 'Azza, where the ruin of a watermill is visible. In the opposite direction, c. 4 km SW of 'Azza, we have surveyed another area which could play an important role in our considerations of the past topography of Kafr 'Azza. Close to a large tell, which was observed by A. H. Layard (1853, 190), the

The initial reconnaissance was carried out courtesy of the Directorate of Antiquities Arbīl and with the presence of its staff. The detailed survey took place in autumn 2014 in cooperation with the Erbil Plain Archaeological Survey (EPAS) directed by Jason Ur of Harvard University.

shrine and cemetery of 'Abd al-Azīz has been identified. The dressed limestone elements, which come from an unknown monumental building, include two massive profiled pillar capitals. These were re-used in 19 visible cases as funeral stelae for recent Islamic graves. The interpretation of these findings will have to take into account all, often contradictory topographical references from the 9th to 16th century AD, dealing with Hazza, Kafr 'Azza, the monastery of Mār Mīkhā'īl (Tar'īl, 'Umr Itrā'īl) and possibly also other sites, which have so far not been located with any certainty.

Altun Köprü (Pirdi) represents a small but vital town situated on the historical route leading from Baghdad to Mosul via Arbīl, on a 13 ha. large island in the Little Zāb river. The eastern arm of the river seems to be artificially cut or, at least, substantially deepened and widened, which means that the island might be considered as a deliberately created fortification element. The position

of the town was of key importance in the past, as the town's nucleus, which was connected to the land by two bridges, offered the only perennially reliable crossing of the river in the whole region. Several hints suggest that the roots of this fortified and urbanized crossing might be found in the Assyrian period. A name Qtartā d'Zāwā ('Bridge across Zāb'), which occurs in a late-8th-century source, has been linked with the town (Fiev 1965, 123), as well as the later names Qantarat az-Zāb (beginning of the 13th c.) and finally Altun Kūbrūk or Kūbrdk (15th century). All of these names corroborate the long tradition of the crossing of the river by bridge(s), although none of them explicitly mentions the urban status of the site. The urban appearance of Altun Köprü is, nevertheless, clearly confirmed by a view of the town dated from 1534 in a miniature painted by Nasúh al-Silahi Matrakçı (Gabriel 1928; Eroğlu et al. 2008, 190). This realistic and extremely useful iconographic source provides information on several architectural landmarks

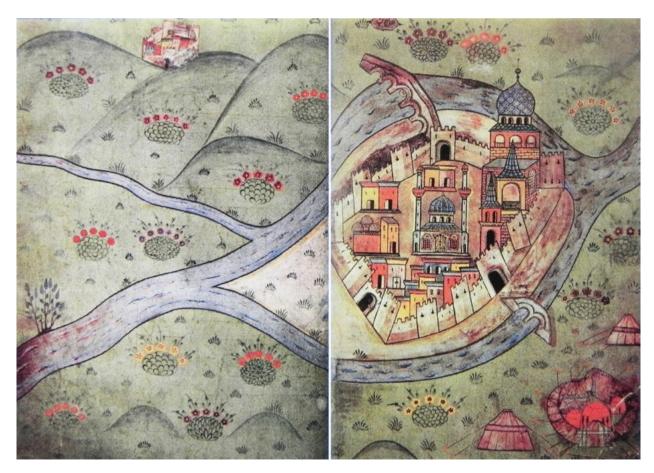


FIGURE 2. VIEW OF ALTUN KÖPRÜ FROM THE SOUTH, 1534, A MINIATURE BY NASÚH AL-SILAHI MATRAKÇI (AFTER EROĞLU *ET AL*. 2008).

in the well-fortified town: a congregational mosque, the governor's palace, three gates and, of course, the two masonry bridges across the Zāb (Fig. 2). The historic bridges were destroyed by the retreating Turkish army in 1918. Their pillars were partially included in the construction of the existing bridges, and were examined by our survey. The dating of the historic bridges in the literature varies considerably from Hellenistic to Early Ottoman Periods (e. g. Sarre and Herzfeld 1920, 322-9). A detailed analysis of travelogues from the 16th to early 20th century, which yielded about thirty more or less detailed descriptions of the town, has enabled us to determine the age of the bridges with more certainty than has hitherto been possible and to lead us to conclusion that the bridges depicted in the 16th century were in fact predecessors of the bridges demolished in 1918, the construction of which may be placed in the mid 18th century. We were eventually able to confirm the location of the medieval bridges by means of field survey: their remains are still situated south of later Ottoman bridges, with the western one a considerable distance from its later counterpart. The roads which used to connect the medieval bridges have left almost no trace in the urban plan. This means that the existing urban pattern of Altun Köprü with its main element – the axis street connecting the bridges - must be the result of a Late Ottoman transformation of the town. This transformation also resulted in the structural pauperization of the town and in the loss of all the aforementioned architectural landmarks.

Our survey also targeted the cemetery on the western suburb of the town. In the CORONA satellite images from late 1960s, the cemetery seems to be at the centre of a tell c. 350 m in diameter (c. 12 ha). This observation is in accord with the information transmitted by J. Černik who passed the town in 1873 and witnessed a vast field of ruins on the suburb (von Schweiger and Lerchenfeld 1876, 47). The western part of the cemetery is covered by a cluster of large low mounds, the origin of which cannot be explained by funeral activity. The excavations of recent grave pits have brought to the surface a number of baked bricks, door sockets and some pottery fragments of Middle to Late Islamic date. We can tentatively confirm Černik's belief that this area represented an abandoned extension of the medieval city.

On the eastern outskirts of the current town of Makhmūr, a large post-Assyrian site was identified in the CORONA satellite imagery. The site is locally known as Old Makhmūr (Makhmūr al-Qadīma, Eski Maxmūr), but no mention of this site has been found so far in documentary sources (Fiey 1965, 127). A large site of more than 120 ha lies in a barely cultivated landscape and its remains are thus excellently visible in relief. The probable nonfortified settlement area comprises several dozen low mounds, most of which are fairly concentrated and seemingly arranged in an urban pattern in the central

part of the site. One unit in this cluster appears to be extremely well-preserved as the rubble covers it up the level of vault caps. An outstanding structure – a 1.5 ha. square enclosure with a rampart 3-6 m high- is located in the northern part of the site. We consider this to be, according to excavated parallels from Syria, a large water reservoir (Mundell Mango 2003. 315; contra Mühl 2013, 212). At least three conspicuously large mounds of a rectangular plan are visible in the outskirts of the site: all of these probably contained the remains of masonry built, fortified building complexes, reminiscent of the Umayyad castles (qusūr) in the Levant. A mound situated separately in the SW part of the site retains portions of a rectangular perimeter wall (53 x 42 m) on its summit, the masonry being cut from limestone blocks, as well as the sparse traces of inner constructions which joined the wall (Fig. 3). The mound is covered by a scatter of pottery which enables us to date it to the Early Islamic Period (Fig. 4). The surface pottery provides evidence for a similar time span – Late Sasanian to Early Islamic – across the site, with the exception of its already flattened western edge, where ceramics of the Uruk, Neo-Assyrian and Parthian periods were collected, suggesting a more complex settlement history. The site sits on the edge of the once extremely fertile Makhmūr Plain, close to the foot of the Kara Čauq Dagh mountains and Hassan Ghazi Pass, where an important route leading from the Central Tigris area to Arbīl traversed the mountain ridge. The western portion of the pass is covered by a large (c. 4-hectare) burial area, which consists of one domed tomb and several thousands grave stelae in a number of clusters. The stelae are generally free of inscriptions or glyptics, with the exception of a tombstone with an engraved cross.

The site of Kušāf, formerly an Assyrian town called Kaštappum / Kassappa (Deller 1990) and later a Middle Islamic Period centre, whose citadel was mentioned by Abū al-Fidā at the beginning of the 14th century, occupied a strategic position on the south bank of Great Zāb, near its confluence with the Tigris. CORONA imagery clearly shows the tripartite structure of the town (Fig. 5). A triangular citadel and the lower town on the tell, fortified with a perimeter wall and ditch, added to the dispersed settlement in the plain. This large, 120 hectare area included open canals or hollow ways and at least two large square structures. The area of the citadel and the lower town was recently damaged by military installations: the village was levelled and a new wide track was bulldozed into the southern slope of the citadel. Despite this heavy remodelling, several portions of the citadel's perimeter wall, constructed of limestone boulders, are still visible. The architectural remains of the south fortification seem to be particularly important. The ring wall of the citadel was added to by an avantcorps c. 37 m wide and protruding from the main wall for more than 5 m. The avant-corps was flanked by two cylindrical towers, between which there will most



FIGURE 3. ESKI MAKHMŪR, AN EARLY ISLAMIC CASTLE (QASR NO. 1), PLAN OF SURFACE REMAINS OF THE STRUCTURE IN THE RECENT SATELLITE IMAGE (DRAWING BY L. STARKOVÁ AND K. NOVÁČEK).

probably have been a gate leading to a bridge across the moat. A similar form of gate, flanked by a pair of round towers, is common in Early and Middle Islamic architecture in the East Mediterranean and Anatolian regions. The pointing of the gate by the avant-corps has the closest parallels with the Frankish and Ayyubid military architecture in Syria. From the end of the 12th century onwards, the monumental, well-defended entrance units became a part of the building tradition of Ayyubid castles and citadels. Another architectural detail also strongly supports the idea of a close relationship between the Kušāf citadel and the Levantine architecture of the Crusader / Ayyubid Period: two limestone ashlar blocks, the only ones preserved in the face of the eastern tower, have a rusticated surface, which is a very common element in Frankish, Ayyubid and early Mamluk architecture.2

Several other sites in the study area should be mentioned briefly. A large, deserted Islamic-Period centre on the south bank of Little Zāb was identified by Edmonds in 1923. Its local name was al-Ismā'īnīyat, according to the preserved 13th-century mausoleum ascribed to an Īmām Ismā'īl (Edmonds 1932). This site can probably be linked to the historical city of **Bawāzij**, which is mentioned several times between the 9th and 14th centuries (Le Strange 1905, 91). In the satellite images we can identify an 138 ha. city of regular, trapezoidal plan, fortified by a wall with bastions. On the west side, a narrow neck extends ending in a large, articulated mound, perhaps a private residence or citadel. The opposite NE corner of the city was added to from the outside by a large square enclosure (a water reservoir?).

Al-Hadītha al-Mawsil was founded (or re-founded) by the last Umayyad caliph Marwān II before the mid 8th century. Some indications in the sources lead us to the tentative conclusion that the city lost its urban character just before the Mongol invasion: the function of the local urban centre might shifted to Kušāf, which lies only 11

E. Herzfeld noticed this detail as well, considering it Parthian (Sarre and Herzfeld 1911, 212), which is not probable if we take into account the aforementioned architectural context of the gate, regardless of fact that the rusticated masonry is not a typical feature of the Parthian architecture.

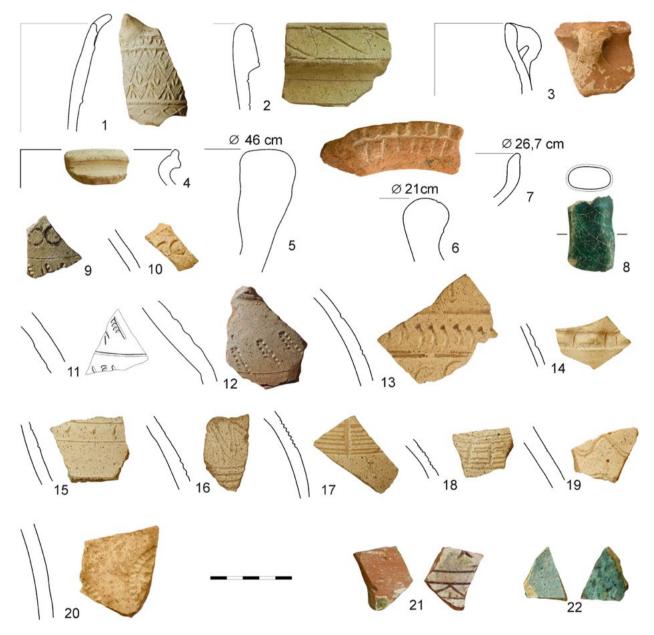


FIGURE 4. ESKI MAKHMŪR, A POTTERY COLLECTION FROM SURFACE SURVEY OF THE QASR NO. 1 (DRAWING BY H. ŠVÁCHA).

km away. The satellite imagery provides a view of a huge, c. 300 ha. large area of low mounds and architectural remains near the village of Sultan Abdullah. The city has a regular plan laid up to the edge of the Tigris terrace, and traces of monumental buildings and courses of the town wall are visible, the deserted congregational mosque among them, described by al-Maqdisi in the 10th century AD as a fired-brick structure.

Quphlāna used to be a regionally important Christian centre with a school founded in the 7th century AD.

Thomas of Mārga characterized the site as a town (Fiey 1965, 59-63). The centre was probably situated in the southern part of the Daštī Kandināwa, a once intensively cultivated, otherwise not urbanized plain stretching between the Awēna Dagh and Kara Čauq Dagh mountains. Its identification with the modern village of Qaplan (Qapran) is very likely, although not the only possibility. Nevertheless, a large settlement area, clearly visible in the CORONA satellite images, has been verified near the village, situated on a terrace between two wadis. Soil marks reveal two or three open channels



FIGURE 5. THE CITY OF KUŠÁF IN CORONA SATELLITE IMAGE (28 FEBRUARY 1967):

1 – CITADEL, 2 – FORTIFIED LOWER TOWN, 3 – UNFORTIFIED NEIGHBORHOODS, 4 – A LARGE RECTANGULAR ENCLOSURE,

5 – OPEN CANALS OR HOLLOW WAYS (DRAWING BY L. STARKOVÁ AND K. NOVÁČEK).

which once approached the site. Preliminary surface survey of the area has yielded a distinctive collection of Late Sasanian-Early Islamic pottery.

Discussion

In our preliminary attempt to contextualize our results, we have to point out, first of all, the huge formal diversity of central sites in Adiabene, which reflects the substantial evolutionary and social differences between the sites. It is difficult to find even one site, which would fully meet the simplistic definition of the 'Islamic city' as a compact, fortified formation provided by close-knit, ethnically segregated neighbourhoods, congregational mosque and suq in the centre. The regularly planned and massively fortified city of al-Ismā'īnīyat / al-Bawāzij

most closely approximates to this traditional model, although the form of its residential areas escapes our knowledge so far. Many more sites are characterized by less compact, yet very extensive building areas, enclosed by irregularly planned fortifications which indicate an additional marking out of the boundary of these organically evolving settlements. In these cases, a complete, closed line of the city wall is typically not visible in survey (as-Sinn, town no. 1-2). Complex, polyfocal, probably unfortified settlements have also been indicated (al-Hadītha, Kafr 'Azza, Tell Mahuz), as well as hierarchically structured sites centered around a heavily fortified stronghold (citadel), in addition to an extensive, dispersed, non-fortified settlement (Kušāf). This city form represents a transition into the category of small-range, strongly fortified towns whose strategic purpose derived from their location on an important route and/or river crossing (most typically Altun Köprü). Apart from all these sites, very diversified as they are, whose urban status can for the most part be corroborated from written sources as well, we have witnessed in the study area an array of other potential central sites whose form seems to be distinctive and which do not appear in any textual evidence. These sites are unfortified, weakly structured, occupying an extensive area but at the same time their settlement units are dispersed. Three such sites, dated by pottery collections to the Late Sasanian – Early Islamic Period, have been identified in the regions of Gwer and Oasr Šemamok in the 2012 and 2013 seasons of the EPAS project (e.g., Tell Khazna: Ur et al. 2013). A site in the vicinity of Altun Köprü called locally Soran (c. 10 ha.) might also be of the same type, as well as the above described site of Qapran / Quphlāna? (more than 32 ha), the only one which might be linked with topographical data from the 7th century AD. We are considering a model of semi-anchorite monastic complexes for the explanation of these areas. The study of the role of monastic sites as alternative regional centres will be an important topic to follow in future research.

Any easily-derived classification criteria have so far failed to provide a proper explanation of the Early Islamic site of Makhmūr al-Qadīma, completely absent from the sources: the very large, probably unfortified settlement area includes both urban patterned neighbourhoods and isolated fortified residences, typologically close to *qusūr* Umayyad palaces in Syropalestine (e.g., Rusāfat Hišām extra muros: Sack *et al.* 2010; Umm al-Walīd, Ma'ān / al-Mutrab, Bālis, Jabal Says etc.: Genequand 2006, fig. 2, 6) or Early 'Abbasid residences at Hīra (Talbot Rice 1934, fig. 2). We can generally argue for an inclusive interpretation of the centre, taking equally into account the possible presence of Early Islamic élites, urban pattern and even features of monastic agglomeration.

Despite the diversified form of the central places, which might suggest a hierarchical urban pattern and a high degree of cooperation within the settlement structure, the constellation of central places in Adiabene was by no means static. At this stage of research the urban dynamism is hard to follow in any detail, but several points should be made. Firstly, long-term continuity can be deduced from a tentative chronological overview of sites. The region of Adiabene inherited a stabilized model of a highly urbanized landscape from the pre-Islamic era. After the Muslim conquest, the system of cities, as well as monastic settlements as possible parallel centres, was further and deliberately developed: the foundation of Mosul on the opposite bank of the Tigris to the dar al-khilāfa and the monastery at Nineveh was the most apparent manifestation of this effort. The process of formal establishment of Mosul as a new capital of the province of al-Jazīra was completed under Marwān II, the last Umayyad caliph (Honigmann et al. 2007, 414). This change in the urban network, as well as other hints of renewed urban colonization supported by the same ruler (particularly the rebuilding of the city of al-Hadītha), had a profound consequence in the shift of the regional urban and economic focus from the Arbīl Plain to the Central Tigris area. Mosul's position in the key, northsouth communication corridor of the 'Abbasid state and in the hinterland of the megalopoleis of Baghdad and Sāmarrā (Heidemann 2011) unquestionably contributed to the density of the urban network and vitality of the life of the city. On the one hand, no later general political changes (such as, for example, the 'nomadization' of North Mesopotamia in the 10th-11th century or the Mongol invasions) appeared to impact directly on the long life of the cities. On the other, several towns might have been abandoned just within periods generally considered stable and prosperous (Mahoze / Tell Mahuz in the 9th century, al-Hadītha in the 12th century). If so, we could probably consider this process as a either a sign of economic emulation between neighbouring sites or as the result of shifts of trade routes. Better defensive qualities should also be pointed out in the case of the cities which probably replaced the abandoned ones: the Middle-Islamic-period urban forms, such as al-Bawāzij and Kušāf, represent a compound structure, comprising a separately fortified city castle or 'palatial complex', emergence of which has been recognized as a second transition period in Islamic urban development (Whitcomb 2012).

The total collapse of the urban network shows the depth of the transformation in land use in the Ottoman Period which eventually overcame the long-term resilience of the urban landscape in the North Mesopotamia.

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Filling the Gap: The Upper Tigris Region from the Fall of Nineveh to the Sasanians. Archaeological and Historical Overview Through the Data of the Land of Nineveh Archaeological Project

Rocco Palermo

1. Introduction

In the last five years the incredible flourishing of archaeological projects in the Kurdistan Region of Iraq has extensively contributed to the knowledge of a poorly known area (the trans-Tigridian zone) with the addition of a specific, and long awaited, interest for the so-called *late phases* (from the post-Assyrian through the Islamic period).

The data presented here have been collected and studied during the first two seasons (2012-2013) of the Land of Nineveh Archaeological Project, a multidisciplinary project which commenced in 2012 under the direction of Daniele Morandi Bonacossi (University of Udine).

The LoNAP area occupies almost 3.000 sq kms in north Kurdistan, covering a region that includes parts of the Duhok and Ninawa governorates, east of the upper course of the Tigris and the Eski Mosul Dam (Fig. 1). From the prehistoric period to modern times the entire region experienced a dense human occupation, which is also reflected in the continuous exploitation of the natural resources. The field-walking survey allowed the LoNAP team to identify more than 550 archaeological sites, with around 300 of which are settlement sites. Although there is the issue that the data recovered by field walking surveys may somehow become separated from the original site-universe by depositional events, the evidence is nevertheless striking for generating new data on the upward/downward trends in occupation in this incredibly rich region (Fig. 2)

The discussion will follow a chronological order from the Post-Assyrian period to the Sasanian phase: it will include the settlement distribution analysis, the material culture and the historical contextualization of the events that characterised the area from the 6th century BC to the 7th century AD.

2. Replacing the Power: The Post-Assyrian / Achaemenid Period

In 612 BC a coalition of Babylonians, Medes, Persians and other populations conquered Nineveh.² The conquest of the Assyrian territory was not entirely followed by a political re-organization of the region, and this created a power *vacuum* which is somehow reflected both in settlement occupation and in the material culture. The political turmoil that followed the conquest of the Assyrian heartland did not, in any case, necessarily imply an empty (or emptied) landscape, and even though the major centres were partly abandoned (Xen. *Anab.* III. 4. 6-12), the Assyrian institutional imprinting was still alive during the Neo-Babylonian period (Kuhrt 1995).

However, the uncertainness of this chronological phase have affected the modern terminology. The LoNAP team prefers to use the label *post-Assyrian / Achaemenid* as there appears to be no significant trace of a new social and economic re-organization (contrast, for example, the incorporation of the Assyrian institutional structures into the Neo-Babylonian state as testified by the tablets of Tell Sheikh Hamad, see below), and yet an Assyrian *trace* is still recognizable in the material culture (Curtis 1989).

The Neo-Assyrian Empire in fact represents the densest period of occupation in the LoNAP area, with almost 200 sites. The collapse of such a political entity is very evident in our data as only 70 sites have been securely dated to the period between the end of the Assyrian rule and the late 4th century BC, confirming a sizeable decrease in terms of settlement number. Among the identified sites, 61 (out of 70) show traces of a previous Neo-Assyrian occupation and 40 sites seem to have been inhabited also in the Hellenistic period. No major centre emerges from this analysis and, most likely, we are here dealing with small sites, possibly hamlets, or isolated settlements.

I would like to thank here Konstatinos Kopanias and John MacGinnis for their kind invitation to discuss these topics in Athens. My deepest thank you also goes to John Curtis, who provided me with a series of important insights into the Post-Assyrian/Achaemenid period. A very special thank you goes to Daniele Morandi Bonacossi and the other members of the Italian expedition for their invaluable support and their precious and constant suggestions. For an overview of the project see Morandi-Bonacossi & Iamoni 2015.

² On the conquest of Nineveh and the end of the Assyrian domination in the area see Zawadski 1988; Kuhrt 1995; Curtis 1997; Tuplin 2004. On the geography of the Upper Tigris region during this period see also Dalley 2014, 171-81.

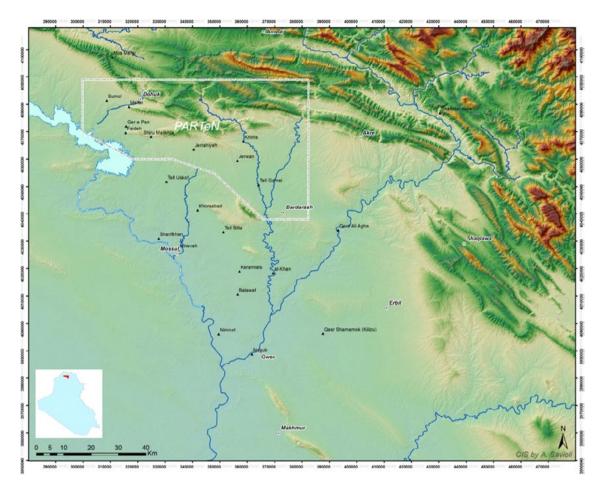


Figure 1. The area of the Land of Nineveh Archaeological Project within the modern context of North Iraq. (© Lonap Archives).

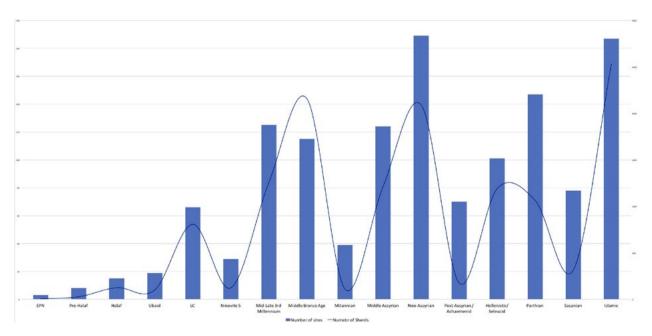


FIGURE 2. PRELIMINARY HISTOGRAM OF THE SETTLEMENTS RECOVERED IN THE LONAP 2012 AND 2013 SEASON. BARS INDICATE THE NUMBER OF SITES PER PERIOD, THE CURVED LINE INDICATES THE NUMBER OF COLLECTED SHERDS. (© LONAP ARCHIVES).

Number (ID)	Name	Neo-Assyrian	Post-Assyrian/Achaemenid	Hellenistic
46	Tell Sharrafiyeh	98	11	190
29	Tell Amyan	47	11	12
35	Kabartu	74	9	10
297	Tobazawa	3	9	0
356	Tell Jammaresh	13	6	14

TABLE 1. COMPARISON BETWEEN THE EARLIER AND THE LATER OCCUPATION ON THE MAJOR POST-ASSYRIAN SITES BASED ON THE NUMBER OF COLLECTED SHERDS.

The definition of the post-Assyrian period has been largely based upon the general continuity observable in the ceramic horizon,3 and the Post-Assyrian / Achaemenid occupation has been archaeologically documented by only a few targeted excavations within the Upper Tigris basin (Wilkinson and Tucker 1995, 102). Some of the sites have also demonstrated the existence of a late-Assyrian ceramic horizon that lasted perhaps two generations after the fall of the Assyrian empire.4 Among these sites Tell Sheikh Hamad, on the Khabur River, represents a very reliable case as widely demonstrated by the data from the so-called 'Red House' (Kreppner 2008, 147-65).5 The data collected at Sheikh Hamad are significantly interesting as the study of the Post-Assyrian pottery has been carried out on a relevant number of stratified sherds (Kreppner 2006).6

Since the study of the Post-Assyrian / Achaemenid pottery of Northern Mesopotamia has only evolved marginally in recent years, the discussion here is mainly based on the presence/absence of the period's most frequently occurring types (Fig. 3)

Grooved top jar specimens have been found at several LoNAP sites thus representing an easily recognizable type within the broader regional context (Fig. 3.1-2). Evidence from the Eski Mosul area, indeed, shows that this type was particularly widespread in the Upper Tigris basin (Curtis 1995, fig. 49.227, dated to the Late-Assyrian period; Goodwin 1995, fig. 33.7; fig. 51.2). Similar specimens have been also unearthed at Tell Sheikh Hamad (Kreppner 2006, Taf. 44, 6-9).

Shallow (occasionally grooved) carinated bowls (Fig. 3.3-4) are also relatively common in the LoNAP area and they have been also excavated at several sites with Late-Assyrian / Post-Assyrian occupation, such as Khirbet Khatuniyeh (Curtis and Green 1997, fig. 55.353), Kharabeh Shattani (Goodwin 1995, fig. 35.3), Khirbet Qasrij (Curtis 1989, fig. 30,107-10) and Tille Höyuk, in southern Anatolia (Blaylock 1999, fig. 13.8-9 and 14).

Flat rim bowls (Fig. 3.7-8) also occur and have regional parallels with specimens found at Nimrud (Oates 1959, pl. 35.4), Kharabeh Shattani (Goodwin 1995, fig. 32.3; 33.6; 9-11) and Khirbet Khatuniyeh (Curtis and Green 1997, fig. 56.362), in the North Jazira Survey (Wilkinson and Tucker 1995, fig. 74.1-2), in the Tell Leilan survey (De Aloe 2003, pl. 51.2) and in the Tell Hamoukar area (Ur 2010, fig. B, 29.6 (even if slightly different from the usual specimens). The most relevant comparisons, however, come from Tell Sheikh Hamad (Kreppner 2006, Taf. 47-48).

Pottery types with notched exteriors (Fig. 3.5-6) also seem to be quite characteristic of the period although they have been also occasionally found in later levels throughout Mesopotamia. At Jebel Khalid, on the upper Syrian Euphrates, potsherds with external incised notches have been found associated with material dated to the late 4th / early 3rd century BC (Jackson and Tidmarsh 2011, fig. 71.4; 7-8). In other regions of Mesopotamia (for example the Diyala Basin) a late Achaemenid / Early Hellenistic burial in a jar decorated with incised

³ Chronological classifications of the transition between the Assyrian and Post-Assyrian / Achaemenid pottery have been proposed by Bernbeck (1993), who basically divided the period between the 9th and the very early 6th century into 4 different phases, and by Wilkinson and Tucker (1995, 100-1) who divided the period in two, the Late-Assyrian (1000-612 BC) and the Post-Assyrian (612-330 BC). Both these studies dealt with survey material of the upper area of Northern Mesopotamia, whereas the data Morandi Bonacossi (1999) analysed for the Lower Khabur Survey were divided into six chronological phases (A-F).

⁴ Khirbet Qasrij, in the Eski Mosul Dam area, has, for example, revealed a Neo-Babylonian occupation (Curtis 1989). Other sites in the area with late Assyrian and Post-Assyrian evidence are Kharabeh Shattani (Goodwin 1995) and Qasrij Cliff (Curtis 1989; Simpson 1990).

⁵ Four cuneiform tablets, dated to the time of the Neo-Babylonian ruler Nebuchadnezzar II (Kühne 1993, 75-86), prove the occupation of Tell Sheikh Hamad at the beginning of the 6th c. BC. The language used in the tablet (Assyrian) the *ductus* of the signs and the names mentioned confirm the Assyrian background.

On Tell Sheikh Hamad during the Late and Post-Assyrian phase see also Kühne 1993; Kühne 2005; Kreppner 2008; 2012.

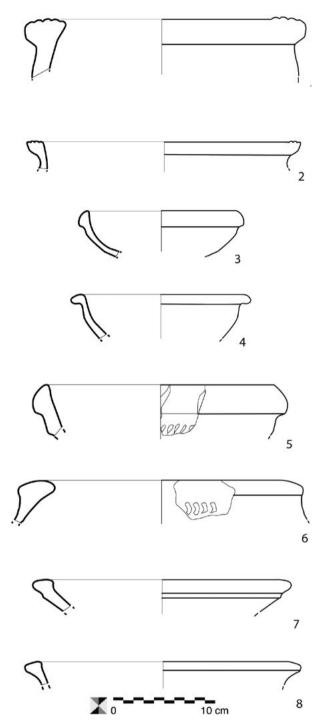


FIGURE 3. POST-ASSYRIAN/ACHAEMENID PERIOD CERAMICS FROM THE LAND OF NINEVEH ARCHAEOLOGICAL PROJECT. (© LONAP ARCHIVES).

notches has been excavated at Mahmudiyah (Rutten 1996, 61 and fig. 5) and dated to the very late 5th / early 4th century BC. It must be added that the decoration does not occur on a specific form, but it seems to be used rather indiscriminately on medium and large jars

with grooved tops, as well as, less frequently, on shallow carinated bowls (Wilkinson and Tucker 1995, fig. 74.6-8; Anastasio 2007, fig. 49: Wadi Ajij).⁷

A similar situation can also be observed for the so-called 'crescent stamped' ware, whose decorative pattern is represented by small incised crescents, most likely obtained by the impression of the fingernail directly into the clay, on the outer surface of the vessel. The most common forms are jars and hole-mouth jars with a sandy fabric containing a small amount of chaff compared to other post-Assyrian pottery. Similar types were also found at Khirbet Khatuniyeh (Curtis and Green 1997, fig. 68.541)⁸ in the Eski Mosul area, and in the North Jazira Survey (Wilkinson and Tucker 1995, fig. 74.26-27).

Despite the recent on-going investigations in the region, the understanding of the Post-Assyrian / Achaemenid settlement patterns and ceramic horizon in Northern Mesopotamia has been only partially achieved and more data are necessary for a better comprehension of the real changes that occurred in the core of Assyria after the fall of Nineveh.

3. Changing trends: Alexander the Great, the Seleucids and the Hellenistic Growth

In 331 BC Alexander the Great led the Macedonian army into one of the most critical battles of the ancient world, at Gaugamela (possibly Tell Gomel, in the LoNAP area), paving the way for the construction of the Hellenistic kingdoms, the Seleucid domination in the area and the creation of the very first global and self-conscious empire of the past (on the topic see Strootmann 2014, 38-61 and, more generally, Kosmin 2014).

In the following centuries, until the Parthian conquest of Mesopotamia, the Seleucid control will be reflected in a consistent policy of land occupation/exploitation, territorial control and communication between lower Mesopotamia (one of the *cores* of the Seleucid Kingdom) and the Tigris region.⁹

Such a change is also reflected in our data. From the 70 post-Assyrian / Achaemenid sites the trend rises to 101 Hellenistic period sites. Geographically these are much more widely distributed (both in the Navkur plain in the South and the northernmost zones of the LoNAP area). Out of 101 sites 61 show no trace of a previous occupation (60.3%). Among these only 12 sites show no traces of a Neo-Assyrian occupation. This could possibly represent further evidence for the *re-occupation* of the land in the

Notch-decorated ceramics were also found at Tell Barri and dated between the end of the 7th and late 6th century BC (Bombardieri-Forasassi 2008, 286-8).

⁸ This type is also decorated with a dog-tooth pattern.

⁹ Kosmin 2014, 36.

Number (ID)	Name	Post-Assyrian / Achaemenid	Hellenistic	Parthian
7	Tell Balyuz	3	203	77
46	Tell Sharrafiyeh	11	190	57
3	Tell Sumel	0	57	31
50	Unnamed	3	47	40
80	Tell Mahmudan 1	1	44	30

TABLE 2. COMPARISON TABLE BETWEEN THE EARLIER AND LATER OCCUPATION ON THE 5 MAJOR HELLENISTIC SITES.



FIGURE 4. A VIEW OF TELL BALYUZ FROM THE NORTH. THE LINE OF TREES ON THE OTHER SIDE OF THE TELL MARKS THE COURSE OF THE RUBAR DUHOK. (© LONAP ARCHIVES).

Hellenistic time. A further interesting aspect is that only 6 sites did not provide ceramics sherds older than the Hellenistic period. This means that the *re-population* of the region did not occur irrespective of the earlier (i-e. the Neo-Assyrian) settlement patterns.

The most important Hellenistic period sites in the region are: Tell Balyuz (Site 7), Tell Zed (Site 114), Tell Sharrafiyeh (Site 46) and Tell Sumel (Site 3). Interestingly three of these sites (3, 7 and 114) are located within a 20 kms radius from each other, separated by smaller settlements. Such a micro-region proves the importance of the network of settlements in the area and possibly the dependence on natural resources.

Tell Balyuz is the most interesting among the Hellenistic sites (Fig. 4). It lies along the right bank of the rubar (Kurdish: *river*) Duhok in a fertile plain between the mountains and the Tigris, less than 10 kms away from the western outskirts of Duhok itself, immediately behind the asphalt road that links Duhok to Sumel. The importance of the site is mirrored by the great number of sherds collected on its surface. Out of 703 total sherds, 203 (almost the 30%). have been securely dated to the Hellenistic period Among these we recorded the presence of two sherds of ESA (Eastern Sigillata A, which could possibly testify the existence of contacts between the site and westernmost areas) and several specimens of painted ware, which include *echinus* bowls, bowls with out-

Number (ID)	Name	Hellenistic	Parthian	Sasanian
7	Tell Balyuz	203	77	20
46	Tell Sharrafiyeh	190	57	7
3	Tell Sumel	57	31	5
50	Unnamed	47	40	1
80	Tell Mahmudan 1	44	30	0

TABLE 3. THE 5 MAJOR HELLENISTIC SITES AND THEIR EVOLUTION IN THE FOLLOWING PERIODS.

turned rims and fish plates, all markers of a significant Hellenistic occupation.

Other important Hellenistic sites share locations similar to Tell Balyuz. They are halfway between the piedmont area of the Zagros and the Tigris, occupying the fertile strip of land along a North-West / South-East axis. If such a distribution on the one hand derives from the exploitation of the tributaries of the Tigris, on the other hand it perhaps reflects the existence of a pre-Hellenistic route coming from central Mesopotamia towards the northernmost fringes of the fertile crescent that connected all these sites. Although we do not have reliable evidence for the identification of such a pattern along the Persian Royal Road, which most likely passed between the Tigris and the mountains before crossing the river in the proximity of Nineveh (Graf 1994; Kuhrt 1995), it is nevertheless intriguing to connect the regular distribution of the Hellenistic sites in the LoNAP area to a particular trans-Tigridian axis that continued to exist throughout the Hellenistic period and possibly afterwards (Table 3).

In terms of settlement density, the Hellenistic period in the LoNAP area also shows how the distribution of some major sites coincided with the nucleation of minor centres around them. This is particularly true for the sites that lie along the aforementioned axis.

The collection of surface material allowed the LoNAP team to categorize these 101 sites as Hellenistic period settlements. 1193 pottery sherds were collected, sorted by site and collection areas and then catalogued, photographed and, the majority of them, drawn. The entire spectrum of collected ceramics highlights some important features that connect these assemblages to both their regional context and to a wider framework (Fig. 5).

The most diagnostic Hellenistic pottery type is the socalled Incurved Rim Bowl (also known as *Echinus* bowl), which is attested from the Levantine coast as far as Central Asia (Fig. 5.1-6). ¹⁰ It has a quite fine fabric whose colour varies from buff to orange, usually tempered with a small amount of grit and very little or no chaff. A distinctive feature of the incurved rim bowls is the painting that usually covers the upper part (frequently both internal and external) of the bowls, and occasionally the whole body. The colours range from reddish to blackish and usually the distribution of the paint on the surface is rather uneven; the vessels were probably dipped into a mix of clay and colouring agent first on one side and then on the other. The result of this procedure is a scalloped effect on the vase. Sometimes the paint trickled along the external and internal bowl surfaces, creating a very irregular line of decoration.

The type resembles the Attic-inspired slipped pottery, which is quite common in the Levant at sites such as Tarsus (Jones 1950, 153) and Antioch (Waagé 1948a, 11 and pl. 2.73-7; pl. 3.78-80). Incurved rim bowls have in fact been interpreted as an imitation of this type, although the differences in surface treatments and their large frequency in the region points at a regional variant rather than a simple imitation. They are widely documented in several coastal sites in the Near East (from the Southern Levant to Northern Syria). The type is also common in easternmost inland regions; it is found in the Syrian Jezirah at Tell Barri (Venco 1982, fig. 4.28; Parmegiani 1998, 295 and fig. 1.10-5), Tell Beydar (Martin Galán

¹⁰ On the diffusion of Hellenistic pottery types from the Mediterranean to Central Asia see the recent volume edited by Nina Fenn and Christiane Römer-Strehl (2014).

¹¹ Oates put forward the imitation theory (1968, 123); the alternative suggestion has been more recently proposed by Jackson and Tidmarsh (2011, 12) and seems to me more plausible.

¹² On the very wide distribution of this type of pottery in relation to the specimens collected during the LoNAP survey and its role within the Hellenistic period social context see the recent contribution by Gavagnin, Iamoni and Palermo (forthcoming). Incurved rim bowls have been found during the Upper Khabur Survey (Dorna-Metzger 1996, 364 and fig. 5-6), Tell Hamoukar Survey (Ur 2010, 282, fig. 31B. 1-3), in the Tell Leilan region (De Aloe 2003, pl. 5.1-10), in the Cizre-Silopi Survey (Algaze 2012, fig. 27.1), in the Jaghjagh River Valley (Oates and Oates 1990, 234) and in the North Jazira Survey (Wilkinson and Tucker 1995, fig. 75.1-4.).

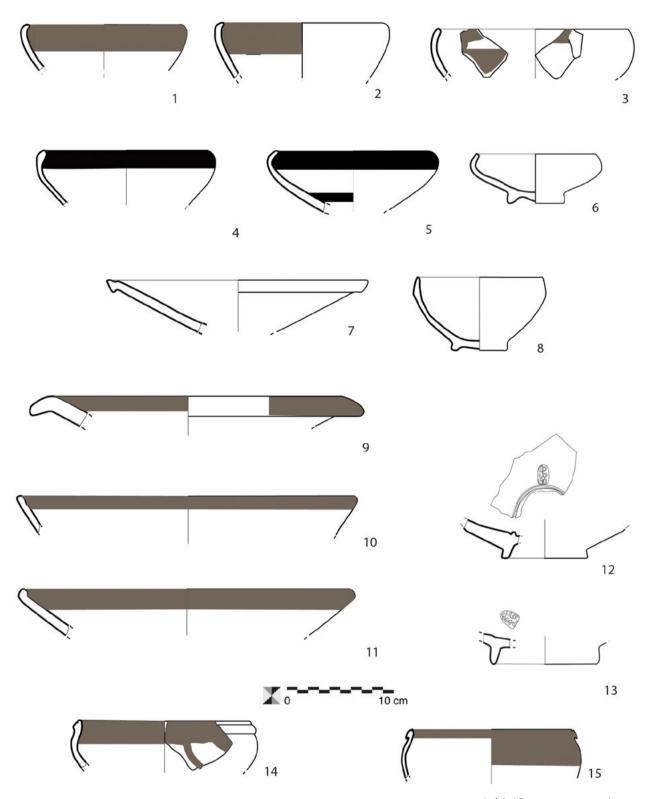


FIGURE 5. HELLENISTIC PERIOD CERAMICS FROM THE LAND OF NINEVEH ARCHAEOLOGICAL PROJECT (1/2). (© LONAP ARCHIVES).

1997, pl. III) and Tell Halaf (Von Oppenheim (trans. G. Wheeler 1933), 313-5; Hrouda 1962, pl. 72. 69), and in the Iraqi Tigris Basin at Nimrud (Oates 1958, 124-53 and

pl. 15. 16), Nineveh (Campbell-Thomson and Hamilton 1932, 82 and pl. LII), Khirbet Khatuniyeh (Curtis and Green 1997, fig. 65.478-81), Tell Mohammed 'Arab

(Roaf 1984, fig. 3.c) and Khirbet Hatara (Venco 1997, fig. 2.18-27) and has been collected on several sites during a number of surveys in the Northern Mesopotamian region.

The chronology of the Incurved Rim Bowls spans from the late 4th century BC to the Augustan period, with a peak in frequency between the 3rd and very early 1st century BC (Hayes 1991, 27). Hannestad (1983b, 15-7) also proposes a shorter time span (4th-2nd cent. BC). It is eventually tempting to connect such a wide distribution to a sort of globalisation of the material culture in the Hellenistic period.¹³

Plates are also quite common in the LoNAP area (Fig. 5.7; 9-11). According to the rim type they may belong to a large variety of forms, such as normal shallow plates and the so-called 'fish-plate' with out-turned rim.14 The fabric appears to be pinkish or light buff, quite fine, and with very rare inclusions (occasionally of limestone). Usually the collected plate or fish-plate sherds are painted both outside and inside, in colours ranging from reddish to brown and even blackish. The presence of the paint brings to mind the black-slipped western pottery to which the Hellenistic plates of Mesopotamia were perhaps related (Oates 1968, 123). Some specimens also bear stamped palmette-shaped marks on the inner surface of the base (Fig. 5.12-13).15 For this type very strict and reliable comparisons have been found at Nimrud (Oates 1968, fig. 15).

The Hellenistic fish-plate is quite widespread in the Near East, occurring from the Levantine coast to Northern Syria and Mesopotamia. ¹⁶ It must be added, however, that many of the collected Hellenistic bases could possibly belong to fish-plates. This possibility must be taken into account when considering the percentages of this ceramic type.

Among the very distinctive types of the Hellenistic period, the survey sherds from closed vessels mainly belong to the so-called Rolled-Over Rim Jar (Fig. 6.1-

4), which is characterized by an everted rolled rim with a central hollow in the outer part. Occasionally the external surface might present traces of painting. The type has numerous variants and could possibly have been developed from the similar Neo-Assyrian period type. In Northern Mesopotamia the Rolled-Over Rim (or Folded-Rim) has been found in various sites, such as Qasrij Cliff and Khirbet Qasrij (Curtis 1989, 499), in the North Jazira Survey (Wilkinson and Tucker 1995, 102, type 65) at Tell Fisna (Numoto 1988, fig. 33.370-3 and possibly 378) and at Tell Mohammed 'Arab (Roaf 1983, fig. 6. 40; 38; 33).

Other diagnostic types are the dog-tooth decorated sherds (Fig. 6.9-11), although only a relatively small amount of these was collected in the LoNAP area. The type has a slightly sand-tempered fabric with a few small mineral inclusions. Surface colours vary from pale yellow to brown and reddish. The decoration, upward-pointing incised triangles, is usually on the shoulder of the vessel.

Impressed dog-tooth jars have been collected in nearby areas both in Post-Assyrian and Hellenistic levels. The type is widely present in the Tigris Basin at Kharabeh Shattani (Goodwin 1995, fig. 56.11), Khirbet Khatuniyeh (Curtis and Green 1997, fig. 63.462-3; fig. 68.541-2) as well as in western Jezirah at Tell Barri (Pecorella-Pierobon 1999, 77) and Tell Beydar (Martin Galán 1997, pl. IV.4). Other attestations come from more distant areas such as the Upper Syrian Euphrates valley at Jebel Khalid (Jackson and Tidmarsh 2011, fig. 71.8). Several dog-tooth impressed sherds were also collected during various surveys in Northern Mesopotamia. Bag-shaped jars (Fig. 6.7-8) and hard gritty rolled rim jars (Fig. 6.6) are both less attested, but not totally absent.

The Hellenistic pottery collected during the LoNAP survey shows the unmistakable traits of the Northern Mesopotamian assemblage, composed of both local types and variants/imitations/importations of western productions. The high proportion of diagnostic types like the incurved rim bowls and rolled over rim jars might definitely indicate the existence, also in this area, of that common material culture horizon that pervaded the entire Hellenistic world, possibly influenced by change in dining habits and food preparation.

3.1. Observations. A New World Order? The Seleucids and North Mesopotamia

The striking turning point in the history of the region represented by the phase between the late 4th and the very late 2nd century BC is the result of a well-known

¹³ It has also been observed that the capacity of these vessels resembles the volumes of individual servings in 4th century BC Athens (Rotroff 1997a, 161). Although the idea is interesting, the lack of reliable data on the topic means that definite conclusions cannot be reached. Studies on the capacity and shape have suggested that the Incurved Rim Bowls were probably used not for drinking (the curve of the rim would have made it impossible), but rather for serving soups or stews (the rim shape would have helped to avoid spillage).

¹⁴ On the diffusion of the fish-plates in Hellenistic Athens see Rotroff 1997

¹⁵ The occurrence of palmette stamps on bowls and plates in the Hellenistic period goes back to 4th century Greece, where these marks appear for the first time on Attic Black-Glaze pottery, see Corbett 1955, 172-86.

¹⁶Cellerino 2004, fig. 6 (Babylonia); Jackson and Tidmarsh 2011, fig. 18.5-11; fig. 19-20 (Jebel Khalid, Euphrates); Guz-Zilberstein 1995, fig. 6.3.11 (Tell Dor, Israel); Oates 1968, fig. 15.3-5 (Nimrud, Mesopotamia); Ur 2010, fig. B.31, 13 and 16 (Syrian Jezirah); Wilkinson 1995, fig. 75.8-10 (Iraqi Jezirah); HacinebiTepe (McMahon 1996, fig. 16a-b).

¹⁷ They provide a valid geographic distribution for the type: Tell Leilan survey (De Aloe 2003, fig. 46.1 63.8-10, 82.3, 86.2-5; in the latter case, specimens are notably smaller than usual), Cizre-Silopi Survey (Algaze 2012, fig. 26.13, preliminarily dated to the post-Assyrian period) and the North Jazira Survey (Wilkinson and Tucker 1995, fig. 75.15-7).

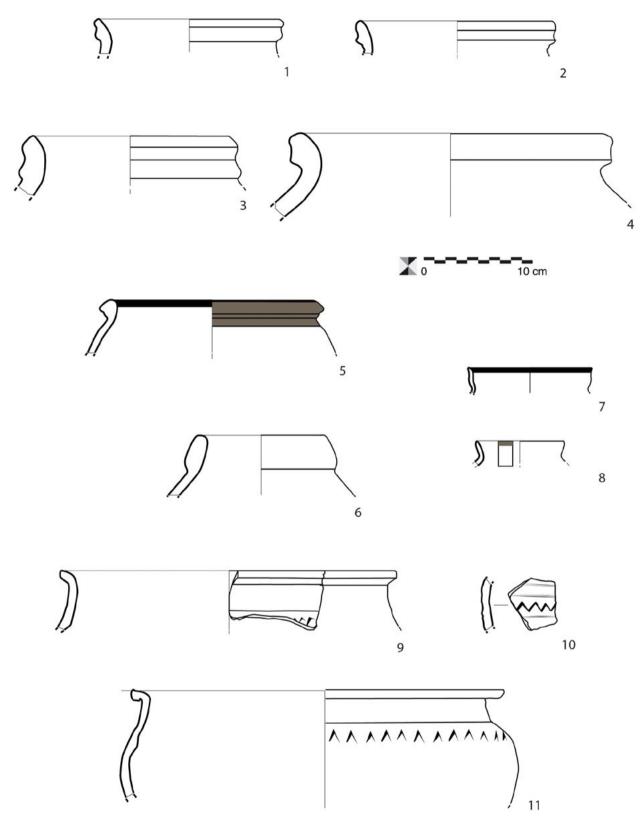


FIGURE 6. HELLENISTIC PERIOD CERAMICS FROM THE LAND OF NINEVEH ARCHAEOLOGICAL PROJECT (2/2). (© LONAP ARCHIVES).

Seleucid imperial policy, whose achievements in land administration, route control and territorial organization

are well summarised in the recent publication by Paul Kosmin (see above). Notwithstanding this new

Number (ID)	Name	Hellenistic	Parthian	Sasanian
7	Tell Balyuz	203	77	20
46	Tell Sharrafiyeh	190	59	6
50	Unnamed	47	40	1
40	Tell Gomel	17	37	1
1	Jerrahiyeh	44	38	1

TABLE 4. COMPARISON BETWEEN THE EARLIER AND THE LATER OCCUPATION ON THE MAJOR PARTHIAN SITES.

renaissance of the Seleucid period, its impact in North Mesopotamia is still to be fully understood. Four major cities dominated the landscape of the northern trans-Tigridan region: Arbela (mod. Erbil), Karka de Beth Selok (Kirkuk), 18 Demetrias (whose exact location has to be proved, possibly between Erbil and Kirkuk) 19 and Natounia (location unknown, but possibly on the Little Zab). 20 There is no doubt that this was an important region for the Seleucid kingdom as it connected two of the core areas centres of its territory, central Babylonia, with the newly founded capital of Seleucia on the Tigris, with the western *tetrapolis* of the Seleucids in North Syria (Seleucia Pieria, Antioch, Apamea and Laodicea).

The importance of the region thus probably affected the occupation of the countryside and the data from the Land of Nineveh Archaeological Project could be interpreted as confirming this trend. According to the distribution of artefacts, most of the sites surveyed during the 2012 and 2013 season were, with very few exceptions, not large sites. The spread of secondary settlements in the region, therefore, can only be explained as a deliberate re-population, nourished by political control and internal stability. Despite the promising results offered by the survey projects carried out in the last twenty years, no major Hellenistic site has been excavated in this region so far. I am quite sure thus that once a relevant site is investigated this will provide us with many more interesting insights into the Seleucid domination of North Mesopotamia.

4. A confirmed growth. The Parthian period

The Seleucid Kingdom fell under the succession of blows that came from the East in *domino effects* which started in western Central Asia and propagated westwards.

The changes in the social, economic and administrative model have been already stressed out in several occasions (Colledge 1967; Wiesehöfer 1998; Sarkosh-Curtis and Stewart 2007). Archaeologically speaking the signs of the Parthian occupation in the region are observable in both major centres (Hatra, Assur) and smaller settlements (Tell Barri, Tell Tuneinir, Sheikh Hamad further south) and in the trends in settlement numbers observed in the data from several regional surveys. All the field surveys carried out in the region between the Syrian and the Iraqi Jezirah attest to a growth in settlements from the Hellenistic to the Parthian period (Wilkinson and Tucker 1995, 69; Ur 2010; Lyonnet 1996; De Aloe 2003). Such a trend is visible in the LoNAP area as well.

After the Neo-Assyrian period and the Islamic phase, which for different reasons are the most represented periods in the area, the Parthian phase (from roughly the very late 2nd century BC to the first quarter of the 3rd century AD) is the next best attested.

The field walking survey was able to identify 147 Parthian sites. Among these, 77 show traces of a previous Hellenistic occupation, whereas 86 sites have no sign of continuity into the Sasanian period (60 sites do show continuity). This may be significant. Surprisingly some of the major sites in the Hellenistic period continued their role into the Parthian one. Tell Balyuz (a major site in several phases) and Site 46 (Tell Sharrafiyeh), for example, seem to have had important occupations in both the Hellenistic and the Parthian periods.

The Parthian period sites seem to be distributed quite evenly within the area, although there is a much denser concentration in the Navkur plain, where the abundance of water may have been responsible for the partial shift of settlements (it appears that this may also have happened in the Sasanian period, and may be related to climatic factors, at least in part: see below).

The evident nucleation observed for the Hellenistic period is more difficult to identify now, although the occupation of the strip of land between the Tigris and the mountains is still significant. If during the Hellenistic period a site

¹⁸ On Seleucus I's supposed activities at Karka of Beth Selok see the doubts of Cohen 2013, 99.

¹⁹ Possible locations might be Altin Köpru, south of Erbil or somewhere in the proximity of Arbela (Cohen 2013, 98).

With the exception of Arbela, identifying these sites is difficut. On the Hellenistic settlements in the region see in general Cohen 2013, 93-105, with extensive literary references and bibliography.

like Tell Balyuz emerges as possibly the most important settlement in the area, there is no such dynamic during the Parthian phase. Among the site where large numbers of sherds were collected, as mentioned, only Tell Balyuz and Tell Sharrafiyeh present more than 50 securely dated sherds (the number rises to 7 if we consider those with more than 30 sherds). This evidence may indicate the lack of a major regional centre during the Parthian era, notwithstanding the dense occupation.

Parthian sites, as usual, have been recognized thanks to the collection of the surface material, which allowed the LoNAP team to delineate the preliminary contours of the Parthian occupation in the region (Fig. 7). One of the most frequent types in the LoNAP area is the Hole mouth jar (occasionally with a rather unique grooved rim, Fig. 7.1-3). It normally has a quite fine-grained fabric with small amounts of temper, usually small-sized grit or calcareous inclusions. Fabric colours vary from buff to orange and light brown; surfaces are generally slightly slipped in buff or light brown. The abundance of the type in the area fits well with its wider diffusion in Northern Mesopotamia; it is known from Assur (Hauser 1996, fig. 6.e and 7.h) and Ain Sinu (Oates 1968, fig. 24.99-100) and has been collected in the North Jazira Survey area (Wilkinson and Tucker 1995, fig. 76, 20-1; 29-30, with a slightly different rim). In western areas of Northern Mesopotamia, the type has been excavated at Tell Barri (Palermo 2012, fig. 2.a-b) and collected during the Tell Leilan Survey (De Aloe 2003, pl. 21.1-2.).

Flat collared rim jars have a fabric similar to the Hole Mouth Jars, sometimes with frequent lithic inclusions. The slip may be the same colour as the fabric, from buff to light brown and occasionally orange. The sherds have a squared rim with a small ridge immediately before the shoulder and they can be double-handed as well.

Straight necked jars also occur in the LoNAP area (Fig. 7.4). A slightly squared rim and a straight neck, which is occasionally grooved externally, characterize the type. The fabric is fine and almost without inclusions; colours vary very little, from whitish to pink. The surface is usually covered by a thin slip, which can be white, light pink or (rarely) light brown. An unusual feature of the straight necked jars is the inner surface, which can be entirely covered with bitumen. The tar-lined surface was probably necessary as the vessels were most likely used to store liquids. The type is quite widespread in the region, having been found on excavations at Ain Sinu (Oates 1968, fig. 22.49-54; 59; fig. 23.66-7) and Tell Barri (Venco 1982, fig. 3.1-2; Pierobon Benoit 2008, fig. 16.a, picture; Palermo 2013, 480, fig. 8, upper row) and collected during the Upper Khabur Basin Survey (Dorna-Metzger 1996, fig. 20-1), the Tell Hamoukar Survey (Ur 2010, fig. B.33. 4-10) and the North Jazira Survey (Type 115 in Wilkinson and Tucker 1995). Similar specimens have also been collected at Hatra (Venco 2008, fig. 8b.

8; and possibly fig. 10b.1-2; 4) and in its hinterland (Ibrahim 1986, pl. 202-3).

Among the most distinctive Parthian sherds in Mesopotamia, the Diamond Stamped ware is widely considered as the most representative one (Fig. 7. 8-10). The decoration appears on both jugs and two-handled jars. It is usually associated with types such as straight or grooved rim jars, and rarely with flat collared rim jars. The pattern consists of a 'diamond' motif, which is composed of smaller diamonds containing impressed dots. The number of dots, as well as the number and arrangement of the diamonds on the vessels, is variable. Sometimes the diamond-stamped decoration is combined, on the body of the vessel, with other decorative patterns such as wavy lines and vertical rocker-pattern motifs. Unfortunately, the diamondstamped decoration has been found at very few sites in the LoNAP area. However, it occurs mainly on sites with a clear and distinctive Parthian assemblage, such as Tell Balyuz (Site 7), Tell Amyan (Site 29), Tell Gomel (Site 40) and Site 111. It should be also considered that most of the straight necked jar sherds collected might have had such a decoration and that the differentiation of the two types could therefore be misleading.

This type is quite well known in Northern Mesopotamia. It has been found during excavations at Ain Sinu (Oates 1968, fig. 21.28, 22.49-50, 54-5), Hatra (Venco 1998, fig. 10b.2), Tell Mahuz (Venco 1971, fig. 91. 41) and Tell Barri (Pierobon 1998, 221 and fig. 34; Palermo 2013, 480, fig. 8) as well as collected by the survey projects such as the North Jazira Survey (Wilkinson and Tucker 1995, type 76, fig. 76.1-8. 8; this one also with the rockerpattern decoration), in the Upper Khabur Survey (Dorna Metzger 1996, 363-76), the Tell Leilan survey (De Aloe 2003, fig. 49.2, 54.3, 63.12, 65.1, 67.5, 70.1-2, 73.2, 79.14, 82.5), Tell Hamoukar Survey (Ur 2010, 337, fig. C. 22. 17-9) and in the Hatra hinterland (Ibrahim 1986, pl. 187-92). Diamond-stamped sherds were tentatively dated to a period earlier than the first half of the 3rd century AD, as demonstrated by the excavations carried out by David Oates at Ain Sinu (Oates 1968, 145, 148). The type is apparently not attested in context later than this date and it also occurs frequently in major Parthian sites, whereas it occurs in a relatively wide area of North Mesopotamia, which was controlled by the Romans between the early 2nd and the late 4th century AD.21 The low number of diamond-impressed sherds collected during the first two seasons of the LoNAP could thus point at that way, but the lack of reliable stratigraphic regional sequences does not allow further discussion at this time.

Green and whitish glazed pottery occurs less commonly, although the rarity of the type among surface material,

²¹ https://www.britishmuseum.org/pdf/Pottery%20seminar.pdf (p. 40).

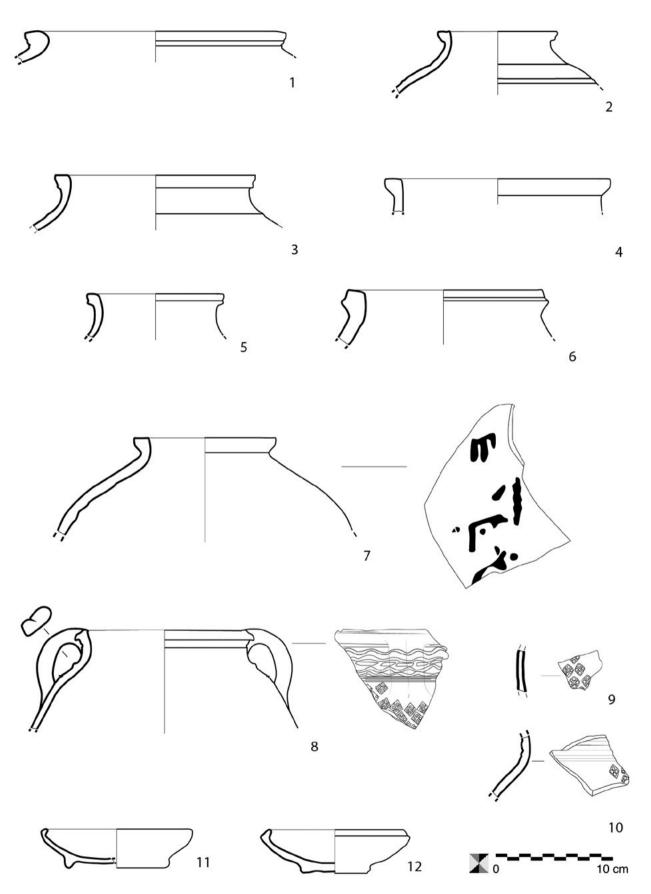


FIGURE 7. PARTHIAN PERIOD CERAMICS FROM THE LAND OF NINEVEH ARCHAEOLOGICAL PROJECT. (© LONAP ARCHIVES).

and the difficulty of a precise identification with respect to the wider group of Partho-Sasanian glazed wares, makes it quite difficult to recognize (Fig. 7. 11-12).

Similar specimens of white and green-glazed pottery have been retrieved at Ain Sinu (Oates 1968, fig. 21.5-29), Assur (Hauser 1996), Hatra (Venco 2008, fig. 8a.1-4) and its vicinity (Ibrahim 1986, pl. 207.45-8), as well as at Khirbet Hatara (Venco 1997, fig. 3.3-4) Mohammed 'Arab (Roaf 1984) and in the west at Tell Barri (Venco 1982, 61-2 and fig. 37-43) and in the area of Tell Leilan (De Aloe 2003, pl. 45). Green-glazed bowls and plates, however, can also be dated to the late Hellenistic period in the region (Da Conceição Lopes et al. 2011, fig. 3). In the Upper Euphrates region green-glazed pottery sherds have also been dated to the late Hellenistic period, for example at Jebel Khalid (Jackson and Tidmarsh 2011, 431-85; for green-glazed bowls and plates see in particular figs. 137-46). A further interesting piece of evidence is the almost total absence of so-called Brittle Ware, which is quite common in the western areas and the lower Khabur region, and is usually dated to the Partho-Roman period.²²

4.1. Observations

The Parthian period represents a phase of intense growth throughout the north of Mesopotamia, which is reflected both in terms of settlement numbers and the ceramic horizon (de Jong & Palermo 2015). This might possibly be because of the persistence of the methods of land exploitation and administration that were already set up during the Hellenistic period, or rather because the Parthians over-imposed their dominion on a partly vacated landscape after the dissolution of the Seleucid power. From the early 2nd century AD the entire region starts to be a contended periphery since North Mesopotamia occasionally shifts within the Roman and Parthian spheres of influence. Although the area beyond the Tigris seems to have been only very marginally affected by the Roman presence, it was nevertheless a transit zone between north and south Mesopotamia and it is not excluded that the excavation of Parthian sites in the region may reveal archaeological evidence of trans-regional contacts (for example, imported pottery) and traces of a mixed cultural landscape.

The current research however is not a blank sheet and major centres like Hatra and Assur have already revealed fundamental data for the understanding of the Parthian period in the region (although Hatra is to some extent an exception), but our comprehension of the countryside, the exploitation of the land and the role of smaller centres is, unfortunately, still blurry.

5. A different story: The Sasanian Period in the LoNAP area

In terms of historical and archaeological reconstruction, the Sasanian period is less known in the region, partly because the initial and final phases overlap with the Parthian and the Islamic periods respectively, a factor that makes the reconstruction of the evidence not easy. Tony Wilkinson and David Tucker already observed that in the Sasanian period 'there is clear evidence of settlement decline with the abandonment of certain areas' when they dealt with the data from the North Jazira Survey (Wilkinson and Tucker 1995, 70). Such a trend is observable also in the LoNAP area which is located east (and, most importantly, not distant) from the NJS.

After the peak of the Parthian period, the number of Sasanian sites in the area drops to 78 in the phase between the early 3rd century and the 7th century AD. That means a reduction of 53%. Unlike the Parthian and, mostly, the Hellenistic periods, the site distribution within the area changes significantly in this period. The densest occupational zone is the Navkur plain, in the south, with only a few (and perhaps minor) sites in the North. The Navkur plain, richer in watercourses than the northern zones, should have represented a safe harbour for those communities that struggled with possible drought in the region (Wilkinson and Tucker 1995, 70-1).

However, 60 sites show continuity with the previous period, whereas 18 sites were not occupied before the Sasanian period. Site 394 is even more interesting as it appears to be a single-phase site: all the sherds collected are securely dated to the Sasanian period with the exception only of 5 uncategorized sherds, which might be of Sasanian/Islamic date. Site morphology also reflects the historical change. Quite often Sasanian sites occupy very low mounded or flat sites in the plain.

Dimensionally speaking, Sasanian sites, in general, tend to be larger than sites in the earlier periods. In southern Mesopotamia the Sasanian sites usually occupy the flanks of canals and they extend along them. This particular mode of occupation has been analysed by Adams (1965; 1981) and Wilkinson (1995; 2003, both for the northern and the southern zones of Mesopotamia). They both conclude that this peculiarity is due to the relative political stability of the area due to the control of the Sasanian authorities. Yet in the LoNAP region the re-use of the Assyrian canal system is apparently absent in the Sasanian period. This could possibly be due to the low density of occupation, which could not have sustained the reconfiguration of the hydraulic landscape of the 1st millennium BC.

²²The type is attested at Tell Barri (Amodio 2008, 322-36), in the Upper Khabur Survey (Dorna-Metzger 1996, 368, fig. 23-4), at Ain Sinu (Oates 1968, fig. 23. 75-85) and in the lower Khabur at Tell Sheikh Hamad (Römer-Strehl 2005, figs. 612-30). Some pseudo-Brittle specimens have been collected, but tentatively dated to a much later phase. Further insights on the topic in Gavagnin, Iamoni and Palermo (forthcoming). On the Brittle Ware, in general, see Vokaer 2011.

Number (ID)	Name	Parthian	Sasanian	Islamic (uncategorized)
394	Unnamed	6	25	5
7	Tell Balyuz	77	20	150
362	Khirbet Taha	6	18	1
337	Germak Kabir	0	15	4
464	Unnamed	6	11	0

TABLE 5. COMPARISON BETWEEN THE EARLIER AND LATER OCCUPATIONS IN THE MAJOR SASANIAN SITES.

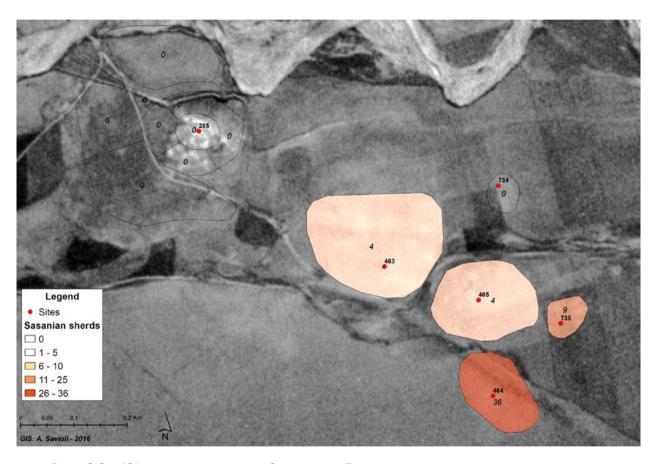


FIGURE 8. SITE 464 AND THE SMALL CLUSTER OF SASANIAN SITES. THE NUMBER OF SHERDS INDICATED TAKES INTO ACCOUNT ALSO THE DATA FROM THE 2015 SEASON (CORONA KH-4A MISSION 1039, GIS A.SAVIOLI, @LONAP ARCHIVES)..

Among the most important sites, Site 464 is also particularly intriguing (Fig. 8). This was first surveyed in 2013 and a second visit, with a more intensive data collection sampling, took place in the 2015 season. It is a very flat mound, barely visible from the satellite, and partly cut by the modern road. The site is apparently

part of a larger cluster of sites (463 and 465), which yields, almost exclusively, Sasanian pottery. Given the characteristics of the Sasanian period in the North Mesopotamia, one could argue that this particular nucleation is perhaps related to a seasonal occupation rather than to a stable pattern.

As far as the ceramics are concerned, the Corrugated Rim Jars represent almost 25% of the total sherds collected and they are quite recognizable as Sasanian markers in the region, as shown by their presence in several surveys and excavation projects in both the eastern and western Jezirah (Fig. 9. 1-4). They were collected in surveys at Tell Leilan (De Aloe 2003, pl. 46.3) and Tell Hamoukar (Ur 2010, fig. B.35.1-3), whereas in the east they were found during the North Jazira Survey (Wilkinson and Tucker 1995, fig. 77.1-3), in the Cizre-Silopi Survey area (Algaze 2008, fig. 28.13-5) and excavated at Kharabeh Shattani (Simpson and Watkins 1995, fig. 62.3 and possibly 9) in the Eski Mosul area.

The so-called Sasanian Stamped pottery (Fig. 9. 5-9) is one of the most distinctive ceramic types in the region (Simpson 1996; Simpson 2014). In the LoNAP area Animal Stamped pottery was found on 19 sites out of a total of 78 Sasanian sites (26%) and 33 sherds were collected, slightly more than 10% of the total. The specimens gathered during the LoNAP survey fit perfectly into the typological and iconographical framework of the type. The stamps are round in shape (usually defined by a notched circle) and represent wild animals such as goats, stags, rams, scorpions, birds and in a single case a horse with rider (which is common, a similar specimen has been also found at Nineveh, see Simpson 2014, 116 fig. 12). A straight-arm cross, a plant and/or a star are sometimes combined with the figure within the circle. Similar specimens have been found throughout the whole of Northern Mesopotamia and dated to between the 5th and 7th centuries AD. Sasanian Stamped sherds were also unearthed at Nineveh (Layard 1853, 491; Thompson and Hutchinson 1931, 77; Thompson and Mallowan 1933, 177 and fig. 77), at Nuzi (Ehrich 1939, 38, pl. 136.C and 137.A), in the Zagros Mountains in the area of the Shanidar Cave (Solecki 1981, 1-2; 6-7 and pl. I-II), at Kharabeh Shattani in the Eski Mosul area (Simpson and Watkins 1995, fig. 62.17) and at Tell Barri in the Western Jezirah (Pierobon 2008, fig. 19). In addition, they have been collected in the North Jazira Survey (Wilkinson and Tucker 1995, fig. 77.6-9) and the Tell Hamoukar Survey (Ur 2010, fig. B35.6-7).

A very recent contribution by St. John Simpson suggestively connects the iconography of the stamped decorations to the mixed traits of the Sasanian society, especially between the 5th and the 7th centuries, when Christian motives (crosses) and Zoroastrian imagery (stags/rams) coexisted as decorative patterns on objects in everyday use (Simpson 2014, 109).

Other Sasanian ceramics (sparsely attested) include the grooved slashed rims and the Honeycomb ware (Fig. 9. 11). This type, specifically, can be also related to later periods (Simpson 1996, 100). Turquoise Glazed ware is present, but in a small amount.

5.1 Observations

Despite the on-going archaeological projects in the region and the specific focus of some of these (see Cereti et al. 2014), the understanding of the occupational model during the Sasanian period is still blurry in this part of North Mesopotamia. Natural resources must have played a primary role in the spatial organization of the settlements (cf. supra), and the evidence of the landscape exploitation suggests a period of intense agricultural activities. This might coincide with a general trend for the Sasanian period throughout Mesopotamia. According to Wilkinson (2003, 95), in fact, the estimated cultivated area of southern Mesopotamia at this time exceeded that of the Ur III period (end of 3rd mill. BC), which was a phase of intense growth. The research carried out so far in the LoNAP area did not, however, recognize one particular distinctive feature of the Sasanian period in Southern Mesopotamia – the organization (and partial reexploitation) of a substantial irrigation system (Adams 1965, 73; Wilkinson 2003, 95-6), despite the fact that the area under investigation was the core of a canal system set up by the Assyrians. In terms of material culture, one important element is the diffusion across this area of northern Mesopotamia (broadly from the Balikh to the western piedmont of the Zagros) of the Sasanian Stamped pottery which can represent a strong case of ceramics regionalism for this period.

6. Concluding Remarks

Contextualizing the data collected during the first two seasons of the LoNAP in the historical continuum of North Mesopotamia from the fall of Nineveh to the Sasanian period might seem a monumental task. The lack of reliable stratigraphic contexts in the area makes the analysis difficult, although we hope that these preliminary insights may indeed represent the first step towards a better knowledge of these periods. Both the pattern of occupation and the analysis of the ceramic evidence have provided the LoNAP team with invaluable data, and the continuity and change in terms of land exploitation, material culture and settlement distribution illustrates the peculiarity of each period in the region.

Given the aforementioned data the Hellenistic and Parthian periods represent real turning points in the history of the area, and for different reasons. The phase between the late 4th and the late 2nd centuries BC saw a re-configuration of the landscape. Small and occasionally nucleated sites flanked major centres following a regular pattern throughout the area. The exploitation of the natural resources seems to be the main reason for such a distribution. Such regularity is also expressed by the ceramic horizon, which shows the globalizing character of the Hellenistic/Seleucid period, yet preserving local features. A slight change occurs in the following

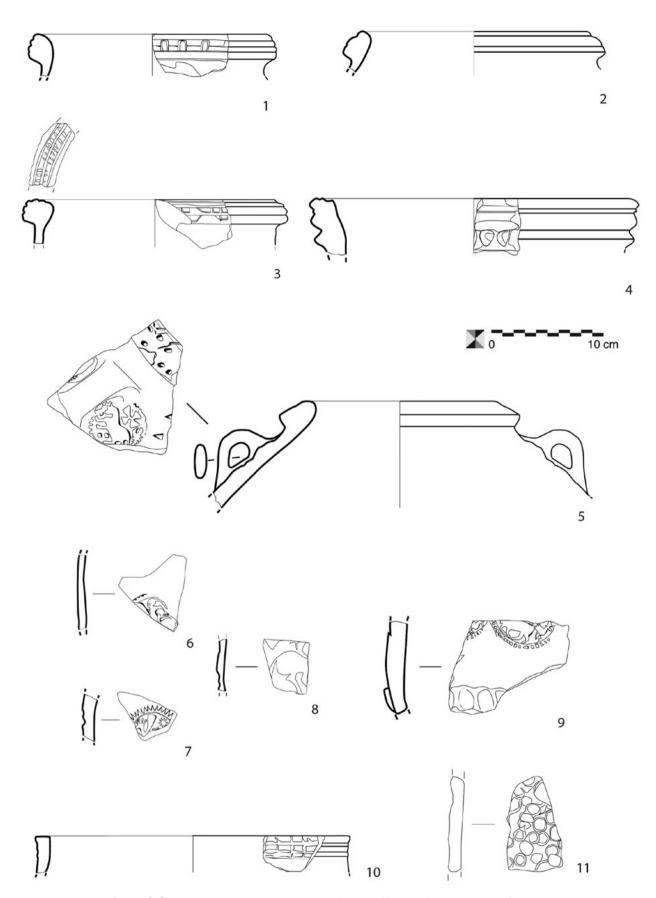


Figure 9. Sasanian period ceramics from the Land of Nineveh Archaeological Project. ($^{\circ}$ Lonap Archives).

centuries when Parthian power overcomes the Seleucids and occupies the area. The number of settlements rises, but the spatial organization seems now to be different from that of the Hellenistic period. Major sites are still aligned along posited routes and watercourses, but there is a larger concentration in the Navkur plain. The ceramic horizon follows a much more local trajectory and the significant quantity of common-ware collected might indicate a lesser degree of contact with external areas, both the lands beyond the Zagros, where contact is in any case inhibited by the morphology of the region, and, more especially, with the western Jezirah and the Upper Euphrates, in this case possibly as a result of the political turmoil caused by confrontation between the Parthian and Roman empires.

A different situation is observable for the Sasanian phase. Sites decrease in number and the major concentration in the southern (much more watered) area of the LoNAP region is perhaps the sign of a shift in terms of land-exploitation, modes of subsistence (nomadism) and settlement patterns. All of these features must have significantly affected the situation between the early 3rd and the 7th centuries AD. The pottery, for its part, shows strictly regional features, with some of the identified types continuing on into later phases (i.e. the Early Islamic period).

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Satu Qala: an Assessment of the Stratigraphy of the Site

Cinzia PAPPI*

The view of historical developments within the area of Idu, identified with Sâtu Qalâ on the Lower Zāb in Iraqi Kurdistan (Van Soldt 2008), and its hinterland have so far been closely connected to available information on the imperial expansion of Assyria in the region. Through the support of the Directorate of Antiquities of the Kurdish Regional Government of Iraq,¹ an international team consisting of the universities of Leiden (2010-12), Leipzig (2010-14), the Salahaddin University of Erbil (2010-12), and the University of Pennsylvania (2013) was able to conduct several seasons of fieldwork at Sâtu Qalâ.² Data from this fieldwork can now provide a much wider historical sequence for the settlement.

The historical data can be correlated with the archeological evidence for Middle Assyrian settlements along the river: Tall Māḥūz, identified with the provincial capital Turša; Tall 'Alī; identified with Atmannu; and the still unidentified settlement of Tall Bāzmusiyān in the Rāniya plain. These have revealed that Assyria controlled the valley of the Lower Zāb at least as far as the Raniya plain from the reign of Tukultī-Ninurta I to Tiglath-pileser I (Pappi 2012). The extension of Idu's catchment area still remains unknown. However, according to Middle Assyrian records, the provincial center of Idu played an active role in political and economic relations between Assyria and this region as a central hub for the redistribution of agricultural products.³ Both the

epigraphic and archaeological evidence gained from the fieldwork at Satu Qala revealed that Idu served not only as a Middle Assyrian provincial capital, but also as the seat of a local dynasty ruling between the end of the 11th and the beginning of the 9th century BC. The seven local kings of this dynasty (Van Soldt et al. 2013, 210-3) built upon the political and economic collapse of the Middle Assyrian Empire at the end of the reign of Tiglathpileser I. A royal inscription of Adad-nērārī II refers to the Assyrian reoccupation of Idu in the early phase of the Neo-Assyrian period at the beginning of the 9th century BC (RIMA 2.0.99.2:34), suggesting a terminus ante quem for the end of the dynasty. A fragmentary inscription on a wall plaque, found reused in a later domestic context (SQ 1064.301=SQ 11-T14 cf. Van Soldt et al. 2013, 204 fig. 14), confirms the Assyrian institutional presence at the site, consisting of a royal building constructed by Ashurnasirpal II. The most recent Assyrian reference (RIMA 3.0.102.6 ii 10-12) attests to the conquest of a number of cities belonging to Idu, but located in the land of Zamua during the reign of Shalmaneser III. (Van Soldt et al. 2013, 216-21)

The evidence sketched above is related primarily to the history of Idu in connection with Assyria. The evidence from primary contexts excavated at Satu Qala provides additional insights into the historical episodes dating before and after the episodes known by the Assyrian records. This study will assess the stratigraphic data from excavations and organize the excavated materials into occupational levels. These data, combined with the preliminary results of the analysis of the ceramic collections and with those of the radiocarbon datings of some of the organic samples, collected during season 2011 and taken to Europe in 2013, will suggest a more precise dating for the occupational sequence of the site. In particular, I will discuss the urban layout of the site and its occupational processes during the Late and Post-Assyrian periods within a wider archaeological and political context.

* University of Leipzig (Germany) until 2015. 1 Lhere take the opportunity to thank the

Description of the Site and Excavation Areas

The site of Satu Qala is located 70 km south-east of Erbil (Fig. 1). It consists of an oval tell, heavily eroded on its

the provincial center. For an overview of Idu in the Middle Assyrian administrative records cf. Van Soldt *et al.* 2013, 217-8. A study on the reconstruction of a model of the economic network of Satu Qala based on the textual sources and the spatial analysis is in preparation.

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² The project, supervised initially by W. H. Van Soldt (2010-12) and later by C. Pappi (since 2012), was mainly supported by the Netherlands Organization for Scientific Research NWO in 2010-11, by the Fritz Thyssen Foundation from 2010-13. In 2013 L. Ristvet with her team of the University of Pennsylvania joined the project as co-director. The study season in 2013 was also supported by the University of Pennsylvania and by the American Schools of Oriental Research.

³ The systematic delivery of offerings to the temple in Assur most likely denotes a regular economic exchange between the capital and

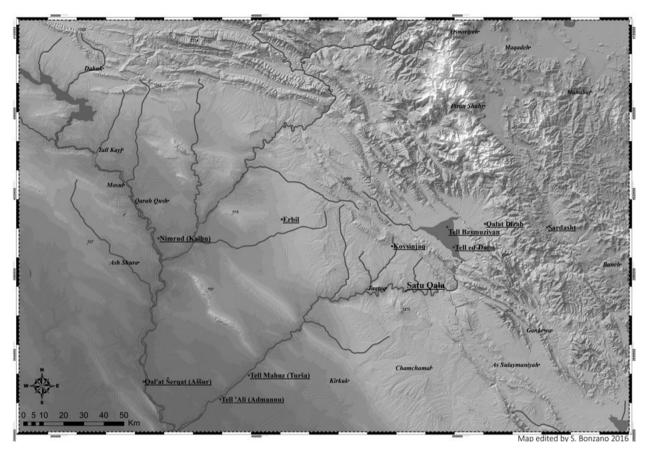


FIGURE 1. MAP OF THE REGION. (COPYRIGHT: THE SATU QALA PROJECT).

southeastern side by a branch of the Lower Zāb (Fig. 2), while the northeastern slope is visibly worn by rivulets caused by the winter rain and by regular digging. The latter serves mostly to supply building materials for the seasonal upkeep of the nearby mud-brick houses. The main mound, covering an area of two hectares, is almost completely covered by a modern village of mud-brick structures, which continues at the foot of the mound along the northern and northeastern slopes. Since 2011 the systematic construction of concrete buildings and, more recently, of fish ponds has almost completely covered the area of the lower town. Inspection of satellite imagery suggests the presence of two different landscape features surrounding the main tell which might be interpreted as the outline of a lower town. Confirmation of this hypothesis is made difficult by the increasing urbanism. However, the existence of an extensive lower town is already suggested by the sporadic discovery of pottery and other archaeological finds, now stored at the local Directorate of Antiquities in Koya, by the inhabitants during modern construction.

Surface investigations in Operation D, located on the southwestern slope of the mound, revealed that the earliest occupational phase of Satu Qala dates back to the Neolithic (Van Soldt *et al.* 2013, 207-8). However, the archaeological evidence obtained from Operations A and B, located on the northern and northeastern upper part of the mound (Van Soldt *et al.* 2013, 201-7), indicates a sequence of functional changes of both areas of the site. This evidence consists mainly of stratified Late and Post-Assyrian domestic contexts, followed by alternating levels of graveyards and defensive structures which can most likely be dated from the Post-Assyrian to the Achaemenid Periods. Unfortunately, both areas are also characterized by systematic extensive digging, modern pits, leveling, and rebuilding activities.

A Stratigraphic Assessment

Operation A has provided the best overview of the stratigraphic sequence of the latest occupational phases so far, with a sequence of eight occupational levels (A0



FIGURE 2. SATELLITE IMAGE OF SATU QALA (GEOEYE 2005, ORBVIEW-3 SCENE, LEVEL ORBVIEW BASIC ENHANCED, GEOEYE, DULLES, VIRGINIA, 1/30/2005).

to A7, Fig. 3), while operation B has provided five (B0 to B4, Fig. 4). Occupational levels have been differentiated according to the functional use of the area. Correlations between both operations can be suggested, but not confirmed. They provided non-continuous coverage for the diachronic gap from the 7th BC to the most recent episodes of the history of the region. The earliest phases in both operations include materials dating to the Late and Post-Assyrian periods. A closer typological investigation, including data from the petrographic analysis of the different fabric types, is still in progress.⁴

Late and Post-Assyrian Levels: A7 and B4

The earliest excavated evidence in both operations, designated as A7 and B4, dates back to the final phase of

the Neo-Assyrian Period. In operation A, phase A7b (cf. Van Soldt *et al.* 2013, 233 fig. 12) consists of two separate domestic structures, named Buildings 2 and 3, connected by a sloping surface. This surface is paved with pebbles of different sizes mixed with fragments of baked bricks, mostly reused from earlier contexts. Building 2 originally had two rooms, named A and B. This internal layout, belonging to a sub-phase A7a, does not persist into a later reuse of the building, here assigned to a sub-phase A7b. The latter is characterized by a domestic unit without partition. Here, an almost complete globular storage jar standing in the north-western corner of the room and a domestic installation made of four baked bricks forming a squared platform lying on the floor were found in situ. The latter can most likely be identified

⁴ A study of the ceramic typology is in preparation. L. Ristvet (University of Pennsylvania) generously shared preliminary data on typological developments in the ceramic collections of Sâtu Qalâ.

⁵ Some of the fragmentary bricks bear possession inscriptions assigned to various kings of Idu, including Bā'ilānu (SQ11-23=SQ11T13; SQ11-24=SQ 11T12 cf. Van Soldt *et al.* 2013: 211) and Edima (SQ11-19=SQ11T9 cf. Van Soldt *et al.* 2013, 212 and 238 fig. 25).

Level	Archaeological Feature	Primary Evidence for Dating	Date
A 0	Modern village after the Anfal Campaign		After 1989
A 1	Modern village before the Anfal Campaign	Material culture. Personal interview with villagers	Before 1989
A 2	Modern village before the Anfal Campaign – siloes	interview with vinagers	20th Century AD
А За	Domestic Structure – Building 1		6th-4th Centuries BC (?)
A 3b	Burials	AMS radiocarbon dating of bone sample from Burial 1017	750 BC (10.2%) 680 670BC (3.1%) 640 BC 560 BC (82.1%) 370 BC
A 4	Domestic Structure – paved floor related to pyrotechnic structures		6th-4th Centuries BC (?)
A 5	Burials	AMS radiocarbon dating of bone sample from Burial 1045	790BC (95.4%) 390 BC
A 6	Monumental Structure	Ceramic collection	Late and Post-Assyrian Period (7th-6th Century BC)
A 7a	Domestic Structure – Building 2	Ceramic collection	Late and Post-Assyrian
A 7b	Domestic Structure – Building 2 and 3	Ceranne conection	Period (7th-6th Century BC)

FIGURE 3. OCCUPATIONAL LEVELS OF OPERATION A.

Level	Archaeological Feature	Primary Evidence for Dating	Date
В 0	Modern village after the Anfal Campaign – Domestic structures	Material culture. Personal interviews	After 1989
B 1	Modern village before the Anfal Campaign – bakery shop	with villagers	Before 1989
B 2a-d	Monumental structure related to trodden floors		
В За	Burials	AMS radiocarbon dating of bone sample from Burial 3127	760 BC (18%) 680 BC 670 BC (9.9%) 610 BC 600 BC (67.1%) 390 BC
B 3b		AMS radiocarbon dating of bone sample from Burial 3139	770 BC (95.4%) 410 BC
	B 4 Domestic Structure – Storage room	Ceramic collection	
B 4		AMS radiocarbon dating of charcoal sample	820BC (62.6%) 730 BC 690 BC (8%) 660 BC 650 BC (24.8%) 540 BC

FIGURE 4. OCCUPATIONAL LEVELS OF OPERATION B.

as a hearth.⁶ The masonry of both structures reveals evidence for the re-use of construction materials, including decorated tiles originally belonging to the architectural decoration systems of the royal buildings

⁶ A contemporary parallel was found at Tall Abū Dāhir, Phase 11.5; cf. Simpson 2007, 84-5 with previous bibliography.

of the dynasty of Idu and to the palace of Ashurnasirpal II.⁷ The ceramic materials found in buildings 2 and 3

⁷ These consist of oblong and crenallated bricks glazed in blue and yellow (SQ11-15, 16, 17, 18); and a fragmentary wall-plague bearing an inscription of Ashurnasirpal II (SQ11-05=SQ11T14). For photographs of SQ 11-16 (=1047.303) and SQ 11-05 (=1064.301) see Van Soldt *et al.* 2013, 233-4 fig. 13-4.

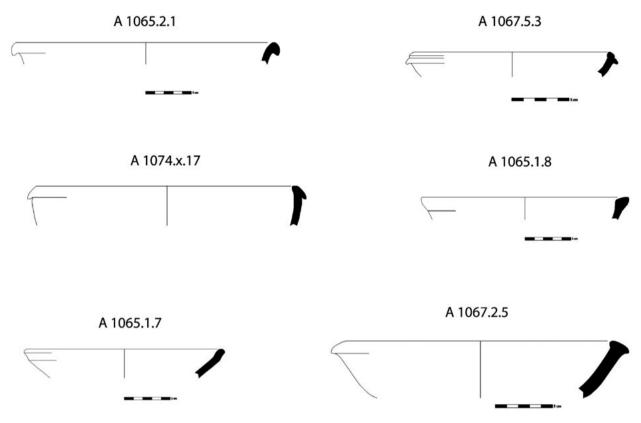


FIGURE 5. SELECTION OF BOWLS FOUND IN BUILDINGS 2 AND 3 OF LEVEL A7A. (COPYRIGHT: THE SATU QALA PROJECT).

represent a homogenous collection dating to the Late and Post-Assyrian Periods. The collections consist mainly of open shapes, with some examples of storage jars of different sizes with beaded and squared rims, well attested elsewhere in the Late Assyrian repertoire (e.g. Hausleiter 2010, fig. 103, FG 3.3-6). Common shapes include wide-neck ridged jars, for which the closest parallels are known from the materials of Khirbet Qasrij (Curtis 1989, fig. 35-6, 210 and 218). Globular and squat cooking pots with simple (Hausleiter 2010, fig. 19, TK 1R1) or folded rims (Curtis 1989, fig. 41, 287) are attested as well. Open shapes such as bowls (Fig. 5) were found in some quantity in the inner spaces of Buildings 2 and 3. These find parallels in the plain pottery tradition of Assyria in later periods. A good example is provided by bowls with inverted and thickened rims, with close parallels among the materials of both levels 3 and 4 of Khirbet Khatuniyeh and in the pottery collection of Khirbet Qasrij (Curtis and Green 1997, 88; Curtis 1989, 47).

In Operation B, phase B4 yielded a domestic space as well, almost contemporary to A7. The architectural context is, however, almost entirely absent. Collapsed

materials, consisting of mudbricks, baked bricks, stones, and burnt remains of bulk, covered an assemblage of storage and cooking vessels, most likely leaning on a poorly preserved pisé wall running northeast-southwest along the southern section of the excavation area. The radiocarbon analysis of a charcoal sample provided a dating between the 8th and the 6th centuries BC.8 The pottery assemblage (Fig. 6) consists mainly of closed shapes, including storage jars of different sizes, e.g. tall straight-sided jars with knob-shaped base (cf. Curtis and Green 1997, 90 and fig. 42; Hausleiter 2010, 324), medium-sized jars with rounded body and base (cf. Curtis and Green 1997, 90 and fig. 41), ovoid and globular body pots, ridged on the short neck, with beaded (cf. Curtis and Green 1997, fig. 47, 218-21; Hausleiter 2010, 327 and fig. 117, TG1 R1) or folded rims (Hausleiter 2010, 327 and fig. 117, TG1 R4). Both of the latter types also occur within the collections of Khirbet Qasrij (Curtis 1989, fig. 35, 207 and 209).

⁸ The radiocarbon age was obtained through Accelerator Mass Spectometry (AMS) of a charcoal sample from L. 3138. The analysis, conducted by the Center of Radiocarbon Dating of the University of Salento (Italy), refers to 2574±40, calibrated: 820 BC (62.6%) 730 BC, 650 BC (24.8%) 740 BC, 690 BC (8%) 540 BC.

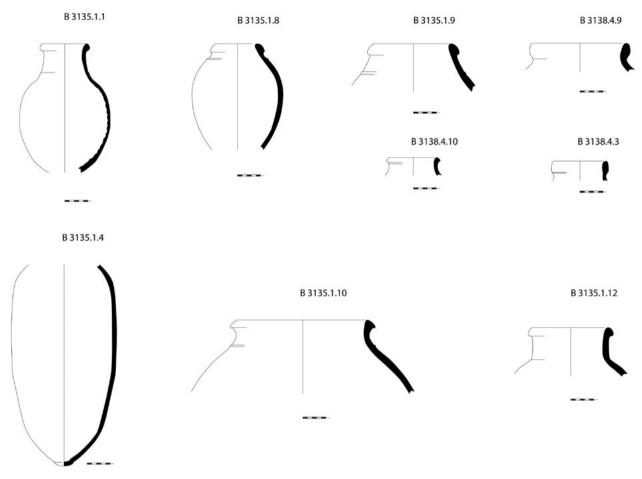


FIGURE 6. SELECTION OF CLOSED SHAPES FOUND IN LEVEL B4. (COPYRIGHT: THE SATU QALA PROJECT).

Historical Transitions and Urban Change

Although the pottery materials does not present consistent changes, later occupational levels reveal a functional change in both areas denoting a reconfiguration of the urban landscape of the site. Alternating fortification structures and graveyards replaced both domestic contexts.

Levels A6 and A5

A monumental structure, most likely a wall, almost 3m wide, was built to follow the general plan of the earlier structures of phase A7 and seals the whole area (cf. Van Soldt *et al.* 2013, 233 fig. 11). This structure was again roughly built through the re-use of materials, including both baked bricks with incised lines and bricks bearing inscriptions of the local kings Bā'ilānu and

Erištienni. ⁹ It was later dismantled and leveled already in antiquity. Unfortunately, the ceramic materials belonging to this level reveal no particular innovations. The area next underwent a further functional change. Phase A5 consists of a graveyard, with three burials cut directly into A6. Two of the bodies, identified as two female adults and a child, ¹⁰ were buried in crouched position without goods. The radiocarbon analysis of a bone sample, indicating a date between the 8th and the 5th centuries BC, ¹¹ is too imprecise to provide a more accurate chronological sequence for the area.

⁹ SQ 11-09; SQ 11-07; SQ 11-13 (Van Soldt et al. 2013: 203).

¹⁰ A report of the osteological evidence of all the burials of Satu Qala is in preparation by Megan Luthern (Temple University) for the final publication

publication.

11 The radiocarbon age was obtained through Accelerator Mass Spectometry (AMS) of a bone sample from L. 1045.2. The analysis, conducted by the Center of Radiocarbon Dating of the University of

Levels B3 and B2

In operation B, a small group of three burials, here designated B3, was cut into the collapsed structure, here designated B4. The graveyard consists of two different sub-phases, named B3a and B3b, respectively. The older burial, here named under sub-phase B3b, was cut directly into the collapse in a shallow pit marked by a few boulders (Van Soldt et al. 2013, fig. 19). Unfortunately, the fragmentary preservation of pelvis and cranium do not allow for an estimate of sex or age. However, the analysis of the teeth, combined with the presence of an iron blade (SQ 11-04) laid across the pelvis as burial gift, suggests that the body should belong to a male adult. Radiocarbon analysis of bone samples suggest, as for A5, a date range between the 8th and the 5th centuries BC.¹² A similar deposition habit, the same posture, and the same gift can be noticed in the record of Late Assyrian burials of Khirbet Shireena in the Eski Mosul area,13 while similar burials at Assur, presenting a similar posture, usually include a wider range of funerary goods (Haller 1954, 12-5; Hauser 2012, 144-7). Two further burials, here assigned to a different sub-phase, B3a, were cut into a later surface. This most likely resulted from the continuing degradation of the structures of Level B4. Each burial contained the body of a child found in flexed position. The body belonging to burial 3124 was contained by two large jar fragments belonging to different jars, closed by a baked brick. Grave gifts include a bronze bracelet and earrings (Van Soldt et al. 2013, 206 and fig. 18). The radiocarbon analysis suggests a date for grave 3127 between the 7th and the beginning of the 4th century BC.14 A similar child burial is attested below the earliest Hellenistic level at Nimrud.¹⁵ A massive mudbrick structure, related to a sequence of four trodden floors corresponding to four sub-phases, named B2a-d, was built on the small graveyard of Level B3. The related surfaces are not associated with any particular archaeological features. However, a preliminary analysis of the pottery collections provided several examples of jars and pots with rolled over rims, finding parallels in the materials of Khirbet Qasrij (Curtis 1989, 48-48 and fig. 37, 227-33) as well as in Level 2 of Khirbet Khatuniyeh (Curtis and Green 1997, fig. 63, 451-3).

Salento (Italy), refers to 2489±45 BP, calibrated: 770 BC (62.2%) 540 BC, 790 BC (95.4%) 420 BC.

Levels A4-A3

Operation A again changes its functional use in the upper levels. The main archaeological features of level A4 include evidence of a floor, partly paved with baked bricks. This has unfortunately been highly disturbed by modern pits, but can still be securely connected to domestic installations, including an oven, a fire place, and a number of pits, indicating an outdoor area. Biconical spindle whorls and loom weights found on the surface of the level suggest that the area was associated with the small-scale, domestic production of textiles. Although the following occupational phase, designated A3, is also associated with domestic production, the layout changed drastically. The area was again leveled with mudbricks. A new building, designated Building 1, consisted of at least two rooms and most likely extended for at least 10 m southwards. A group of three graves belongs to this phase. These were cut into the surface outside the building and bear no gifts. Although modern disturbances have led to a very poor state of preservation, the radiocarbon analysis on a sample dates the grave to a period between the 6th and the 4th centuries BC.¹⁶ Unfortunately, due to a lack of documentation of the fieldwork in 2010, the data to be gained by the analysis of the ceramic collections is currently not available.

The Recent History of the Village

Finally, the three most recent levels are dated to the modern history of the village. Phase A2 is characterized by an open yard with the several siloes, while A1 and A0 represent levels dating to the last decades and directly reflect urban changes connected to episodes in the recent history of Iraq. A destruction level is also well attested in Operation B, clearly marking the transition between B1, which consisted of a traditional bakery dating to the 1980s.

New Data and Perspectives for a Historical Reconstruction

The data, collected in the two field-seasons 2010 and 2011, provide a wealth of evidence for the reconstruction of historical developments of the site and its region. Both had been almost completely unknown until 2008. This evidence contributed in particular to two largely obscure topics of the first millennium BC in the region between Erbil and the Zagros chain: (1) the international policy of the early phase of the history of the Neo-Assyrian Empire; and (2) the historical developments during the Late and Post-Assyrian periods, the main focus of this study.

¹² The radiocarbon age was obtained with Accelerator Mass Spectometry (AMS) of a bone sample of L. 3139.2, conducted by the Center of Radiocarbon Dating of the University of Salento (Italy), refers to 2473±45 BP, calibrated: 760 BC (68.2%) 520 BC, 770 BC (95.4%) 410 BC.

¹³ Phase 11, Grave 6 (Ball 2003: 49 and fig. 16).

¹⁴The radiocarbon age obtained with Accelerator Mass Spectometry (AMS) of a bone sample of L. 3127.2, conducted by the Center of Radiocarbon Dating of the University of Salento (Italy), refers to 2418±45 BP, calibrated: 550 BC (68.2%) 400 BC, 600 BC (95.4%) 390 BC.

¹⁵ Grave PG 3, Level 6 dating to end of the 3rd century BC (Oates and Oates 1957, 135) consists of a deposition of a child in a jar, supported by two baked bricks, cf. Oates and Oates 1957, 153-4 and pl. 30 c).

¹⁶The radiocarbon dates were obtained with Accelerator Mass Spectometry (AMS) of a bone sample of L. 1017.2, conducted by the Center of Radiocarbon Dating of the University of Salento (Italy). The calibrated age of 2377±45 reveals a date included between 560 BC and 370 BC (82.1%).

Developments in the Political Landscape of Assyria

The domestic architecture of levels A7 and B4 and their related materials mainly attest to activities linked to the consumption, preparation, and storage of food, in addition to small-scale textile production, within the context of a locally based subsistence economy. These can most likely be dated to the late 7th and 6th centuries BC. The economic frame hardly matches the economic picture suggested by the earlier Assyrian records in the Late Bronze Age. Furthermore, the rich architectural elements belonging to institutional buildings of older settlement phases, dating to the 10th and 9th century BC, were consistently found decontextualized in the masonry of domestic buildings of later levels. In combination with the lack of evidence for an Assyrian institutional presence in the 7th Century BC, their re-use highlights the discontinuity of Idu within the Assyrian institutional and economic developments in the flourishing phase of the Empire.

The data from the earliest excavated levels at Satu Qala thus raise questions about the changing urban landscape along the middle valley of the Lower Zāb in the Iron Age and, secondly, about the role of Idu within the Neo-Assyrian provincial system.

The drastic change of the urban layout at Satu Qala at least partly reflects the settlement patterns suggested for the Neo-Assyrian periphery: a dense rural hinterland composed of small centers. This pattern finds several parallels in case studies conducted in the Syrian and Iraqi Jezirah, as well in the sample areas recently investigated in the plain of Erbil (Ur et al. 2013: 102 with previous bibliography). The economic and political developments of Satu Qala in the late phase of the Assyrian empire can be better explained within this wider historical and archaeological context. The lack of Assyrian institutional presence both led to and reflected the decline of Idu's political role. It also confirms the dissolution of the infrastructure system related to both the provincial center, which had existed until the 11th century BC, and to the peripheral royal 'palace' built in the 9th century BC. Both can be ascribed to the location of Satu Qala as a communicative node along the Lower Zāb. Similarly, later changes can be ascribed to a combination of political and military events, including: (1) the first campaign of Ashurnasirpal II; (2) the Assyrian control of the pass of Babītu; and (3) the foundation of the new capital at Kalhu. All of these represent policies initiated by Ashurnasirpal II and consolidated by Shalmaneser III. The combination of these events served to shift Assyrian focus from the region of Idu and the northern bank of the middle valley of the Lower Zab to regions closer to the imperial frontiers, for example the region close to the pass between Qala Dizeh and Sar Dašt to the East and the region of Zamua to the Southeast. The consequences of the above mentioned

historical events can be summazized in the following three points.

- 1. The increasing Assyrian control of the regions located beyond the land of Idu, i.e. Tummê and Habrūrī (Radner 2006: 51), led to the gradual annexation of the region included between the chain of the Habb as-Sultān Dāġ and the Chain Magistrale (Levine 1974: 6 Fig. 1), corresponding mainly to the Rāniya Plain, into the imperial territories. This process, initiated after the first campaign of Ashurnasirpal II (e.g. RIMA 2, A.0. 101.1 i 43-58; campaign Ia cf. Liverani 1992: 19-28 and 87), shifted the Assyrian frontier further east. A recently discovered Neo-Assyrian text, found in the region east of the Raniya plain and dating to the end of the 8th Century BC (Radner 2015), refers to the Palace Herald. The text thus supports Liverani's suggestion for the location of the Province of the Herald in the region of the upper valley of the Lower Zab (Liverani 2004: 218; Radner 2015: 195-6) and demonstrates Assyrian institutional presence close to the border with the territories controlled by the West Iranian states. Furthermore, the archaeological evidence gained by the investigations conducted before the construction of the Dokān dam (as-Soof 1970: 66-7) reveals a widespread Neo-Assyrian presence in the Rāniya plain. As a consequence, the territorial shift of the political and strategic interests of Assyria towards the Zagros, which developed gradually after the campaigns of Ashurnasirpal II and which were likely meant to establish greater control of the pass through the Zagros between Qala Dizeh and Sar Dašt, would explain the simultaneous decline of Idu/Satu Qala.
- 2. The subsequent Assyrian conquest of the pass of Bābītu, the modern Bazyan (RIMA 2, A.0.101 ii 23-31; cf. Liverani 1992: 90), also opened the route towards the heartland of Zamua, representing an insidious enemy which has been annexed into Assyria only under Shalmaneser III (Radner 2006: 52), and towards the southwestern Iranian plateau (Altaweel et al. 2012: 14). The pass is easily accessible from the Eastern Tigris regions located south of the Lower Zāb, e.g. Arrapḥa and Arzuḥīna, both directly connected to the Assyrian capitals though the ford of Altın Köprü.
- 3. Finally, the relocation of the imperial capital, in particular to Kalhu, combined with subsequent changes in the political and economic landscape of heartland Assyria (cf. Harmanşah 2012: 65-8; Morandi and Iamoni 2015: 24-5), was partly meant to revitalize the urban landscape of the region located north of the main Assyrian centers. This in turn should have improved the economic and military exchange along the valley of the Tigris, and in particular along Upper Zab.

Assyria after Assyria

The radiocarbon dating showed that the areas investigated underwent several functional changes within a relatively short period of time. Unfortunately, the different levels of occupation cannot be situated more precisely within the historical timeline of Northern Mesopotamia. However, the evidence gained can be used to locate the latest occupational phases within absolute chronology and thus lead to a better understanding of the historical developments of the immediate surroundings of the site.

The functional changes in the stratigraphic sequence from A6, A5, A4, to A3 for Operation A (Fig. 3) and B3 and B2 for Operation B (Fig. 4) appear at present to have taken place within a span of two to three centuries. This chronological analysis is based on a terminus post quem for the levels A7 and B4 at the end of the 7th or beginning of the 6th centuries BC, according both to the radiocarbon analysis and to the ceramic assemblage, and on a terminus ante quem, based on the youngest calibrated radio carbon date for the burials in levels A3b and B3a-b, corresponding to the last decades of the 4th century BC. In particular, the archaeological features of levels A6 reveal evidence for fortification activities on the top of the tell. The ceramic assemblage does not reveal any remarkable changes. As a consequence, few insights into a relative or absolute date could be provided. Furthermore, the absence of grave gifts, combined with a variety of depositional processes, likely reflecting a hybrid social context, likewise yields little data on chronology. It seems certain, however, that the drastic functional changes of the area from a sequence of fortification to structures to graveyards, to domestic buildings dating roughly to the time span included between the 6th and the 4th centuries BC, closely reflect the political changes occurring in the region.

This period is characterized by the fall of the major centers of the Assyrian heartland under the attacks of Median and Babylonian troops and the subsequent Achaemenid occupation of the region. Archaeological investigations of the main Assyrian centers, e.g. Nineveh, Assur, and in particular Kalhu, have provided evidence for destruction and resettlements (e.g. Curtis 2003: 160; Miglus 2000; Oates and Oates 2001: 125 and 257-8). The Babylonian Chronicle and later classical authors provide most of the data for the historical reconstruction of this specific period, indicating several military campaigns by Medes and Babylonians (e.g. Dalley 1993; Reade 2003; Rollinger 2010). However, evidence for the Median and Babylonian presence within the political landscape of northern Mesopotamia remains scant. What little evidence of Babylonian institutional infrastructures in northern Mesopotamia has been observed includes the presence of a governor at

Assur (BM 63283 cf. MacGinnis 2000: 335; Jursa 2003: 173) as well as Neo-Babylonian stamp seals found at Nimrud (Parker 1955: pl. XIX 6-7; Curtis 2003: 160). Archaeological traces of an Achaemenid presence in the region are more common (Curtis 2005). The case of Tall Šēḫ Ḥamad in the valley of the Ḥabūr is crucial for the western provinces. The site shows a homogenous continuity in the use of the Neo-Assyrian pottery until the beginning of the 5th century BC (Kreppner 2015: 229-30; Röllig 2003), while Late-Babylonian influence is noticeable in the administration of the site since the beginning of the 6th century BC (Postgate 1993; Brinkman 1993).

The relevant levels at Satu Oala shows neither traces of wide-spread destruction nor traces of any kind of administrative or institutional infrastructure. Similar to the case of Tall Šēh Hamad, however, the ceramic assemblage seems to be relatively homogenous. The evidence of fortification activities combined with the site's strategic position on the Lower Zāb indicates a defensive function. The site had been already used as a defensive center during the conflicts between Assyria and Babylonia at the end of the 2nd millennium BC (Van Soldt et al. 2013: 218-9; Pappi forthcoming). This would confirm the persistence of the site as a strategic center along the valley of the Lower Zāb. This functional change can be compared to the Achaemenid fortified palace at Tall ad-Dēm, located further upstream in the Rāniya plain (al-Tekriti 1960), which has been interpreted to reflect a strategic defensive policy of the Achaemenid power within the region.

Conclusions

The discontinuous settlement sequence from the Neolithic to at least the end of the 1st millennium BC at Sâtu Qalâ can be correlated with historical shifts. However, the persistence of the settlement as a strategic stronghold and as an agricultural center indicates that Sâtu Qalâ remained strongly tied to its environment. The flourishing phase of Idu as an Assyrian provincial center and, later, as an independent kingdom embedded the site into a wide political and economic network which connected Assyria, Babylonia, and the region beyond the Zagros. Subsequent political shifts also influenced the economy of Idu and its catchment area both during the great expansion phase of the Neo-Assyrian Empire and after the fall of the central powers of Assyria. Developments in the urban layout of the site mirror the functional roles of Satu Qala within this network. The shape of this regional network, the degree to which the roles of the site of Satu Qala extended on a regional scale, and what effects its role as an economic hub or defensive stronghold exerted onto the infrastructural systems in its immediate hinterland, remain unclear. All of these questions can only be answered through further research in the region.

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Helawa: A New Northern Ubaid/Late Chalcolithic Site in the Erbil Plain

Luca PEYRONEL, Agnese VACCA and Gioia ZENONI

Introduction

The Italian Archaeological Expedition in the Erbil Plain (MAIPE) carried out a first season of fieldwork in 2013, focusing on a small part of the south-western Erbil Plain, namely the area of Helawa/Aliawa, located c. 28 km south-west of Erbil, which includes two main mounds, Helawa (south) and Aliawa (north).1 The western Erbil plain is characterized by a large number of mounds, mainly located along several irregular ancient watercourses and streams flowing towards west/south-west and constituting a fertile hydrographic basin with Chai Kurdara to the south and Chai Siwasor to the north, both flowing into the Upper Zab.² Surface material collected during the the first visit in January 2013 allowed identification of the main occupation phases at both sites, showing that Helawa (Fig. 1) was an important site during Neolithic and Chalcolithic periods, with a later occupation dating to the 2nd millennium BC, and that Aliawa (Fig. 2) was a huge fortified settlement mainly dating to the Islamic period, with previous occupation spanning from the Neo-Assyrian to the Sasanian period. An intensive survey at Helawa was then carried out during three weeks in November 2013, in order to establish the main period of occupation at the site through a systematic collection of surface material and the study of pottery and other diagnostic finds. Moreover, a complete topographic plan with differential GPS for DEM and GIS elaboration was produced.³

Site morphology and survey description (L. Peyronel, G. Zenoni)

The archaeological site of Helawa stands about 22 m higher than the surrounding plain, with a maximum elevation of 332 m a.s.l. at the top of the main mound and a minimum of 310 m at its foot. The site covers a surface slightly larger than 6.5 ha that includes a high mound to the south, and two low extensions to the north and east. (Fig. 3). However, based on the observation of CORONA satellite imagery, the area of archaeological interest appears larger than 6.5 ha, covering more than 10 ha – although the south/south-eastern portion of the ancient settlement now lies under houses and farms of the modern Helawa village and the peripheral lower eastern part has been damaged by agricultural activity.⁴ The western and south-western limits of the site can be easily identified in the bed of a watercourse, whereas the northern limit might be located c. 170 m from the top of the mound and the eastern limit c. 220 m from the same point.

The southern and western sides of the mound are characterized by a steep slope (12.05%) that becomes more gentle in the lower part, ending at the edge of the river. Conversely, the northern side slopes gradually (6.92%) toward the modern road running east-west. A small secondary mound c. 90 m wide, which rises to c. 7.5 m above the surrounding plain with a slope of 8.33%, is located in the south-eastern part of the site.

¹ The first season of research was possible thanks to the permission of KRG and SBAH granted in 2013. We would like to express our sincere gratitude for the help and encouragement of the General Directorate of Antiquities of the KRG, directed by Mr Othman Zaineddin Abubakir (Mala Awat), the Erbil Directorate of Antiquities (Mr Nader Babakr and the former director Mr Haydar Hussein, Mr Hasan Hussein Saber and Mr Goran Mohammed), and the State Board of Antiquities and Heritage in Baghdad. Funding for the 2013 MAIPE fieldwork season was provided by the Italian Ministry of Foreign Affairs, University IULM of Milan, Sapienza University of Rome; the project is also sustained by the Lombardy Regional Authority. The topographic work and the Web-GIS elaboration was carried out together with an IBAM-CNR research team thanks to a collaboration agreement between University IULM and CNR. The 2013 team consisted of Luca Peyronel (director, University IULM), Gioia Zenoni (vice-director, University IULM), Agnese Vacca (vice-director, Sapienza University of Rome), Daniele Bursich (archaeologist, University IULM), Fabiana Macerola (archaeologist, Sapienza University of Rome), Giacomo Di Giacomo (topographer, IBAM-CNR of Lecce) and the Erbil Directorate of Antiquities representative, Goran Mohammed.

² A complete archaeological survey of the Erbil Plain has been conducted by the Harvard expedition directed by J. Ur (Erbil Plain Archeological Survey, EPAS), which started work in 2012: Ur *et al.* 2013.

³ The topographic work at the site used a differential GPS to take a large number of Ground Control Points (GCP), in order to calibrate the satellite image acquired in 2013, taken from the WorldView2 satellite on March 12th 2011. Geo-referenced topographic maps, thematic maps with distribution of surface material, sections of the site, and a digital elevation model have been produced and all the data collected during the survey entered in a GIS system based on Quantum GIS; metadata are stored in a Sqlite database. For a more detailed description of the topographic work in relation to the WebGIS project, see Peyronel *et al.* (forthcoming).

⁴ We would like to thank J. Ur who gave us the possibility to obtain information from some older and recent satellite images of the EPAS Expedition. At the moment of the survey the surface of the lower slopes was ploughed, preventing a detailed collection of material, and a field of corn to the east completely hid the ground, obliging us to forgo survey in that part of the site.



FIGURE 1. GENERAL VIEW OF HELAWA FROM THE SOUTH.



FIGURE 2. GENERAL VIEW OF ALIAWA FROM THE SOUTH.

On the northern side of Helawa there are two gullies and all around the main mound many other erosion channels in which a great amount of archaeological material (potsherds, worked stone: chert and obsidian flakes, cores and tools) has accumulated due to natural redeposition processes.

An intensive survey of the site was carried out with the following differentiated approaches:

- collection of diagnostic material in scattered field samples in the lower area of the mound, corresponding to the southern, eastern and northern sides partly affected by modern ploughing;
- collection of diagnostic material in the area of the mound that has not been ploughed or cultivated, from scattered locations chosen on the base of morphological features;

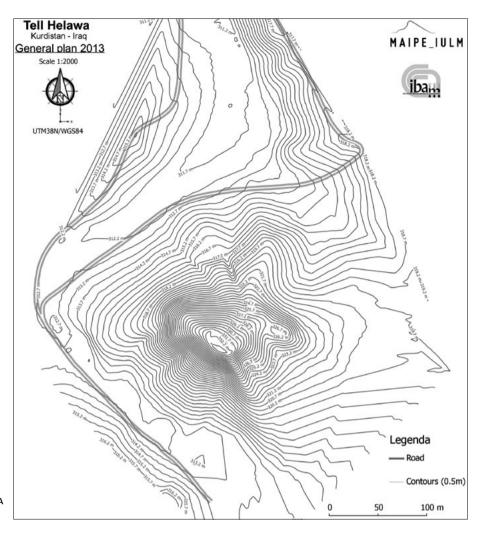


FIGURE 3. GEOREFERENCED TOPOGRAPHIC PLAN OF HELAWA WITH ALTIMETRIC CURVES.

systematic collection of surface material from an area of 3330 sqm in the part of the mound that was not ploughed or cultivated, divided into 5 irregular Collection Areas (hereafter CA, labeled with capital letters from A to E), subdivided into 44 Collection Units (hereafter CU); a precise location for the surface finds was given by the geo-referenced positioning each CU (Fig. 4).5 All diagnostic pottery sherds (rims, bases, handles, painted sherds, incised or decorated body sherds), small finds (including chert tools and debitage), pottery slag and architectural components (worked stone, mud bricks, plaster fragments) were collected; beside these a large number of body sherds were also collected from CU A1-7 and D33 in order to perform statistical analysis

on fabrics and evaluate surface alteration due to post-depositional events.⁶ Generally speaking, although the visibility of the surface of the whole north-western slope is compromised by the presence of vegetation, it seems that in this part of the site surface material is nevertheless scarce, particularly in the upper part of the slope, while the frequency increases towards the bottom of the slope.

During the 2013 season all the material collected from CA was registered and entered in the GIS Database,

⁵ Each CU is identified by the letter of the Collection Area followed by a number (1 to 44). The dimension of the CU varies depending on morphological features of the CA and on the quantity of material observed during the survey. On the south-western slope CU are mostly 5 x 5 m squares (CU A1-A5; A8-A12; B14-B19; C24-C31).

⁶ CA A-C are located on the steep south-western slope of the main mound; they are situated between four erosion gullies. CA A is located on the southern side of the site and extends from the edge of the ploughed area at the base of the slope to the top of the mound; CA B is located to the west of CAA, and reaches the same height; CA C extends to the west of CA B on the lower part of the slope. CA D corresponds to a large part of the small eastern mound. It is bordered to the north and east by two cultivated areas. CA E is located on the northern slope of the mound, between two gullies; the lower part is ploughed, while the upper part is covered by low vegetation.

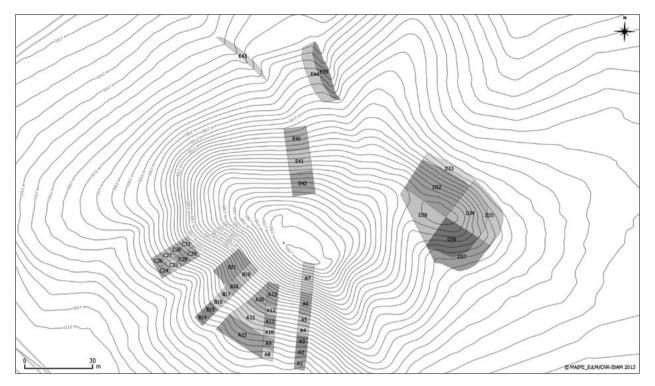


FIGURE 4. TOPOGRAPHIC GRID OF COLLECTION AREAS (A-E) AND COLLECTION UNITS (1-44).

whereas the pottery sherds and small finds from other discrete units were briefly described, and will be registered during the next campaign.

The distribution of material shows a main concentration in two areas: the southern slope of the central mound (CA A-C) and the northern slope of the eastern small mound (CA D) (Fig. 4). The central and lower parts of the southern slope are covered by thousands of pottery fragments, small pebbles and worked stone: chert and obsidian flakes, cores and tools. The good preservation of this material (sherds with no worn breaks, postdepositional surface alteration etc.) suggests that stratified deposits and structures lie immediately under the surface. Diagnostic pottery collected from CA A-C suggests that the occupation of the central mound dates mainly to the 5th-4th millennium BC; moreover, the presence of a large quantity of Late Ubaid and Late Chalcolithic material from the upper part of the slope seems to indicate that Helawa was a huge settlement during these periods, with a stratified sequence several meters thick.

The largest collection of finds comes from CA A, especially the eastern sector, and is characterized by a high percentage of painted sherds and lithics. A significant concentration of lithics, especially obsidian

tools and debitage, probably indicative of the functional characterization of the structures lying immediately under the topsoil, was found in CA B. In CA D, corresponding to the small eastern mound, the lower sector of the northern slope (CU D33) yielded a large number of pottery sherds and lithic tools, as well as several small finds. Many finds were also collected in the CU located at the conjunction of the two mounds (CU D38), evidently accumulated there due to erosion of the slopes. The majority of diagnostics in CA D dates to the Late Bronze Age, suggesting that the main occupation of this small mound occurred during the Mittanian and Middle Assyrian periods. This evidence fits well with the material collected from the upper part and top of the main mound (CA A-C), where Ubaid and Late Chalcolithic material is sparse but 2nd millennium pottery is quite frequent. It is also worth mentioning that fragments of baked bricks and mud bricks were identified in the upper part of the mound, where traces of walls are visible on the surface, and could be related to the Late Bronze Age occupation.

Pottery (A. Vacca)

During the 2013 survey season a total of 3065 diagnostics were collected from CA A-E, including 1565 rim fragments and 1500 body sherds (with painted,

incised or impressed decoration). Diagnostic sherds from scattered field collection units were counted and registered, amounting to 700 units, but not collected.

The preliminary study of diagnostic pottery shows that Helawa was settled from at least the 7th millennium BC (Hassuna), while the main periods of occupation correspond to the Halaf (6th-5th millennium BC), the Late Ubaid (5th millennium BC) and the Late Chalcolithic 1-3 (4th millennium BC). Interestingly, more than 2/3 of the diagnostics date from the Late Ubaid and LC 1-2 periods.7 It seems that the site was abandoned in the course of the LC 3 or at the beginning of LC 4, and no longer occupied during the EBA, since no unequivocal diagnostics of those periods have been identified among material collected during the survey. The site was then re-occupied during the second half of the 2nd millennium BC (late Old Babylonian/Mitanni and Middle Assyrian). Sporadic sherds collected from the top of the central mound attest a limited occupation also during the 1st millennium BC (Assyrian and Post-Assyrian) and the Islamic Period.

A total of 30 painted and plain sherds dating from the Halaf and Late Ubaid periods were sampled in 2013 in order to be analyzed in Italy. Physical and chemical analyses are in progress, including RAMAN, XRF, XRD, SEM, Thick and Thin Sections, with the aim of investigating manufacturing techniques and firing temperatures, as well as to characterize the main fabrics for each period, potentially useful for future provenance studies.⁸

Isolated specimens of typical Hassuna painted pottery were collected, especially in CA A-C, on the southern slopes of the main mound. A fragmentary bowl with monochrome reddish-brown painted decoration is comparable with similar vessels from Nineveh and Tell Nader (Fig. 5:1). On the other hand, ceramics of Late Halaf period date are more abundant and represented by several highly fired vessel fragments with monochrome or polychrome painted geometric decorations, such as dots, twisted motifs, and checkerboards, characteristic of the Late Halaf pottery repertoire at both Nineveh and Arpachiyah (Fig. 5:2-4). Bowl TH.13.A2/1 (Fig.

5:2) has a fine orange-pinkish mineral-tempered fabric; the decoration consists of horizontal painted bands and hatched motifs on the outer surface, and horizontal rows of dots on the inner surface. Ceramics dating from this phase are mainly concentrated on the southern slopes of the conical-shaped high mound (CA A-C).

Large numbers of pottery fragments dating from the Northern Ubaid (5300-4500/4400 BC) and Late Chalcolithic 1-2 (and possibly LC3) periods (4500/4400-3700 BC) were collected in all the surveyed areas (CA A-F) and in sporadic collections from the rest of the site.¹¹

Diagnostic sherds dating from the Northern Ubaid, or Ubaid 3-4 (c. 5300-4500/4400 BC), include holemouthed jars with channeled rim (often internally perforated), both painted and undecorated (Fig. 5:5-6). Jar TH.13.A20/2 (Fig. 5:6) is painted with black horizontal bands, zig-zag and hatched motifs. 12 Mediumsized hemispherical bowls with slightly or sharply incurving rim (Fig. 5:7) are quite frequent.¹³ Bell-shaped bowls, with straight or slightly flaring sides and thinned lips (either painted or undecorated) are widespread throughout the CU (Fig. 5:8-12). They are manufactured with buff or light green fine clay, with organic temper (straw) and mineral inclusions; the painted decoration is generally monochrome, ranging from black to darkbrown in color. This form is common in Northern Ubaid contexts and continues to be present during the beginning of LC 1. Bowl TH.13.A2/4 (Fig. 5:9) is painted with a black band on the rim and pendant loops on the inner surface, just below the rim.¹⁴ A hatched motif framed by horizontal painted bands on bowl TH.13.A3/39 (Fig. 5:11) is comparable with similar decorated bowls from Gawra, Telul eth-Thalathat and Qalinji Agha level D.15 Sinuous-sided bowl TH.13.A13/5 (Fig. 5:12), with the inner wall slightly thickened below the rim, can be

⁷ Interestingly, during the survey a concentration of numerous furnace wasters was observed in CA A-C on the southern slope of the mound. Several vitrified and overfired sherds, pertaining to LC 2 vessel types, hint at the existence of a LC ceramic workshop at the site. Beside this, several exemplars of ring scrapers were also collected from the same area.

⁸ Analyses are being conducted by C. De Vito and L. Medeghini at the Dipartimento di Scienze della Terra, Sapienza, University of Rome. In subsequent years a larger amount of ceramic material from surface collections and stratified contexts will be added to the samples selected in 2013.

⁹ Nineveh (Gut 1995, pl. 33: 518-20); Tell Nader (Kopanias *et al.* 2011, fig. 23:6).

¹⁰ Nineveh (Gut 1995, pl. 45: 704, 46); Tell Arpachiyah (Mallowan and Rose 1935, figs. 64-5).

¹¹ The chronological framework followed is that proposed by Stein (2012, 128-9). A large part of the sherds are well preserved (rim and body fragments or almost complete vases), particularly those from CU A-C, located on the southern slope of the site, suggesting a significant erosion of the mound, which may have exposed earlier stratified deposits and structures.

Similar forms are attested at Khanijdal (Wilkinson *et al.* 1996, fig. 11:72), Gawra XX-XVII (Tobler 1950, pl. 122:107), Arpachiyah (Mallowan and Rose 1935, fig. 38:1), Leilan VIb (Schwartz 1988, fig. 62:12); Abada L.I-II (Jasim 1985, figs. 174-5).

¹³ For comparisons see Hammam et-Turkman VA (Akkermans 1988b, fig. 97:2-3, 7), Leilan VIb (Schwartz 1988, fig. 62:13), Arpachiyah (Mallowan and Rose 1935, fig. 28), Nineveh (Gut 1995, pl. 51:782) and Gawra (Tobler 1950, pl. 124:127-30, 133). The painted decoration on bowl TH.13.A13/6 is similar to that seen on hemispherical bowls from Khanijdal: Wilkinson *et al.* 1996, fig. 7:9, 15-6.

¹⁴ Similar painted bowls are attested during Ubaid 3-4 in the Hamrin sites (such as Tell Abada L.II; Jasim 1985, fig. 157), and in Northern Mesopotamia, at Gawra (Level XVI throughout XIIA-XII; Tobler 1950, figs. 124:136; 132:238), Nineveh (Lower Ninevite 3; Gut 2002, fig. 8:12-3), Tell Nader (Kopanias *et al.* 2013, fig. 23:8), Khanijdal (Wilkinson and Tucker 1995, fig. 64) and Hammam et-Turkman IVA-D (Akkermans 1988a, figs. 2-6).

¹⁵ Gawra XVIII (Tobler 1950, pl. 124:132); Telul eth-Thalathat (Fukai et al. 1970, pl. 74:17); Qalinj Agha level D (Hijara 1973, fig. 26B: 8).

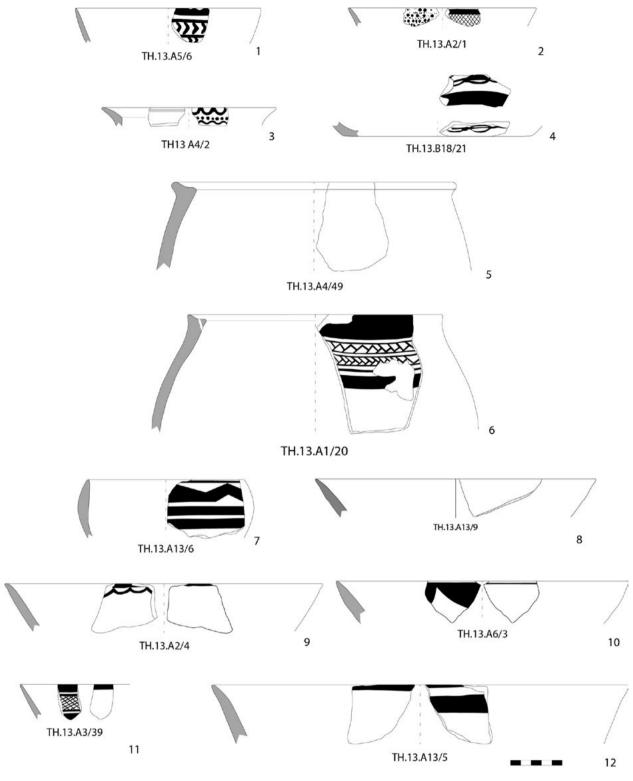


FIGURE 5. SAMARRA, HALAF AND NORTHERN UBAID POTTERY FROM HELAWA.

compared with similar exemplars from Tell Hamoukar (Phase 4), dating from the early LC 1.¹⁶

Several ovoid jars with short everted rim and rounded lips date to a later phase of the Northern Ubaid period/LC 1. Jar TH.13.A5/9 (Fig. 6:1) has a black painted decoration with cross-hatched triangles framed by two

¹⁶ Baldi and Abu Jayyab 2013, fig. 2.

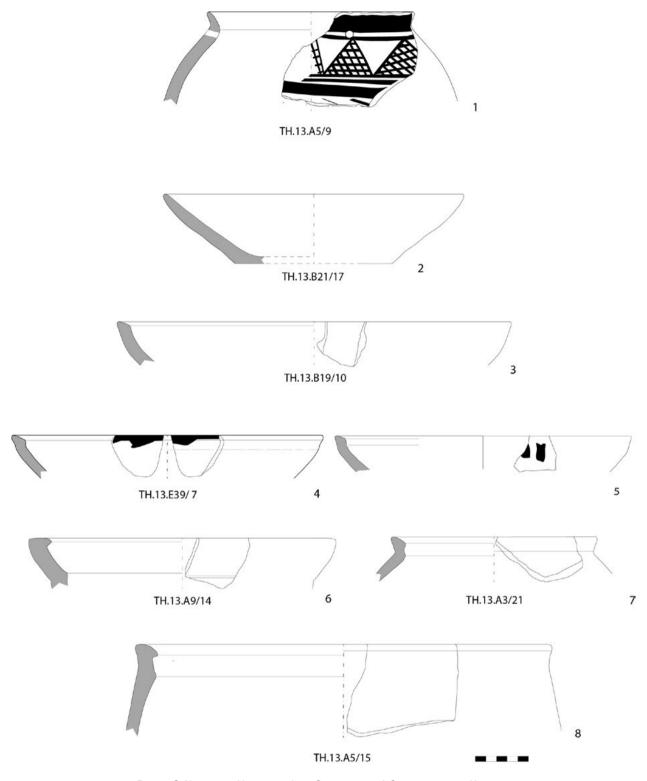


Figure 6. Northern Ubaid and Late Chalcolithic 1-2 pottery from Helawa.

horizontal bands, which resembles vessels from Gawra XIIA-XII and also in level A of the 1970 Sounding at Qalinj Agha, which yielded Late Ubaid/LC 1 transitional

sherds.17

¹⁷ Gawra, Tobler 1950, pls. 138:305, 139:307; Qalinji Agha, Hijara 1973, fig. 23. The cross-hatched triangles motif, generally painted just below the rim or the neck, becomes very common from the Terminal Ubaid/LC1 period onwards (LC 2-3): Rothman 2002b, 55.

A large number of wide flower-pot fragments, some of which have complete profiles (TH.13.B21/17, Fig. 6:2), has been collected from throughout the site. These coarse, chaff-tempered bowls are widely attested from the LC 1 and LC 2-3 (c. 4500/4400-3700 BC). The examples from Helawa are similar to the 'wide flower pots' from Gawra XII-XA (LC 1- early LC 2) and VIII (late LC 2/ early LC 3) (Fig. 6:2), as well as material from other sites of the Iraqi Jezirah and the Tigris piedmont (including the Erbil Plain), such as at Qalinj Agha, Nineveh (Lower Ninevite 3) and Grai Resh. 19

Diagnostic sherds dating to the LC 2 are well represented in the Helawa survey, from all the Collection Areas, with high percentages especially in CA A-C. This phase, corresponding to the so-called Gawra period (Gut's Gawra A-B),²⁰ can be better defined thanks to the presence of very distinctive types that occur in a number of Northern Mesopotamian sites, such as Gawra (XIA-IX), Nineveh (Lower Ninevite 3), Tell Nader, Qalinj Agha, Khirbat al-Fakhar/Hamoukar Southern Extension (levels 3-1), Feres al-Sharqi, and Hammam et-Turkman (VB). Several specimens of painted or undecorated bowls, with inwardly beveled-rim, occur; the fabric color ranges from brownish-pink to light green, with straw and mineral tempers, while the inner surface is generally wet-smoothed. Painted exemplars are decorated with a horizontal or irregular bands (generally reddish-brown or black) applied on the rim (Fig. 6:4). This type of bowl, generally with rounded bottom, is very common during the LC 2 period and is widespread on a number of Northern Mesopotamian sites, remaining in use also during the LC 3.21 Exemplars from Gawra B (LC 2)22 are characterized by two or three 'blobs' of dark paint; similar bowls are known from a number of sites in northern Iraq and south-eastern Anatolia and also surface finds from Helawa (Fig. 6:5). Among closed forms a common type is the necked jar with vertical and internal angled rim, characterized by chaff-tempered pinkish-buff fabrics. Jars TH.13. A9/14 and TH.13.A5/15 (Fig. 6:6-8) closely resemble specimens from both Nineveh and Qalinj Agha.²³ A

VIII; in the later phase VIII their fabric is tempered with a little chaff and the surfaces are generally smoothed (perhaps finished on a tournette): Rothman 2002b, 55.

single vessel fragment pertaining to a double-mouthed jar attests the presence of this diagnostic type at the site, whereas other characteristic LC 2 period markers (such as cannon spouts and double rim jars) cannot be identified among the surface material collected during the survey.²⁴

No certain LC 4-5 and 3rd millennium BC diagnostic sherds have been recognized so far among the material collected at Helawa; it thus seems possible that the site was abandoned after the mid-4th millennium BC and then re-occupied in the mid-2nd millennium BC, as suggested by the Late Bronze Age pottery collected in particular on the upper part of the mound and on the eastern and northern slopes (especially in CA D). This possibility constitutes an interesting working hypothesis, but clearly needs to be tested by means of excavation of the site.

Diagnostic LBA sherds include bowls with triangular, inturned or hammer-like rims (Fig. 7:1-2), large bowls with thickened rim and articulated profiles (Fig. 7:3), deep bowls with expanded rim (Fig. 7:4), slightly carinated bowls with everted rim, jars with rounded rim (Fig. 7:8), large jars/pithoi with square rim (Fig. 7:9) and pithoi with collared rim.²⁵ Fabrics are usually coarse, organic-and-mineral tempered or exclusively mineral-tempered, with small calcareous and mica inclusions. The presence of a late Khabur globular beaker with black-greenish painted horizontal band (Fig. 7:5) and a jar with expanded rim decorated with a zig-zag painted band on the upper part of the rim might be indicative of a late Old Babylonian or early Mittanian phase (Fig. 7:6).26 Several pieces of greyburnished bowls and small jars can be also dated to the Mittanian period, with precise parallels at Brak, Rimah and Nuzi (Fig. 7:7).27 Finally, some sherds of shallow bowls with a painted red band on the rim can be easily ascribed to the Mittanian/early Middle Assyrian period.28

¹⁹ Rothman 2002b, fig. 4:g and 9:n; Wilkinson and Tucker 1995, fig.
65; Hijara 1973, pl. 14: 8, 10-3, 15: 1, fig. 23; Gut 2002, fig. 11: 17-20;
Kepinski *et alii* 2011, pl. 12: 9-10.

²⁰ Gut 2002; Rothman 2002b.

²¹ Baldi and Abu Jayyab 2013, 6. Parallels exist from Nineveh and Gawra (Gut 2002, fig. 11: 8-14), as well as Khirbat al-Fakhar, Feres al-Sharqi and Hammam et-Turkman (VB) (Baldi and Abu Jayyab 2013, fig. 4; Akkermans 1988a, fig. 9: 140-2).

²² Rothman 2002b, 56, fig. 7: 1-t.

²³ Gut 2002, fig. 12: 20 and 23. Qalinj Agha shows close affinities with Nineveh, and in particular with the Lower Ninevite 3 period (LC2), as demonstrated by the number of ceramic parallels between the two sites (Gut 2002, 19, fig. 12: 13-54). Similar jar types are also attested at Hammam et-Turkman (Akkermans 1988a, fig. 9: 140-2), Khirbat al-Fakhar and Feres al-Sharqi (Abu Jayyab 2012, fig. 7:11; Baldi and Abu Jayyab 2013, fig. 6, top) from phase LC2.

²⁴ See e.g. Rothman 2002b, fig. 7: e-g, with exemplars from Gawra XI/ XA, Brak and Telul eth Thalathat VIIa; see also Kopanias *et al.* 2014, fig. 9:g with a complete specimen from Tell Nader.

²⁵ The majority of the diagnostic rims collected are from CA D,

The majority of the diagnostic rims collected are from CA D, corresponding to the area of the small eastern mound, where fragments of baked bricks have also been found, suggesting the presence of an LBA structure immediately below the surface. It seems that two main phases of occupation (late Old Babylonian/Mittanian and Middle Assyrian) are present here. Scattered LBA material from the main mound also suggests that the 2nd millennium settlement includes the highest portion of the site. The most widespread types of Mittanian (see for comparisons the Rimah and Brak assemblages: Postgate *et al.* 1997; Oates *et al.* 1997) and Middle Assyrian pottery (See Pfälzner 1995 and especially Duistermaat 2008) occur. However, no Nuzi Ware has been found in the surface collections.

²⁶ Parallels from Tell Nader (Kopanias *et al.* 2014: fig. 11:f) and Brak (Oates *et al.* 1997, fig. 191:270, 195:383-5).

²⁷ Oates et al. 1997, 74-5, fig. 189.

²⁸ See e.g. similar material from Bderi, Sheikh Hamad, Mohammed 'Arab (Pfälzner 1995, pl. 1:c-d, f, 133:b-c, 189:b-c) and Brak (Oates *et al.* 1997, 73, figs. 187-8). and sites in north-eastern Jezirah (Wilkinson and Tucker 1995, fig. 72:16, 18).

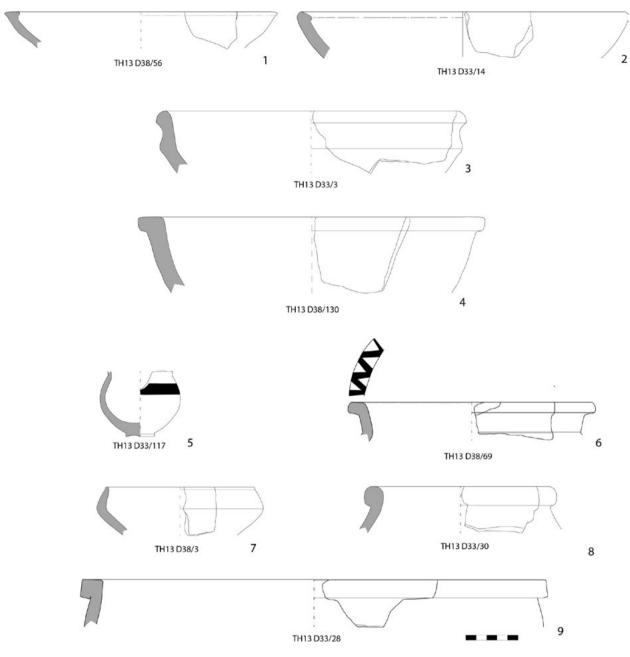


FIGURE 7. LATE BRONZE POTTERY FROM HELAWA.

Only a few Neo-Assyrian and Islamic sherds were collected, probably suggesting squatter occupation during the 1st millennium BC and the Islamic Period.

Small Finds (L. Peyronel)

More than 600 small finds, mainly consisting of chert and obsidian blades and tools (c. 150), chert debitage (c. 400), but also including clay nails, clay ring scrapers,

polishing and percussion tools, grinding slabs and grindstones, and pottery spindle whorls, have been found.

Obsidian blade, bladelets, and flakes (Fig. 8) are scattered on the surface of the whole site (53 pieces), although the intensive survey documented a concentration of finds on the southern slope and in particular in the central part of CA B, where several flakes and some exhausted cores



FIGURE 8. OBSIDIAN BLADE, BLADELETS, AND FLAKES FROM CU A20 AND D33.

indicate the presence of manufacturing activities.²⁹ The percentage of obsidian within the lithic assemblage collected on the surface is 8.8%, fitting well with the ratio of obsidian to other stone/flint types observed in Northern Mesopotamia/Jezirah Late Ubaid and LC1-2 sites.³⁰

A large amount of unworked flint, cores, flakes and debitage (Fig. 9) together with more than one hundred blades and tools of different types – mainly dating from the Late Ubaid and Late Chalcolithic periods – were found, especially in CA A-C, but also in the lower and peripheral area of the site.³¹ Blades with trapezoidal section of 'Cananean type' are prevalent, but flake scrapers and other irregular flake tools are present as well. The raw material differs in quality and color, including gray, dark brown, light brown, white and yellow chert, although no selection is seen in the final products.

Among clay objects, five clay nails/'mullers' and seven ring scrapers were collected (Fig. 10), dating from the 5th-4th millennium settlement, as well as five terracotta spindle whorls. Straight or curved/bent clay nails are attested in several Ubaid settlements in Southern Mesopotamia but they have also come to light in Northern Ubaid sites such as Tell Nader in the Erbil Plain, Gawra XIX-XII, Tell Zeidan, and Arpachiyah.³² The so-called ring scraper is widely attested in Susiana and Southern Mesopotamia in Middle to Late Uruk contexts related to pottery manufacture, 33 although ringshaped clay scrapers have also been found in LC 2-3 contexts in Northern Mesopotamia and Jezirah, such as at Tell Nader, Kosak Shamali, Brak HS1 and especially Tell T2.34 Several percussion, cutting and polishing tools made especially of hard stones were scattered in large quantities on the southern and eastern slopes, and probably date from the pre- and proto-historic phases. Some basalt grindstones and percussion tools, on the other hand, might date to the 2nd millennium

²⁹ A macroscopic distinction between a black opaque and a gray-green translucent obsidian resembles the raw material attested at Tell Nader, roughly dated to the same period. The analysis of obsidian samples from Nader has shown the presence of two different sources: the Lake Van peralkaline obsidians of the Bingöl/Nemrud Dag group and an alleged Cappadocian obsidian (Suphan Dag): Kopanias *et al.* 2013, 33-6.

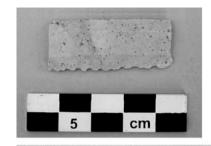
³⁰The only exception is Khirbat al-Fakhar/Hamoukar Southern Extension, where obsidian dominates the inventory, clearly indicating a special role of the settlement in the production of obsidian tools: Al Ountar *et al.* 2011, 8-10, 13-4.

Quntar *et al.* 2011, 8-10, 13-4. ³¹ For an overview of the Late Ubaid and Post-Ubaid/LC 1-2 lithic industry see Healey 2010; Thomalsky 2012.

³² Kopanias *et al.* 2014, 144 (Tell Nader); Tobler 1950, 169-70, 224, pls. 83:f-g, 156:47-50 (Gawra); Stein 2010a, 129-30, fig. 11 (Zeidan); Mallowan and Rose 1935, 90, fig. 49:8 (Arpachiyah).

³³ Alden 1988. The interpretation of the ring scraper as a tool used in pottery production is confirmed by the discovery of several exemplars associated with kilns and pottery waste in the industrial quarter located in the Brak urban periphery and dated to LC3: McMahon 2013, 71-2, fig. 3.

 ³⁴ Kopanias *et al.* 2014, 144 (Tell Nader); Sudo 2003, 220-1, fig. 15.6, pl. 15.4:1, 6-9 (Kosak Shamali); Matthews 2003, fig. 4:23 n. 25; McMahon 2013, fig. 3 (Brak).



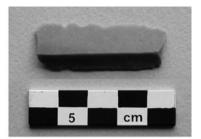




FIGURE 9. FLINT TOOLS AND DEBITAGE FROM CU B21, D32, D38.

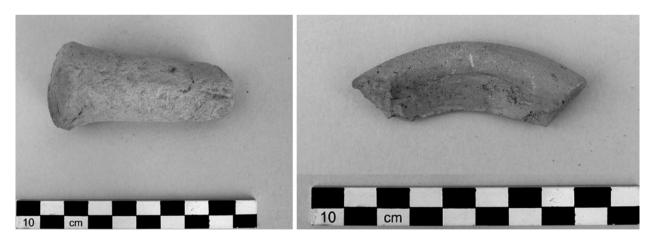


FIGURE 10. CLAY NAIL (TH.13.A20.25) AND RING SCRAPER (TH.13.A23.44).

BC. Finally, luxury objects are represented only by a small fragment of a marble vessel and a rock crystal bead.

Conclusion

The first season of the Italian Archaeological Expedition (MAIPE-IULM) has identified at Helawa an important

prehistoric and proto-historic settlement in the southwestern Erbil Plain, which reached at least 6.5 ha during the 5th-4th millennium BC. It was probably one of the main settlements of that period in the entire plain.³⁵ The large amount of material dating from the Late Ubaid (5300-4500/4400 BC) and Late Chalcolithic 1-2 phases (4500/4400-3850 BC), and the lack of significant levels dating to later periods, makes Helawa an ideal site for excavation in order to reconstruct the emergence of social complexity in Northern Mesopotamia.³⁶ In the Upper Tigris, Sinjar and Eastern Tigridian regions the only site that has been extensively excavated is Tepe Gawra, which constitutes the key sequence for the Upper Tigridian region.³⁷ In other important sites, either the 5th and early 4th millennium occupation has been brought to light just in limited soundings (Nineveh, Al-Hawa, Grai Resh),³⁸ or only the Halaf-Ubaid phases are well documented (Arpachivah, Kirbet Derak, Yarim Tepe, Telul eth-Thalathat). Therefore our knowledge of this crucial period is based on data from settlements located in the Syrian Jazirah and along the Euphrates (such as Khirbat al-Fakhar, Brak, Ziyadeh, Mashnaqa, Hammam et-Turkman, Zeidan, Kosak Shamali).

After a probable break in occupation during the 3rd millennium BC (no diagnostic finds of that period were identified during the survey), Helawa was occupied by a small (fortified?) settlement during the second half of the 2nd millennium BC. The presence of building remains visible at the surface on the top of the main mound and the reliable dating of the south-eastern mound to this late phase make it probable that the occupation expanded to 3-4 ha during the Late Bronze Age.

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³⁵ The Erbil Plain was probably densely settled during the Late Ubaid and Late Chalcolithic periods, as suggested by the first results of the EPAS survey (Ur *et al.* 2013) and new excavation projects (Tell Nader, Tell Baqrta, Basht Tepe, Surajah). The small settlement of Tell Nader located in the periphery of Erbil possesses a sequence very similar to that of Helawa (Kopanias *et al.* 2014). The only previously investigated V-IV millennium settlement in the plain is Qalinj Agha (Abu al-Soof 1966; 1967; 1969; Hijara 1973).

³⁶ The site might also have a substantial Halaf occupation below the LU/LC phases, and possibly a more limited subsequent LC3 phase. The chronological framework and absolute dates follow Stein 2012. For the spread of the Ubaid into the northern regions and its explanation according to the interaction sphere model, see Stein 2010b.

³⁷ Tobler 1950; Rothman 2002a.

³⁸ For the Deep Sounding of Nineveh see Gut 1995; 2002. The largest upper Tigris settlement with an uninterrupted sequence from Late Ubaid (15-18 ha) to Late Chalcolithic (50 ha), Tell al-Hawa was surveyed and excavated during short campaigns in 1986-1988: Ball, Tucker and Wilkinson 1989; Ball 1990a; 1990b.

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From the banks of the Upper Tigris River to the Zagros Highlands. The first season (2013) of the Tübingen Eastern Habur Archaeological Survey

Peter PFÄLZNER and Paola SCONZO

1. Introduction

After decades of strife and unrest, during which Northern Iraq remained closed to the outside world, a new era of international scientific enterprise has begun in this region thanks to the recent democratic and civil upturn and its subsequent economic resurgence: scholars from various well-known institutions have come back to this land, and various projects aiming at the preservation and enhancement of its cultural heritage have been proliferating. In the last few years, together with the restoration and refurbishment of historical monuments, there has also been a spread of new archaeological undertakings in the form of surveys and excavations, the quality and quantity of which is fully shown in the present volume.¹

Such projects are now fostering a new wave of wideranging interdisciplinary field research, which above all has ensured a shift in the focus of traditional archaeological investigation. Now, large historical cities, famous capitals and the metropolitan elites are studied side by side with village and town communities in the countryside, thus avoiding prioritising one sector of society over another.

Based on this approach, a Tübingen University research project was recently initiated in the northernmost part of Iraqi-Kurdistan, in the province of Dohuk. The research area is located at the foothills of the Zagros Mountains. The project is referred to as the 'Eastern Ḥabur Archaeological Survey (EHAS)'.

The main goal of the present contribution is to discuss the background of the new project and to present briefly the results of the first survey season conducted in the summer of 2013.

2. The Eastern Habur Archaeological Survey: key issues and goals

The EHAS project is a long-term reconnaissance programme undertaken in the northern and western parts of the Dohuk province of the Autonomous Region of Kurdistan in Iraq. It is funded by the German Research

Foundation (DFG) in the framework of the Tübingen Collaborative Research Group (SFB) 1070, as subproject B 07 entitled 'A hunt for resources? The expansion of Mesopotamian States into the Mountainous Regions of the North'. This project aims at investigating the development of landscape and settlement patterns in this largely unexplored region from Palaeolithic to modern times. A special emphasis is put on the relations between the Mesopotamian territorial states of the Akkadian and Neo-Assyrian periods and the mountainous areas on their northern periphery. The role played by natural versus cultural resources, both from inside and outside of the region, and the resulting socio-cultural dynamics, are particular questions to be investigated. The study of the development of the so-called 'periphery' as a settlement and resource region will form an important contribution to our understanding of the cultural history of northern Mesopotamia.

3. Geography and history of research

The EHAS survey region covers a vast area of about 4,400 km². It extends from the eastern bank of the Tigris River in the west to the city of Amedi in the east, from the Turkish frontier in the north to the Zawita gorge in the south.2 The area undoubtedly played a crucial strategic role throughout time as a major commercial and military passage along and across the middle Tigris River and its tributaries: not only was it crossed by important east-west trade routes linking the Iranian plateau with the Syrian steppe and the regions further west, but it also controlled the north-south transit routes. Thus, it provided access to the rich natural resources of the Anatolian highlands for Assyria and Lower Mesopotamia. Apart from a site reconnaissance carried out by Iraqi archaeologists before the recent wars and collected in the 'Atlas of the Archaeological Sites in Iraq' (Anon. 1976) and several smaller modern excavations at Dohuk-Carestin, Dohuk-Šindokha and Semeel,3 as well as at Amedi4 and Zakho, where the Dalal-Bridge has been investigated and restored,5 the

¹ See also Kopanias et al. 2015.

² For a detailed account, see Pfälzner and Sconzo 2015.

 $^{^3}$ Three excavations carried out by Dr. Hassan Qasem, Director of the Department of Antiquities Dohuk.

⁴ Nováček 2011.

⁵ Project carried out under the auspices of Dr. Hassan Qasim, Director of the Department of Antiquities Dohuk.

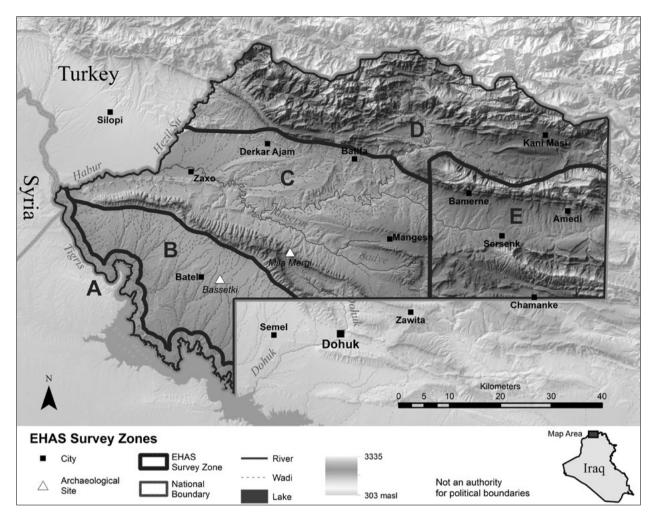


FIGURE 1. GEOGRAPHICAL MAP OF THE EHAS REGION (DOHUK PROVINCE), WITH INDICATION OF THE FIVE SAMPLING ZONES (A TO E).

region is largely *terra incognita* from an archaeological point of view. The wider region is however embedded into a cluster of large-scale field activities, carried out in the recent past and in the present. Immediately to the north is the Cizre-Silopi plain, where an area of about 400 km² was surveyed in the late 1980s by Guillermo Algaze and later on by Gülriz Kozbe; 6 to the south-west, and now partially underwater, is the region of 'Zammar', which includes the fertile alluvial valley of the Tigris and was intensively surveyed and excavated in the 1980s by the British Archaeological Expedition to Iraq in the framework of the 'Saddam Dam Salvage Project'; 7 to the south is the hinterland of Nineveh, currently being investigated by the 'Land of Nineveh Archaeological

⁷ Ball *et al*. 2003.

Project' (LoNAP) of the University of Udine under the direction of Daniele Morandi Bonacossi.⁸ The EHAS project practises a close scientific exchange with the LoNAP project and with two other large survey projects launched in 2012 in neighbouring areas to the south-east, the 'Upper Greater Zab Archaeological Reconnaissance' (UGZAR) under the direction of Rafał Koliński of the University of Poznan (Poland)⁹ and the 'Erbil Plain Archaeological Survey' (EPAS) directed by Jason Ur¹⁰ of Harvard University. These four projects form a closely-linked working group, namely the 'Assyrian Landscapes Research Group', which shares a common

⁶ Algaze et al. 2012; Kozbe 2008.

 $^{^8}$ Morandi 2012-13; 2014a; 2014b; *forthcoming* a; Morandi and Iamoni 2015 Morandi, this volume; Iamoni, this volume.

⁹ Koliński 2012; 2013; 2014.

¹⁰ Ur et al. 2013.

basic methodological approach, both in the field and for the study of materials, which hopefully will help to achieve important results for the reconstruction the cultural history of Kurdistan.

On geographical grounds the Tübingen survey region is characterized by a strongly heterogeneous landscape, which includes river valleys and wadis, hills and plains, mountainous rocky chains, cliffs and caves. It can be subdivided into five large geographical zones (Fig. 1): Zone A covers the eastern bank of the Tigris valley; Zone B comprises the Selevany plain, which is part of the East-Tigridian plateaus, and extends up to the first Zagros mountain range, the Jebel Bihair; Zone C comprises the lower Zagros chains and the Habur River basin; Zone D encloses the inner or higher Zagros chains and their narrow valleys; Zone E corresponds to the corridor of Amadīya/Amedi.11 These five zones differ in geomorphology, altitude, soils, precipitation, accessibility and available resources. Together, they embrace a geographical transect through the northern borderland of Mesopotamia, i.e. from the riverine environment of the Tigris, through to the foothills and elevated highlands of the Zagros Mountains. Thus, the EHAS region is ideal for investigating and understanding the nature and scope of the interaction between lowland and highland societies through time.

4. Methods and preliminary results of the 2013 survey season

Both for off-site and on-site methodology the EHAS follows well-established procedures and standard techniques of modern archaeological surveys. These include the ground control of site locations through remote-sensing, using both new¹² and old¹³ satellite images. Furthermore, a re-examination of already known historical and archaeological sites is being carried out, such as the sites of Bassetki and Mila Mergi. In addition, a detection of further sites through vehicle and walking survey is conducted.¹⁴

The first season lasted less than one month and included three weeks of actual fieldwork and a final fourth week devoted to finds processing. Due to time constraints, the investigation of caves (which are quite numerous in the region, especially in Zones C, D and E) and an off-site survey by means of transect-walking was postponed to future campaigns;¹⁵ fieldwork was instead concentrated on a very limited portion of land, in Zone B, in a selected area of less than 80 km² within the Selevani Plain to the south of the Jebel Biḫair, where the site of Bassetki is located (Fig. 2).

Since the latter is the largest mound so far known in the survey area, it deserves further comment. Bassetki represents a key element in the historical topography of the region and is one of the reasons why the EHAS is taking place in this area. It lies in the heart of Zone B, about 25 km to the west of the city of Dohuk, along the modern Dohuk-Zakho highway. The site became famous in the 1970s thanks to the chance finding of a bronze statue base. The latter, generally known as the 'Bassetki Statue', bears an Akkadian inscription mentioning the divinization of king Naram-Sin (2273-2219 BC)¹⁶ and has been considered a key monument for understanding the expansion of the Akkadian imperial ideology in the northern periphery (consequently, as a 'cultural resource', in terms of the Tübingen SFB 1070 project). In future, it needs to be ascertained whether this object was originally placed on the site or was brought in at a later period (for instance, as the booty of war). The decision to allocate most of the efforts of the 2013 season in the this area was therefore not at all casual, but derived from the desire to investigate the chronology of the site by surface survey and the settlement system of the area in the third millennium BC.

In the same season, only a few days were left to work on the northern side of the Jebel Biḥair mountain range, where efforts were concentrated on the valley of the Sadya River, south of the Mangêş Mountains. Here, the site of Gir-i Peteh is located, the second largest site of the region known so far. Two more days were finally spent on visiting the Mila Mergi rock relief (see below).

At the end of the field campaign a total of 21 new archaeological sites and heritage monuments had been identified, 16 located in the Selevani Plain of Zone B and five in Zone C. Interestingly, the rate of positive site identifications among the potential sites detected from satellite imagery was high (about 60%).¹⁷

¹¹ For a detailed account on the geography of the region, see Pfälzner and Scope 2015

¹² GeoEye imagery from 2004 and 2010, available via GoogleEarth™, and DigitalGlobe™ from 2010 available on the Bing Maps website.

¹³ Our analysis was based on three different CORONA imagery missions (Mission 1102 of 11th December 1967, Mission 1104 of 16th August 1967, and Mission 1107 of 2 August 1969), all orthorectified and freely accessible through the 'CORONA Atlas of the Middle East' of the University of Arkansas - http://corona.cast.uark.edu/index.html. ¹⁴ For more details on the methodology, see: Pfälzner and Sconzo 2015. It is worth noting again here that the chronological determination of finds was accomplished by making use of the 'Working Ceramic Typology (2013)', a pottery catalogue which is an outcome of the fruitful collaboration with the 'Assyrian Landscapes Research Group'.

¹⁵ The 2013 survey team, under direction in the field of Paola Sconzo (University of Tübingen), included Benjamin Glissmann and Matthias Lang, responsible for GIS applications and mapping, Ivana Puljiz in charge of the recording of small finds and Simon Herdt appointed for finds photography. All members regularly took part in the fieldwork as well and cooperated in sampling and registration. Liwa al-Ashemi and Terek Abdu worked as draftsmen.

¹⁶ On the retrieval, Al-Fouadi 1976; Braun-Holzinger 1984, 23, pl. 13 no. 61; on the inscription, cf. Farber 1983; Frayne 1993, 113. For a recent summary and evaluation of this discussion, see: Brisch 2013, 37-41

^{37-41. &}lt;sup>17</sup> The 2013 analysis of the remotely sensed images provided for the whole region about 140 'potential' sites, but was not exhaustive. Most

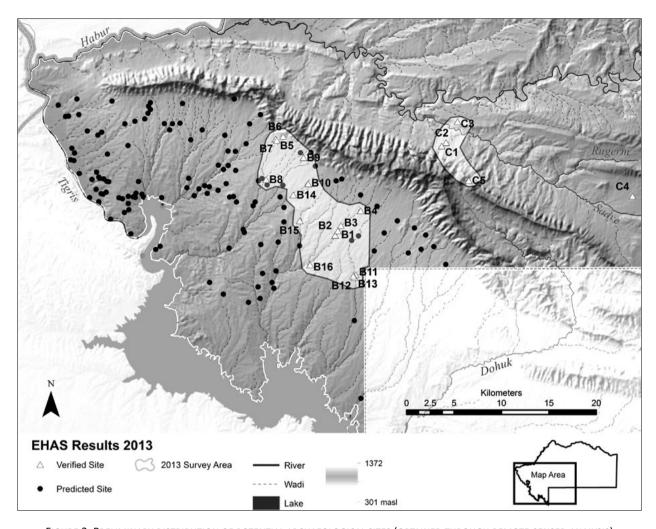


FIGURE 2. PRELIMINARY DISTRIBUTION OF POTENTIAL ARCHAEOLOGICAL SITES (OBTAINED THROUGH REMOTE-SENSED ANALYSIS) AND TRUE SURVEYED SITES IN THE TWO AREAS INVESTIGATED IN 2013.

The site typology in the explored area so far includes tells with a lower town (just one, i.e. Bassetki, site B01, Fig. 3:a) or without (thirteen); hill- or bluff-top sites (six, Fig. 3:b-c); rock-carved monuments (only one: Mila Mergi, site C05); and ruins (one). In addition, many caves and rock shelters were identified but not visited (Fig. 3:d). Most of the mounded sites displayed a multi-period

of these sites were apparently concentrated in zones A and B, in the undulating plains that stretch between the Tigris river to the west and the Jebel Biḥair to the east; while the hilly and mountainous landscapes on the other side of the first mountain chain (zones C-E) appeared from the air to be much more sparsely settled. In zone B, out of the 111 possible sites only 14 were checked, 12 of which turned out to be ancient settlements. Four more were identified through enquiries with local residents. In zone C, out of 20 potential sites only three were visited and identified; two more were spotted while travelling on the way.

occupation, ranging from the Pottery Neolithic to late historic periods, with a noticeable peak in the late third-early second millennia BC,¹⁸ as well as in Hellenistic, Parthian and Islamic times. Most of these are spread out along wadis and watercourses or are located in proximity to natural springs.¹⁹

In the study area no significant urbanisation was noticed, apart from Bassetki, which clearly operated as a major regional centre in the late third/early second millennium BC (see below) and which reached, with its lower town, a remarkable size of over 50 ha. Most other sites did not exceed 3 ha size.²⁰ The second largest site is Gir-i

¹⁸ For a more detailed account, cf. Pfälzner and Sconzo 2015.

¹⁹ For a similar pattern, cf. also Morandi Bonaccossi 2012-13.

²⁰ The same applies to the LoNAP region (Morandi and Iamoni, 2015).

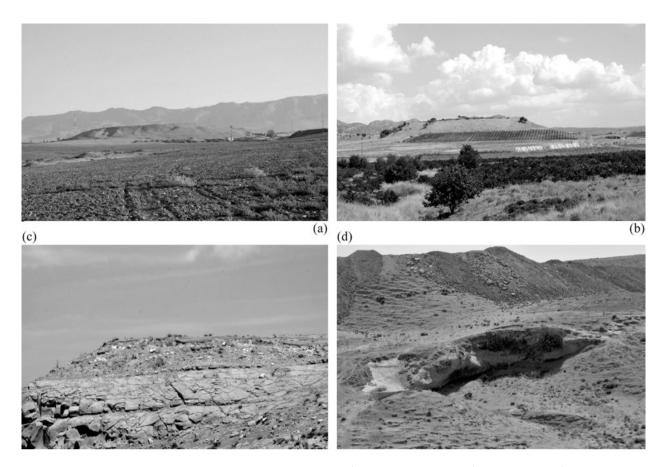


FIGURE 3. SITE TYPOLOGY OF THE 2013 TRIAL SEASON: A) TELL WITH LOWER TOWN (BASSETKI, SITE B01);

B) HILL-TOP SITE (GIR-I PETEH, SITE C04); C) BLUFF-TOP SITE (BAMIR, SITE B16);

D) SHELTERS (IANES, UNIVERSITY OF TÜBINGEN / P. SCONZO).

Peteh (site C04, Fig. 3:b), in Zone C, which presumably acted as a provincial centre in Hellenistic and Parthian times.

A strong continuity of occupation could be noticed especially at mounded sites. For example, a continuous occupation from the Halaf to the Ubaid period is often attested, and the same applies to the late third and early second millennium BC (Early to Middle Bronze Age).²¹

Periods of sparse occupation so far seem to be the fourth millennium, or Late Chalcolithic. Uruk horizons are almost absent, and even a clear occupation in the second half of the fourth millennium BC was hardly recognized. Equally rare is the attestation of early third millennium BC occupation, also known as the Ninevite 5 period, and the Late Bronze (Mittanian/Middle Assyrian period). Furthermore, no Hassuna, Late Iron Age or Sassanian

sites could be clearly identified so far.²² However, it remains an open question whether the lack of sites from the latter periods (Late Iron Age and Sassanian) represents the real situation or is due to our still limited knowledge of diagnostic pottery attributes.

In addition, very little can be said of the occupation during the Islamic periods, as the pottery from different Islamic phases has not yet been analysed in detail.

5. Zone B: Bassetki in the third millennium BC

In order to better assess the possible origin of the statue base from Bassetki and consequently to increase our understanding of the Akkadian presence in the region,

²¹ Pfälzner and Sconzo 2015, fig. 23.

²² Very little can be inferred at this stage of the research about the midfirst millennium BC, roughly corresponding to the Neo-Babylonian and Persian periods. The latter, in fact, still remain both historically and archaeologically poorly understood in this part of Mesopotamia (Pfälzner and Sconzo 2015).

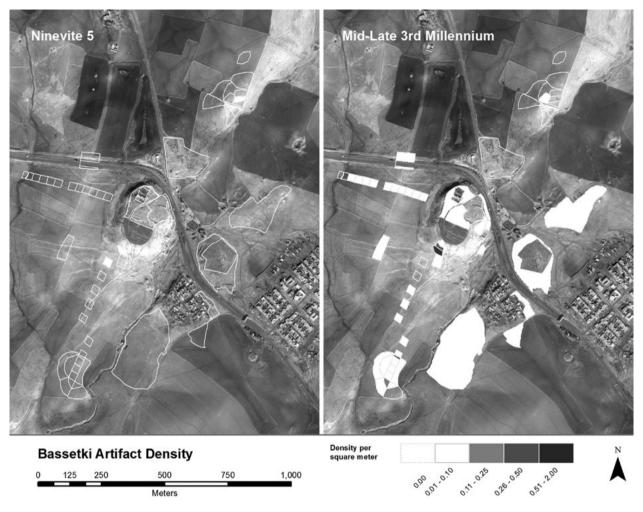


FIGURE 4. THE SITE OF BASSETKI IN THE EARLY BRONZE AGE ACCORDING TO SURFACE SHERD COVER.

particular attention was paid to the site of Bassetki and its surroundings during the first survey season. About eight survey days were devoted to the site.

An intensive collection was conducted on the mound, while three radial transects of contiguously arranged 30 x 30 m squares were selected for surveying the lower town. The mound itself turned out to have been almost continuously settled from the early third millennium BC to Hellenistic times, and then again in the Islamic period until very recently, when the Kurdish village of Bassetki, located on top of the mound, was destroyed by Saddam Hussein's army in 1974. The lower city proved to have been occupied exclusively during the Early and Middle Bronze Ages, periods in which the site apparently grew into a major urban centre with an area of

approximately 50 ha with additional surrounding satellite settlements. 23

At Bassetki, the mid to late third millennium occupation has been predominantly detected along the southern flanks of the mound and in the lower city (Fig. 4). Surface finds consist mainly of mineral- and/or chaff-tempered buff wares, as well as of a very fine, hard and dense ware, in the literature generally referred to as 'Akkadian green ware' or 'Post-Akkadian Stone Ware'. ²⁴ The latter apparently suggests an important occupation during the last quarter of the third millennium, prompting the assumption that the city may have acted as a major

²³ Pfälzner and Sconzo 2015, fig. 14.

²⁴ Pfälzner and Sconzo 2015, fig. 25 and pl. 1: nos. 24-8, 32-9, 41.



FIGURE 5. MILA MERGI, LOOKING NORTH TOWARDS THE SYNDA PLAIN AND THE TURKISH BORDER (IANES, UNIVERSITY OF TÜBINGEN / P. SCONZO).

outpost of the Akkadian empire at its northern periphery. This would make it plausible that the statue base of Naram-Sin was intentionally placed at Bassetki already in Akkadian times.

On the other hand, the Middle- and Neo-Assyrian occupation of the site, confined to the tell itself, does not seem to suggest for Bassetki any specific supra-regional role on the chess-board of the late second to early first millennia BC. It is, therefore, not justified to assume that the Akkadian statue might have been brought to Bassetki at that time.

6. Mila Mergi and the Neo-Assyrian expansion

As regards the Neo-Assyrian period, the EHAS region embraces the border between the northern periphery of the Assyrian Empire and some of the buffer states separating it from the rival kingdom of Urartu. In fact, within the EHAS region one of the cornerstones for retrieving the Assyrian expansion to the north is to be found: the inscribed rock relief at Mila Mergi. Commissioned by Tiglath-pileser III in around 739 BC, the relief is located in a remote (albeit well-chosen) spot, along a comfortable pass across the Jebel Bihair. The latter is the first steep mountain ridge of the Zagros and thus controls the access route from the plains of the Tigris to the highlands and the Eastern Habur valley, and eventually also to Urartu. The relief looks over the wide basin of the Eastern Habur and its eastern tributaries north of the Jebel Bihair range, as well as the access routes to the high mountain ranges along the modern Iraqi-Turkish border (Fig. 5).

First published in 1948,25 the inscription was studied by Nicholas Postgate in the early 70s²⁶; after which it was

for many decades almost inaccessible due to political factors. The monument seems to have acted as an important structuring element of the political map of the 8th century BC and to have functioned as a resource for political domination.

The inscription, in combination with other royal inscriptions of the same king,²⁷ mentions the conquest by Tiglath-pileser III of the Land of Ulluba, located on the Assyrian periphery. These events mark a phase of protracted competition between Assyria and Urartu over the buffer states and 'Habhu lands' in the mountainous regions of modern northern Iraq and south-eastern Anatolia; it resulted in the destruction of some Ullubean 'towns' and the foundation of a new provincial centre of the region, named Aššur-iqiša. As a working hypothesis it is argued that the land of Ulluba could have been located north of the Mila Mergi pass within the fertile Sindi plain. In view of the possible importance of the monument, a visit to the relief was first undertaken in 2013. The major intention was to launch a renewed documentation and reading of the inscription, as all later editions followed the explicitly preliminary documentation of the relief by Postgate.

Unfortunately, our first visit in September was highly disappointing. We found that the relief had been partly destroyed by vandalism. While the image of the king is more or less intact, the lower part of the inscription had been badly destroyed. As a salvage operation we were able to collect a large number of broken fragments of the relief at the foot of the rock (Fig. 6), which we brought to the National Museum of Dohuk. Thus, it is hoped that in the future the relief will be restored.

What we can infer from our preliminary results of the 2013 survey season for the Neo-Assyrian period, or the

²⁵ Al-Amin 1948; Shukri 1954.

²⁶ Postgate 1973.

²⁷ Tadmor and Yamada 2011, 19-169.



FIGURE 6. RESCUE OPERATION AT THE MILA MERGI ROCK RELIEF (IANES, UNIVERSITY OF TÜBINGEN / P. SCONZO).

Iron Age more generally, is that the site distribution in both Zones B and C points towards a settlement system mainly based upon small sites, possibly rural villages, and also farmsteads, which do not exceed 3 ha, thus paralleling the evidence from the Syrian and Iraqi Jezirah and the Nineveh hinterland.²⁸ In Zone C, Gir-i Peteh (site C04), the largest site in this zone, proved to show a limited Iron Age occupation, followed by a rather pronounced amount of evidence for the Hellenistic and Parthian periods. In zone B, the finding of a Neo-Assyrian cylinder seal at Bassetki,²⁹ together with a limited amount of Neo-Assyrian pottery, suggests that the

²⁹ Puljiz in Pfälzner and Sconzo 2015.

earlier Bronze Age site was still inhabited during the Iron Age II period, though only on the upper mound. A more profound investigation is needed to better understand the mechanisms of Assyrian expansion in the region.

7. Conclusions

The first season of the Tübingen EHAS project in 2013 has proven the enormous archaeological potential of the survey region with its interesting and diverse geographic zones. The preliminary data on settlement patterns suggest a first settlement in the Neolithic period, a continuous albeit sparse occupation in the Chalcolithic, an intensive Early Bronze Age occupation, continuous settlement during the Middle and Late Bronze Age, the latter represented by both the Mittani and the Middle Assyrian pottery tradition, and a slight decline of settlement intensity during the Iron Age. The later periods, from Hellenistic through Parthian and Sassanian to the Islamic periods, are equally well attested. Future field-work will be aimed at intensifying the archaeological survey in Zones B and C and also in the other survey areas (Zones A, D-E). The GIS mapping of the settlement system, as well as the identification of available resources, ecological factors and communication routes will hopefully contribute to a better understanding of the impact of the Mesopotamian empires upon the local cultures and societies through time.

Acknowledgements

The first season of the University of Tübingen archaeological survey in the Iraq-Kurdistan province of Dohuk was made possible thanks to the official permit granted by the Department of Antiquities of the Kurdistan Regional Government in Erbil and by the Dohuk Directorate of Antiquities, headed respectively by Mr. Zeineddin Abu Bakr (Mala Awat) and by Dr. Hassan Ahmed Qasim, to whom go our deepest thanks for their support and advice during all stages of our research. Our work would not have been possible without the enormous support of Mr. Mohammed Yusufi from the Zakho branch of the Dohuk Antiquities Department, who acted as government representative and accompanied us during our field trips and supported our work in many ways. The EHAS also owes a special debt to Jason Ur (University of Harvard), Alberto Savioli and the LoNAP team for making available various topographic maps and satellite images of the region. We are deeply indebted to all our colleagues of the 'Assyrian Landscapes Research Group', who provided a great deal of information from the results of their previous research work in the region.

Last but not least, special thanks are due to Konstantinos Kopanias and John MacGinnis, organizers of the Athens conference and editors of the present volume.

 $^{^{28}\,\}mathrm{Morandi}$ and Iamoni 2015, with further references to neighbouring regions.

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Gre Amer, Batman, on the Upper Tigris: A Rescue Project in the Ilisu Dam Reservoir in Turkey

Gül Pulhan and Stuart Blaylock

The Gre Amer excavations

Gre Amer is located on a natural hill on the east bank of the Garzan tributary of the Tigris River, 26 km north of their confluence, near the boundary of the modern-day provinces of Batman and Siirt (Fig. 1). Our excavations started in 2009 during the second phase of the Ilisu salvage excavation projects, at first in cooperation with the Mardin Museum and, since 2011, with the newlyestablished Batman Museum. The archaeologically unexplored status of the area, and the presence of second and first millennia BC material in surface collections, supported by a surface find of a sherd inscribed with a fragment of a cuneiform sign, were the reasons behind the choice of this site. In five seasons, we have excavated nearly 4000 square meters of the 4-hectare mound (Fig. 2), approximately one tenth of it (although the extent of the site continues to expand as we explore more of

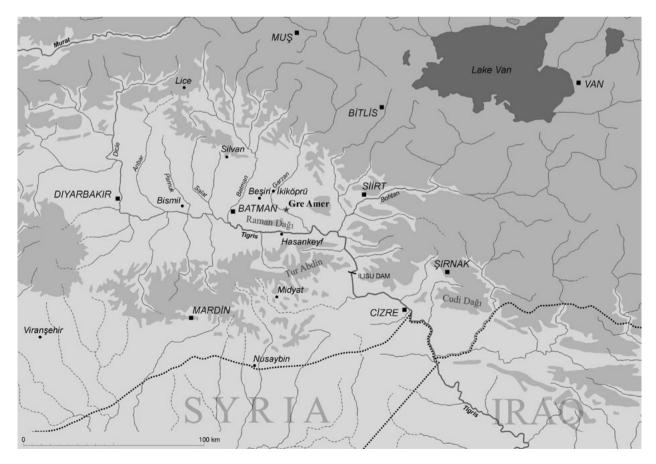


FIGURE 1. SOUTH-EAST TURKEY, SHOWING THE LOCATION OF GRE AMER IN RELATION TO MODERN SETTLEMENTS.

DRAWING: TONY IVES/STUART BLAYLOCK.

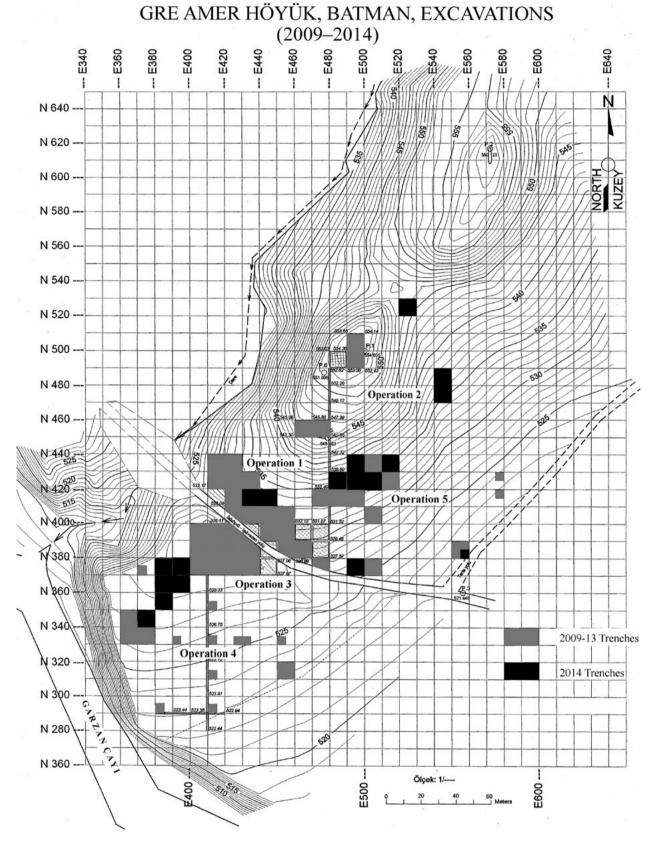


FIGURE 2. GENERAL SITE PLAN OF GRE AMER, SHOWING OPERATIONS (FOR ORIENTATION), AND AREAS EXCAVATED 2009-14. DRAWING: ILUH HARITACILIK/STUART BLAYLOCK.

it, both horizontally and vertically!). At the time of the conference it was uncertain if we were to have any more excavation seasons, but a season has come to pass in 2014, and we now have reasonable expectations of another in 2015. A preliminary account of the early seasons (2009-10) has appeared (Pulhan and Blaylock 2013), along with a number of popular articles (Pulhan 2010; 2013); further interim reports are in progress. This article concentrates on the findings of the 2009-13 seasons, as presented at the Athens conference in November 2013, but will occasionally draw on 2014 findings where appropriate.

The Ilisu Dam is the largest current dam project in Turkey: when complete it will create a reservoir 313 square kilometers in area containing 45 million cubic meters of water, and will entail the resettlement of 50,000 people. Rescue excavations have been going on on the Tigris River and on its tributaries the Batman Su, Garzan Çayı and Bohtan (Fig. 1) since 1998, at first mainly towards the upper limit of the dam lake, around Bismil in Diyarbakır province; a second phase began in 2009 with work at a number of sites further downstream, including Gre Amer.

Generous financial support for the projects of Turkish institutions comes from the State Water Directorate in cooperation with the local museums of Mardin, Diyarbakır and Batman (foreign projects have had to provide their own funding). While the financial and administrative responsibility is shared with the respective museum directors, the organization of the team and the fieldwork, analysis of the data and publication are the scientific advisor's responsibility. The teams are expected to employ a high number of local people, in our case an average of 70-80 workmen, with an excavation team of around 20-25 composed of students, archaeologists and specialists.

Summary of the Stratigraphic and Architectural Sequence

The site can perhaps best be characterized as an occupation deposit accumulated on the shoulder of a natural hill, rather than a true mound (tell or höyük) in its strict sense. This appears to be between 4-5 metres deep, although this remains subject to revision. So far, the excavations have unearthed four tightly packed, consecutive settlement levels that span the period from c. 1700 BC to c. 300 BC. Technically the digging is difficult, with buildings terraced into the natural slopes of the mound and sometimes into each other, meaning that deposits of different dates and architectural levels can often appear at similar absolute levels, and is complicated by the frequent re-use of walls and parts of buildings. Further complications arise from another frequent structural device whereby little attention was paid to foundations and floors and other occupation surfaces are cut down below foundation levels, a phenomenon especially common on the inside/uphill sides of buildings.

Sections though the stratification of the site were exposed by a road which cut through it in the 1950s (Figs. 2-3), and so it was perhaps natural that we began work in this area in 2009-10, where a clear sequence of structures could be seen. Indeed, to date, the most complete sequence of occupation appears to be located in this area (Operation 1: Fig. 2). But as we continued to explore the site very well-preserved buildings of the Middle Bronze Age and Early Iron Age began to be found some distance away (in Operation 5), on the south-east slope of the site, where later occupation had not occurred. In fact the area had been used as a cemetery in the mid-first millennium BC (Persian period), thus ensuring that Early Iron Age and Middle Bronze Age levels beneath were protected from disturbance thereafter.

Some third millennium occupation at the site is attested by stray sherds (grey and metallic wares; a large Ninevite 5 cup sherd found in 2014), but no stratified occupation of this date has yet been observed. If it exists, it is likely to lie under the Middle Bronze Age buildings on the south-east slope (Operation 5), since deposits of natural soil and river gravels underlie the Middle Bronze Age architecture in Operation 1, beside the road cutting. Any still-earlier occupation at the site remains speculative.

In general Gre Amer has a well-preserved archaeological deposit with plenty of *in situ* pottery and other artifacts (to date the tally of catalogued whole pots runs to some 370 vessels). The very summit of the site was occupied, but excavation of two trenches in 2009 (Fig. 2) revealed that structures were very poorly preserved in this area, having been eroded away from the top of the hill (and no doubt, in the process, being responsible for very deep deposition of colluvial soil layers further down). Partly because of the poor preservation, but also because the summit will survive well above the water line, we have not continued trenches in this area (Operation 2), but have chosen to concentrate on the lower parts of the site in the years 2010-2014.

For working purposes we have identified four main architectural levels (discussed in more detail in separate sections, below). These are provisionally numbered from the top down, as follows: **Level 1**, comprising extensive building plans to the north and south of the road (Operations 1 and 3/4), of the mid.-late 1st millennium (originating in the Persian period and with occupation continuing into the Early Hellenistic period); the cemetery on the south-east slopes of the site (Operation 5) is coeval with at least part of this occupation. As yet buildings of **Level 2** have been identified only in a small area of Operation 1, but elsewhere there are isolated pits



Figure 3. Air photograph of Gre Amer from the west, showing Operations 1 and 3/4 (front left and right respectively), the road bisecting the site (centre), and trenches of Operation 5 to the rear. The Garzan river is seen to the right and rear centre, looking south-east, 12th November 2014.

Photo: Hüseyin Kaymakçı/İhsan Çakır, ref: 2014/2864.

and other features stratified between Levels 1 and 3; these are characterized by Neo-Assyrian pottery and other materials, but are as yet poorly understood. Level 3 is an extensive area of Early Iron Age (10th to 8th centuries BC?) occupation spreading around the lower slopes of the mound from Operation 1 to Operation 5 and around to the rear of the summit. This does not (so far) appear to have spread onto the lower slopes (lower part of Operation 5) or river terrace (Operation 4), and may have been confined to the middle slopes. This level is characterized by the grooved hand-made pottery that has become the hall-mark of the Early Iron Age in South-East Turkey but yields many other types of pottery in association with well-preserved architecture (in some cases standing almost to roof height); many of the buildings were destroyed by fire. Level 4 is the Middle Bronze Age occupation and architecture (18th-16th centuries BC?), also consisting of well-preserved buildings, rich in pottery and objects, and also largely destroyed by fire. This level is characterized by 'red-brown wash ware', by Khabur and Nuzi-related pottery types of painted pottery as well as more local classes of painted pottery. The existence and nature of any intermediate Late Bronze Age and Transitional occupation at Gre Amer remains

one of the unanswered questions about the site to date, and may be partly related to our inability to recognize local material of this date. As might be expected, this quadripartite division is not universally applicable, and there are a number of inconsistencies and anomalies (for example structures clearly later than Level 1, have been provisionally termed 'Level 0'; there is also some uncertainty whether Level 2 really deserves definition as a separate 'level' or whether it would be better seen as a later phase of Level 3), and there is little doubt that this working sequence will eventually have to be revised. Problems of correlation also remain, especially in linking the earlier levels across separate excavation areas (i.e. Operations 1 and 5). Nevertheless this four-fold division is broadly sustainable on the evidence recovered so far and has served as a useful basis of interim interpretation and (having been published in a number of preliminary statements on the site) we are sticking with it for the present.

Pottery methodology

Some remarks about methodology are necessary as a prelude to discussing the pottery. It is a well-known

truism that pottery sherds can move around a site and can therefore mislead. As we are fond of saying 'sherds lie to us', and our treatment of pottery at Gre Amer has this concept behind it – if sherds can lie, or at least mislead, then we need to be aware of this in our treatment of them and to establish our understanding of pottery on material that can be deemed reliable.

We have been fortunate in a number of ways in this, primarily in that, to date, we have a growing corpus of whole pots, about 370 from five years' work at the most recent count (495 if the tally from 2014 is included). Where found in association with architecture, as most are, these are the most reliable class of ceramic evidence, and can be reliably understood to have been used by the people who lived in the buildings. Of course we take notice of sherd material, but we try always to test this reliability and base the main trend of our interpretation on whole vessels; sherds are relegated to a secondary class of supporting evidence.

Our second advantage lies in the nature of the stratification of the site. Within the occupation span of the early-second to the mid.-first millennia there is relatively little potential for contamination, and between levels the ceramic material is sufficiently different for residual material to be identified with some confidence.

This policy has two main effects: (i) we hope ultimately to be able to offer a reliable sequence; (ii) the majority of background 'clutter' of sherd material is discarded after primary processing.

One reason for adopting this approach was the absence of comparative material nearby, although a great deal has been learned from the rescue excavations in the Bismil area some 50 km and more to the west. Where one finds oneself in a ceramic vacuum one has to start from scratch and be self reliant and so we have adopted the policy of trying to establish an independent and (we hope) reliable ceramic sequence for ourselves in the Garzan valley that will also be of use to researchers further afield.

But we are not entirely in a ceramic vacuum: each of the four main stratigraphic levels have some ceramics that are well known from the area of the Turkish Tigris, or the wider area of North Mesopotamia: in Level 4 the red-brown wash ware repertoire (with its associated 'dark rimmed orange bowls'), plus late Khabur and Nuzitype ceramics; in Level 3 the grooved pottery repertoire of the Early Iron Age; in Level 2 some recognisable Neo-Assyrian ceramics; and in Level 1 the red-triangle painted pottery tradition. These provide pointers, and help in defining the chronology of the site. What we are now trying to do is to fill out and refine the picture with the full range of ceramic types represented in whole (or near whole) vessels from well-preserved architecture.

The interim nature of the results described here should also be stressed. This account is based on what we understand so far; it may well change in the course of further work.

Level 4

Architecture and stratification

Level 4 contains the earliest extensive occupation at the site, dating to the Middle Bronze Age and ends with a big fire (which is now dated by radiocarbon to the 17th or early 16th century BC: see below). The settlement seems to have attained its greatest extent in this period, with occupation spreading out at the base of the southeastern slopes (where it is covered by as much as 2-2.5 m of colluvial soil wash from the higher parts of the site), beneath the road, and across the fields towards the river (sampled in one trench in 2013 and found to be present, although the single-level buildings were heavily plough-damaged). We also consistently find residual Middle Bronze Age pottery in quantity in Operation 4 trenches on the river terrace, although there seems not to be continuous occupation and architectural remains in this part of the site. In the western part of the mound (Operation 1), Level 4 lies at the bottom of the full sequence of architectural levels, and has been slow to reach because of the need to excavate and record later levels first. On the eastern and south-eastern slopes Level 4 lies beneath Level 3 occupation, itself very well preserved, 2 meters or more below the surface, buried under a thick deposit of colluvium. Either way, access to the second millennium levels takes time. Nevertheless we have now examined some 600 m² of Level 4 structures in Operation 1 and a similar area in Operation 5 (split between two areas: upper, 400 m², and lower, 200 m²).

In Operation 1, to the north of the road cutting, the surviving Level 4 buildings form a strip along the contour of the hill, about 10 m wide NE-SW to the north-west, widening to almost 20 m to the south-east. We are slowly coming to understand the way the Level 4 structures relate to the natural slopes beneath. Substantial walls were constructed initially, with their footings following the slope, to make up the ground to a level. At the core of the plan is a continuous terrace wall, curving along its length, some 50 m of which has been exposed to date. Buildings depend from this on both sides, including some quite massive walls, up to 1.8 m wide and standing in places to 1.5 m or more high. Inside the walls there are substantial deposits of redeposited river gravels used to make up the ground level. The buildings display a considerable sequence of development and alteration, with new buildings added, and some way up into the sequence a large battered retaining wall, surviving up to 3.5 m in height in 18 courses, was constructed to form the front of the terrace. Two sections survived, at the east

and west ends of the excavated area, comprising a length of 22 m in all. The eastern surviving section shows that it was built to a stepped or indented plan, and the outer (presumed projecting) parts in between had been cut away by the road cutting.

The surviving Level 4 buildings were predominantly of stone construction, although the burned fills of the rooms contained massive brick deposits, showing that the upper levels of the walls were of mud brick. Traces of mud plaster survive where the wall faces were burned. Some rooms have stone pavements; others earth floors. One structural device appears typical: the double, or 'back-toback' wall: broad walls constructed as a pair, sometimes with two faces to each half of the wall, sometimes with one wall abutting the other (i.e. without a face on the inside line). This device also appears in some of the Early Iron Age buildings, so would appear to be typical of the site, rather than just of the second millennium levels, although it is particularly widely used in, and is therefore a marked characteristic of, these buildings.

Three radiocarbon determinations from Level 4 contexts in Operation 1 provide a clear steer that the occupation belongs to the 18th-16th centuries BC. One from within the second-millennium sequence dated to 3340±50 BP; Cal BC 1690-1595 and 1585-1530 (ref: Beta 373495). Two from destruction levels dated to 3410±30 BP; Cal BC 1765-1630 (ref: Beta 373494) and 3230±30 BP; Cal BC 1605-1585 and 1545-1435 (ref: Beta 373493) respectively.

In Operation 5 terracing is again the prime characteristic of the architecture – a product of coping with building on the slopes. Ranges of buildings tend to be about 3-4 m wide, built along the slope, with linear spaces along the same axis (north-east to south-west) at intervals, presumed to have acted as alleys or access routes. Here buildings have been particularly well-preserved, with walls standing up to 2 m in height, and doors and even windows surviving. Again the surviving fabric is mainly of stone, but the burned room fills testify to upper stages of mud brick. It is never easy to determine house divisions in the plans and it is presumed that the buildings were often used on multiple levels, with floor levels in one terrace giving onto roof levels outside, and presumably utilised together in the manner still seen in many local villages. Construction was often carried out in a very ad hoc manner, with floors cut down below the base level of walls (a stratigraphic nightmare, this, if it was not for the good preservation), and buttresses and supporting walls constructed against standing wall faces betray structural problems in use. Many of the smaller rooms were probably semi-subterranean, and acted as store rooms or working areas, rather than human dwellings, which are presumed to have lain above and in the slightly wider terraces that sometime feature in

the plan. One such small store room, excavated as the conference was taking place in Athens in November 2013, contained five red-brown wash ware pithoi sherds (Fig. 6); carbonised barley grains from one of these have yielded a radiocarbon date of 3320±30 BP; Cal BC 1680-1520 (ref: Beta 371773).

In the lower area of Operation 5, on the roadside in trenches E49 N37 and E50 N37, the configuration was rather different. In this area the original topography was much more level and a series of excavated buildings form long rectangular rooms fronting a roughly-paved street, seemingly forming workshop areas; one of the rooms was full of stone and earth plaster settings for pots or (since no traces of pots survived) organic vessels of some sort. A provisional interpretation was that this area was in some way related to pottery production, perhaps the settings serving as the seating for coil-built vessels, perhaps related to other evidence for second-millennium pottery production at the site (below).

Level 4 pottery and objects

Red-brown wash ware

The colour-coated or colour-washed material, known as 'red-brown wash ware' (RBWW) is plentiful in the upper Tigris valley and has been reported from numerous sites in the region. Although there is broad agreement that it belongs to the early-to-middle second millennium, the detailed attribution varies greatly on a site-by-site basis. As we have seen, we are still in the process of excavating this, and many details of the stratigraphic sequence remain to be refined, but it seems as though we have more than one structural level and the question of how late this tradition continues is still to be satisfactorily answered. At Gre Amer this material is the dominant ceramic material, appearing in all phases of the lengthy sequence of occupation that comprises Level 4, and coming in a huge variety of forms, from tiny finewares to pithoi in RBWW, coupled with painted material in the Khabur and Nuzi traditions.

There is some evidence for an internal stratification/ sequence: RBWW in quantity dominates in the earlier part of the sequence (inasmuch that in Operation 1 it was not present in the burned destruction groups which contained predominantly Khabur- and Nuzirelated painted material, local cooking pots, etc.). But in contrast RBWW is present in large quantities alongside other types in the destruction groups of Operation 5, so this difference may be functional/spatial rather than chronological: the significance of this is not yet clear.

So the RBWW certainly continues throughout the life of Level 4, although we are not yet able to say exactly how late it continues, and thus whether there is a hiatus in the occupation of the site between Levels 4 and 3 (say, in the later second millennium). The very clearly defined differences in the pottery assemblages between these two levels suggest that there might be such a hiatus.

In the same colour-coated tradition is the sub variant of the 'dark-rimmed orange bowl'. Although this has sometimes been attributed to a rather earlier date range, the provisional conclusions published from Hirbemerdon Tepe, near Batman, seem to suggest that it was the product of variant kiln conditions rather than representing a distinct type (Laneri *et al.* 2006, 167-8). Casual observation of the occurrence and properties of this material, as well as the vessel forms represented at Gre Amer, would seem to confirm this tentative conclusion, as do the many examples in which the distinctive colours are reversed or varied: perhaps we should be calling these 'orange-rimmed dark ware' or 'cream-rimmed orange ware'?

Most of the seal impressions recovered to date (below) are impressed on RBWW vessels. A handful of examples show figurative or geometric painted designs on RBWW, usually in a zone below the rim, reserved from the wash or specially prepared with a slip, and painted decoration

anyway tends to appear on the better finished vessels, both in terms of forming and finishing (rather than on the vessels with rough or cursorily-washed finishes). One detail of the RBWW repertoire that does not seem to have been noted anywhere else is the common (for us) feature of deep combed-incised ornament on the interior surface of some of the open jar and bowl forms (Pulhan and Blaylock 2013, fig. 12, row 4).

Wasters and possible pottery production

One significant aspect of the site is its potential for pottery production; this is one possible interpretation of the function of the workshop buildings excavated in the deep trenches beside the road in Operation 5 (above), if the multiple stone and plaster settings can be interpreted as pot settings. Although this area yielded a higher-than-average number of wasters and ceramic slags, no specific *in situ* evidence to support this identification has yet come to light. From the site as a whole, some 225 sherds of wasters have been recorded so far, mainly as individual sherds, but also (more rarely) as kiln waste consisting of several vessels fused together. Moreover, several whole vessels that are either wasters or 'seconds' have been found, most spectacularly the vessel with



Figure 4. Group photograph of selected Level 4 pots from Operation 1, including Khabur ware bird-painted waster (left) and Nuzi-type bichrome jar (left centre).

Photo: Stuart Blaylock, ref: 2011/6321.

painted bird motifs (Fig. 4, extreme left). Most of the wasters are from second millennium contexts, and where forms can be identified they are consistent with such an attribution, and include typical forms seen in the RBWW collection. The frequent incidence of such pieces strongly suggests that there was pottery production on the site in the second millennium. Despite extensive geophysical survey in 2012 (one of the aims of which was to locate pottery kilns), we have yet to establish its precise location and locating and excavating kilns or other direct evidence for production remains one of the aims for our remaining time at Gre Amer. Of course it is likely that the pottery kilns, if not the workshop area itself, lay outside the main area of occupation, and it thus may have been some way away. Given the difficulties (deep overburden, peripheral areas under cultivation, etc.) the chances of locating kilns will depend on good luck and considerable further exploration. One further piece of evidence for pottery production on the site is provided by the find of one half of a potter's wheel bearing, also from a Level 4 building.

Other second-millennium types

Numerous band-painted vessels are present as sherd material, and occasionally in whole vessels, through most of the Level 4 sequence, although they seem to be absent from the very earliest groups. These are clearly related to Khabur Ware, although we have preferred generally to use the more neutral term 'band painted decoration'. The sherd material also contains frequent hatched-triangle and lattice decoration motifs in the same tradition (Pulhan and Blaylock 2013, fig. 13). Many of these pieces were recovered from very large sherd dumps in the deposits in front of the retaining walls of trenches E42 N41 and E44 N39 in Operation 1. Two whole vessels with painted bird motifs, very typical of later Khabur Ware, have appeared (including the waster vessel mentioned already), supported by a variety of similar designs on sherds; the energy and economy of line used in these depictions are often very striking. Also worth a mention is one of the few near-complete vessels of red-triangle painted pottery from one of the same sherd dumps in front of the retaining wall: while this is visibly different from the examples from Level 1, to be discussed below, it is nevertheless also recognizably in the same tradition of ceramic decoration (Pulhan and Blaylock 2013, fig. 15, left).

Among the same sherd groups there are very occasional examples of Nuzi-related bichrome-painted vessels and sherds, with white-on-brown designs, and some plain or monochrome vessels displaying similar fabrics and paint quality. These are emerging mainly from the later phases of Level 4, and seem also to be anchored there by the one whole vessel to have been found to date (Fig. 4, centre left). As far as we are able to judge the various classes of complex painted material

are more plentiful in these later phases, and relatively sparse in the earlier phases (although admittedly we have only seen very small samples from the earliest phases to date).

A selection of the better preserved vessels from the excavation of Level 4 trenches in 2011 appears in Figure 4, including band-painted and bichrome decorated vessels, a cooking pot (upper left), a painted jar with complex dendritic design (upper right), a crude fruit stand (centre right), etc.

Finally, there is a strong tradition of fine painted bichrome or polychrome ceramics, invariably white- or cream-slipped, and with thick black, grey, red or brown painted geometric and figural motifs, sometimes in two or more colours, sometimes in single colours. Until 2014 these had been present only as sherds, but these also have now been firmly anchored in Level 4 by the discovery of a complete example in a burned fill of one of the Level 4 buildings in Operation 5 (Fig. 5). Prior to this the most complete example was a section of the wall of a large jar made up of several joining sherds from a number of widely-separated contexts. This depicts birds in remarkably life-like style, including several ibis and a crane (in Turkish: kelaynak and turna respectively), plus stick-like human figures (not unlike the style of depiction typical of our sealings) and deer figures



FIGURE 5. A SECOND-MILLENNIUM SLIPPED AND BICHROME-PAINTED VESSEL, PAINTED WITH BIRD, ANIMAL AND HUMAN FIGURES, AND MULTIPLE GEOMETRIC MOTIFS. PHOTO: CANER ŞENYUVA, REF: 2014/2863. [



FIGURE 6. FIVE RBWW PITHOI IN A LEVEL 4 STORAGE ROOM OF E49 N42 IN OPERATION 5, LOOKING NORTH-WEST. PHOTO: STUART BLAYLOCK, REF: 2013/5025.

with elaborate antlers. Close parallels to the geometric designs and the antler motifs are found on a number of unprovenanced vessels in private collections, variously attributed to the 'Van-Urmia Region' and even to the 'Early Transcaucasian culture' (Paksoy 2007, 126-55; Işıklı 2011, pl. G; Sevin 2011, 348, 355; Özfirat 2011, 356-7). It looks very likely to us that these may have been coming from somewhere much closer to our area than the 'Van-Urmia' region. Incidentally nothing of this sort appears to have been found so far in the Bismil region of the Tigris, further to the west.

Among the objects several perforated bronze straw tips or strainers are a notable element in Level 4, as are numerous bronze implements and weapons. One half of a bi-partite mould for an elaborate socketed axe was recovered from a residual, Level 3, context in Operation 5. This is a distinctive type with a ribbed socket and with a rectangular projection at the socket end of the blade; known from a number of examples from north Syria, the Levant, Iraq and Anatolia, and tentatively dated to the

16th century BC by John Curtis (1983) in his study of similar axes from Chagar Bazar and Nimrud.

There are also a number of cylinder seal impressions, mainly on large vessel fragments (15 examples to date), and mainly from Level 4 contexts. The handful of examples from later contexts and surface finds also appear to be on second-millennium vessels. Sealings have been found all across the site in Level 4, and do not yet appear to show any centralised pattern of distribution. The iconography of the seals includes ritual hunting, dancing and animal sacrifice scenes with a provincial taste and quality but with distinct similarities to known Mitannian seals from places such as Tell Atchana (Collon 1982).

The synthesis of the evidence suggests a site of economic-administrative(?)-organization related nature. What this represents in terms of control on a local or regional basis, and the nature of its broader affiliation, is yet to be defined.

Level 3

Architecture and stratification

The next major structural level, Level 3, falls broadly into the period of the south-east Anatolian Early Iron Age, of c. 1100-900 BC. At Gre Amer, this level is characterized by well-built stone houses and terraces and terminated again in an episode of destruction by fire. Operation 5, on the eastern slope of the mound has a very well preserved quarter of stone-built terrace houses, and this has been shown to continue further north and east in an area newly-excavated in 2014, termed Operation 2. A recently-excavated Level 3 house was wholly preserved apart from its roof/upper floor, with lintels surviving on doorways and stone-built niches within the walls (Fig. 7). Again the buildings were of stone, perhaps up to first-floor level, and of mud-brick above. Roofs were the typical vernacular earth roofs still (occasionally) to be seen in the region, supported on timber and brushwood or reeds. Some burnt and collapsed examples have been unearthed. There is growing evidence of a hiatus (of unknown duration) between Levels 4 and 3, sufficiently long for the earlier buildings to decay, but there are nevertheless continuities in the architecture and plan of the structures between Level 4 and 3, including a number of examples of deliberate re-use of walls. Presumably this came about as a result of common architectural responses to the topography of the site, within the long-established vernacular architecture of the region. Terracing activities involved in constructing the Iron Age buildings resulted in the exposure and occasional re-use of walls surviving from Level 4.

As with Level 4, the buildings of Level 3 are laid out around linear terrace walls, orientated broadly northeast to south-west (nearer to east-west towards the west in trench E47 N41), conditioned by the need to manage the slope of the mound. In Operation 5 we have now excavated some 1000 m² of the Level 3 plan, plus



FIGURE 7. THE LEVEL 3 BUILDING IN OPERATION 5, E51 N42, EXCAVATED IN 2013, SHOWING WALLS WITH NICHES AND DOORWAYS PRESERVED TO LINTEL HEIGHT; LOOKING NORTH. PHOTO: STUART BLAYLOCK, REF: 2013/3001.

another 200 m² in Operation 2 to the northeast (above). Narrow passages perhaps represent alleys or entrances to individual houses, with the main rooms up to 3.5 x 5.5 m; exceptionally one room is about 5 x 5.5 m, a span too great for roofing in one breadth, and here the roof is supported on central columns or posts. Several rooms have well-laid stone pavements; another (in Operation 2) has a free-standing stone plinth in the centre of the room. In Operation 5 there appears to be a limit to the main built-up area towards the south-east, in trenches E50 N40 and perhaps also at the south-eastern limit of E51 N42, although this remains to be fully tested by further excavation. Certainly in the lower trenches of Operation 5, beside the road, Level 3 is represented just by nonstructural 'dry stone' terrace walls and spreads of rubble: these we interpret provisionally as cultivation terraces for gardens (or perhaps vineyards?).

In Operation 1 Level 3 has been excavated over moreor-less the same area as Level 4 (c. 600 m²). Here the main items of interest are another massive terrace wall, stretching broadly north-west to south-east for some 30 m; the buildings were set in terraces and were stepped up the slope of the mound, presumably again using the roofs of lower houses as balconies and working areas. One notable building (trenches E44 N40/E44 N41) was a workshop containing multiple ceramic baths or tubs, some with bottoms, i.e. suitable for wet storage or processes, others without bottoms, i.e. suitable only for dry storage or processes. This room was heavily burned when it was destroyed by fire, and thus it is hard to disentangle evidence for the process concerned from the destruction deposit. Working theories are that this was used for dyeing or tanning, although this remains to be demonstrated. Another notable find was in the northwest end of Operation 1 (trench E41 N43), where a large terrace wall had collapsed crushing three individuals to death beneath the rubble. These were all adult males, aged 35-40, 45-50 and 50-60 respectively (Üstündağ 2012, table 2), two of whom possessed iron knives on their persons. The collapse was sudden, giving the people no time to escape, and catastrophic, in the sense that the bodies were left where they lay, rather than being dug out for burial (perhaps because the settlement was deserted for a while after this event, because the inhabitants had fled, or had been expelled). Along with the thick deposits of rubble associated with these skeletons, this evidence of catastrophic collapse might be taken to suggest destruction by an earthquake.

What is distinctive in the archaeology of Level 3 is the massive amounts of stone rubble filling the rooms (a phenomenon observed everywhere we have seen Early Iron Age buildings, in Operations 1, 2, and 5), and the relatively good preservation. We have not yet been able to demonstrate the contemporaneity of buildings in Operations 1 and 2/5; the two radiocarbon dates we have obtained for this level so far might suggest that

the former destruction (dated 2700 ± 30 BP, Cal BC 900-800 [ref: Beta 371772]) might precede the latter (dated 2440 ± 30 BP, Cal BC 750-680, 670-610, 600-400 [ref: Beta 371774]), although the limitations of C_{14} dating in the middle of the first millennium make any precision based on these dates fraught with uncertainty.

Level 3 pottery and objects

Grooved pottery

A wide variety of hand-made Grooved pottery comes from Level 3. One aspect of this material is that it is poorly made and finished, and does not survive well as whole vessels. Nevertheless several whole or nearly complete vessels have been recovered, along with numerous small cup and bowl forms (below). The majority is of the buff/pale brown and unburnished variety that seems most characteristic of the eastern distribution of this material, with relatively little of the dark, black, dark brown or dark red, invariably highly burnished, class of material more familiar from the Euphrates to the west.

The range of sizes, forms, decoration and surface finish is considerable. Common details are the spouts on the shoulders of jars; small, almost lug, handles from rim to shoulder, or sometimes wholly on the shoulder; and so on. Other distinctive characteristics are the grouping of the grooves in pairs or multiple groups for decorative effect; additional incised ornament; applied ornament in the form of bosses or strips ('snakes') of clay, in addition to the grooves at the rim; and the very wide range of related vessel forms: bowls, jars, cups, etc. (e.g. Fig. 8, nos. 196, 337, 561, 2012/220, 242; in contrast to the relatively uniform range of hole-mouthed jars elsewhere). Small hand-made cups and bowls are the most common form to survive as whole vessels, simply because of their small size and relatively durable qualities. A particular concentration of about 20 of these vessels came from the fill of the plinth room in Operation 2 and its vicinity in 2014. There is no space to consider the intricacies of dating this material; despite the evidence of later date to the west and possible continuity, we are working on the assumption that it is broadly Early Iron Age here.

Other pottery from Level 3

The salient point about the ceramics of this period at Gre Amer is that the ubiquitous hand-made grooved pottery just described occurs alongside a wide variety of finer wheel-made ceramics, often very fine in quality (e.g. Fig. 8, nos. 2012/026-31). One type of fine deep globular bowl or cup, with a narrow ring base, is especially numerous (e.g. Fig. 8, nos. 077, 441, 443, 2012/224), but a wide repertoire of fine jars, and open bowls, plus cooking pots, and coarser jugs (Fig. 8), belies statements that the Early Iron Age is a period of technically limited

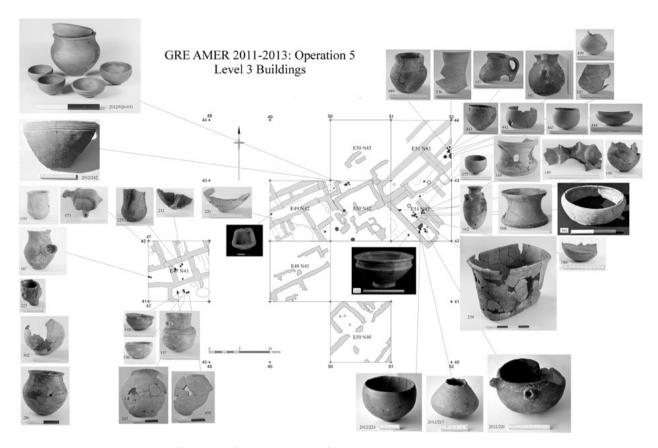


FIGURE 8. PLAN OF OPERATION 5, LEVEL 3, WITH MONTAGE OF KEY CERAMIC FINDS.

DRAWING: STUART BLAYLOCK.

ceramics: hand-made, poorly fired and limited in range and form.

Early Iron Age painted wares

The main class is of wheel-made, well finished painted wares showing numerous designs based on horizontal lines with cross-hatched triangles, wavy lines, pendant semi-circles, and a variety of other hatched and dotted designs (Fig. 9). One very typical design is based on a circle infilled by dots that we colloquially call the pomegranate design. Although very plentiful as sherd material, and represented by occasional large or joining sherds, we have so far found only one complete example of this painted ware.

Conclusion

The pottery repertoire of Level 3 is totally different to that of the underlying Level 4. The hand-made, mostly grey or buff, grooved-rimmed vessels familiar from the Early Iron Age elsewhere in the region are a major



FIGURE 9. SELECTED EARLY IRON AGE PAINTED SHERDS. PHOTO: CANER ŞENYUVA, REF: 2014/2076.

component of the ceramic repertoire but do not dominate to the same extent as has been proposed elsewhere. This is surely a classic case of one type of material achieving an unwarranted dominance because of its ubiquity and ready identifiability. Alongside the grooved pottery we find numerous other types, many of them wheel made, and some of considerable accomplishment. The variety is an important aspect of the ceramic repertoire at Gre Amer, showing that the grooved pottery was only one component in a varied ceramic assemblage at this period.

Elsewhere in this region, at a number of the Ilısu excavations along the Tigris, especially in the Bismil area, this period has been defined as a nomadic or seminomadic interval with poor-quality or non-existent architecture, sandwiched between the preceding Mitanni and Middle Assyrian hegemonies and the following Neo-Assyrian empire (Matney 2013, 335-41; Ökse and Görmüş 2013, 187-8, inter alia). The evidence from Gre Amer, of a varied ceramic repertoire in indubitable association with well-built and well-preserved architecture, overturns the accepted story of cultural impoverishment in the Early Iron Age. The reason for these differences between the Bismil area and the Garzan still awaits an explanation.

Level 2

Architecture and stratification

This level is as yet poorly represented by architecture. The only structures attributable to a discrete stratigraphic level between Levels 3 and 1 so far observed are in one trench of Operation 1 (E43 N42), set into the slope, towards the northern side of the area excavated; elsewhere in Operation 1 intermediate structures seem better interpreted as later phases of Level 3 than as wholly independent structural level. It may be, therefore, that the construction of Level 1 buildings shaved off most of the remains of Level 2 in Operation 1. Exceptionally, the end of this level did not come about by fire and destruction, so far as can be seen from the limited sample we have excavated so far. We tentatively assign Level 2 to the period c. 900-600 BC but this remains an elusive and poorly-understood level at present. In Operation 5, no continuous buildings have so far been located, but Level 2 is here represented by traces of terrace walls and a number of well-constructed stone-lined pits cutting Level 3 and, in turn, cut by the graves of the Level 1 cemetery (below). This evidence is supplemented by two kiln structures having the same stratigraphic position between Levels 1 and 3, and so likely to belong to Level 2. The kilns remain enigmatic in function; they do not appear to be ceramic kilns, since there is absolutely no evidence for ceramic waste associated with them; neither is there any other indication of their function. They can be deemed typical of the area, however, since a very similar kiln has been found at the nearby site of Cemialo Sırtı (Aslı Özdoğan, personal communication). Taken

together it would seem that Operation 5 was peripheral to the main focus of occupation on the site in Level 2, and was given over to grain storage and perhaps cultivation terraces. There may also have been some occupation of this period on the summit of the site; trenches excavated here in the first season showed very eroded and poorly-preserved structures, but yielded some Neo-Assyrian type pottery from pits.

Level 2 pottery

Although relatively few well-stratified deposits have been found (above), some distinctive ceramics have appeared from separate areas of the site, always occurring (where not residual) between Levels 1 and 3; even in trenches where little has survived, we have sometimes noted the incidence of Neo-Assyrian forms and finewares in intermediate contexts between Levels 1 and 3 (e.g. in E44 N40 in 2013, where a worthwhile collection of fine-wares came from intermediate contexts). The stone-lined pits of Operation 5 also yielded distinctively Neo-Assyrian groups. Most notable are a small group of distinctively Neo-Assyrian fine-wares, supported by larger vessels, bowls, jars, etc. Although it must be admitted that we do not, as yet, appear to have fullblown Assyrian material culture at Gre Amer, the finewares are typically Assyrian in form and fabric, among them a number of sherds of dimpled fine-ware cups and beakers, close to real Palace Ware (Fig. 10). Substantial progress was made on this in 2013, with more of this material emerging in this season than in the previous four seasons together.



FIGURE 10. SELECTED NEO-ASSYRIAN PALACE WARE SHERDS ASSOCIATED WITH LEVEL 2. PHOTO: CANER ŞENYUVA, REF: 2014/2109.

If there was an Assyrian presence in the Garzan valley following Ashurnasirpal II's fifth campaign in 879 BC, then it is likely to be represented by the later phases of Level 3 or by Level 2. In the 7th century the Garzan would seem to have been more in the centre of things. The earlier entity of Šubria was subdivided in 673 BC, during the reign of Esarhaddon (680-669 BC), into two Neo-Assyrian 'provinces', Uppumu and Kullimeri. We have previously suggested that the latter should be located at Arzan/Telleba, near İkiköprü, only 12 km north of Gre Amer (Pulhan and Blaylock 2013, 395). In this context it seems very likely that there would have been some Neo-Assyrian interest in Gre Amer. Further exploration of this level remains one of our continuing aims in such time as is left to us at the site.

Level 1

Architecture and stratification

Level 1, the latest extensive archaeological deposit at the site, has proved to be of considerable interest. We have excavated large, multi-roomed houses, courtyards with column bases, storage areas and workshops at this level on the western side of the mound (in Operation 1), continuing to the south of the road in Operation 3, and stretching out over the river terrace to the south (Operation 4). To date Level 1 buildings have been exposed over some 850 m² in Operation 1 and some 2000 m² in Operations 3/4.

A distinctive room plan that recurs a number of times in Operations 1 and 3 appears to be typical of this level and permits some architectural comparison with sites elsewhere in the near east. This comprises a rectangular room with two column bases on its long axis, usually of limestone, but in one case of marble; many of these have crude torus mouldings. The second salient feature is a hearth platform or fireplace against the long side, placed on the central axis of the room as established by the columns. This exactly mirrors the plan of several rooms in the Achaemenid Level X at Tille Höyük on the Euphrates (Blaylock 2009, 200, and fig. 8.7, rooms 9-11 and 30); another similarly planned room is at Mizpe

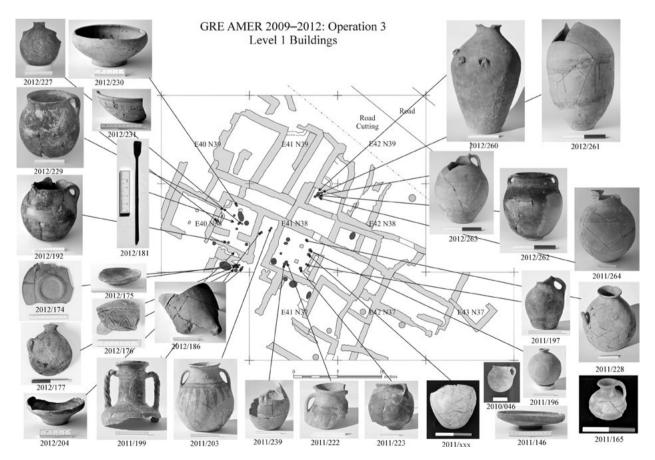


FIGURE 11. PLAN OF OPERATION 3, LEVEL 1, WITH MONTAGE OF KEY CERAMIC FINDS. DRAWING: STUART BLAYLOCK.

Yammim, Palestine (Stern 2001, 483-4). Other distinctive features include axial planning extending over the plan of adjacent rooms, and stone bins constructed against the side-walls of rooms.

The greatest surprise of the 2011 season was the discovery of a cemetery in Operation 5 on the eastern slope of the mound (Fig. 12). The rectangular stone cist graves (of which about 40 have been excavated to date), which lay close to the surface, were usually lined with large, flat stones and covered by large slabs. One pithos burial has been found and occasional burials were made without special treatment; five graves along the southeast limit of the cemetery were differently orientated and may be later. The graves mostly contained single burials in a flexed position and sometimes modest grave goods, such as rings and bracelets, usually of bronze but occasionally of silver, ceramic flasks and cups, two bronze bowls, and clay pitchers; one grave contained a bronze kohl tube and castellated kohl stick. The stratigraphic position of the graves and the types of the grave goods led us to the conclusion that this cemetery belongs to the Achaemenid Persian period. Many of the grave goods resemble material from the well-known fifth-century cemetery of Deve Hüyük, near Carchemish (Moorey 1980): two ceramic cups have very distinctive Achaemenid profiles (Fig. 12, nos. 2011/043, 147); the bronze bowls (Fig. 12, nos. 2011/132, 191) are directly paralleled at Deve Hüyük, as is some of the jewellery (Fig. 12, no. 2011/192). But the kohl sticks (two: Fig. 12, 2011/073, 186) and tube (one: Fig. 12, 2011/185) provide the most strongly diagnostic finds; this is a class of object that has been singled out by John Curtis as an indicator of Achaemenid material culture at a site (Curtis 2005, 182). The critical question is whether the cemetery can be associated with the Level 1 buildings to the west. It would seem that they can in part: the buildings stop short, west of the limit of the cemetery, and contain many similar finds (such as a number of kohl sticks, similar ceramics and metalwork), but the key diagnostic ceramics of the Level 1 buildings (the red-triangle painted wares and turquoise glazed vessels: see below) are missing from the cemetery groups for reasons that remain unclear.

Level 1 pottery and objects

Red-triangle painted ware vessels

This is a class of material that has become familiar from numerous excavated examples in our region of the Upper Tigris. At Gre Amer the most typical forms are jars and jugs with zones of horizontal- and wavy-line decoration on the shoulders and long pendant triangles filled with hatching, wavy, or vertical lines below (Fig. 11, no. 2011/203; dozens of such vessels have emerged over the past six years). There are further variations and complexities of design, including hatching, pendant

semicircles and radial lines on the upper surfaces of the rims. A similar painted repertoire appears on open forms of plates and bowls, as well as numerous bowls with painted triangle rims, and occasional fine splayed-rim cups with triangle-painted motifs on the inside of the rims that are strongly reminiscent of Persian triangle ware. In these, as well as among the other material mentioned already, there appear to be generic links to western Iranian and other eastern painted pottery traditions of the second and first millennia BC, and specifically to the classic 'Triangle Ware', one of the hall marks of Achaemenid period ceramics in Western Iran.

Turquoise-glazed ceramics

Also in this assemblage are a number of turquoise glazed jars and bowls: first thought to be Parthian, on the basis of their dating in museum collections, but pretty firmly associated with red-triangle painted pottery (*inter alia*, two vessels, one glazed and one painted, were found together on a floor in Operation 3: Fig. 11, nos. 2011/199 and 203).

Other typical and characteristic vessels are splayed-rim cups (some resembling the fine fabrics and delicate forms of classic Achaemenid 'eggshell ware'). These appear in the grave groups, paired with lentoid flasks or jugs (Fig. 12, 2011/147-8; 2012/043-4). Both forms also occur individually in the domestic groups. The cups are a long lasting form occurring in both Neo-Assyrian and later contexts. In this case, however, we believe the vessels to belong in the later, Achaemenid, period. Bronze cups of plain round form and splayed form with a shallow omphalos from the graves (above) are closely paralleled in material from the fifth century cemetery at Deve Hüyük studied and published by Roger Moorey (Moorey 1980, 28-38 and fig. 6), and there are numerous further examples from Mesopotamia and Iran. This concurs with the evidence of other finds, such as the kohl sticks and tube mentioned already, jewellery, and the like.

Vessels decorated with triangular impressed decoration and with circular and almond-shaped stamps are both represented in the sherd material from Level 1. These are both classes of material that have been identified as Achaemenid-Hellenistic elsewhere (Stern 1982, 132-6; Oates 1968, 127-9).

Some of the forms from Level 1 have echoes in Hellenistic pottery, such as the flat plates (Fig. 11, no. 2011/146), bowls with incurved-rims (2012/230), often with thin colour-washed surfaces, and jars with splayed rims; but there is little of the Hellenistic mainstream in this collection and we believe that these types probably represent some proto-Hellenistic forms, perhaps of the later 5th or early 4th centuries. There are grounds for thinking that the occupation on the river terrace (Operation 4) spread gradually out over time, and it may

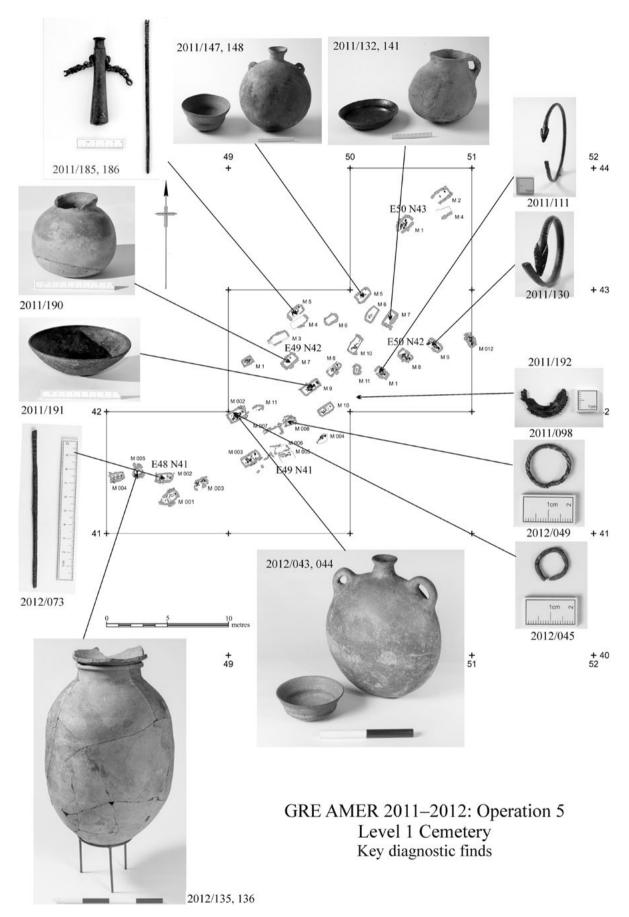


FIGURE 12. LEVEL 1 CEMETERY 2011-2012, PLAN OF BURIALS WITH KEY DIAGNOSTIC FINDS.

DRAWING: BEN CLAASZ COOCKSON/STUART BLAYLOCK.

be that some of the peripheral areas (excavated in 2013-14) are still later than the 5th/4th centuries, and belong to the Hellenistic period proper. Some finds in 2014 (fragments of unguentaria, a lamp) certainly indicate a limited later influence, but taken as a whole the Level 1 ceramics show little of the many distinctive items that might be taken as typical of widespread Hellenistic material culture, had it been present at the site (sigillata and colour coated wares, coins [we have recovered only two coins: from topsoil], lamps, terracottas, etc.). That these are present in the region is amply shown by David Oates' work in Northern Iraq (for example Oates 1968, Appendix A, 122-44). This leads us to conclude that we are broadly in a somewhat earlier period in Operations 1 and 3.

Incised decorated sherds

One very distinctive class of ceramics in the latest level is a group of incised-decorated finewares. Occurring mainly on small cups and bowls, but occasionally on vessels of other forms (lentoid flasks, for example) it displays a variety of motifs, including chevron and spiral patterns, volutes, and stylised leaf patterns. Many sherds display parallel incisions creating a fluted effect, perhaps in imitation of metal vessels or imported pottery types, but these are broadly hand-incised (rather than mould-made) ceramics with which they could be, superficially, confused. Incised fluting also appears as a decorative technique on one of the turquoise-glazed vessels, a narrow-necked bottle.

One wonders if these are attempting to imitate something else: at first sight the obvious candidate are to be found in Hellenistic mould-made ceramics, in particular Megarian Bowls, but since these were not produced before the mid-late 3rd century it seems unlikely in view of the absence of other typical Hellenistic material at Gre Amer (above). There are, however, plenty of other possible prototypes, Attic black-gloss fluted ceramics offer one (themselves sometimes said to be imitating Achaemenid metal prototypes); metalwares in general another (Stern 1982, 73-5, 144-5; Curtis and Tallis 2005, 109). Parallels for this material are scarce. A handful of similar pieces have been published as Hellenistic from Gre Dimse (Karg 2002, fig. 6), and two similar sherds from Ali Boran's survey of Arzan, some 15km north of Gre Amer (Boran 2006, 201), but none from outside the immediate region.

Summary (Level 1)

Level 1 has proved very rich in ceramics, providing perhaps 45-50% of the total assemblage recovered so far. The pottery, and in some cases complete vessels, form a distinctive assemblage: red-triangular painted jars, turquoise glazed vessels, pilgrim flasks and fine, stamped and incised vessels. These generally conform to

the repertoire of post-Neo Assyrian assemblages in the region, sometimes with a 'proto-Hellenistic' complexion, although there is little that is directly comparable. We have come to believe that these represent the material remains of the Achaemenid Persian empire, perhaps of the 5th-4th centuries BC, although there are signs that a part of the plan, especially in Operation 4 on the river terrace, could be significantly later than this, with the appearance of some indubitably Hellenisticlooking ceramics. The conclusion is therefore that Level 1 originated in a settlement of the 5th-4th centuries in Operations 1 and 3 (in the area now divided by the road), and was occupied into the early Hellenistic period, perhaps spreading over the river terrace in Operation 4 during this time. The way it looks from all this is that we might perhaps be in the 5th or 4th centuries, perhaps running on into the 3rd century, but probably not as late as, say, the 2nd century BC. The stray find of a coin of Artavasdes II, son of Tigranes the Great (c. 55-34 BC) from topsoil (Tekin 2014) provides a terminus ante quem of a sort for the decline of the Operation 4 buildings, which themselves are likely to be among the latest in the Level 1 sequence.

Conclusion

In conclusion, it is possible to say that Gre Amer is giving us interesting results outside of the established historical trajectory of the Upper Tigris that emerges from work elsewhere in the region, namely that of the 'semi-nomadic' settlement pattern in the Early Iron Age and of the demonstrable Assyrian presence in the Bismil area. It is also enabling us to start to pin down the pre-Mitannian, Mitannian (?), and Persian periods in the Garzan valley and is demonstrating, by means of pottery and sealings, that the area north of the Tur Abdin was part of the political/cultural mainstream of North Mesopotamia from the second millennium BC onwards. The presence of a Ninevite V excised cup fragment and a Piedmont Jemdet Nasr-style sealing on a lid fragment indicate the possibility of similar connections in the third millennium, although we have yet to excavate strata of this period. Results so far have shown that there is a hiatus on the site between the middle of the second millennium and the Early Iron Age; if there is Late Bronze Age occupation on the site we have yet to discover it.

None of the levels is yet as precisely dated as we would wish; we are working to supplement the six radiocarbon dates determined to date with a sequence of targeted radiocarbon samples for the earlier levels, and possibly selected samples from the later levels (in view of the notorious imprecision of radiocarbon in the middle centuries of the first millennium BC). The major architecture and good preservation in Levels 4 and 3 are beginning to show variations in function between different areas of the site, which suggests to us that within the essentially village-character of the settlement (i.e. one

of agricultural production and household-based storage), there was craft specialisation and, on the evidence of the sealings (and, in Level 3, the architecture), some type of organization and control. The incidence of sealings in various houses of Level 4 and the varied iconography show individuality, but we have yet to understand whether this is related to manufacture, distribution, or ownership. Substantially more of the Level 3 plan has been excavated and (especially in 2014) this has now revealed two larger buildings centred on open areas that reflect a specific architectural importance. One of these, with a central plinth or platform in the centre and frequent finds of small ceramic cups, beads and several unique vessels, suggests a special function. One of the outstanding problems is that of the difficulty of identifying 8th or 7th century material: although we have made progress in 2013-14 in certain areas and we found a good deal of unassociated Neo-Assyrian sherds in Operation 2 on the summit of the hill in 2009, so far the material evidence suggests there was no direct Assyrian control at Gre Amer. The identification of Level 1 as belonging to the Achaemenid period is a major step forward not only in the dating of our site, but in the archaeological identification of this period in the region in general. The distinctive plan form of some of the core buildings (two column bases, axial fireplaces) shows some architectural characteristics related to Persian architecture. From Hurrians to Persians Gre Amer is beginning to reveal the local character of this part of Upper Mesopotamia.

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In the Neo-Assyrian Border March of the Palace Herald: Geophysical Survey and Salvage Excavations at Gird-i Bazar and Qalat-i Dinka (Peshdar Plain Project 2015)

Karen Radner, Andrei Ašandulesei, Jörg Fassbinder, Tina Greenfield, Jean-Jacques Herr, Janoscha Kreppner and Andrea Squitieri*

The Peshdar Plain (Fig. 1) is situated in the province of Sulaymaniyah, district of Raniyah (also known as Raparin district), in the Kurdish Autonomous Region of Iraq, directly at the border with Iran on the upper reaches of the Lower Zab. The regional centre is the town of Qaladze (Qalat Dizeh), in the northwest of the plain, whose impressive settlement mound (36° 11' 7" N, 45° 6' 53" E) demonstrates that the site has held this position since antiquity. The Peshdar Plain Project was inaugurated in 2015 with the goal of investigating the region in the Neo-Assyrian period and focuses on two sites: tiny Gird-i Bazar (36° 8' 18" N, 45° 8' 28" E; henceforth Bazar), a shallow mound (altitude: 539 m) of only 1.5 ha situated in the plain, and the more impressive Qalat-i Dinka (36° 8' 12" N, 45° 7' 57" E; henceforth Dinka), looming high over the Lower Zab on the imposing terminal outcrop of a crescent-shaped mountain range along the northern river bank (Fig. 3: A). This first report will briefly detail the geophysical survey (section 1) and the excavations (section 2) conducted in 2015 before introducing the bioarchaeological sampling strategy (section 3) and presenting a first assessment of the sites and more generally of the significance of our work in the regional setting of the Peshdar Plain and within the Neo-Assyrian Empire and its client states (section 4).

During a visit to the Raniyah Plain on 16 February 2015, local representatives of the Sulaymaniyah Directorate of Antiquities and Heritage informed Karen Radner that in 2013 a farmer had discovered a fragmentary cuneiform tablet while preparing a field at Dinka for the cultivation of chickpea. The autopsy of the secondarily fired tablet in Raniyah showed it to be a Neo-Assyrian legal document from the year 725 BC with an intriguing

mention of a servant of the Palace Herald (Radner 2015). Prompted by this apparent clue to the Border March of the Palace Herald, Radner visited the Peshdar Plain two days later in order to see Dinka and also Bazar, following a suggestion of Jessica Giraud, director of the Sulaymaniyah Governorate Archaeological Survey (MAFGS; cf. Kopanias *et al.* 2015, 48): at both sites, the French mission had found Neo-Assyrian pottery during the surface survey in February 2013.

When it emerged that an industrialised chicken farm had been erected at Bazar a few months earlier, destroying substantial parts of the site, it was quickly decided that salvage excavations at the imperilled mound should start as soon as possible in conjunction with a wider investigation of the Peshdar Plain, including excavations at Dinka which is threatened by agriculture. The Sulaymaniyah Directorate of Antiquities and Heritage, headed by Kamal Rasheed Zewe, offered immediate administrative support and subsequently supplied invaluable personnel and logistic assistance to all aspects of the project. Funding for a first fieldwork season was readily available, as Radner had just been awarded the International Award for Research in Germany (Alexander von Humboldt Professorship), and Janoscha Kreppner quickly agreed to direct the fieldwork.

The 2015 team consisted of the following members: Hero Salih Ahmed (Sulaymaniyah Directorate of Antiquities): pottery processing and deputy supervisor, Area East; Mark Altaweel: mapping and offsite archaeology (UCL); Andrei Ašandulesei (Alexandru Ioan Cuza University of Iași, Romania): geophysics and mapping; Peter Bartl (FU Berlin): trench supervisor, Area West; Jörg Fassbinder (Bayerisches Landesamt für Denkmalpflege, Munich): geophysics; Christoph Forster (Berlin, Fa. Datalino): data base creation and photogrammetry; Tina Greenfield (University of Manitoba, Winnipeg, Canada): bioarchaeology; Jean-Jacques Herr (EPHE, Paris): head of pottery processing; Alice Hunt (University of Georgia, Athens, USA): material sciences; Barzan Baiz Ismail (head of Raparin Directorate of Antiquities, Raniyah): government representative (who went beyond the call of duty to facilitate our work – thank you!); Janoscha Kreppner (LMU Munich & FU Berlin): field

While Greenfield wrote section 3, Radner drafted the remainder of the text, drawing on reports and notes compiled by Ašandulesei and Fassbinder (section 1), Kreppner (section 2, integrating field reports of all team members) and Herr (sections 4.2 and 4.3) who also prepared Figures 1 and 5. Kreppner and Squitieri selected and prepared all other illustrations. We are much indebted to John MacGinnis, in his capacity as one of the editors of the present volume, for his offer to include a brief first account of the 2015 season in the Athens conference proceedings. We are grateful to Felix Höflmayer (Vienna) for his advice on the ¹⁴C dates. Our thanks go to all team members whose tireless work underpins this short sketch. A comprehensive joint report is in preparation.

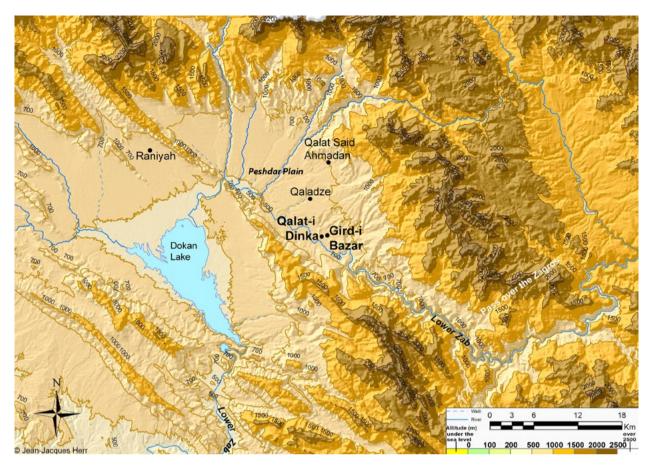


FIGURE 1. MAP OF THE PESHDAR PLAIN WITH ITS KEY SITES (PREPARED BY JEAN-JACQUES HERR).

director; John MacGinnis (University of Cambridge): trench supervisor, Area East; Anke Marsh (UCL): geoarchaeology; Karen Radner (LMU Munich): project director and epigrapher; Andrea Squitieri (UCL & now LMU Munich): mapping, data base management and documentation; Adam Stone (University of Cambridge): trench supervisor, connecting trench; Muhamad Kahraman Walika: pottery drawing; Eleanor Barbanes Wilkinson (University of Durham): small finds and deputy supervisor, Area West; Aziz Sharif (Sulaymaniyah Directorate of Antiquities): driver; Ibrahim Manla Issa: cook; and 12 workers, mostly from the village of Nureddin. Moreover, we are very much obliged to Kamal Rasheed Zewe and especially Saber Ahmed Saber of the Sulaymaniyah Directorate of Antiquities for their invaluable assistance in matters great and small in Sulaymaniyah and in Qaladze, to our project partner Jessica Giraud (IFAO Erbil) for her dynamic support in research and logistics, to Adelheid Otto and Simone Mühl (both LMU Munich) and Dorian Fuller and David Wengrow (both UCL) for generously

letting us benefit from their equipment and finally to Stephan Kroll (LMU Munich) for sharing his knowledge and material, especially on Mannean pottery.

In this first field season, a geophysical survey was conducted at both sites and salvage excavations began at Bazar. Our research throws light on a hitherto little known frontier region of the Assyrian Empire, specifically the Border March of the Place Herald at the border to the kingdom of Mannea. Although the Japanese mission at Qalat Said Ahmadan (36° 13' 30" N, 45° 8' 48" E), a site to the north of the Peshdar Plain (Fig. 1), unearthed in 2014 remains of an Iron Age building of unclear date (Tsuneki et al. 2015, 31-8), Bazar is the first Neo-Assyrian site to be excavated in the region. The settlement beginning to be uncovered here promises not only the rare opportunity to explore a non-elite settlement of the Neo-Assyrian period at the empire's frontier but also the crucial chance to synchronize the Western Iranian pottery cultures (with the key sites Hasanlu, Godin Tepe, Nush-i Jan and Baba Jan; Fig. 2)

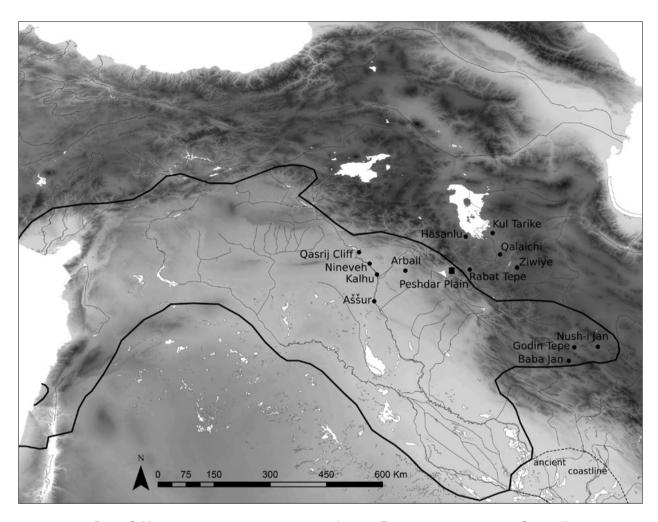


FIGURE 2. MAP OF THE PROVINCIAL BORDERS OF THE ASSYRIAN EMPIRE DURING THE REIGN OF SARGON II (721-705 BC), INDICATING THE PESHDAR PLAIN AND KEY SITES IN CENTRAL ASSYRIA AND WESTERN IRAN MENTIONED IN THIS PAPER (PREPARED BY ALESSIO PALMISANO AND ANDREA SQUITIERI AFTER A SKETCH OF KAREN RADNER). NOTE THAT THE EXACT EXTENT OF THE PROVINCES IN WESTERN IRAN IS NOT SECURELY ESTABLISHED: IT IS ESPECIALLY UNCLEAR WHETHER BABA JAN LIES INSIDE OR OUTSIDE THE ASSYRIAN TERRITORIES. IT IS CLEAR, HOWEVER, THAT SETTLEMENTS UNDER THE CONTROL OF MEDIAN CITY LORDS EXISTED WITHIN AND IN PARALLEL TO THESE ASSYRIAN ADMINISTRATIVE UNITS (RADNER 2013).

with the Assyrian material of the 8th and 7th century BC.

1. The geophysical survey at Gird-i Bazar and Qalat-i Dinka

After Jörg Fassbinder had first assessed the potential of the sites Bazar and Dinka in April 2015, he conducted a geophysical survey and analysis together with Andrei Ašandulesei, assisted in the field by Hero Salih Ahmed and Janoscha Kreppner from 20 to 22 August 2015.

1.1. Method

As Fassbinder's work has demonstrated before, magnetometer prospection is a successful and cost-effective tool for detailed geophysical mapping of large areas in a reasonable time. In order to reach the highest possible sensitivity combined with a maximum speed of prospection, the so-called 'duo-sensor' configuration of the optical pumped cesium-magnetometer Smartmag (Fassbinder and Gorka 2009; Fassbinder 2015) was chosen for our purposes which allows to set the

reference value, e.g. the virtual gradient of the Earth's magnetic field, to infinity, so that magnetic anomalies can be measured with their full intensity. Usually more than 98% percent of the magnetometer data in a 40 m grid on archaeological sites vary in the range of ± 20 nT from the corrected mean value of the geomagnetic field. The stronger anomalies can typically be ascribed to burned structures, to lightning strikes or to pieces of iron containing slag or iron rubbish and these are easily distinguishable by their different direction of magnetic dipole anomalies but also by their high intensities (> ± 50 nT). To cancel the natural micro-pulsations of the Earth's magnetic field, a band pass filter in the hardware of the magnetometer processor was used.

The magnetometer probes were mounted on a wooden frame and were carried in zigzag-mode 30 cm above the ground. The sampling frequency of the magnetometer of 10 readings per second can provide the measurement of a 40 m profile in less than 30 seconds, maintaining the spatial resolution of approximately 10-15 cm at normal to fast walking speed. Every 5 m, additionally to the magnetic data, a marker was set by manual switch. This helps to perform the correct interpolation of data during the subsequent laboratory processing work. Additionally, the linear changes in the daily variation of the geomagnetic field are removed by a reduction filter process to the mean value of all data of the grid.

At Bazar, two adjoining areas of 25 x 60 m within the fenced area of the chicken farm and 40 x 80 m outside the fence were magnetically scanned. At Dinka, areas of a total of about 3 ha were surveyed, namely 120 x 120 m on the western slope of the mound and 100 x 60 m on the eastern plateau. The sampling density was 25 x 50 cm. On the read-out field unit, the data were stored as binary files. They were subsequently downloaded to a Panasonic Toughbook and unpacked to ASCII data. The software packages Geoplot (by Geoscan, UK) and Surfer (by Golden Software, USA) were used for image processing. To create discrete field values a re-sampling program designed by Fassbinder was used, which sets the data to 25 x 25 cm. The data was visualized as a grey scale magnetogram image, which allows tracing even tiny anomalies.

The advantage of the 'duo-sensor' configuration is that the resulting image provides more information of the site, including from the deeper parts of the archaeological structures. The instrument measures the Earth's magnetic field with a sensitivity of ± 10.0 pT (Picotesla) with a sampling rate of ten measurements per second; in August 2015, the Earth's magnetic field in the Peshdar Plain varied in the range of 47.280 ± 20.0 nT (Nanotesla). On the other hand, geological features and nearby installations, such as fences, may disturb the readings but these disturbances can be removed by applying a high-pass filter to the data. Its application

removes the deeper and mainly geological features and provides supplemental information on the type of the anomalies. The results are then displayed in a second grey scale magnetogram image.

1.2. The geophysical survey at Gird-i Bazar

The results of the geophysical work at Bazar were used in order to plan the excavation, which began directly afterwards. They showed no clear archaeological features in the area to the north of the fence surrounding the chicken farm (Fig. 3: E), and the northern perimeter of the ancient settlement therefore seems to roughly correspond to the modern fence. Immediately inside the fence, however, the geophysical results indicated the presence of clearly discernable rectangular building structures (Fig. 3: D). Consequently, an excavation area was set up here, in the western part of the ancient settlement (see below, section 2).

1.3. The geophysical survey at Qalat-i Dinka

In Dinka, the two areas surveyed on the western slope (c. 14,500 m²) and on the eastern plateau (c. 3,200 m²) had been chosen, firstly, because of ceramics surface finds and, secondly, because of topographical considerations. Both areas are being used for agricultural purposes. In August 2015, the fields cultivated in the surveyed areas had already been harvested but not yet been ploughed and were therefore relatively undisturbed. The strong magnetic enhancement of topsoil and archaeological layers compared to the weak magnetic susceptibility of bedrock and gravels is responsible for the clear signature of the ancient structures beneath the ground. Archaeological features therefore dominate the resulting magnetogram image whose analysis revealed clear settlement structures.

On the eastern plateau (Fig. 3: B), the magnetometer survey revealed traces of dense activity and many archaeological features, including fundaments, pits and very probably fortification installations. On the western slope (Fig. 3: C), where the secondarily burnt clay tablet had been found in 2013, a semicircular feature of c. 80 x 60 m is clearly discernible. This peculiar structure shows a high concentration of magnetic anomalies, which very probably represent the remains of burnt houses. Pits in a large rectangular layout overlie (or possibly underlie) the semicircular feature. All archaeological features are limited to the upper part of the slope, and in the lower part they are clearly enclosed by the remains of a palisade fence or fortification wall. Near the modern metal fence, where the farmers gather stones that obstruct ploughing, we found two door socket stones with a diameter of about 1 m that may have been connected to this fortification structure. Outside of it, there are no more archaeological features discernible in the geophysical results.

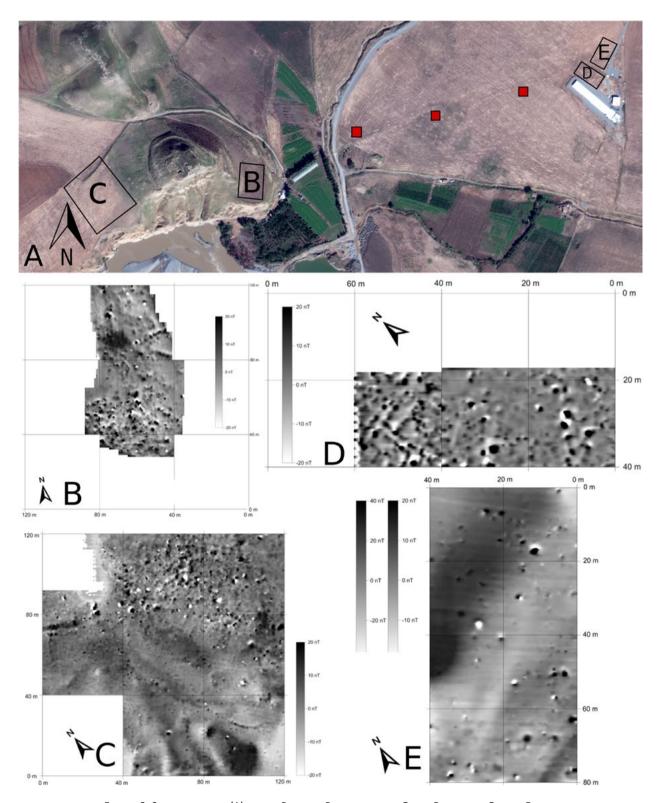


Figure 3. Satellite image (A) of the Peshdar Plain showing Gird-i Bazar and Qalat-i Dinka, with the areas of the geophysical survey (B-E) and the three off-site trenches (solid squares) indicated. QuickBird Image, 24 October 2014.

Magnetograms by Jörg Fassbinder and Andrei Ašandulesei.

2. The first season of excavations at Gird-i Bazar

In the week from 23 to 31 August 2015, the wider region around Bazar was mapped with a differential GPS (model Leica Viva GS10/GS15, courtesy Adelheid Otto), resulting in the creation of five benchmarks at Bazar and one more at Dinka. The excavation grid established at Bazar consists of 25 10 x 10 m squares aligned towards north within the Universal Transverse Mercator coordinate system (WGS 84 / UTM zone 38N; EPSG 32638). Each square is assigned a number consisting of six digits corresponding to its Easting (X) and Northing (Y) UMT coordinates. This numbering system can be used in the entire Peshdar Plain without danger of duplication. Wooden stakes with orthophoto markers were prepared in the corners of the squares for the photogrammetric documentation with PhotoScan and QGIS. A positive side effect of working on the chicken farm is that there is electricity and a WiFi network (plus water from a well for the flotation machine, see section 3). We were therefore able to document the excavation digitally in the field using a server-based 3D database designed in MySqL by Christoph Forster, managed by Andrea Squitieri and accessible to all excavation staff via a web interface.

During that same time, offsite surface surveys were conducted in the plain and also on the terrace above the southern bank of the Lower Zab to record ceramic assemblages and man-made features in order to contribute to the ongoing work of our project partner Jessica Giraud's MAFGS team. Moreover, Mark Altaweel and Anke Marsh selected three spots between Bazar and Dinka (Fig. 3: A, marked with solid squares) and had offsite trenches dug there with a digger in order to sample for sediments and phytoliths. One of these (G42) yielded burnt wood above a floor c. 1 m below the present surface, and near a possible wall. This charcoal sample yielded an uncalibrated date of 2630 ± 25 years BP (with BP = AD 1950) according to 14 C radiocarbon analysis at the Center for Applied Isotope Studies (CAIS) of the University of Georgia, Athens (sample number UGAMS-23561). Using the OxCal v4.2.4 radiocarbon calibration software of the Oxford Radiocarbon Accelerator Unit with the calibration curve IntCal13 (Bronk Ramsey 2009; Reimer et al. 2013), this corresponds to a calendar date between 830 and 789 calBC (95.4%; Fig. 6). This date provides merely a terminus post quem for the associated layer, as 'inbuilt age' always biases 14C dates derived from charcoal samples to be older than the fire event (Waterbolk 1983): inbuilt age may be the result of growth age (when the age of dead wood in the centre of the living tree is dated) and/or storage age (referring to the time elapsed from the death of the tree to its use e.g. as building material).

Excavations at Bazar started on 1 September 2015 and lasted for 17 working days until 27 September 2015.

Bazar is a shallow mound of c. 1.5 ha, of which a third has been destroyed by the chicken farm. In order to gain an understanding of the character and function of the ancient settlement, two large areas were excavated and linked with a connecting trench (Fig. 4: A). In the western part of the mound, square 267931 was opened under the supervision of Peter Bartl, as the geophysical results had indicated well-preserved architecture here ('Area West'). In the eastern part, squares 271927 and 271928 were opened under the supervision of John MacGinnis, as the nearby profile of the section created by the construction of the chicken farm had revealed well-preserved floors and walls in this part of the site ('Area East'). Adam Stone supervised excavation of the longitudinal connecting trench between the areas on the eastern and western sides of the mound. This trench was designed to connect and better understand these separate excavations and to investigate if similar or noticeably different structures and activities were to be found between these areas. The trench has a width of 1.5 m and runs c. 43 m across six excavation squares (270928, 270929, 269929, 269930, 268930 and 268931). It is aligned in roughly northwestern-southeastern direction, about 3-6 m distant from and more or less parallel with the modern cut through the mound. Moreover, the trench was placed in such a way that it traversed a prominent magnetic anomaly recorded in the geophysical survey.

As hoped, throughout the excavation we unearthed a well preserved, single-phase occupation level of Neo-Assyrian date whose buildings were founded directly on the bedrock. Both in the western and the eastern area, stone buildings were exposed: so far, parts of six architectural units, four in the west, two in the east, arranged in a general layout orientated along a northnorth-west axis and separated from each other by narrow corridors, presumably uncovered alleyways. Good floor contexts were uncovered throughout the excavation and these generally yielded fine ceramic assamblages (see section 4.3) but very few small finds. The occupation was maintained, with at least one later construction phase discernable in two of the exposed buildings, until the settlement was abandoned. The site was later reused as a graveyard.

Western area (Fig. 4: B)

The walls of four buildings were uncovered, preserved to a height of more than 1 m. Only one of these structures has been excavated in its entirety, measuring 5.0 x 2.6 m. Two distinct phases of occupation with separate floor levels were observed here: corroded metal fragments were recovered from the debris above the younger floor while the floor of the previous occupational phase consists of small pebbles. The floor of one of the partially excavated buildings features an installation build out of stone slabs, covered

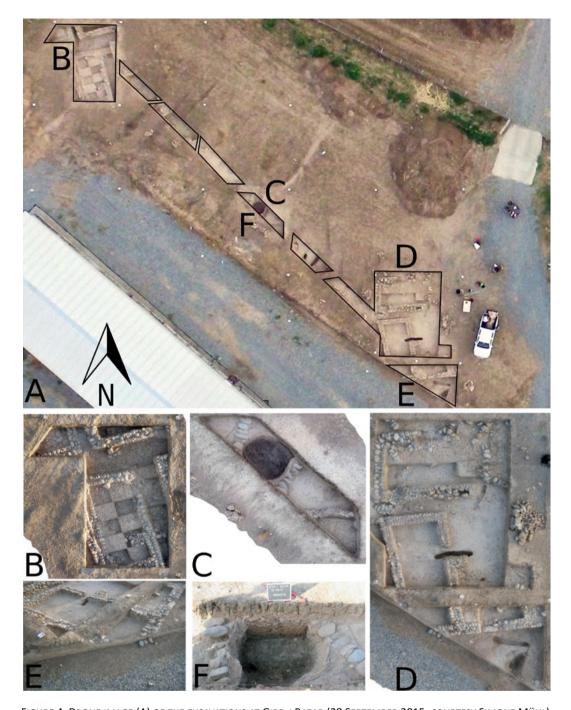


Figure 4. Drone image (A) of the excavations at Gird-i Bazar (28 September 2015; courtesy Simone Mühl) and detail photographs of the individual excavation areas (B-F).

with debris from a fire but hitherto without usable charcoal samples. So far, only small parts of this and the other two buildings have been unearthed. At present, we assume that all four structures are single room buildings.

Eastern area (Fig. 4: D, E)

The walls of two buildings were unearthed, preserved to a height of c. 0.5 m above their floors. The first building consists of a room of 6.0×2.5 m and two

walled but presumably unroofed, exterior areas. A charcoal sample from above the floor of the first building (PPP 271927:014:008) dates to 2750±25 years BP (with BP = AD 1950) according to ¹⁴C radiocarbon analysis at the Center for Applied Isotope Studies (CAIS) of the University of Georgia, Athens (sample number UGAMS-23213). Using the OxCal v4.2.4 radiocarbon calibration software of the Oxford Radiocarbon Accelerator Unit with the calibration curve IntCal13 (Bronk Ramsey 2009; Reimer et al. 2013), this corresponds to a calendar date between 937 and 829 calBC (92.2%; Fig. 7). This provides merely a terminus post quem for the associated layer (see above). There is a pit lined with stones just outside of the building, possibly a well; this needs further investigation. The second building underwent renovations at least once and we can discern two separate floors and usage levels. The full dimensions of this structure are not yet clear and the bedrock has not yet been reached in this part of the excavation.

Connecting trench (Fig. 4: C)

The results here indicate that the groups of buildings in the western and the eastern part of the settlement were separated from each other by an open space of a diameter of about 30 m. In its centre lies a kiln (square 269929) whose presence had been indicated by a magnetic anomaly in the geophysical survey. The part that has been excavated so far is c. 1.5 m long, more than 1.5 m long and preserved to a hight of 1.1 m, with the clay lining measuring 5-10 cm in width (Fig. 4: F). The complete exposure of this structure and its immediate context is one of the key objectives of the 2016 season. The best set of small finds, as well as important pottery collections (see section 4.3), comes from within the kiln, in which four registered objects were recovered: a small fired ceramic figurine of a four-legged animal (PPP 269929:020:004), a worked stone object which might be a pounding tool (PPP 269929:005:011) and two complete ceramic vessels which provide secure dating parameters for the kiln, placing it within the Neo-Assyrian period (vessels PPP 269929:005:018 and PPP 269929:005:021; Fig. 4).

The later graveyard

In this first season, the registered small finds from Bazar comprised merely 48 objects including beads, lithics, fragments of metal and metal objects, slag, ceramic sherds, complete vessels, and singular objects such as an iron alloy arrowhead and a modern Iraqi coin. But only a few small finds can be considered significant as chronological or cultural markers for the main occupation of the site, especially as about half of them were recovered from within human burials of a later date. In total, 26 graves were identified, especially in the eastern part of the settlement, and 14 have been

excavated entirely (see also section 3.2). They cut from above into the buildings of the main occupation level and were therefore created at a later time. Most of the graves so far excavated did not contain grave goods.

As most previous Neo-Assyrian excavations have tended to focus on large centres in the heartland and in the provinces, unearthing palaces and elite residential architecture, Bazar is of great interest because it is certainly a non-elite settlement and possibly a production site, as perhaps indicated by the kiln. The best parallel known to us is the complex partially excavated in 1985 in Khirbet Qasrij during the Eski Mosul dam salvage project (Curtis 1989; Fig. 2). Because of the pottery, the excavators attributed a post-Assyrian date to the site but this is not certain. We interpret Bazar as a production site sustaining the Assyrian fortress (*birtu*) at Dinka (see section 4.1).

3. The bioarchaeological sampling strategy at Gird-i Bazar

Until very recently Braidwood's seminal research on the 'The Hilly Flanks' was the only extensive multidisciplinary field investigation of the ecology of the plains and foothills of the Zagros Mountains in Iraqi Kurdistan (Braidwood et al. 1983; Braidwood and Howe 1960). In the past five years, this has changed dramatically and much relevant work has begun, especially in the Shahrizor Plain (Altaweel et al. 2012; Elliott et al. 2015). For the Raparin (Raniyah) district, in particular, data on the environmental and settlement landscape is still largely lacking although archaeobotanist Hans Helbaek successfully sampled botanical remains from nearby Tell Bazmosian during the Iraqi excavations in 1956 (Helbaek 1963). Consequently, when the Peshdar Plain Project was launched in 2015 part of its research design was to fill this lacuna, in particular for the Neo-Assyrian period (9th-7th centuries BC). Our key research objective aims to determine how the Assyrians, living on the eastern edge of the empire, exploited and interacted with their local environment. In order to fully examine this question, it is necessary to investigate and analyse bioarchaeological data that will better inform on the social, economic and political behaviour of the occupants living in the Peshdar Plain during the Neo-Assyrian period. To this end, an integrated and holistic protocol for sampling and analysing ancient bioarchaeological data (animal and human bones, seeds, shells, charcoal, soils and phytoliths) was implemented.

3.1. Data

Bioarchaeological data are by definition the remains of human activities that impart information on the production, consumption, and exploitation strategies for food, movement, diet and health of peoples within sites and across landscapes (Reitz and Wing 2008). Correspondingly, such data can be related to their status and position within their social and economic structure. Furthermore, they can also inform on the taphonomy of the site and enable reconstruction of the nature of changes that transformed the recovered remains and deposits at the site (Lyman 1994). Subsequently, organic data were collected during the 2015 campaign at Bazar as the preliminary step in recreating human and animal interaction in the Peshdar Plain. Three major types of bioarchaeological data were collected: plant (carbonised seeds/charcoal and phytolith), animal (bone, teeth and shell) and human remains. Soil samples were also taken for specific studies related to the human remains.

3.2. Method: sampling procedures and protocols

Plant and animal remains

A rigorous and standardized protocol for the collection and sampling of organic remains was implemented during the inaugural campaign at Bazar. Sampling strategies for all organic material excavated focused on the recovery of remains from primary contexts/deposits that included suprafloors, floors, features, and pits with a known surface. Detailed protocols for procuring carbon, phytolith, zooarchaeological and botanical remains were directly tailored to this focus, and implemented daily in the field. When deemed necessary, 1 x 1 m² grids were imposed for tighter spatial control of these data within primary features/floors; in this instance, samples were collected for phytoliths and botanical analyses. Samples were also taken from any charcoal concentrations for the purposes of radiocarbon dating. Additionally, 100% of the soil (post-bioarchaeological sampling) from each primary feature was dry-sieved for maximum recovery of artefacts. In addition to sampling floors and features, a minimum of 20-litre soil samples was taken from each primary (non-floor) archaeological context. Each sample was floated (essentially washed) for the maximum recovery of micro-artifacts, charcoal and palaeobotanical remains. A state of the art flotation machine was made for the project in Sulaymaniyah, using the template of the models currently used at the excavations in Bestansur (directed by Roger Matthews, University of Reading) and Gurga Çiya (directed by Robert Carter and David Wengrow, UCL) in the Shahrizor Plain. The analysis of light fraction botanical remains include carbonized remains (seeds, charcoal) and heavy fraction samples that contain the remains of micro-artefacts will allow for a better understanding of land use and food management strategies at Bazar.

Human remains

A total of 14 graves with human remains were uncovered and fully excavated during the 2015 season; they are of a much later date that the Neo-Assyrian settlement (see section 2). In total, 26 graves were identified across the excavation area. Each individual specimen was recorded on osteological sheets and detailed notes were recorded for further analysis. All of the human remains were curated for further studies in the following years on Stable Isotopes, pathologies and potentially aDNA analyses.

Soils

Soil samples were taken from above the head, below the feet, and within the pelvic region of each individual that was excavated from a grave.

Spatial distribution of remains

One of the objectives in the recovery and analysis of the bioarchaeological samples is to examine the spatial distribution of each of the discreet data sets across the excavation. A strict protocol for the gridding of floors and features (Fig. 4: B) allowed for the recovery of organic data on a much smaller and tighter scale than has ever been used on past excavations in the region. This spatial control provides the ability to determine behaviour and activity processes on a micro scale within each building. Additionally, discrete sets of activities (i.e. food processing, consumption, disposal patterns, etc.) can be determined between the different buildings across a site (Rainville 2000). A macro and micro scale of socio-economic behaviours can be assessed that are not normally understood on Neo-Assyrian sites.

3.3. Analytical themes

Diet, status, mobility

Bioarchaeological specimens were excavated from several different contexts, including floors, and suprafloors from within each of the identified buildings, graves, and areas such as alleyways that lay outside buildings/structures.

Plants and animals

Comparative zooarchaeological and palaeobotanical material was collected during this season and will provide the base for a modern reference collection for future field analyses. Each specimen was processed with the same spatial and temporal control to ensure comparability with the excavated material. These data, once identified and analysed, will allow for the construction of a comprehensive picture on a variety of behavioural issues related to socio-economic factors, such as status, diet, and food production inherent across the site (Greenfield 2014; Rosenzweig 2014). This study will provide important *comparanda* to studies on other Neo-Assyrian sites and allow us to begin construction of

a model of the ecology of the region. The analysis of the ancient plants and animals from Bazar will be the first phase in attempting to recreate the ancient landscape and ecology of the Peshdar Plain in Neo-Assyrian times.

Human remains

The examination of the human remains will highlight patterns related to the general population living at (or near) Bazar. Information on the health, age, and sex of the individuals can be determined through intensive identifications of pathologies to both teeth and bones, ageing/sexing data through metric studies, as well as other indicators related to mobility (White 1998). Each of these indicators helps to identify diet, the general population health, and overall movement of individuals across the region and further afield.

Post-field analyses

Aside from the traditional zooarchaeological and bioarchaeological specimen identifications, animal and human remains will be chosen for Stable Isotope studies as part of the larger reconstruction of the ecology of the Peshdar Plain, during the Neo-Assyrian period and later. These data, gleaned from human and animal bones and teeth, will inform on the movement of both populations across the larger landscape. In addition, soil samples taken from within the human graves and analysed by Piers D. Mitchell (University of Cambridge) for parasitological analyses will help highlight their place of origin, their diet, and their general health. The identification, analysis and integration of each of these above mentioned organic data will help to build a comprehensive picture of human interaction with plants, animals and the surrounding landscape during the first millennium BC and that of the more recent past at Bazar. Radiocarbon (AMS) dating of charcoal samples and carbonized seeds will determine the dates of occupation at Bazar and will allow for a scientifically accurate account of the timeline at the settlement. Two charcoal samples have already been analysed at the Center for Applied Isotope Studies (CAIS) of the University of Georgia, Athens (see above). Subsequent sampling of charcoal from additional occupational horizons will allow for a tight temporal sequence of the site's life history that is often difficult to gain from traditional excavation and artifact analyses.

4. Historical and archaeological significance: some first thoughts

Beyond the chance to excavate at Bazar a Neo-Assyrian non-elite settlement with a dedicated bioarchaeological sampling strategy, our research in the Peshdar Plain is also of great importance for furthering an understanding of how the Assyrian Empire organized its frontier zone with one of its principal local competitors in the central Zagros region.

4.1. The Border March of the Palace Herald

The secondarily fired clay tablet from Dinka is a Neo-Assyrian legal document recording the sale of a slave woman in the year 725 BC (Radner 2015) and mentions a subordinate of the Palace Herald among the witnesses. In parallel to similar cases from e.g. Kalhu or Aššur, this can be taken as an indication that the transaction took place in the Border March of the Palace Herald. So far, the location of this frontier region under the command of one of the highest magnates, created in the late 9th century BC for the protection of the empire (Liverani 2004), could only be roughly circumscribed as situated in the mountains to the east of Erbil. On the basis of the available references in Neo-Assyrian inscriptions and archival materials (collected in Mattila 2000, 34-7), Postgate (1995, 9) thought the plain of Rowanduz 'a distinct possibility' whereas Liverani (2004, 218) suggested a location 'probably on the upper valley of the Lower Zab'. The tablet as well as the presence of Neo-Assyrian pottery at Bazar and Dinka indicates that the Peshdar Plain, the last microregion suitable for agriculture west of the chaîne majeure of the Zagros, was part of this border march (Fig. 2).

Our understanding of the way the Assyrian border marches were organised is currently very limited. Their obvious defensive purpose would suggest a high degree of militarisation and, in contrast to the ordinary provinces, only a limited focus on productivity. However, these assumptions have not yet been put to the test, and fieldwork in the Peshdar Plain offers the opportunity to do just that. In August 2015 we observed several qanat systems in the region, of which one is still in use. It becomes increasingly clear that this method of irrigation through horizontal wells, once considered typical of Western Iran, was widely used in the Assyrian heartland (for the region of Erbil, ancient Arbail: Ur et al. 2013, 91, 107). Because of the nature of the well-dated irrigation works created by Assurnasirpal II at Kalhu there is the distinct possibility that this technology was already used in the 9th century BC (Dalley 2013, 87). It is therefore essential to establish whether or not there is a connection between the *qanat* systems in the Peshdar Plain and the region's use in the Neo-Assyrian period.

Because of its general geographical situation and the results of the geophysical survey at Dinka we may hypothesise that the complex there was of military character. Its Neo-Assyrian date is clear because of the surface ceramics finds as well as the tablet. As fragments of fired bricks with the typical Neo-Assyrian format of c. 30 x 30 x 8 cm can be found on the surface of the massively disturbed top of Dinka (but also washed down on all sides), we assume that there was a building on top. Because of the excellent views this position (altitude: 579 m) offers across the plain, from the passes over the *chaîne majeure* of the Zagros far down the valley of the

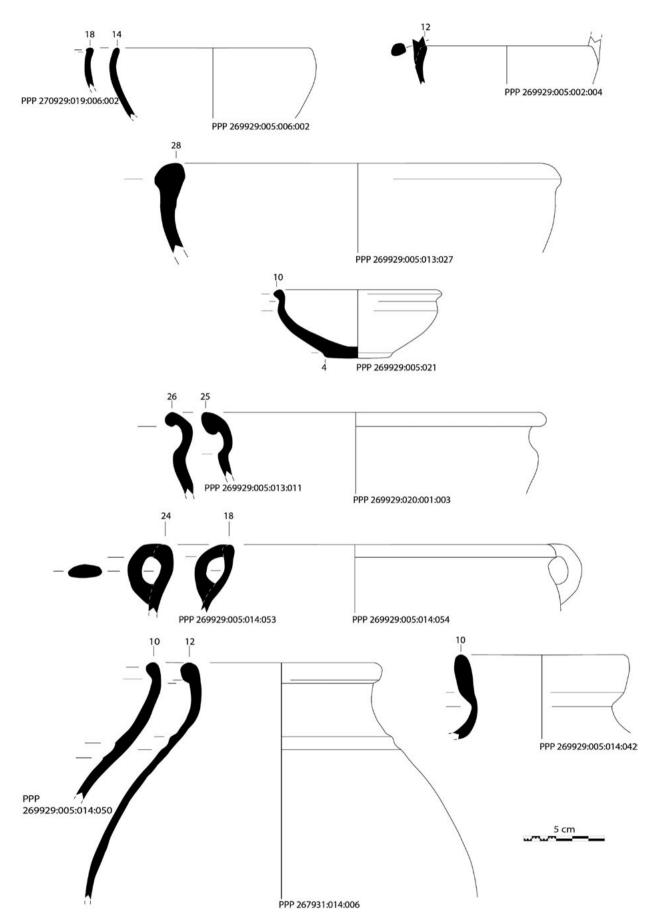


FIGURE 5. A SELECTION OF STRATIFIED POTTERY FINDS FROM GIRD-I BAZAR, AS MENTIONED IN THIS PAPER (PREPARED BY JEAN-JACQUES HERR).

Zab, it is likely to have served as a signalling tower. A test trench on the western slope where the burnt settlement draws close to the palisade or fortification wall, planned for May 2016, will provide the first opportunity ever to explore an Assyrian fort (birtu). Our knowledge of these military structures, created and maintained to safeguard the empire's most sensitive locations (and not just along external borders), is hitherto limited to the descriptions provided by some letters of the Assyrian state correspondence of the second half of the 8th century BC, especially SAA 15 166 (in Eastern Babylonia) and SAA 19 60 (in the Upper Tigris region; cf. Parker 1997). The ongoing excavations of the contemporary settlement site at Bazar will provide crucial information on how such a fort operated within the context of its economic hinterland.

4.2. Historical geography and the connection with Iran

From its geographic position alone, it is clear that the Border March of the Palace Herald served to safeguard the route from the low-lying passes of the Zagros along the Lower Zab into the Assyrian heartland, where this tributary of the Tigris reaches the Aššur region. A pass with an altitude of only 923 m (36° 1' 52" N, 45° 21' 8" E) lies at a distance of just 22 km from Bazar. Thus, the Peshdar Plain was situated in direct proximity to the

kingdom of Mannea, which in the early first millennium BC occupied the territories on the other side of the *chaîne majeure* of the Zagros. Mannea emerges in the 9th century BC as one of Assyria's largest and politically most significant neighbours, alternating between rival, client and ally – its role often reflecting the empire's difficult relationship with the archrival Urartu whose southern holdings in Iran bordered onto Mannea. On the other side of the Zagros, at a distance of about 40 km as the crow flies from Bazar, lies the important Mannean site of Rabat Tepe (35° 3' 29" N, 46° 54' 56" E) where Iranian archaeologists have unearthed monumental buildings decorated with distinct multi-coloured glazed bricks and pebble mosaics (Kargar and Binandeh 2009; Afifi and Heidari 2010; Heidari 2010).

The Neo-Assyrian occupation of the Peshdar Plain supports the argument of Lanfranchi (1997, 136) who suggested on the basis of a letter of the Palace Herald's deputy to Sargon II (SAA 5 133) that the Assyrian settlements of Harrania and Anisu need to be located in the plains of Raniyah and Peshdar, respectively, on the border to Mannea and also Hubuškia, whose precise location in the Zagros range is still a matter of controversy. Further work in the Peshdar region will serve to clarify key problems in the historical geography of the early first millennium BC.

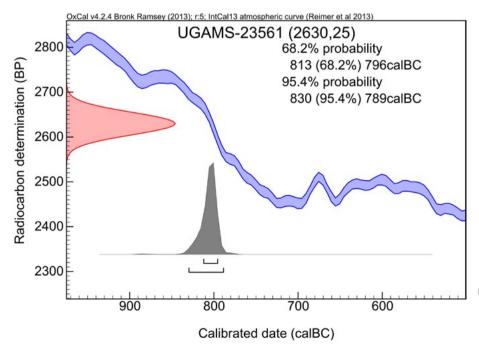


FIGURE 6. CALIBRATED RADIOCARBON DETERMINATION FOR THE CHARCOAL SAMPLE UGAMS 23561 FROM THE OFFSITE TRENCH G42.

4.3. Linking up Assyria and the Western Iranian pottery cultures

During the 2013 surface survey conducted by Jessica Giraud's MAFGS team, a good-sized pottery assemblage was discovered at Bazar that was identified as Neo-Assyrian in date. Especially the fragments of carinated bowls and neck jars have close parallels among these morphological types from Aššur and Kalhu in the Assyrian heartland (Hausleiter 2010, pl. 63, 107, 111). More of this material was unearthed in stratified contexts during the 2015 excavations. These, however, also made it clear that the ceramics at Bazar include much that links them to the Western Iranian Zagros pottery cultures. Directed by Jean-Jacques Herr who is also part of MAFGS, the pottery team focused beyond the analysis of shapes and fabrics on the reconstruction of the chaînes opératoires of the pottery production (forming, shaping, finishing). In 2015, 145 pottery collections were excavated, consisting of 125 kg of material. Sherds were collected by locus and photographed as a collection in order to quickly document the entire material. Subsequently, all diagnostic sherd (rims, bases, jar necks and significant bodysherds) was registered, measured, photographed, drawn and finally analysed in regard to the vessel's chaîne operatoire. Then, all non-diagnostic sherds from the same collection were analysed in this way in order

to document the relative ratio of each *chaîne operatoire* identified within the diagnostic material. During the 2015 field season, a preliminary typology of shapes and fabrics was established and correlated with eleven *chaînes opératoires*, categorised through macroscopic techno-petrographical analysis. Alice Hunt is currently conducting microscopical analysis on a first selection of samples at CAIS (University of Georgia, Athens).

The pottery team processed 25 complete collections, fully documenting 308 diagnostic sherds. Although these were unearthed relatively late during the excavation, priority was given to the material coming from the kiln in the connecting trench (PPP 269929:005, PPP 269929:020) and the floor levels of the buildings from the eastern and western areas (PPP 268930:005, PPP 267927:021, PPP 267931:014, PPP 267931:033). The material from all these contexts shows great homogeneity across the site in the distribution of the morphological types and in the use of the same *chaînes operatoires*.

Very little pottery material from the Mannean settlements excavated in the last 15 years by Iranian archaeologists has been published so far (Qalaichi: Mollazadeh 2008; Ziwiye: Mo'tamedi 1997; Fig. 2). But clear morphological parallels of the Bazar ceramics (Fig. 5) to pottery from other sites in Western

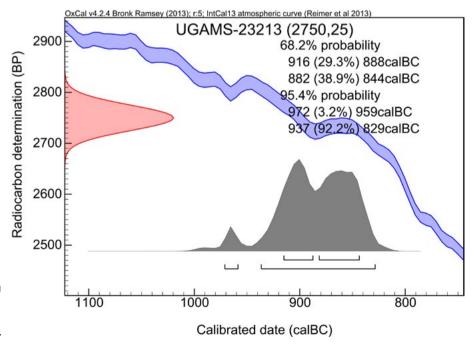


FIGURE 7. CALIBRATED RADIOCARBON DETERMINATION FOR THE CHARCOAL SAMPLE UGAMS 23213 FROM GIRD-I BAZAR (PPP 271927:014:008).

Iran, in the levels traditionally assigned to the 8th and 7th century BC, emphasise our site's strong cultural orientation towards the east – rather than solely towards the Assyrian heartland whose influence at Bazar is most apparent in carinated bowls (PPP 269929:005:021; PPP 269929:005:013:011; PPP 269929:020:001:003; cf. Hausleiter 2010, pl. 53: SF 8.2, SF 9.1-2, pl. 63: SF 27.5, pl. 64: ST 3.5; Beuger 2005, pl. 33.3a-b), large conical concave neck pots and some short necked jar types (PPP 269929:005:014:042; cf. Hausleiter 2010, pl. 107: FG 5.5, FG 5 R1, pl. 111; Curtis 1989, fig. 37 no. 235). This is especially noteworthy as these Assyrian types are generally absent in the Western Iranian sites. The main Western Iranian types found at Bazar are: hemispherical bowls with incurved rim (PPP 270929:019:006:002; PPP 269929:005:006:002), some with a handle (PPP 269929:005:002:004) and others with a thicker wall and a triangular rim (PPP 269929:005:013:027); short neck pots with handle (PPP 269929:005:014:053-054); and necked jars marked by a hollow band (PPP 269929:005:014:050; PPP 267931:014:006). These types have strong parallels in Nush-i Jan (Stronach 1978, 17 fig. 6: nos. 2, 4-8), Godin Tepe (Gopnik and Rothman 2011, 358 fig. 7.56: no. 81) and Baba Jan (Goff 1985, 15 fig. 3: nos. 23-25, 16 fig. 5: nos. 22 and 27, 17 fig. 6: nos. 15-16). The surface of vessels from Bazar is frequently treated with streaky burnishing and this especially highlights the strong eastern orientation of the pottery making tradition (cf. Nush-i Jan: Stronach 1978, pl. VIIb-c; Baba Jan: Goff 1985, 15 fig. 4: nos. 3-4; Mannean cemetery of Kul Tarike: Rezvani and Roustaei 2007). But there are also conspicuous absences at Bazar, both of western and eastern materials. Bowls with hammerhead and incurved grooved triangular rim, so typical elsewhere at sites from the Assyrian imperial period, are not present at all at Bazar. Absent is also the painted Triangle Ware, characteristic of Western Iranian Iron Age sites from Hasanlu (Level III; Dyson 1999) to Baba Jan (Level III; Goff 1978).

The synchronisation of the Western Iranian pottery cultures of Hasanlu (excavations: 1956-74) and of the three sites traditionally identified as Median (Nush-i Jan: 1967-74, Baba Jan: 1966-69 and Godin Tepe: 1965-73) with Mesopotamian history and archaeology is fraught with problems (Danti 2013, 363-8). Situated at one of the key routes across the Zagros, in a frontier region of the Assyrian Empire whose responsibility it was to maintain close links with the Iranian states in the region, Bazar emerges as a key site whose material will provide much needed new data to enable the correlation of the Western Iranian pottery with the ceramics known from the Assyrian heartland. This is especially important for the contentious archaeology of Media. As Gopnik (2003, 249) stresses, 'the sites of Godin, Nush-i Jan, and Baba Jan have long stood as the main sources of information about Median material culture, but the exact chronological placement of their respective artefact

assemblages has not been securely established.' The single phase main occupation at Bazar with its well stratified pottery, so closely linked with the Assyrian heartland, seems to be ideally suited to remedy this key issue at least in part.

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New investigations at Shanidar Cave, Iraqi Kurdistan

Tim Reynolds, William Boismier, Lucy Farr, Chris Hunt, Dlshad Abdulmutalb and Graeme Barker

Shanidar Cave (36°50' N, 44°13' E) in the Zagros Mountains of Iraqi Kurdistan, approximately 740 m above sea level (Fig. 1), has iconic status in Palaeolithic archaeology following excavations by Ralph Solecki between 1952 and 1960 (Solecki 1963, 1971). It is central to debates about Neanderthal burials and behaviour, the origins of the Upper Palaeolithic and issues of Neanderthal-Modern Human interaction and succession.

In his 14 m-deep trench, Solecki located several Neanderthal burials, including an elderly individual with evidence of severe disability (Trinkhaus 1983) and

FIGURE 1. LOOKING NORTH TO SHANIDAR CAVE; BUST OF RALPH SOLECKI IN THE FOREGROUND (PHOTOGRAPH BY G. BARKER).

another, argued by Leroi-Gourhan (1975) to have been buried with flowers. Four major cultural phases were defined from the artefacts (Fig. 2) and a chronology was derived using radiocarbon: D: non-Levallois Mousterian associated with the Neanderthals (>45 ka); C: Baradostian Upper Palaeolithic, a regional variant of the Aurignacian techno-complex (33-27 ka); B2: Zarzian, a late Pleistocene industry (approximately 12 ka); B1: a proto-Neolithic cemetery (11 ka); A: Holocene activity (from approximately 7 ka).

In 2011, the Kurdistan Regional Government approached Graeme Barker about further work at Shanidar. The resulting project aims to contribute to major debates about Neanderthal societies in south-west Asia and their vulnerability or resilience to climatic change in comparison with *Homo sapiens*, while specific objectives are to establish a high resolution environmental and cultural record, and to re-investigate the Neanderthal burials, their chronology, context and contents. Initial fieldwork during summer 2014 was interrupted by the IS threat, but two phases of excavation were undertaken in 2015.

The excavations – a 4 x 4 m eastern extension of Solecki's main trench – are focused on the location at which the earlier fieldwork discovered most of the Neanderthal remains (Fig. 3). The removal of backfill has exposed approximately 10m of section in this area and the adjacent faces of the main trench to a depth of 4 m (Fig. 4). The sediments result from shallow wash, mud and debris flows, roof fall and aeolian deposition. Sedimentary and diagenetic processes, vegetation and climatic history are being investigated from sediment and micromorphological samples.

An approximately 0.5 x 0.5 m plinth of sediment, separating from the main face as a result of post-1960 boulder collapse, was excavated to investigate Baradostian activity (Fig. 4). Initial radiocarbon dates by the Oxford Radiocarbon Laboratory place the Baradostian c. 35,000-40,000 years ago. Ephemeral but persistent evidence for human activity is present throughout, with three shallow scoops of ash and charcoal, each around 30cm in diameter and probably used as hearths (cooking places). The size of these features suggests limited groups of individuals. An insubstantial assemblage of lithics from Baradostian layers indicates an attempt to maximise the use of available raw materials, mainly

¹ This article first appeared in the *Antiquity* Project Gallery for December 2015 and is reprinted by kind permission of the Editors.

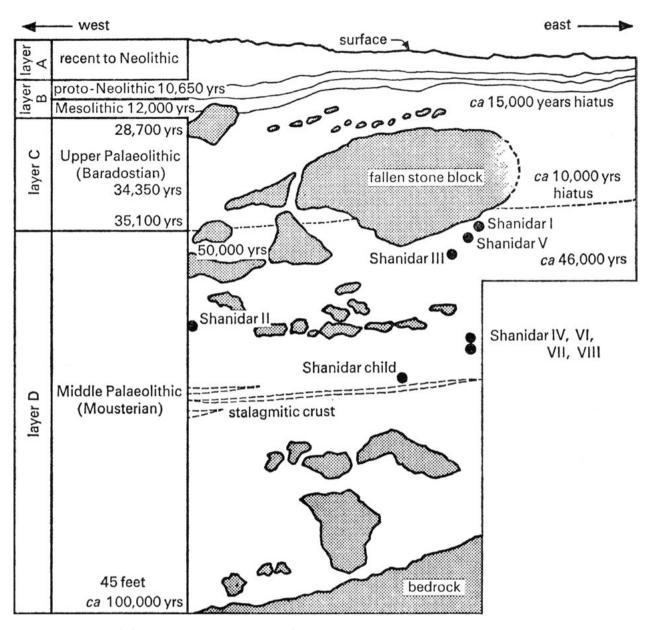


FIGURE 2. SCHEMATIC CROSS SECTION OF THE SOLECKI EXCAVATION, SHOWING HIS MAJOR CULTURAL LAYERS,
THE KEY RADIOCARBON DATES AND THE RELATIVE POSITIONS OF THE NEANDERTHALS
(REPRODUCED WITH KIND PERMISSION OF RALPH SOLECKI).

river pebbles, with frequent small cores and core shatter fragments, and core edge-trimming flakes. The frequency of multiple burins implies that the retooling of hunting equipment may have been significant (Fig. 5). The amount of burnt bone present in the highly fragmented faunal assemblage could indicate its use as fuel, which is consistent with initial pollen work that suggests a steppeland environment. The emerging picture is of small groups making regular short-term visits for shelter and tool maintenance in extreme conditions.

Around the findspot of the Neanderthal individual – Shanidar V – discovered by Solecki, we have found further Neanderthal remains including a hamate, the distal ends of the right tibia and fibula, and some articulated ankle bones, scattered fragments of two vertebrae, a rib and long bone fragments. The tibia and fibula were in articulation with the ankle bones (Fig. 6) and lay, foot uppermost, on an approximately 45° slope. These elements are missing from the list presented by Trinkhaus (1983), making it probable that they belong

FIGURE 3. THE EASTERN EXTENSION OF THE SOLECKI TRENCH IN 1960, WHERE MOST OF THE NEANDERTHAL REMAINS WERE FOUND; THIS AREA IS THE MAIN FOCUS OF THE NEW EXCAVATIONS (REPRODUCED WITH KIND PERMISSION OF RALPH SOLECKI).



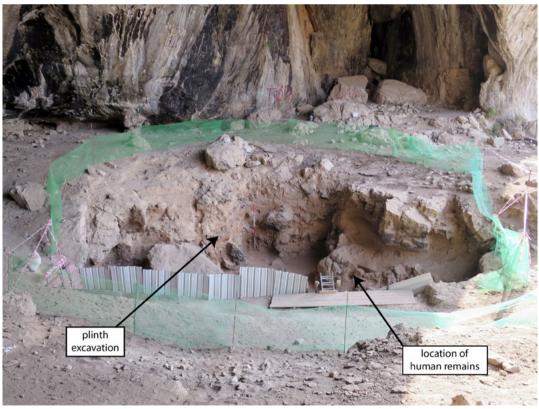


Figure 4. General view of the excavation area, looking east, showing the locations mentioned in the text; scales: 2 m and 0.5 m (photograph by G. Barker).

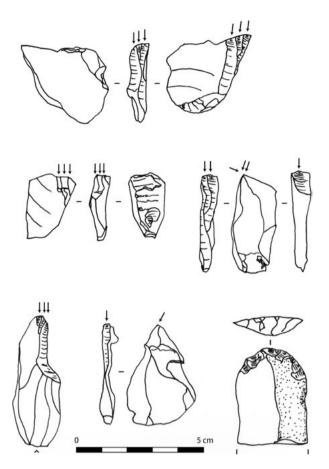


FIGURE 5. A VARIETY OF BURINS AND (BOTTOM RIGHT)
AN ENDSCRAPER FROM THE SEDIMENTS OF BARADOSTIAN
AGE (ILLUSTRATION BY T. REYNOLDS).



FIGURE 6. THE HUMAN RIGHT TIBIA AND FIBULA IN ARTICULATION WITH ANKLE BONES NEAR SOLECKI'S SHANIDAR V NEANDERTHAL SKELETAL MATERIAL AND PROBABLY PART OF THE SAME GROUP; SCALE: 8 CM (PHOTOGRAPH BY G. BARKER).

to Shanidar V, although a new individual cannot be ruled out. An animal burrow truncated the area where the rest of the foot would have been, but some scattered phalange fragments were recovered. The surrounding sediments showed no sign of a grave cut. The lack of a visible cut, the orientation of the anatomical elements and disturbance by animal burrowing all closely match Solecki's observations (1971, 238-42). There is a notable absence of worked lithics around the bones or, indeed, from any of the exposed pre-Baradostian sediments. This contrasts with the amount of material published from the Mousterian (Skinner 1965; Akazawa 1975), but it should be noted that a further 9 m of deposit lies beneath the level reached by the new excavations.

The new fieldwork at Shanidar is undertaken with the permission of the Kurdistan Directorate of Antiquities, which is warmly thanked, as is the Leverhulme Foundation for its financial support.

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Materials from French excavations in the Erbil area (2010): Kilik Mishik

Olivier ROUAULT and Ilaria CALINI



FIGURE 1. GENERAL VIEW OF KILIK MISHIK IN ERBIL AREA (2009).

The first French Mission to get a permit of excavations in Iraqi Kurdistan, as well as in the Erbil area, we conducted operations at the site of Kilik Mishik, now situated in the southern suburbs of Erbil (Fig. 1), only for one season, in spring 2010, in an informal collaboration with a team from the Department of Archaeology of

team. We thank them all very sincerely.

Salaheddin University. Later on, in 2011, our colleagues at Salaheddin University continued the researches successfully, while we with the agreement of the KRG Direction of Antiquities and the State Board of the Antiquities and Heritage in Baghdad moved to the site of Qasr Shemamok.

In order to be crystal clear, in this paper we will present only the material coming from the two areas in Kilik Mishik excavated under the direction of O. Rouault's and the responsibility of the French team, established by an official permit, even if, obviously, colleagues and students from Salaheddin University participated in the fieldwork – such as Dr Narmin Ali Mohammed Amin who excavated in trench A, and Dr Al-Hadad and Dr Mahmood, of the Department of Geography, who drew the first plan of the site (Fig. 2).

¹ The work of the French Mission in Kilik Mishik was possible thanks to the authorizations, help and support of numerous institutions: the State Board of Antiquities and Heritage of Iraq, the Ministry of Municipalities of the Kurdish Regional Government, the Directorate of Antiquities of Iraqi Kurdistan, the Directorate of Antiquities of Erbil, Salaheddin University of Erbil, the Commission des Fouilles of the French Ministry of Foreign Affairs, the French Consulate in Erbil and the French Centre National de la Recherche Scientifique (UMR 5133 Archéorient and UMR 8167 Orient et Méditerranée). The Mission worked in collaboration with Dr. Yusuf Khalaf of the Department of Archaeology of Salaheddin University; Dr Narmin Ali Mohamed Amen, also Salaheddin University, was also an active member of our

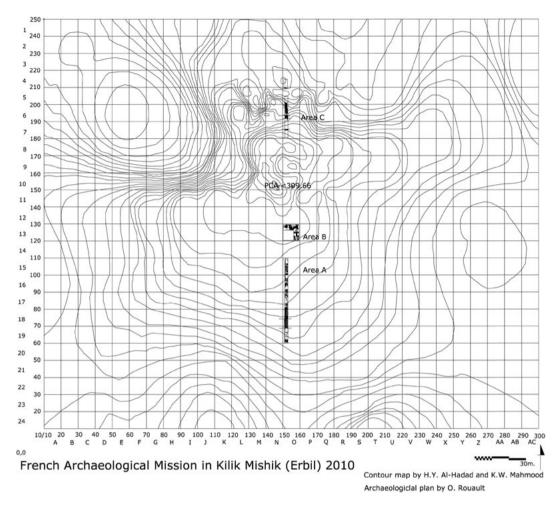


FIGURE 2. GENERAL PLAN OF THE SITE.

Shortly after the end of our work on the site we presented in summer 2010 a report of that mission at the 56th Rencontre Assyriologique in Barcelona to which one can now refer for a description of the site and of its environment.² In hindsight, thanks also to our experiences in Qasr Shemamok and an expanded knowledge of the local material culture, we can now better assess and readjust our first interpretation of the stratigraphic sequence which we identified at Kilik Mishik. The sequence has been established by studying a trench laid out on a North/South orientation. Our aim was to get a first appraisal of the situation, to be complemented by the excavations carried out at the same time in area B by the Salaheddin University team under the responsibility of Prof. Yusuf Khalaf. With this in mind a long excavation area was laid out, comprising trenches A and C, which

measured 50 m and 35 m long, leading out from a central trench B which measured 10 m by 10 m square.

Only a part of the site has been identified and protected by a metal fence, even if aerial pictures show that its area was possibly much larger in ancient times; the site is crossed by a *qanat*-canal crosses it on its northern side.

The trench established on the site in 2010 is 2 m wide and not continuous, in order to avoid the uppermost part of the tell which has been damaged, and recently even destroyed, first by construction and subsequently by the removal of modern military structures. The ceramic scatter shows traces of these events, with many periods attested on the surface.

In trench C, in the northern part of the site, where there is a quite steep slope cut by a small stream, we were able

² Rouault 2013.

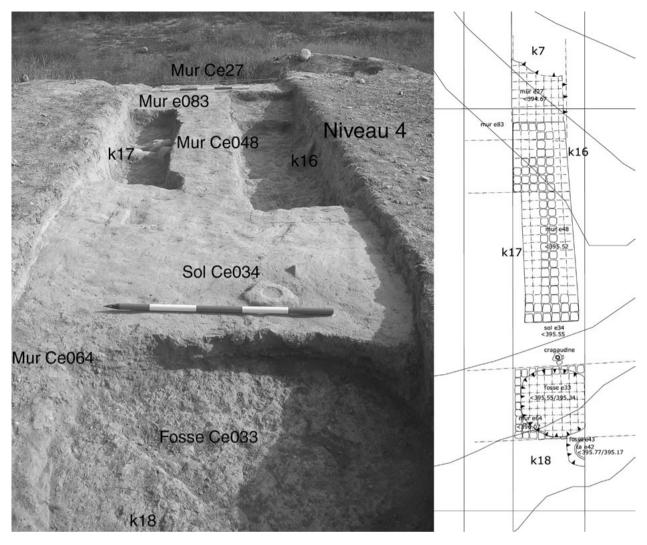


FIGURE 3. AREA C, SASANIAN AND PARTHIAN LEVELS.

to identify a possibly Parthian-Sasanian level with the very eroded remains of domestic occupations (Fig. 3). By contrast, in trench A, on the southern slope, nothing equivalent was found, not even a real Iron Age level. In the southern part of trench A, we found an Islamic level almost at the surface, while some Islamic tombs were discovered in area B.

In trench A, the potential and in some way expected Iron II-III occupation, indicated also by the discoveries of our colleagues in Area B, seemed to be attested only by the remains of quite substantial mudbrick and packed earth foundations (Fig. 4). These much eroded structures appear not to be clearly associated with houses. They rather look like supports for a terrace, or maybe elements of a defensive wall system, to be

connected with the presence of a settlement on the top of the site, now completely eroded, perhaps a village with storage facilities for agricultural production – large jars of common quality are the most frequent typology of vessels found in this location.

Following the model proposed by Max Mallowan and Al-Amin in their first study of the nearby Makhmur plain,³ the stratigraphy of trench A in Kilikh Mishik shows that the Iron Age II-III settlement was built on an ancient tell. As we found no Middle Assyrian period material clearly associated with a level in the limited space of trench A, we suggested that the tell had been formed mainly by Middle Bronze II-III

³ Mallowan and al-Amin 1949; 1950.

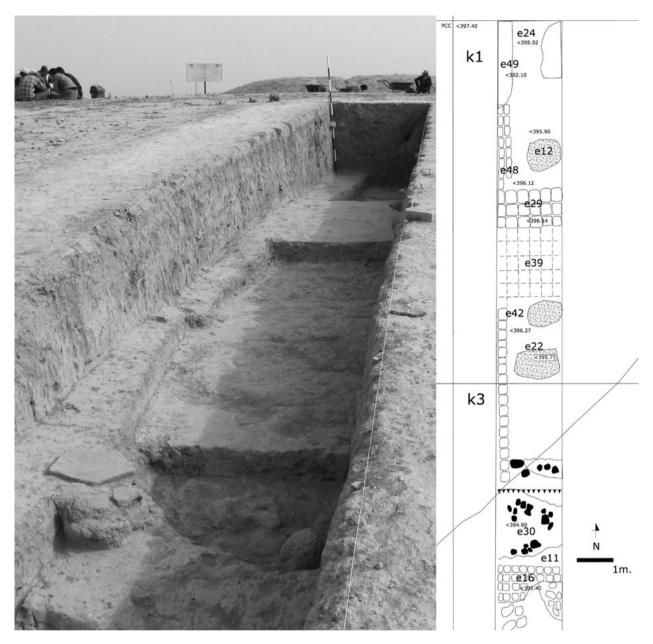


FIGURE 4. AREA A, NORTHERN PART OF THE TRENCH, IRON II AND III OCCUPATION.

occupations. This period is documented both by the presence of some terracotta material such as fragments of clay models of chariots as well as by pottery, which was however found in quite perturbed contexts (Fig. 5).

We think not only of Old Babylonian traditions, but also of Habur Ware culture, preceded in time by a more ancient 3rd millennium settlement, already from the Ninevite V period, which is attested in a small deep sounding

in the Northern end of trench C (Fig. 6). Possibly also some Ubaid period shards have been identified among the painted materials on the surface of the site. What we understand better today, thanks to a revaluation of the importance of some 'piecrust' pot-stands, found in different contexts in trench A, under the level marked by the Iron Age II-III terrace foundation (Fig. 11a), is the continuity of the occupation of the site of Kilik Mishik especially from the Late Bronze Period to the Iron I. These characteristic objects document a Late Bronze

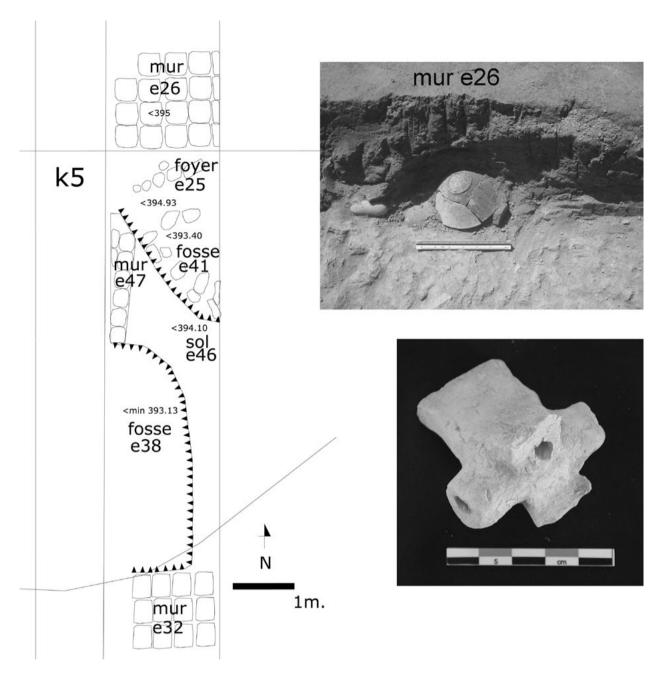


FIGURE 5. AREA A, MIDDLE BRONZE II-III CONTEXT AND FRAGMENT OF A MODEL OF CHARIOT.

occupation⁴ from the Mitanni and possibly until the early Middle Assyrian period. Their presence should not be understated, even if we have not recognized other clear Middle Assyrian artifacts, and no architectural structures of this period have been identified in the trench.

Nevertheless, the importance of this level is evident as a link with later Iron Age settlements.

In fact, the continuity of occupation of the site in itself is not surprising, and it does not change the vision of the evolution of the area, in a quite rich agricultural district, so close to Arbail. But this situation makes of Kilik Mishik one of the best sites in Kurdistan for studying the

⁴ Eichler et al. 1990; Hamlin 1974; Kolinski 1997; McMahon 1998; Pfälzner 1995; 2007; Postgate et al. 1997.



FIGURE 6. AREA C, SOUNDING, WITH NINEVITE V SHARD.

change between the culture of the Late Bronze Age and the new regime introduced by the Assyrians at least from the time context of the Middle Assyrian Empire.

From the beginning of our work in Kilik Mishik, among the surface shards on the top of the tell we have remarked some shapes diagnostic for the vessel production of the Assyrian tradition, as well as a considerable amount of glazed and painted pottery. Of all the ceramics collected in the trench, the material that we were able to study consists of 450 fragments of coarse and common wares, with just a few examples of fine wares (Fig. 7), assessed as diagnostic on the basis of either morphological or decorative features. These mostly correspond to closed shapes – more than 70% of the shards – whereas among the fragments of open shapes there seems to be a majority of quite large vessels, mostly deep bowls. In addition to that, we also collected 14 complete shapes. Several periods of occupation can be attested by the ceramic material. Starting with the more recent, we found Islamic ceramic material (Fig. 8a-c) mainly in the southern part of trench A, located on the southern slope of the tell. In the same context several fragments of typical glass bracelets were also found. A significant amount of shards show a monochrome glazed surface, mostly green or yellow. Several examples of unglazed pottery were present too,

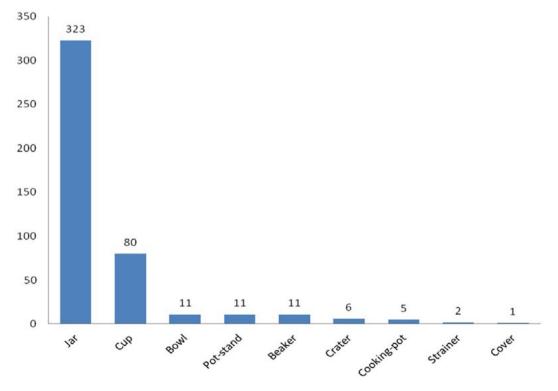
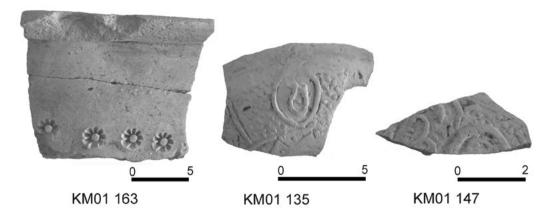
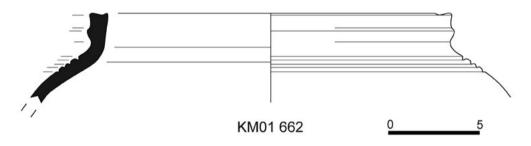


FIGURE 7. GRAPHIC OF DIAGNOSTIC SHARDS.



Islamic unglazed pottery with moulded or stamped decorations



Parthian grooved rim jar from Area C

FIGURE 8. ISLAMIC AND PARTHIAN MATERIAL.

providing a variety of typical surface decorations.⁵ We can mention stylized motifs, moulded into abstract and geometric shapes - such as alternating rows of vertical ribs and small circles, or dots – and in some cases parts of Arabic writing; incised or combed patterns of parallel horizontal and wavy lines, sometimes combined with irregular applications and 'barbotine' decorations; and a stamped row of flowers on the outside of the body of a rather large basin characterized by an everted rim, a buff-greenish color and chaff-tempered clay. Even if some examples might have good Sasanian/Early Islamic parallels, the most clearly diagnostic shards – notably the glazed and several of the moulded ones - seem to suggest a dating rather to the Middle Islamic period, approximately between the 11th and the 13th century BCE.6

For the Parthian/Sasanian period a possible level with several construction phases was identified only in area C (Fig. 8d). Here, the material associated with the archaeological structures consists mainly of fragments of grooved-rim jars with parallel lines combed or incised on their body; a variant which seems quite well attested shows a cylindrical neck characterized by many ridges, and sometimes a strap-handle with a central hollow.⁷

A substantial quantity of ceramic shards, collected in several levels of area A as well as in area C, were identified as possible Iron II-III material (Fig. 9). Unfortunately, the majority was just scattered in fill layers and mixed with more ancient or more recent material, without any complete shape datable to this period. Even if these ceramic assemblages were strongly contaminated and mixed in almost every level, we could recognize different pot-types diagnostic for the Assyrian

⁵ Adams 1970; Nováček et al. 2008; Rousset 1996.

⁶ We would like to thank our colleague, Professor Karel Nováček, (University of West Bohemia), for his kind and very valuable contribution to the assessment of the dating of the Islamic material.

⁷ Debevoise 1934; Dorna-Metzger 1996; Keall and Keall 1981.

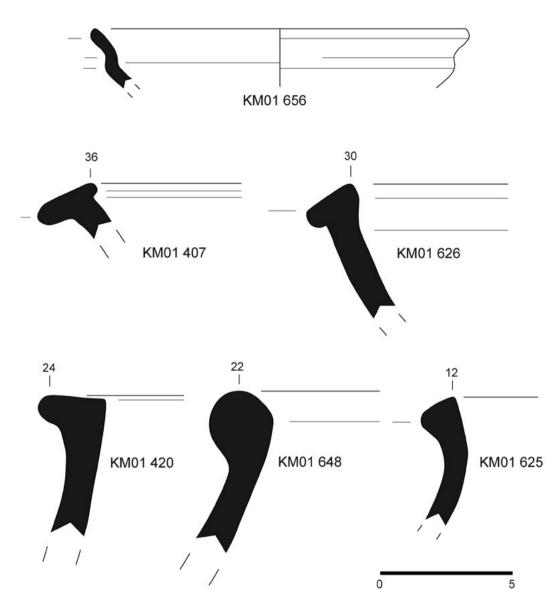


FIGURE 9. IRON AGE II-III POTTERY.

tradition.⁸ They correspond quite well to the material described by Mallowan and al-Amin during their surveys in the Makhmur plain.⁹ All the ceramic examples for this period are wheel-made, often with a light yellow-pinkish or buff clay. They are mostly fragments of jars with a cylindrical neck and a triangular or rounded rim, and, for the open shapes, hemispherical shallow bowls with triangular and slightly overhanging rims, with parallels, for example, from Nineveh and Assur.¹⁰

As mentioned, 'Middle Assyrian Standard Ware'¹¹ is almost absent in the trench. On the other hand, numerous ceramic shards seem to belong to the Late Bronze Age (Fig. 10), especially to Mitanni typologies, with parallels from Tell Brak and Tell Bdēri. ¹² For this ceramic production – which, in comparison with standard Middle Assyrian has far fewer small and carinated open shapes – we also have some complete vessels, especially different kinds of shallow conical or deep bowls with a flaring and thickened rim. A ceramic typology, which is particularly well attested on the site, is represented by 'piecrust' pot-

⁸ Anastasio 2010; Hausleiter 2010.

⁹ Mallowan and al-Amin 1949; 1950.

¹⁰ Anastasio 2010; Hausleiter 1997; 2010; Hausleiter and Reiche 1999; Lumsden 1999.

¹¹ Pfälzner 2007.

¹² Oates et al. 1997; Pfälzner 1995; Reiche 2014.

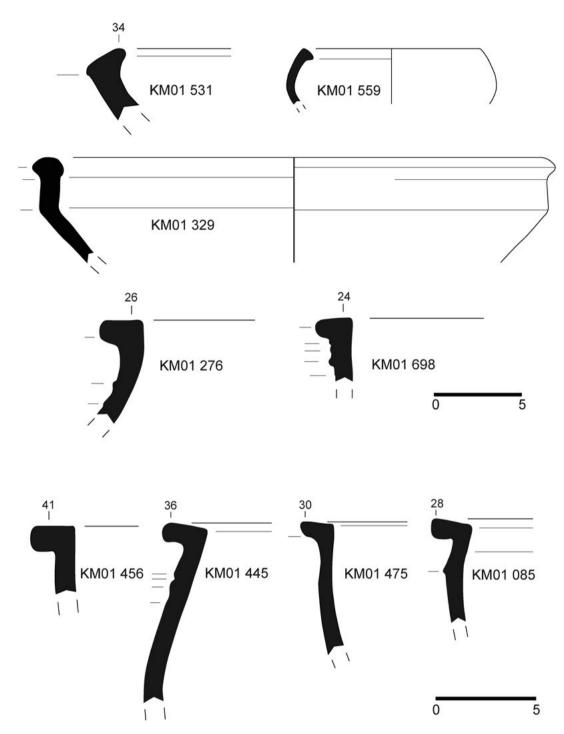


FIGURE 10. LATE BRONZE AND MITTANIAN POTTERY.

stands, characterized by a typical wave-shaped rim: several fragments have been found in almost every excavated level, and two complete shapes have been discovered in trench A. Even if examples of this particular variant of pot-stand are attested in several different periods – at least since the third millennium BC and until the Middle

Assyrian period – their presence in Kilik Mishik seems to be clearly associated with the Mitanni assemblage. The execution of the vessels is neat and of good quality: the surface of the outer wall is generally well smoothed, the shaping of the rim is rather accurate, and traces of pottery wheel on the inside wall are quite even.

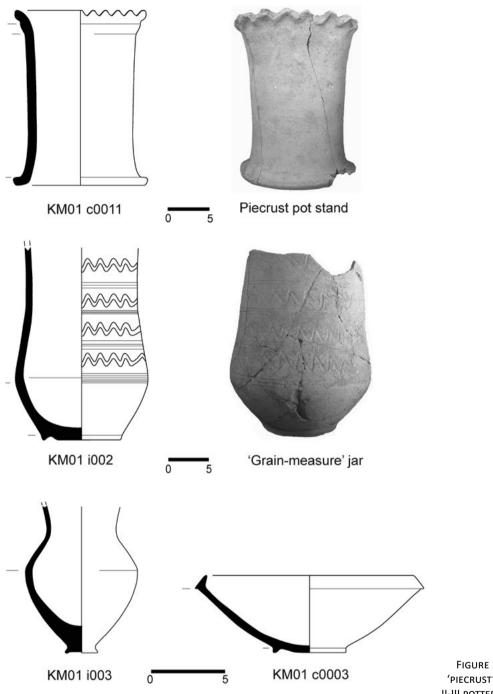


FIGURE 11. MITANNI PERIOD
'PIECRUST' AND MIDDLE BRONZE
II-III POTTERY: KHABUR WARE STYLE
AND DEPOSIT FOUND IN AREA A.

Evidence of a material culture datable to the first half of the 2nd millennium BC, Middle Bronze II-III, was also found in the same trench (Fig. 11b). Notably, several fragments of chaff-tempered vessels with painted decorations in Habur ware style, consisting mainly of horizontal stripes painted in a monochrome reddish-

The MBA 'foundation deposit' from Area A

brown color, are very similar to those found, for example, in Chagar Bazar, Tell Barri and Tell el-Rimah.¹³ A jar, almost complete, has an almost cylindrical shape with a

 $^{^{13}}$ Baccelli and Manuelli 2008; Faivre and Nicolle 2007; Hamlin 1974; Mallowan 1937; Postgate $\it et~al.$ 1997.

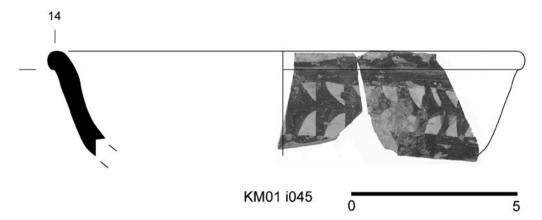


FIGURE 12. 3RD MILLENNIUM NINIVE 5 MATERIAL.

slight and rather low carination, an orange-buff outside surface, and alternating sets of parallel and wavy incised lines on the body. These decorative and morphological features suggest it might be a 'grain-measure' vessel, most likely of the same type as the unpainted 'prototype' found in Tell Jidle and dated by Mallowan to around 1600 BCE. ¹⁴ A possible 'foundation deposit' discovered in trench A also gave us two interesting examples of Middle Bronze Age pottery (Figs. 5b-c; 11c-d): associated with a chariot model, we found a small ring based shallow bowl with an in-turned triangular rim and a foot based shouldered beaker, both wheel-made in a quite fine ware with a whitish smoothed surface. ¹⁵

More ancient levels of occupation of the site have been documented by some examples of 3rd millennium ceramic material, discovered mainly at the bottom of a small sounding opened North of trench C (Figs. 6, 12). A fragment from a wheeled-made open bowl with a small bead rim and a dark brown painted decoration showing a series of horizontal triangles between two parallel lines was found there in a fill layer without a real archaeological context. Its morphological features and decorative style suggest it could be an example of Ninevite V material - actually quite isolated, apart from a badly broken jar, and maybe belonging to a later

The results of our 2010 campaign in Kilik Mishik, based on the study of the limited area excavated, are obviously preliminary, and useful only to establish a first assessment of the occupational history, as well as, eventually, a strategy for subsequent research. The excavations program launched by the Department of Archaeology of Salaheddin University in Kilik Mishik will surely give new evidence for a better understanding of this important settlement so close to the great mound of Arbail itself.

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period, perhaps towards the end of the 3rd millennium BC.¹⁷

¹⁴ Mallowan 1946; see also Kelly-Buccellati and Shelby 2007, 147, pl. XI, n. 85; Pfälzner 2007, 261, pl. III, n. 17; Postgate *et al.* 1997, 204-7, pl. 77-8.

pl. 77-8.

15 Pfälzner 2007, 266, pl. VIII, n. 73-9; Postgate *et al.* 1997, 158-9, pl. 54, p. 194-7, pl. 72-3.

In particular, the example shown in Numoto 2003, 136-7, pl. 27, n. 104, which belongs to the phase A of Tell Thuwaij and is described as 'Rim of painted bowl, creamy slip, dark brownish purple paint, sand and straw temper' seems to have very similar characteristics to the fragment found in Kilik Mishik. See also Numoto 1991, 121, pl. 14, n. 205, p. 126, pl. 15, n. 165, p. 142, pl. 24, n. 355; for the site of Tell Kutan, see Bachelot 2003, 176, pl. 24, n. 2; for Tell Chagar Bazar, see Mallowan 1937.

¹⁷ Beuger 2005.

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Kurd Qaburstan, A Second Millennium BC Urban Site: First Results of the Johns Hopkins Project

Glenn M. SCHWARTZ

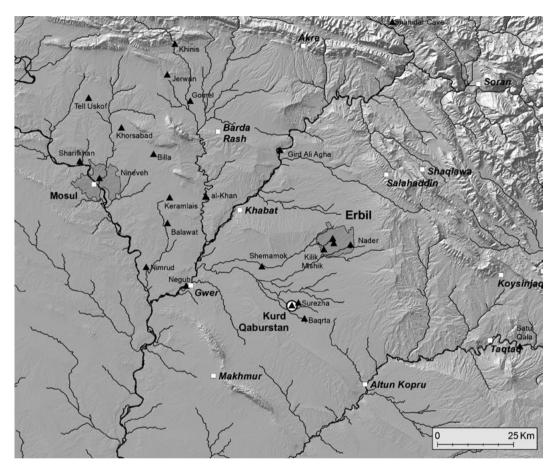


FIGURE 1. THE ERBIL REGION, WITH KURD QABURSTAN INDICATED. MAP BY JASON UR.

The Johns Hopkins University archaeological project at Kurd Qaburstan, in the Shemamok Nahiya of the Erbil governorate, Kurdistan, Iraq, held its first field season over a three week period in June-July 2013. Kurd Qaburstan ('cemetery of the Kurds') is located ca. 22 km southwest of Erbil on the Erbil plain (latitude 35.99/longitude 43.86; UTM 397470 E/3983250 N) (Fig. 1).

At 109 hectares, Kurd Qaburstan is one of the largest Bronze Age sites in the region of Erbil. Enclosed by a city wall, the site consists of two components: a central 11 hectare high mound up to 16 meters in elevation, and a 98 hectare lower town with a maximum elevation of ca. 4 meters (Figs. 2-4).² The modern village of Yedi Kizlar is located in the southeastern part of the lower town, while the eponymous cemetery is situated on the high mound and occupies its highest point. As Ur *et al.* (2013) suggest, the large size and likely importance of Kurd Qaburstan can be correlated with its location

Texpedition staff included Glenn Schwartz (director), Adam Maskevich (associate director), Christopher Brinker (associate director), Sally Dunham (small finds analyst), Emily Williams (conservator), Peter Chomowicz (architect), John MacGinnis (excavator and consultant), Andrew Creekmore (director, geophysics project), Joshua Brookhouser and Nicholas Ownby (geophysics assistants), and Lara Fabian, Stefano Marchiaro, Steve Renette, and Jennifer Swerida (excavators).

 $^{^2}$ Parts of the site in the southwest extend beyond the city wall. Ur (et al. 2013) estimate the area within the city wall to be 105 hectares.



FIGURE 2. KURD QABURSTAN, VIEW OF CENTRAL HIGH MOUND FROM THE SOUTHWEST.

PHOTOGRAPH BY JASON UR.

close to the watershed between the Upper and Lower Zab rivers as well as its proximity to a gap in the Avanah Dagh hills between Makhmur and Erbil. The relatively plentiful rainfall (ca. 300-400 mm/year) and adequate soils of the expansive plain also would have been conducive to a productive dry farming regime, generating surpluses to support a large urban center and its surrounding communities (Buringh 1960, 43-4; Wilkinson 2003, 18, fig. 2.1).

In the Atlas of Archaeological Sites in Iraq, Kurd Qaburstan is designated site 35 on Map 3 (National Directorate of Antiquities Iraq 1976). The Erbil Plain Archaeological Survey (EPAS) directed by Jason Ur of Harvard University designated Kurd Qaburstan as site 31 and conducted surface sherd collection there in summer 2012 (Ur *et al.* 2013). According to the results of the EPAS sherd collection, the lower town was primarily occupied in the early second millennium BC (Middle Bronze Age), along with significant Islamic period presence south of the high mound, while the high mound had evidence of occupation from the early third millennium BC to the first millennium AD (Ur *et al.* 2013).

Given the large size, location, and occupational history of the site, Ur and his colleagues proposed that Kurd Qaburstan was a major walled city of the Middle Bronze period (ca. 2000-1600 BC), perhaps to be identified with ancient Qabra (Ur *et al.* 2013). Texts of the Middle Bronze period indicate that Qabra was the preeminent city of the Erbil region at this time and capital of a kingdom (Charpin 2004; MacGinnis 2013b). Two monumental stone steles, one in the Louvre Museum, the other in the Iraq Museum in Baghdad,

commemorate the defeat of the king Bunu-Ištar of Qabra and the capture of his capital by the kings Šamši-Adad of upper Mesopotamia and Daduša of Ešnunna (Ismail and Cavigneaux 2003; Schwartz 2013, 5, figs. 1a, 1b). References to Qabra appear to be restricted to the Middle Bronze period, although some scholars have proposed that the town of Baqarru referred to in neo-Assyrian sources is a later version of the same toponym (Deller 1990).

Excavation and geophysical investigation of an urban center such as Kurd Qaburstan offers the opportunity to study the nature of urbanism, urban organization, and urban lifeways in early second millennium BC northern Mesopotamia. While Mesopotamia is celebrated as the 'heartland of cities,' study of second millennium BC Mesopotamian urbanization has primarily focused on southern Mesopotamia (Adams 1981; Stone 2007; van de Mieroop 1997) or on the Syrian Jezireh (Akkermans and Schwartz 2003, 233-87; Matney 2012; Ur 2010a; Weiss 1986), neglecting the plains of northern Iraq.

Among the issues that have been raised by scholars of early second millennium upper Mesopotamian urbanism is the proposal that cities of the north were 'hollow,' established by Amorite dynasts as impressive seats of power but consisting mainly of palatial and religious complexes, lacking a dense population (Oates 1985; Ristvet 2012, 43). In addition to testing the 'hollow cities' model, this project will aim to investigate the spatial distribution and nature of domestic remains, craft production, fortifications, and public architecture at the site, the presence of neighborhoods and their distinguishing characteristics (e.g. social status, kinship, profession) (Smith 2010), the evidence for central

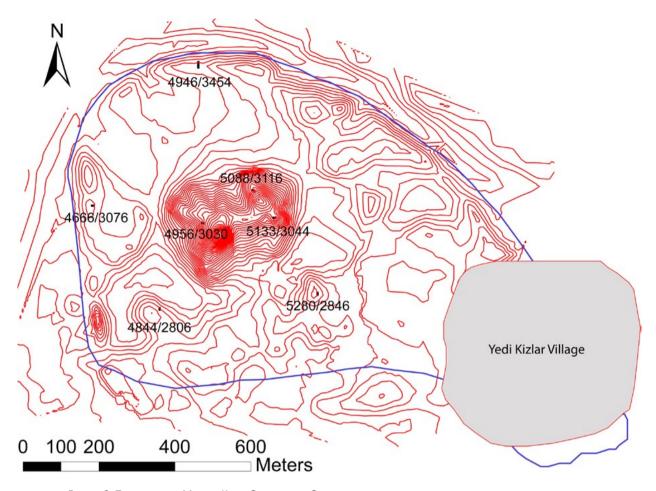


FIGURE 3. TOPOGRAPHIC MAP OF KURD QABURSTAN. OUTER EDGE OF PUTATIVE CITY WALL INDICATED BY SOLID LINE.

MAP BY CHRISTOPHER BRINKER.

planning (Harmanşah 2013; Smith 2007), and symbolic and ideological aspects of urban organization. We aim to consider urban space as a product of people's daily practices and, conversely, as a shaper of people's thoughts and actions (Rapoport 2006; Smith 2003; 2011). Through such studies we hope to begin to illuminate the nature of second millennium BC urbanism in the Erbil plain.

In the first season of the Johns Hopkins project in 2013, fieldwork aimed at four goals:

- Producing a topographic map of the site (see Fig. 3):
- Sampling different parts of the site through excavation to determine their character and history of occupation and to guide future excavation strategy;
- 3. Testing the hypothesis that Kurd Qaburstan was a major city of the Middle Bronze period;
- 4. Beginning a geophysical survey project to study the urban layout of the site.

As part of this research, seven excavation units were opened. Both the high mound and the lower town were sampled.

High Mound Excavations

On the high mound, three trenches of 6 x 10 meters were excavated; these consist of unit 5144/3044 on the high mound east, unit 5088/3116 on the high mound north, and unit 4956/3030 on the high mound west (Fig. 3). In all three trenches, human skeletons were found directly below the mound surface, with adult and subadult ages represented. The skeletal materials had no associated artifacts, so their period of occupation is uncertain. Evidence of burial pits was often difficult to detect but could be discerned on occasion.

Deposited prior to these skeletons in the three trenches were occupation layers of the Mittani period (Late Bronze Age, ca. 1600-1300 BC). While trench 4956/3030



FIGURE 4. CORONA SATELLITE IMAGE OF KURD QABURSTAN, WITH CITY WALL VISIBLE.

contained no evident architectural remains, the other two units yielded mudbrick and baked brick architecture in deposits excavated to depths of ca. 1.5 meters. On the high mound north, trench 5088/3116 included a mudbrick wall three mudbricks wide (mudbrick size 36 x 36 cm) extending east-west through the unit.

On the high mound east, Trench 5144/3044 had the most abundant architectural evidence, with three phases exposed. The uppermost phase consisted of two incompletely preserved perpendicular mudbrick walls two bricks wide (brick sizes 35-6 x 35-6 cm), with evidence of lime plaster on the walls and on the associated floor surface (Fig. 5). At times baked brick segments were embedded within the mudbrick walls, a characteristic of the architecture in 5088/3116 as well. Common in this phase was evidence of pyrotechnic activity including substantial amounts of slag.

In the middle phase was a mudbrick wall one brick wide (brick size 35 x 35 cm³) and a baked brick surface

consisting of two rows of four trapezoidal bricks each⁴ (Fig. 6). The baked bricks' trapezoidal shape indicates that their original context was the lining of a well or a vaulted structure.⁵ In the earliest phase excavated, a baked brick surface was traversed by a drain consisting of cylindrical ceramic elements (diameter = 14 cm) adjacent to a small square baked brick door socket (11 x 11 x 7 cm) (Fig. 7). This feature recalls Mittani period drainage installations at Nuzi (Yorgan Tepa) (Starr 1937, plate 13C, 14A). The baked bricks of the feature measured 30-1 x 31 cm.

The Mittani pottery assemblage retrieved from the high mound trenches includes such characteristics as shallow bowls or plates with beveled or simple rims and ring bases (Fig. 8: 1, 3, 5), bowls with ledge rims (Fig. 8: 9, 11), bowls with square, block rims (Fig. 8: 12, 14, 15), and carinated bowls with vertical upper bodies and flat rims (Fig. 8: 8). Jars and kraters with square, block rims were common (Fig. 9: 9), as were jars with tall, thickened rims (Fig. 9: 8), and 'piecrust' pot stand

³ Starr (1939, 43) records that the mudbricks at Nuzi were typically 33 x 33 x 13 cm or 33 x 17 x 13 cm and thus smaller than the Kurd Qaburstan bricks thus far identified. On brickmaking at Nuzi, see Lion and Sauvage 2005.

 $^{^4}$ Measurements for short base vary from 19-25 cm, long base 27-32 cm, height 28-32 cm.

See the 'well bricks' noted in Starr 1937, pl. 15D, although these are not as strictly trapezoidal as the Kurd Qaburstan examples.



FIGURE 5. HIGH MOUND EAST, TRENCH 5144/3044, LATEST MITTANI PHASE. LOOKING SOUTH.



FIGURE 6. HIGH MOUND EAST, TRENCH 5144/3044, MIDDLE MITTANI PHASE. BAKED BRICK SURFACE SOUTH OF MUDBRICK WALL. LOOKING NORTH.

sherds appeared with some frequency. Cooking pots had a diversity of rim shapes that included angular flaring rims, everted beveled rims, and short everted rims. Apart from cooking ware and fine decorated vessels, the Kurd Qaburstan Mittani pottery had light yellow clay with vegetal inclusions.

Particularly characteristic of the decorated vessels were fine, thin-walled goblets with painted horizontal stripes and pedestal or button bases, examples of the so-called 'Younger Khabur Ware' (Pfälzner 2007) (Fig. 9: 4, 5; Fig. 11). Also typical of the assemblage were small beakers with low carination, painted horizontal stripes



FIGURE 7. HIGH MOUND EAST, TRENCH 5144/3044, EARLIEST MITTANI PHASE. BAKED BRICK FEATURE WITH CERAMIC DRAIN AND DOOR SOCKET. LOOKING SOUTHWEST.

on the vessel body and/or painted stripes atop the rim ('grain measures') (Fig. 9: 1, 3). Gray/black burnished bowl sherds sometimes had incised, impressed, and infilled decoration (White Paste Inlay Ware, as defined by Pfälzner 2007) (Fig. 12).

Only one sherd of Nuzi Ware was recognized (Fig. 10, 3).⁶ Although three painted sherds from trench 5088/3116 had elegant designs also found on Nuzi Ware including a large daisy-shaped rosette with hollow central circle (Fig. 10, 1) and a voluted palmette (Fig. 10, 2), the paint was dark-on-light rather than light-on-dark as in Nuzi Ware (Fig. 10).7 While these examples might be compared to what Pfälzner (2007) has termed Dark on Buff Animal Ornamented Ware, their motifs find better parallels in Nuzi Ware (see also Oates et al. 1997, 200-3, figs. 200-1). The dark on light painted sherds display similar motifs (e.g. two parallel lines with a line of dots in between, and two parallel stripes) and it may be possible that some or all belonged to the same vessel. Their archaeological context is also similar, deriving from the same part of trench 5088/3116 in the same phase. It also might be suggested that these sherds derived from a glazed vessel or vessels; note the greenish color of the

Many of the Mittani ceramic characteristics attested at Kurd Qaburstan can be observed at sites elsewhere in northern Iraq such as Tell al-Rimah west of the Tigris (Postgate, Oates and Oates 1997), or at Nuzi near Kirkuk (Starr 1937; 1939), not to mention farther west in Syria. Conspicuous in their absence in the excavated assemblage, however, are red-edged bowls, common in Mittani contexts elsewhere (Oates *et al.* 1997: 73; Pfälzner 2007; Postgate *et al.* 1997, 56).

Many of the ceramic features of the Kurd Qaburstan Mittani assemblage, including gray burnished bowls, White Paste Inlay Ware, and the absence of rededged bowls, are consistent with the characteristics of the earlier Mittani period as defined by Pfälzner (2007), i.e. his Middle Jazirah IA period. Although Pfälzner assigns piecrust potstands to the later Mittani period (Middle Jazirah IB), the Middle Bronze period assemblage from Tell Rijim (Koliński 2000) in the Eski Mosul salvage region reveals that piecrust potstands were in use well before the Mittani period and should not be assigned exclusively to any Mittani subphase.⁹

paint on Fig. 10, 1 and 2 and the tendency of the outer surfaces of the sherds to flake off rather than chip.⁸

⁶ For parallels to the swag motif represented, see, for example, Alalakh (Woolley 1955, pl. CVI, ATP/47/38).

⁷ For parallels see Starr 1937, pl. 69:A2, pl, 78: S; Oates *et al.* 1997, 195, fig. 197, no. 421 and 197, fig. 198, no. 433; Woolley 1955, pl. CVI, ATP/8/202. See also the volute palmettes on a wall painting from the Nuzi palace (Starr 1937, pl. 128, H).

⁸ I am grateful to Marian Feldman for this suggestion.

⁹ The presence of piecrust potstands in the Middle Bronze period was also corroborated by the 2014 excavations of the Kurd Qaburstan project.

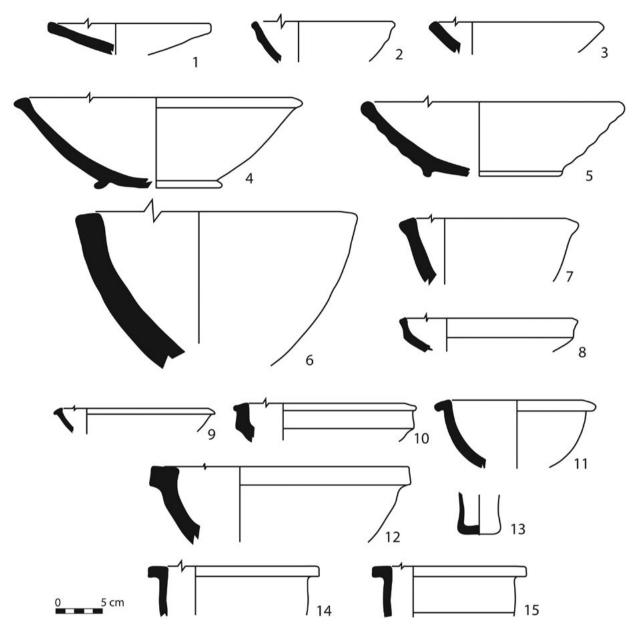


FIGURE 8. MITTANI PERIOD POTTERY. 1. 5088/3116-007. LIGHT YELLOW, MEDIUM VEGETAL INCLUSIONS; 2. 5144/3044-003. LIGHT YELLOW, MEDIUM VEGETAL INCLUSIONS; 3. 5144/3044-001. LIGHT BROWN, MEDIUM VEGETAL INCLUSIONS; 4. 5144/3044-023. LIGHT BROWN/PINK, MEDIUM VEGETAL INCLUSIONS, MEDIUM WHITE SAND; 5. 5144/3044-030. LIGHT BROWN, MEDIUM VEGETAL INCLUSIONS, FINE TO COARSE WHITE SAND; 6. 5144/3044-008. DARK GRAY, COARSE VEGETAL INCLUSIONS, FINE TO COARSE SAND; 7. 5144/3044-008. LIGHT YELLOW, MEDIUM VEGETAL INCLUSIONS; 8. 5144/3044-003. LIGHT GREEN/YELLOW, MEDIUM VEGETAL INCLUSIONS, FINE SAND; 9. 5144/3044-004. LIGHT YELLOW, MEDIUM VEGETAL INCLUSIONS; 11. 5144/3044-008. LIGHT YELLOW, MEDIUM VEGETAL INCLUSIONS; 12. 5144/3044-009. LIGHT YELLOW, MEDIUM VEGETAL INCLUSIONS; 13. 5144/3044-023. LIGHT BROWN, NO VISIBLE INCLUSIONS; 14. 5144/3044-004. LIGHT YELLOW, MEDIUM VEGETAL INCLUSIONS; 15. 5144/3044-004. LIGHT YELLOW, MEDIUM VEGETAL INCLUSIONS; 15.

As a result, the Mittani levels thus far exposed at Kurd Qaburstan may be provisionally assigned an early Mittani date.

In contrast to the Kirkuk area, with results from Nuzi (Starr 1937; 1939) and Tell el-Fakhar (al-Khalesi 1977), there has been little archaeological documentation of the

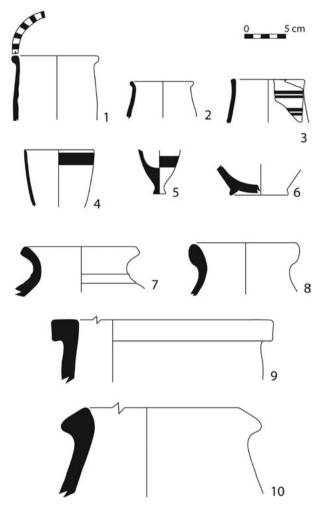


FIGURE 9. MITTANI PERIOD POTTERY. 1. 5144/3044-032. LIGHT GREEN/YELLOW, NO VISIBLE INCLUSIONS, BROWN PAINT; 2. 5144/3044-008. LIGHT YELLOW, MEDIUM VEGETAL INCLUSIONS; 3. 5144/3044-001. PINK/BROWN, NO VISIBLE INCLUSIONS, REDBROWN PAINT; 4. 5144/3044-014. LIGHT BROWN, FINE WHITE SAND/LIME, DARK BROWN PAINT; 5. 5088/3116-011. LIGHT YELLOW, NO VISIBLE INCLUSIONS, BLACK PAINT; 6. 5144/3044-008. LIGHT YELLOW EXTERIOR/INTERIOR, LIGHT BROWN/PINK CORE, MEDIUM VEGETAL INCLUSIONS; 7. 5144/3044-011. LIGHT YELLOW, MEDIUM VEGETAL INCLUSIONS; 9. 5144/3044-002. LIGHT YELLOW, MEDIUM VEGETAL INCLUSIONS; 10. 5144/3044-002. BROWN, MEDIUM VEGETAL INCLUSIONS, FINE WHITE SAND.

Mittani period in the Erbil region thus far.¹⁰ It is hoped that the Kurd Qaburstan results will assist in filling this lacuna.

Lower Mound Excavations

CORONA satellite imagery (Fig. 4) indicated the existence of large-scale architecture in the central parts of the lower town, where white-colored masses have been interpreted to indicate the presence of substantial mudbrick constructions (Ur et al. 2013). To test the presence of such architecture and to determine its date, excavations were conducted in the 6 x 10 meter unit 5260/2846 in the central lower town south of the high mound. Excavation below the surface revealed the presence of Islamic pottery associated with fragmentary mudbrick architecture. In order to document the occupational history of the area and to determine the presence of Bronze Age architecture, a test trench one meter in width was excavated against the south balk to a depth of 2.8 meters. The strata exposed in the test trench yielded only Islamic period remains and included a wall of baked brick preserved to 11 courses projecting out of the west balk as well as a large pit in the center of the trench. Examples of Sgraffiato Ware, Turquoise Glazed Ware, and pottery with black painted decoration under a transparent turquoise glaze indicate the presence of an occupation dating to the Middle Islamic period, perhaps attributable to the 13th-14th centuries AD (Fig. 13) (Ur 2010b, 295-6; Vezzoli 2008; Wilkinson and Tucker 1995, 220, fig. 79). 11 Another Middle Islamic type found in this context consisted of handmade flat-based plates (see Pappalardo 2012, 649), and fragments of glass bracelets were also recovered.

The results from trench 5260/2846 reveal that satellite imagery indicative of large-scale architecture is confirmed by the well-preserved baked brick wall exposed in the test trench. The extant top of this wall was 1.44 meters below the mound surface.

CORONA satellite photographs at Kurd Qaburstan also revealed a distinct white mass on the western lower town interpretable as a discrete large building. Excavations were conducted in the 6 x 10 meter unit 4844/2806 in this area in order to test the presence of such a building and determine its date. Immediately below the present day surface was a cobble-paved surface of ca. 2.5 x 2.5 meters in association with Islamic period pottery.¹² A test trench one meter in width was sunk against the south balk to a depth of 2.5 meters in order to acquire information on the local occupational sequence and to determine whether Bronze Age deposits were extant. The pottery from the test trench was also Islamic period in date, except for a small number of second millennium BC sherds that derived from deposits just above the limit of excavation. No architecture or features were

¹⁰ Note also that there is very little textual evidence for developments in the region during the Mittani era (MacGinnis 2013a). As Novák (2013, 355) observes, 'the archaeology of the Mittani empire has revealed astonishingly little material so far, especially in its central heartland of Upper Mesopotamia.' For recent discussion of Mittani and its origins, see Cancik-Kirschbaum et al. 2014.

¹¹I am grateful to Michael Danti and Tim Matney for help in dating these materials, and I am especially indebted to Valentina Vezzoli for her detailed comments on the pottery.

¹² The precise date of this pottery within the Islamic era remains to be established.

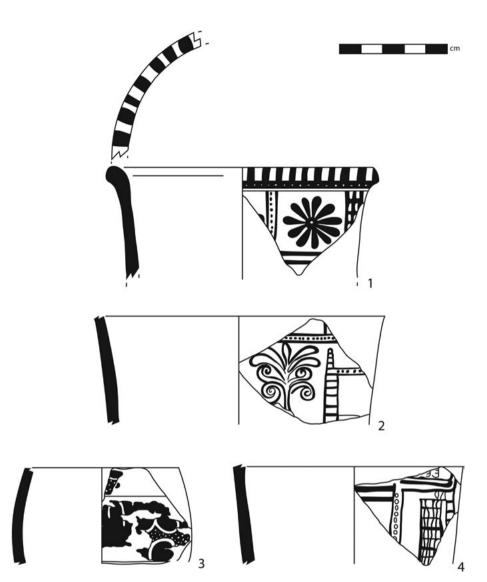


FIGURE 10. MITTANI PERIOD POTTERY. 1. 5088/3116-011.
LIGHT YELLOW/GRAY, FINE WHITE SAND, PAINT FADED, CURRENTLY GREENISH-GRAY; 2. 5088/3116-009. LIGHT YELLOW/GRAY, NO VISIBLE INCLUSIONS, PAINT FADED, CURRENTLY GREENISH-GRAY; 3. 5144/3044-028. LIGHT YELLOW, NO VISIBLE INCLUSIONS, WHITE ON BLACK PAINT; 4. 5088/3116-012. LIGHT YELLOW, NO VISIBLE INCLUSIONS, BROWN PAINT.

noted in the test trench except for a small circular hearth comprised of stone cobbles. Thus, the results from trench 4844/2806 do not support the interpretation of a large building as suggested by the CORONA images. However, it is possible that the excavations sampled open areas inside a large architectural unit.

City Wall Excavations

In order to determine the existence and date of the city wall, the project opened two trenches next to the wall's presumed location. These excavations were also undertaken as part of our aim to determine whether Kurd Qaburstan was a large Middle Bronze city. It was reasoned that if the construction of a city wall enclosing over 100 hectares could be dated to the Middle Bronze

period, this conclusion would support the identification of the site as a major city of that period.

In unit 4666/3076 on the west (Fig. 14), measuring 6 x 10 meters, excavations below the present-day mound surface revealed that the soil matrix in the area was a uniform red-brown hard material with lime inclusions, with no indications of mudbrick architecture. A onemeter wide test trench was excavated along the 10 meter long south balk and extended for an additional 4.5 meters to the east, reaching a depth of 2.2 meters. In the western part of the 14.5 meter long test trench, almost no pottery or other artifacts were found, while the eastern segment had sherds and other features. The pottery dated exclusively to the second millennium BC and is primarily identifiable as Middle Bronze in date.



FIGURE 11. MITTANI PERIOD FINE PAINTED GOBLET POTSHERDS.

Among the features exposed in the trench was a clay oven containing part of a painted bowl and a very large circular limestone door socket (38 length x 37 width x 28 height). Also found from a context fairly close to the present-day surface was a torso fragment of a terra

cotta moldmade plaque depicting a standing human female holding her breasts and wearing a collar (Fig. 15), comparable to second millennium BC examples from Nuzi (Starr 1937, pl. 100). The figure is of reddish clay with profuse vegetal inclusions. Given the absence



FIGURE 12. MITTANI PERIOD WHITE PASTE INLAY WARE.



Figure 13. Middle Islamic glazed pottery from Lower Mound Trench 5260/2846.



FIGURE 14. LOWER TOWN TRENCH 4666/3076, LOOKING WEST.



FIGURE 15. TERRA COTTA MOLDMADE PLAQUE FRAGMENT.

of artifactual or architectural materials in the western part of the trench and their presence in the east, we have hypothesized that the western segment of the trench included part of the mudbrick city wall with bricks that had fused or 'melted' together, while the eastern segment consisted of strata deposited against the interior face of that wall.

In units 4946/3454 and 4946/3444 in the north, consisting of a strip 1 x 20 meters in area that reached a depth of 2.3 meters, excavation results were similar to those of unit 4666/3076 in the west. As in 4666/3076, the soil matrix was a uniform red-brown hard soil with lime inclusions. In the northern part of the trench, almost no pottery or other artifacts were found, but there were occasional indications of gray mortar lines separating presumed red-brown mudbrick rows. In the southern part of the trench, second millennium BC pottery and an east-west oriented row of baked bricks each measuring 39 x 19 x 6 cm were discovered. As in unit 4666/3076, these results allow for the hypothesis that the northern part of the trench included part of the mudbrick city wall, whose bricks had formed a homogeneous mass, while the southern part consisted of strata deposited against the interior face of that wall. Data from the geophysical survey (see below) confirm that this area was located in or near the city wall.

The results from both trenches indicate that the soil near the city wall consisted of a uniform red-brown matrix with lime inclusions in which remains of mudbrick architecture have become invisible or nearly so. It is possible that the relatively high amount of rain received in this region is relevant to this phenomenon (Starr 1935, 18). Mudbrick architecture was also sometimes difficult to recognize in other trenches on the site, an interpretive problem that will need attention in future (on this issue see Starr 1935).

The second millennium pottery retrieved from the two city wall trenches is best assigned to the Middle Bronze period. This includes kraters with ledge rims, sometimes with horizontal grooves or combing below the rim (Fig. 16: 3, 5, 7, 13), carinated bowls with ledge rims (Fig. 16: 6), and shallow bowls with elongated ledge rims (Fig. 16: 12) or elongated flat-top rims (Fig. 16: 11). A painted sherd from a tall-necked wide-mouthed jar might considered an example of 'classic' Khabur Ware (Fig. 16: 4), while a ring-based bowl (Fig. 16: 8) has painted decoration comparable to an Middle Bronze example from Haradum (Khirbet ed-Diniye) on the Iraqi middle Euphrates (Kepinski-Lecomte 1992, fig. 113: 15, fig. 114, lower right).

Geophysical Survey

Geophysical prospection was directed by Dr. Andrew Creekmore of the University of Northern Colorado and included the use of magnetometry and conductivity to determine evidence of the ancient urban layout apparent below the present-day surface. Through such large-scale investigation, we hope to acquire data on the spatial organization of the site, the location of streets, domestic areas, monumental architecture, craft-working loci, open areas, and defensive architecture. The magnetometry survey covered a total of nearly 12 hectares divided among several areas in different parts of the site, while the conductivity survey was limited to just over 1 hectare. Among the most important preliminary results are the documentation of a city wall on the north with towers or bastions at intervals of 20 meters (Fig. 17). ¹³ The location of this wall coincides with the northern city wall trench, unit 4946/3454. Elsewhere, evidence of architecture, streets, and pyrotechnic features was detected.

Conclusions

The results of the 2013 season of fieldwork at Kurd Qaburstan reveal that the site is indeed a very large, walled settlement dating to the second millennium BC, with significant periods of occupation subsequent to that era. Reviewing project goals 2-4 enumerated above, the following results can be detailed. Having derived excavated samples from diverse parts of the mound, we have determined that second millennium remains dating to the Mittani period are accessible immediately below the surface on the high mound. On the lower town trenches south and west of the high mound, Islamic occupation dominates for at least 2-3 meters below the present day surface. It is uncertain if pre-Islamic levels are extant below those strata, although the results from

trench 4844/2806 imply that this is the case. In the lower town trenches north of the high mound in the area of the presumed city wall, second millennium BC (Middle Bronze) remains are immediately present below the modern mound surface.

A sidelight of our sampling strategy has been the ability to test the relationship between surface survey/remote sensing results and excavation results. There is both agreement and discrepancy. The primacy of second millennium BC settlement observed in surface survey is corroborated by excavation, as is the presence of significant architecture on the lower town to the south of the high mound, as indicated by CORONA images. However, inferences from CORONA images of a major building west of the high mound on the lower town were not confirmed by excavations in trench 4844/2806.

With respect to our goal of testing the proposition that Kurd Qaburstan was a sizeable city of the early second millennium BC, we can conclude that the site was indeed a very large, walled settlement in that period. The combination of excavation and magnetometry results reveal that a city wall enclosed the Kurd Qaburstan lower town and was contemporaneous with occupations dated to the early second millennium BC/Middle Bronze period. Deeper excavation is required to determine if the city wall was first constructed in the Middle Bronze period or in an earlier phase. Whether Kurd Qaburstan is to be identified as ancient Qabra remains to be seen, but the site's location, size, and occupational history are consistent with textual evidence concerning Qabra, as is its prodigious expansion in the Middle Bronze period and retraction thereafter (MacGinnis 2013b).

Finally, the magnetometry survey has provided important and informative results on the urban layout of the site on the northern lower town, revealing the existence and character of the city wall and the nature of occupation inside the wall. Further geophysical studies should assist in investigating this extensive site.

Since Kurd Qaburstan has major occupation of the early and middle second millennium BC (Middle Bronze and Mittani/Late Bronze periods), its investigation should assist in filling a chronological gap in the archaeology of the Erbil Plain. Projects are now based at sites with substantial occupations dating to the Chalcolithic period (Surezha),¹⁴ the Early Bronze Age (Baqrta¹⁵), and the Middle and Neo-Assyrian periods (Qasr Shemamok¹⁶ and Bash Tapa¹⁷). Kurd Qaburstan's main occupation

¹³ Note the similar arrangement of bastions on the city wall of Qabra as depicted on the Daduša Stele from Ešnunna (Ismail and Cavigneaux 2003).

 $^{^{14}\,\}mathrm{Excavated}$ under the direction of Gil Stein, University of Chicago.

¹⁵ Excavated under the direction of Konstantinos Kopanias, University of Athens

¹⁶ Excavated under the direction of Olivier Rouault and Maria Grazia Masetti-Rouault of the Université de Lyon 2 and École Pratique des Hautes Études – Sorbonne, France.

¹⁷ Excavated under the direction of Lionel Marti, French National Center for Scientific Research.

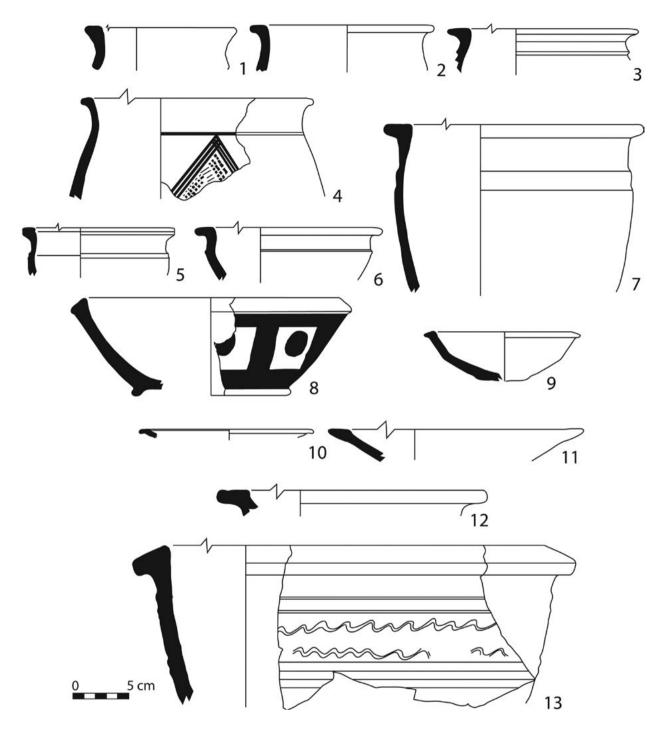


FIGURE 16. OLD BABYLONIAN PERIOD POTTERY FROM CITY WALL TRENCHES. 1. 4666/3076-006. LIGHT YELLOW, MEDIUM VEGETAL INCLUSIONS; 2. 4666/3076-030. LIGHT YELLOW, NO VISIBLE INCLUSIONS; 3. 4946/3444-006. LIGHT YELLOW, FINE SAND; 4. 4946/3444-009. LIGHT YELLOW, NO VISIBLE INCLUSIONS, DARK BROWN PAINT (VERY WORN); 5. 4946/3444-003. LIGHT BROWN, FINE SAND; 6. 4946/3444-006. LIGHT YELLOW, MEDIUM AND FINE SAND AND MEDIUM VEGETAL INCLUSIONS; 7. 4946/3444-005. LIGHT YELLOW, FINE SAND, MEDIUM VEGETAL INCLUSIONS ON FACE; 8. 4666/3076-018. LIGHT BROWN, MEDIUM VEGETAL INCLUSIONS AND FINE WHITE SAND, WHITISH SLIP ON EXTERIOR, BLACK PAINT; 9. 4666/3076-020. DARK GRAY, FINE SAND, EXTERIOR BURNISHED; 10. 4666/3076-019. LIGHT BROWN, NO VISIBLE INCLUSIONS; 11. 4666/3076-028. BROWNISH YELLOW, MEDIUM VEGETAL INCLUSIONS, FINE WHITE SAND; 12. 4666/3076-013. PINK-BROWN EXTERIOR/INTERIOR, BLACK CORE, MEDIUM VEGETAL INCLUSIONS, MEDIUM WHITE SAND; 13. 4666/3076-010. LIGHT YELLOW, MEDIUM VEGETAL INCLUSIONS, FINE SAND.

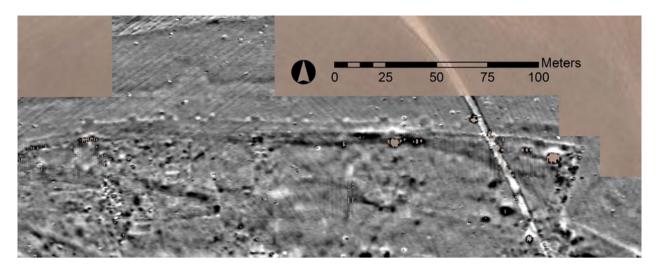


FIGURE 17. MAGNETOMETRY RESULTS FROM NORTHERN LOWER TOWN, SHOWING CITY WALL AND TOWERS (WALL APPEARS HORIZONTALLY IN UPPER PART OF IMAGE).

phase fits neatly into the sequence under investigation in the region.

In future seasons, we hope to intensify the study of the Mittani period levels and to expand investigation of the Middle Bronze period settlement, revealing the history and character of a major city of the second millennium BC on the Erbil plain.

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The Sirwan (Upper Diyala) Regional Project – First Results

Tevfik Emre ŞERIFOĞLU, Claudia GLATZ, Jesse CASANA and Shwkr MUHAMMED HAYDAR

The Sirwan Regional Project is a five-year international research initiative of the universities of Bitlis Eren, Glasgow and Dartmouth College in collaboration with the Garmian Department of Antiquities. The project, which was started in 2013, aims to investigate the landscape and settlement history of the Sirwan (Upper Diyala) River Valley, as well as the long-term cultural development and identity of this transitional region situated between the Mesopotamian plains and the Zagros Mountains.

Archaeological work along the Diyala River Valley started with the excavations of the Oriental Institute of the University of Chicago at Tell Asmar and Khafaje in the 1930s and continued with the famous 'Land Behind Baghdad' survey of Robert McC. Adams in the late 1950s (Frankfort *et al.* 1932; 1940; Delougaz 1940; Delougaz *et al.* 1942; 1967; Adams 1965). In the 1960s,

the Iraqi Department of Antiquities recorded a number of archaeological sites along the river's upper reaches for the Archaeological Atlas of Iraq, and conducted excavations at the multi-period mound of Qala Shirwana, located on the outskirts of the modern town of Kalar (Iraqi Directorate General of Antiquities 1970). The Hamrin region to the north of Adams' survey area was subject to a short but intensive burst of archaeological activity in the 1970s in the wake of the Hamrin Dam construction (Roaf 1982; Postgate and Roaf 1982, 170-2, 174, 176-84, 186-92; Yaseen 2005). Recent work to the north of the Upper Diyala/Sirwan region includes a series of archaeological projects in the Shahrezor Plain (Altaweel *et al.* 2012; Miglus *et al.* 2013).

The Sirwan Regional Project presents the first systematic, multi-scalar archaeological exploration of the Upper Diyala River Valley and adjacent landscapes (Fig. 1).

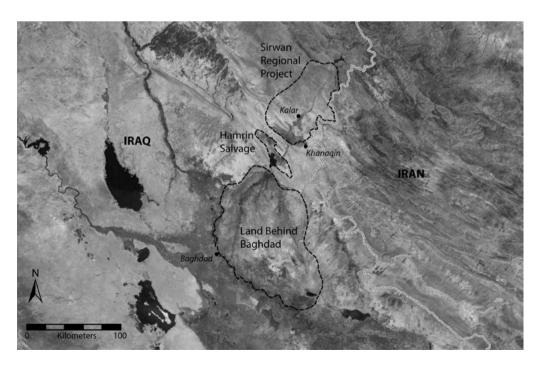


FIGURE 1. THE PROJECT AREA.



FIGURE 2. TEPE RAHIM.

Previous work includes the soundings at Qala Shirwana and a more recent investigation of the Halaf/Ubaid site of Tepe Rahim by a team from Baghdad University (Fig.

2), which along with many other archaeological sites in the region is endangered by modern building activities and agricultural intensification. Many of the higher mounds were damaged during the Iraq-Iran war, where they served as military outposts (Fig. 3).

The research area of the Sirwan Regional Project stretches from Darband-i Khan in the north to the irrigated plains around Kalar in the south, and amounts to approximately 4000 square km. The river valley constitutes a major communication corridor that skirts the Zagros piedmont and connects the Shahrezor high-plateau to central Mesopotamia. It provides access to the Iranian plateau via the Khorasan Highway and to northern Mesopotamia along the north of the Jebel Hamrin range. At the same time, the Diyala has a long history as a marker of political boundaries, including the Ottoman-Safavid frontier and the modern national border between Iraq and Iran.

The survey region incorporates a range of different landscape types and ecological zones, each with different potentials for site-preservation. The region is framed by the Zagros foothills in the north and the east. Beyond the Qara Dagh mountain chain to the north, lies the Shahrezor high-plateau. To the south of Darband-i Khan, a series of narrow plains stretch out from the river, especially to the east and are used for dry-farming and herding today. A second millennium BC rock relief – Darband-i-Belula or Shaikhan – hints at the importance of this region during the Bronze Age (Börker-Klähn 1982, 139-40; Postgate and Roaf 1997).



FIGURE 3. MILITARY TRENCHES DUG ON TOP OF TELL MAJID 1 (SRP 39).

Moving south along the river, the landscape is dominated by gravel terraces, which are commercially exploited today (Fig. 4). The riverbed is deeply incised into these terraces, which are the most likely locations for the preservation of early prehistoric sites. At the modern town of Kalar, the landscape changes rather dramatically resembling more closely the plains of central Mesopotamia than the Zagros highlands. The latter skirt the southern edge of the dry-farming belt and, thus, situate our research region at the intersection

of different agricultural traditions and cultural spheres, such as those characterised by Halaf, early Ubaid and Samarra traditions.

During our first season in 2013, we concentrated on gaining a better understanding of the different landscapes in this large region and on the ground-truthing of potential archaeological sites identified through satellite remote sensing (Fig. 5). To date we have recorded a total of 107 sites in this manner, which attest to the diverse range of



FIGURE 4. THE SIRWAN RIVER.

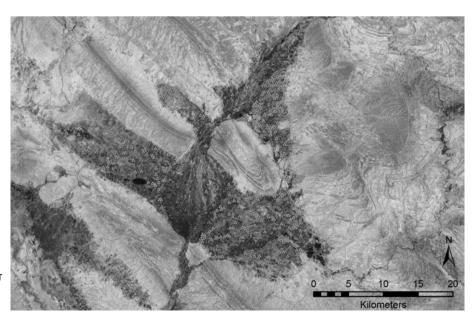


FIGURE 5. SITE CANDIDATES AT THE SOUTHERN EDGE OF THE SURVEY AREA.

sites in our survey region, ranging from low mounds, multi-period high-mounds, large-flat settlements and irrigation works dating from the pre-pottery Neolithic to the modern period.

In contrast to the Diyala region further to the south, to the north of the Jebel Hamrin, the main branch of the Diyala flows through a deeply incised channel, resulting in minimal sedimentation on adjacent terraces. The alluvial plains adjacent to the river, near the modern town of Kalar, possess a large number of perennial springs, providing abundant water resources, rich soils, and very high agricultural potential, while exploratory archaeological survey suggests that a large number of early prehistoric sites are preserved there. Four sites amongst these are of particular interest: Fallah (SRP 22), Mirwari (SRP 28), Geydan 3 (SRP 35) and Tepe Sirwan (SRP 36). These sites have yielded ceramic evidence from the Hassuna, Samarra, Halaf, Ubaid and Uruk periods. Each of these sites, all within a 2 km radius of one another in the Suz Bulaq area, is an extensive low mound, with little occupational overburden from later periods (Fig. 6). These sites and the larger region thus present a unique opportunity to investigate the development of early social complexity in a strategically important geographical, environmental and cultural context.

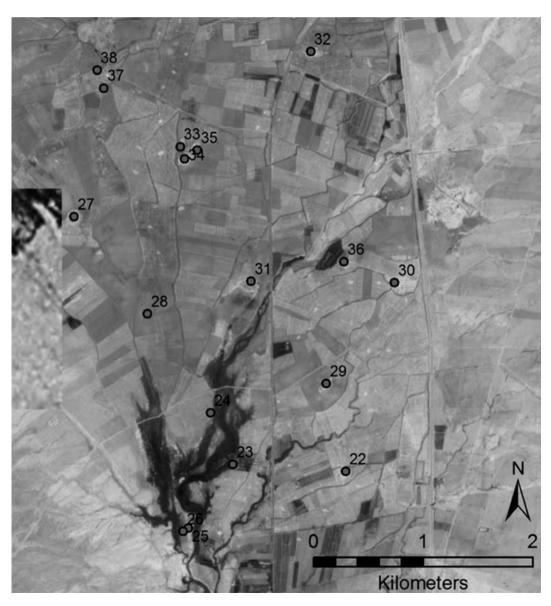


FIGURE 6. SITES VISITED AND RECORDED IN THE SUZ BULAQ AREA.

A number of large Bronze Age sites were also discovered such as Tepe Kalan (SRP18), Tepe Bor (SRP 25) and Kani Masi 6 (SRP 46). Tepe Kalan seems to have been first settled in the mid third millennium BC and extensively occupied in the second millennium BC (Fig. 7). Tepe Kalan also has medieval architectural remains and a pre-Modern cemetery, which represent the final phase of occupation at this site. Kani Masi 6 also has

a strong second millennium BC settlement component (Fig. 8). Tepe Bor consists of a mound and a lower town surrounding it, and was not only settled during the 2nd millennium BC but most probably also during the Iron Age (Fig. 9).

Similar to the Lower Diyala plains, the Upper Diyala region experiences an explosion of settlement and



Figure 7. Kani Masi 6 (SRP 46).



FIGURE 8. TEPE BOR (SRP 25).



FIGURE 9. TEPE KALAN (SRP 18).

investment in hydraulic architecture in the Sasanian period (Adams 1965, 69-83). Several major irrigation canals and qanat systems are visible on satellite imagery. We also recorded several siphons (Fig. 10). A massive

monumental complex at Tepe Gawur Kebir (SRP11) may also belong to the Sasanian period. We trialled kitebased aerial photography at this site and a 3-D model/ site plan was created using the images acquired (Fig. 11).



Figure 10. Sassanian water canal remains (SRP 66).



Figure 11. Tepe Gawur Kebir (SRP 11).



Figure 12. Qule Ahmad Qadir (SRP 68).

We also recorded several watchtowers on the western river terraces that guarded the Ottoman Empire's eastern border against Safavid attacks. (SRP 58, 59, 62 and 63; Fig. 12).

In future seasons, we plan to expand our methodological repertoire to include a geomorphological assessment

of the survey region, conduct geophysical surveys and test excavations at key sites to collect radiometric dating samples and produce a robust absolute regional chronology.

We would like to thank the General Directorate of Antiquities of the Kurdistan Region of Iraq and the Garmian Department of Antiquities for allowing us to work in this important area and for their ongoing support. In particular we must thank Abwbakr Osman Zainadin (Mala Awat), Director General of Antiquities and Heritage for the Kurdistan Region, Dr. Kamal Rashid, Director of Antiquities and Heritage for Suleymaniyah, and Shwkr Muhammed Haydar, Director of Antiquities and Heritage for Garmian. In Garmian, we owe a special debt of gratitude to Salh Muhammad Samin, Deputy Director of the Museum, and our representative during most fieldwork, Awat Baban. Funding for our first weeks of fieldwork was provided by Glasgow University and the Center for Middle East Studies at the University of Arkansas.

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Tracking early urbanism in the hilly flanks of Mesopotamia – three years of Danish archaeological investigations on the Rania Plain

Tim Boaz Bruun Skuldbøl and Carlo Colantoni

This paper presents a brief summary of the work and results of the Danish Archaeological Expedition to Iraq (DAEI, formerly the University of Copenhagen Archaeological Project in Iraq). The aims of this research project are twofold: (1) to investigate early urbanism in marginal regions of Upper Mesopotamia; and (2) to assist in cataloguing, monitoring and protecting archaeological heritage on the plains of Rania and Pishdar in the district of the Raparin Directorate of Antiquities.1 Today most archaeological sites on the plains are in danger of destruction either by seasonal flooding by Lake Dokan or by rapidly expanding modern cities and towns. Archaeological work by the DAEI has so far focused on a segment of the Rania Plain located in the inundation zone of the lake. This test area has revealed important evidence of early urban development and cross-cultural interaction in the Late Chalcolithic Period.2

Archaeological investigations on the Rania Plain

The twin plains of Pishdar and Rania are located within the foothills of the Zagros Mountains and represent an extensive settlement zone in these foothills (Fig. 1). Settlements and past activities are widely distributed across both plains (e.g. Al-Soof 1970; 1985; Skuldbøl Colantoni 2016a). Previous archaeological investigations on the Pishdar and Rania plains are limited and are chiefly characterised by an incomplete survey and salvage excavations by the Iraqi Directorate-General of Antiquities and by a Danish excavation project at the site of Shemshara (Al-Soof 1970; Mortensen 1970; Eidem 2013). These projects were undertaken in the late 1950s, prior to the construction of the dam and its reservoir, Lake Dokan (see also Skuldbøl and Colantoni 2014).

The DAEI, which commenced in 2012, has completed its fourth season (October-November 2015) of archaeological research on the Rania plain.³ The project employs an approach entailing intensive settlement survey combined with excavations and targeted soundings at selected sites on the Rania Plain to achieve

Excavation and survey results, a short overview

During fieldwork at the sites of Bab-w-Kur on the Rania Plain we aimed at investigating and recording exposed surface remains (Fig. 2). At the base of the main mound Bab (the largest mound in the Bab-w-Kur site cluster), we detailed sections of what we have dubbed the 'Red Mudbrick Town'. The exposed remains include a series of large tripartite row houses and workshops, and a fortification wall that seems to surround parts of the lower mound. An initial assessment of the pottery and other finds from targeted surface scraping and the excavation of soundings suggest a date for the buildings and fortification wall corresponding to the Late Chalcolithic 2-3 period.

In the autumn of 2015 we discovered an extraordinary large and complex tripartite building on the highest part of the mound. We have so far exposed approximately 440 m² of the building and associated features. The current extent of the complex itself is roughly 20 by 20 m (Fig. 3). This complex has a symmetrical layout and consists of a large central room with two large fireplaces and multiple flanking subsidiary rooms. Although we are unaware of any exact parallels for the Bab complex in northern Mesopotamia, contemporary large multi-room complexes have been recovered at Tell Brak (c.f. the Eye-temple, Emberling 2002), Arslantepe (Frangipane 2012), Tepe Gawra (Rothman 2002), and at Habuba Kabira South (Kohlmeyer 1996). The extent and nature of this complex will be investigated in future seasons.

Current stratigraphic evidence and finds suggest that this building represents the latest phase of settlement on Bab and possibly dates to the Late Chalcolithic 3-4 period. Numerous pottery kilns and trash pits – found across the top of mound and which cut into the tripartite building complex and the 'Red Mudbrick Town' – suggest that

its goals. Survey work on the plain has recorded a rich settlement history with a large number of sites dating to the Late Chalcolithic period, while excavations at the twin sites of Bab-w-Kur (which have an associated cluster of 'satellite' sites) have revealed an unusually complex occupational history from the Late Chalcolithic 2-5 period (4200-3100 BC). The following pages will give a brief overview of current results of this project.

¹ The Raparin Directorate of Antiquities is to be established in January 2016 with Barzan Baiz Ismail as Director.

Details of these results are now being published: see Skuldbøl et al. 2014; Skuldbøl and Colantoni 2016a-c.

³ There are many photographs related to the project's work available at www.facebook.com/babwkur.

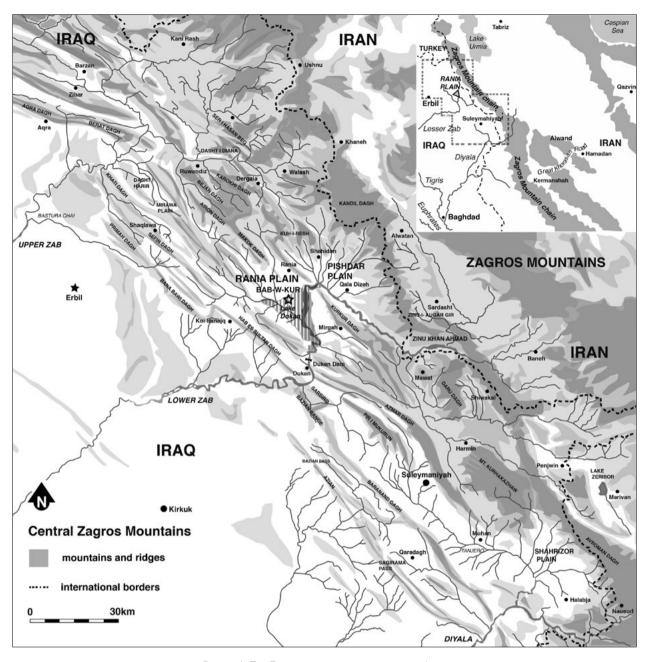


FIGURE 1. THE ZAGROS FOOTHILLS OF NORTHERN IRAQ (BASED ON LEVINE 1973: FIGURE 1 AND 2; ILLUSTRATION COMPILED BY CARLO COLANTONI 2015).

during the Late Chalcolithic Period 3-4 period the site of Bab underwent a transformation in function and became a location for specialized activities and production.

Investigations at Kur

The Bab-w-Kur site cluster lies deep within the flood zone of Lake Dokan. As a result, the sites are only accessible during the autumn and winter of every year. Due to the

higher than previously experienced water level of Lake Dokan in the autumn of 2013, the project commenced investigations at Kur, the second largest mound in the Bab-w-Kur site cluster. Surface scraping and excavation at Kur revealed an occupational development at the site corresponding to that at Bab, with the exposure of part of a relatively large niched building (Fig. 4) as well as systematic trash pitting following the abandonment of this building.

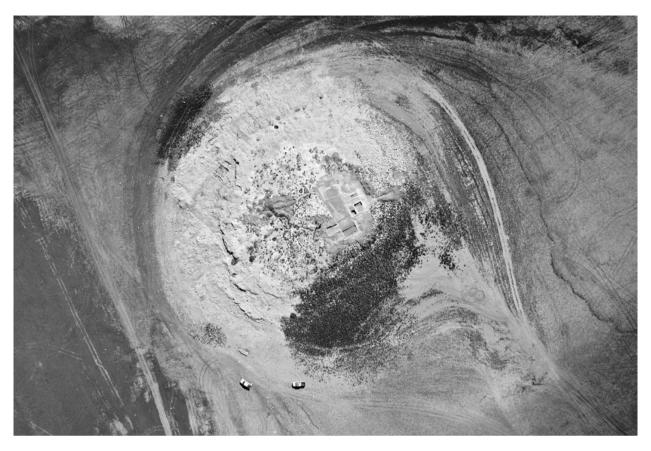


FIGURE 2. BAB: THE MAIN MOUND IN THE BAB-W-KUR SITE CLUSTER. THE AREA EXCAVATED IN 2015 IS VISIBLE ON THE SUMMIT OF THE MOUND AND THE AREA EXCAVATED IN 2012 IS VISIBLE AT THE BASE OF THE MOUND IN THE UPPER LEFT CORNER OF THE IMAGE (UAV IMAGE, HENRIK BRAHE AND TIM SKULDBØL 2015).



FIGURE 3. THE BAB BUILDING COMPLEX EXPOSED IN THE AUTUMN OF 2015. THE COMPLEX HAS A TRIPARTITE DESIGN WITH A LARGE CENTRAL HALL AND FLANKING SUBSIDIARY ROOMS (UAV IMAGE, HENRIK BRAHE AND TIM SKULDBØL 2015).



FIGURE 4. THE NICHED BUILDING AT KUR, LEVEL 2 (PHOTOS, TIM SKULDBØL 2013).

While evidence points to a date of the niched building lying in the Late Chalcolithic 3-4 periods, the contents of the trash deposits and pits (with many pottery types of south Mesopotamian origin, including large numbers of beveled rim bowls) suggest a date for these refuse dumping events in the Late Chalcolithic 4-5 periods. Further material dating to the Late Chalcolithic 4-5 periods was also recovered from six soundings excavated in four small mounds clustered around Kur (see also Skuldbøl and Colantoni 2016c).

Preliminary survey results and heritage management

Intriguing remains of the Late Chalcolithic period have also been recovered from the survey undertaken by the project on the Rania Plain.⁴ From a survey test area collected in the autumn of 2013, which lies in the central part of the plain, we recorded many sites and several clusters of sites dating to the Late Chalcolithic Period. Sites and clusters of sites seem to distribute along ancient wadi and spring systems, and within a short distance

from one another. We believe this pattern of distribution represents cases of small-scale early urban sprawl on the Rania Plain in this period (see Skuldbøl and Colantoni 2016b for a discussion of this issue). In 2014 and 2015 further Late Chalcolithic period sites and clusters were recorded by the DAEI and by the Netherlands Institute for the Near East in the western and eastern parts of the plain.

When combining the results of the survey and previous investigations on the Rania Plain undertaken by the Iraqi Directorate General of Antiquities and by the Iraqi archaeologist Behnam Abu Al-Soof (1964; 1985), there are currently well over 30 sites (excluding small satellite mounds in site clusters) with Late Chalcolithic occupation. Data also points toward a notable increase in the numbers of Late Chalcolithic sites across the plain compared to numbers known from the previous Ubaid period. As survey work continues, we expect that there will be a considerable increase in the numbers of sites identified with Late Chalcolithic remains, though understanding the reasons underlying these complex distribution patterns is a serious challenge. The fact that fourteen sites or clusters of sites across the plain have produced bevelled rim bowls or other southern Mesopotamian forms also demands explanations. Although research relating to this occurrence is still in its early stages, neither the number of sites with southern

⁴ The Rania Plain Survey is a collaborative survey project between the Netherlands Institute for the Near East and DAEI. The DAEI has so far, during the autumn of 2013 and the spring of 2015, conducted survey work in the central and western part of the Rania Plain (see Skuldbøl and Colantoni 2016a; 2016c). Further survey work in the region is being undertaken by Jessica Gireau of L'Institut Français du Proche-Orient Iraq (IFPO) in collaboration with the Sulaimaniyah Directorate of Antiquities.

Mesopotamian pottery forms nor the excavated evidence from Bab-w-Kur seem to favour traditional explanations regarding the so-called Uruk Expansion (see Skuldbøl and Colantoni 2016c). Further work on the dating and composition of the archaeological remains will clarify these intriguing patterns of cross-cultural interaction.

Finally, a concern of the DAEI is the assessment of damage to the archaeological heritage in the area under the jurisdiction of the Raparin Directorate of Antiquities. Since the 1950s the archaeological heritage on the Rania Plain has suffered considerably from damage due to erosion by the waters of Lake Dokan, the intensification of agricultural practices and modern urban expansion. Today modern urban expansion and infrastructure developments are arguably the biggest threat to archaeological heritage in the Kurdish region of Iraq, as well as on the Rania Plain. Despite considerable efforts being made by the region's antiquities departments they are under pressure from competing interests and the demands commercial developers, government infrastructure projects and local farmers. As a result, ancient sites are damaged or obliterated and many will probably go unrecorded. We have previously advocated that the recording and cataloguing of archaeological heritage together with close engagement with stakeholders (local communities, governmental bodies, academic institutions, etc.) is essential for raising local awareness and protecting the archaeological heritage of the Rania Plain (see Skuldbøl and Colantoni 2014).

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The Activities of the Italian Archaeological Mission in Iraqi Kurdistan (MAIKI): The survey area and the new evidence from Paikuli blocks documentation

Gianfilippo Terribili and Alessandro Tilia

Archaeological survey and ethnographic research

The quinquennial project carried out by MAIKI aims to create an archaeological map of a broad area of c. 835 km² (Fig. 1) stretching around the main road linking Chamchamal to Darbandikhan and skirting the western slopes of the Qaradagh range, where three historical passes (Paikuli, Sagirma, Delzha) are placed. The area includes the main part of the modern districts of Sangaw and Pebaz, while the Diyala River on the south-eastern edge and the Basra River on the northern side mark its natural boundaries.

The issues posed by the lack of an appropriate cartography¹ required a collation of the available satellite images, differing in origin and nature. Among the material gathered, CORONA images attest how the territory was before the harsh military retaliation led by Saddam Hussein against the Kurds. The campaign, named Al Anfal, had indeed a severe impact on the local population and long affected this area with heavy firefights (1986-1989). The Google database (Google Earth) provides on the other hand a set of current images with a good degree of resolution for almost the whole area. A further source of information is given by high-resolution QuickBird images that have been purchased to highlight, in this early phase, only a limited area surrounding the Paikuli monument. The analysis of such material allowed the identification of almost two hundred sites of suspected archaeological or anthropological interest (Fig. 1). The field surveys following this preliminary study enabled us to achieve a better perspective of the real situation on the ground, clarifying those cases where satellite images failed to give satisfactory data.

So far four campaigns² have been carried out, during which the team started to survey the northern section of the area, undertaking the preliminary study of the collected findings. The data, included in a relational database linked with a GIS platform,³ confirmed the

presence of several sites of remarkable size whose documentation will foster the historical analysis of the local settlement system.

For each site the suspected coverage area has been identified through the presence of outcropping structures and/or surface materials. When typological differences in surface material or visible structures were evident, the site area has been divided into sub-units or contexts. All the diagnostic material and a complete set of the pottery temper typologies have been collected for each context.

The materials gathered during the surveys form a large and heterogeneous corpus, both for range of typologies and for the chronological span through which each class of object is represented. Serious challenges have been faced in setting a proper methodology for the analysis of such a varied corpus during the two campaigns that have been specifically devoted to classification of the findings. The solution adopted aims to identify the specific productions attested in the area, the technological level achieved by local craftsmen during different time periods and eventually the identification of imported materials and, where possible, their provenience.⁴

In order to reconstruct the broader cultural frame of this area, MAIKI set up a program of ethnographical research, focused on the study of local religious practices. Preliminary data, collected in the first two campaigns (December 2013; April 2014),⁵ attested to a still living cult of Sufi saints, centred on places of worship related to the Shaikhs, the spiritual leaders of Sufi brotherhoods, a typical feature of the Kurdish religious background (Kreyenbroeck 1996, 94-6). Within the area surveyed, Shaikhs' hermitages and graves appear indeed as the core of popular devotion. Likewise, the village of Krpchna and its mausoleum still have a striking influence over the regional society, being the headquarters of the Kasnasanyya branch of the Qadiriyya order, the oldest

 $[\]overline{\ }$ The Archaeological Atlas of Iraq (1975) provides only scanty and outdated information for this area.

² Under the supervision of Director Dr Kamal Rashid Rahim, members of the Sulaimaniyah Antiquities Directorate (Zana Abdullkarim Qadir, Nawshirwan Aziz Mohammed, Khanda Osman Fatah and Parwin Yawar Manda) joined the Italian team. We are thankful to all of them for the steady support offered us throughout each activity.

³ The Database has been developed to connect the geographical data

with more strictly archaeological and anthropological information. In this respect we are thankful to the Studio Associato BraDypUS, Associazione Culturale ROUTES and Studio 3R for all the support provided.

⁴ Archaeometric analysis started with the precious collaboration of Prof. Piacentini (Department of Scienze di base e applicate per l'Ingegneria – Sapienza, University of Rome) and Dr Giolj Guidi. For a more detailed explanation of the ceramics classification criteria and survey activities see Rahim, Fontana *et al.* (2014).

⁵ This research is led by the anthropologist Dr Camilla Insom.

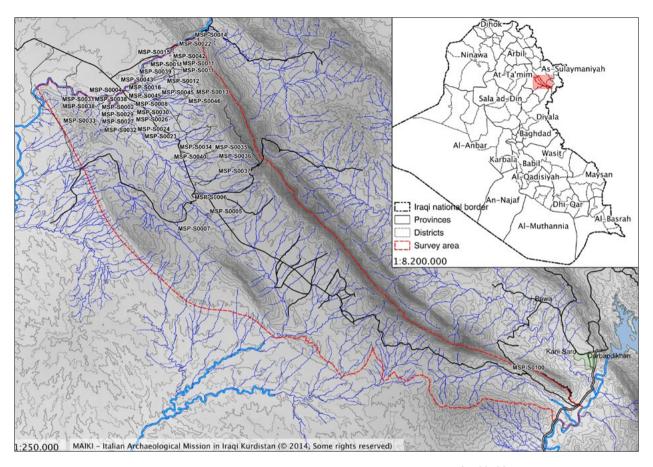


FIGURE 1. MAIKI SURVEY AREA WITH THE SITE OF PAIKULI NUMBERED MSP-S0100 - (MAIKI - IMAGE PROCESSED BY BRADYPUS).

amongst Sufi brotherhoods currently active in the Iraqi Kurdistan.

In this context, the believers assign to the Shaikhs a mediatory role between God and their community. The spiritual might of these holy men is reputed to manifest itself through healing and divinatory powers; these are faculties that do not expire with the death of the Shaikh, but instead continue to pervade his burial and hermitages thereafter. For this very reason a variety of therapeutic, apotropaic or propitiatory rituals, often including animal sacrifice, are performed on the Shaikhs' graves dotting this area.

Nowadays, several factors are undermining the traditional Sufi saints cult, among others the migration towards urban centres and the rising influence of orthodox Sunni imams in the major towns, as well as the loosening of the Shaikhs religious authority in connection with their more active involvement in political affairs. In this light the

ethnographic research enhanced by MAIKI may offer a remarkable documentation on the transitional process that is currently affecting local society.

Researches on the Paikuli Monument and its inscriptions

The Paikuli monument lies at the southernmost edge of the MAIKI survey area about 16 km west of the modern city of Darband-i Khan. It was erected by the Sasanian King Narseh (AD 293 – 302) to celebrate his ascension to the throne after a dynastic struggle against his nephew Wahrām III who, backed by the influential courtier Wahnām, seized the crown without receiving unanimous consensus. Narseh himself reported these events in a bilingual inscription (Middle Persian and Parthian) carved on the monument's walls. The structure stood next to the homonymous mountain pass, at that time crossed by a strategic route linking the capital city Ctesiphon to the region of Ādurbādagān, the heart of

the north-western Iranian Plateau (Cereti, Terribili, Tilia 2015). More specifically it marks the spot where, during his march towards Ctesiphon, Narseh met nobles and dignitaries of the kingdom that recognized him as the legitimate sovereign.⁶

The renowned British Orientalist, Major Sir Henry Rawlinson was the first scholar to visit the site of Paikuli in 1844 (Rawlinson 1868); however, it was only several decades later that the German archaeologist Ernst Herzfeld undertook broader documentation campaigns, in 1911, 1913 and 1923, issuing the first philological edition of Narseh's inscription in 1924. Later the textual reconstruction was largely enhanced by H. Humbach and P. O. Skjærvø (1978-83), while in 1997, due to a very concrete risk of looting,7 about a hundred of blocks, as well as the five busts of King Narseh, were moved to the Museum of Sulaimaniyah to ensure their preservation. About ten years later, in 2006, an Italian research project, led by Prof. Carlo G. Cereti, started a collaboration with the Sulaimaniyah Museum, focusing on the study of the Paikuli monument and its epigraphic material (Cereti and Terribili 2012; 2014), researches now converged within the MAIKI activities. 8

Among the 106 Paikuli inscribed blocks and fragments, now held at the Sulaimaniyah Museum, are 22 blocks (11 Middle Persian, 11 Parthian) that never appeared in any philological edition of the inscription. 19 of these blocks have been recently published (Cereti and Terribili 2014), while three more Parthian blocks are still under investigation, posing serious problems for their identification, a task hampered by the poor condition of their inscribed surface. One of MAIKI's principal future aims is to undertake an intensive survey of the area surrounding the Paikuli Monument in order to retrieve any further inscribed block which may still be there.⁹

6 Narseh's Paikuli inscription §. 32 (Humbach and Skjærvø 1978-83, 3(1):41-3).

The linguistic material provided by these new blocks considerably increases the Paikuli glossary available up to now, adding some terms to the epigraphic lexicon of both languages. Out of 177 discrete lexica, not counting repetitions, are 16 terms previously attested in only one of the two versions of the Paikuli inscription, 12 not yet attested in Paikuli but preserved within other epigraphic sources, and 8 *hapax legomena* in the epigraphic corpora of both languages.¹⁰

The analysis of the Sulaimaniyah-Paikuli collection also involves the architectural aspects of this monument. Since the origin of the project a collaboration has been undertaken with Studio 3R for this purpose, including the use of new technologies applied to the documentation of the ornamental elements.

Given the poor state of preservation in which the monument already lay at the time of Herzfeld's campaigns, the hypothesis regarding its original shape poses serious problems. What actually still stands on the site is just part of the inner core, made of rough stones and mortar; the outer casing, made of unevenly rectangular blocks, has collapsed entirely, apparently at an early age. In his inscription Narseh labels the commemorative monument using the term *pillag* (Middle Persian **plky**; Parthian plk),11 the meaning of which should be strongly related with the shape the monument had, implying something stepped, an altar or a pedestal (Henning 1952, 518 n. 6).12 The same term (pylg) is attested in Manichaean Middle Persian and Parthian texts (Durkin-Meinsterernst 2004: 289), where according to Boyce (1977, 76) it refers to an altar or a stepped altar, ¹³ as the common iconography of the Iranian fire altar actually shows. In a fragment of a Manichaean Parthian Parable (M44: 167; 172) the term is connected with an element used during the royal parade outside the palace (Colditz 1987, 300-301). Here pillag possibly refers to a movable or permanent structure upon which the king used to give audience receiving praises from nobles; the same function indeed that thrones and takht's had within the Iranian tradition (von Gall 1971), a feature that deals perfectly with the historical circumstances narrated in the Narseh's inscription referring to Paikuli. Be that as it may, while this last remark opens interesting perspectives on the function of the monument itself, it does not help overly much in reconsidering its original shape.

At the beginning of this century a well preserved Middle Persian block (E1) appeared on the antiquities market (Skjærvø 2006).

⁸ The earlier archaeological investigations carried out by IsIAO (Istituto Italiano per l'Africa e l'Oriente) had an abrupt interruption in the spring of 2007 due to security problems. The research could be resumed only in 2009, but limited to the Sulaimaniyah Museum. The subsequent financial problems affecting IsIAO (2010-2011) precluded the possibility of planning any campaigns in Kurdistan up until the fall of 2013, when MAIKI and the Department of Classic – Sapienza University of Rome signed a new agreement for the study of the Paikuli Monument with the Sulaimaniyah Antiquities Directorate.

⁹ A number of blocks documented by Herzfeld (Herzfeld 1924; Humbach-Skjaervo 1978-83, 1) are not among those preserved today in the Sulaimaniyah Museum; we suppose that at least some of them are still to be recovered from the site. Moreover, we do not exclude the possibility that a systematic survey in the field may bring to light new epigraphic evidence with the possibility of fostering a more forceful analysis of some of the more difficult issues. At the time of writing a large number of rectangular blocks are still scattered across a wide area on the flat top of the hill, while numerous others have rolled down the steep slopes flanking the monument. Some of the Paikuli blocks may have also been used by the peasants of the nearby villages, as was the case for block f1, found during the 2006 campaign within a sheep pen in the village of Barkhal. The recent replacement of the old mudbrick

houses with new concrete structures suggest an urgent control of the discarded material should be carried out.

¹⁰ For a glossary of the linguistic material belonging to the new Paikuli blocks see Cereti and Terribili (2014, 385-96).

¹¹ See *loci* in Humbach and Skjærvø (1978-83, 3(1):114).

¹² The presence of an uninherited *l* stems from a loanword in Parthian that Sims-Williams thought derived from Prakrit *pīdagha*- (1984, 133-4), a Middle Indian form of Sanskrit *pīṭha* 'pedestal of an idol' (Henning 1952, 518 n. 6). The Neo Persian form of this term, *pelle*, means 'staircase'.

¹³ See also Humbach and Skjærvø (1978-83, 3(2):21).

Unfortunately Herzfeld's works (1914; 1924; 1926) contain just scanty information on architectural elements as well as the overall structure; the reconstructive sketch proposed (Herzfeld: 1924) apparently takes inspiration from the so called Ka'ba-i Zardušt, an Achaemenian tower where Narseh's father, Šābuhr I, engraved a trilingual inscription (Huyse 1999). Even though this hypothesis is generally accepted, uncertainty on its actual shape still remain. The Paikuli monument indeed has many decorated pieces distinguishing its feature, whereas its peculiarity is emphasized by the lack of direct comparisons within the existing evidence of the Iranian architecture of this period.¹⁴ The Sasanian tower of Nurābād, made of rectangular blocks of limestone, might be considered within the range of suitable comparisons (Huff 1975, 190-1); the function of this structure remains quite unclear, while the presence of an inner staircase differentiates it from Paikuli. A seemingly closer comparison may be offered by the monument of Taq-i Girra, placed before the Patagh pass along the route connecting Qasr-e Shirin to Kermanshah, on the path of the old 'Khorasan highway'. It is a squared tower hall with an archway, built with rectangular limestone blocks. This structure was considered by von Gall (1971, 221) to reflect a Sasanian 'Thron-Iwan' typology, a recurrent pattern of the royal architecture promoted by this dynasty, which had a celebratory function. The floor is set on a platform, while some cuttings on its surface supposedly witness the presence of a statue, most likely a royal one (von Gall 1971, 222); furthermore during his trip in 1905 Herzfeld noticed, on the rock to the left of the monument, a smooth squared surface which he argued was made with the intention of bearing an inscription (Herzfeld Notebook N-81, 40). Below the monument are traces of a terrace connected to the monument and of two ancient roads (von Gall 1971, 224). The ruin of a Parthian arched monument at Oal'eh Zohak, in eastern Iranian Azerbaijan, has been considered as an earlier example of this royal architectural typology (Herzfeld 1926, 258; Kleiss 1973, 175-6; Pohanka 1983, 245-50). The similar geomorphological features of the environs surrounding all these three monuments, placed on specific mountain slopes or spurs overlooking an imposing landscape, deserve more thorough examination. Moreover, the location of Taq-i Girra is significant for a further reason. It was placed on the main road linking Ctesiphon with the region of Media and far beyond with Khorasan; this is the same route where the site of Taq-i Bustan with its ornamented caves lies, while on a branch of this itinerary, departing from the Royal palace of Qasr-i Sirin towards the Sharazur and the northern region of Ādurābadagan, is Paikuli itself. These connections highlight the strategy the Sasanian kings followed in creating, within the heart

of the imperial route system, symbolic evidences of their royal ideology; all these monuments indeed exploited the busiest roads of the kingdom as media for propaganda.

Providing a sounder hypothesis on the monument's shape is one of the most ambitious targets of our research, but it can not disregard a deeper archaeological survey of the site itself.¹⁵ At this moment, thanks to the 3D renderings provided by Studio 3R, we are able to confirm some suppositions hinted at in previous reports (Cereti and Terribili 2012, 85). According to the orientation of the lines of writing carved on their surfaces, the new blocks, Middle Persian F18 and Parthian f1 (Fig. 2), turned out to be two inscribed bell-shaped bases of three-quarter columns. 16 The profile of the base fl 17 forms a wavy line widening at the bottom, where the plinth lay on a small podium projecting out about 10 cm from the masonry. On the upper surface, the junction between the base and the column shaft is outlined by a narrower ring. These bell-shaped bases represent an element of continuity with the Achaemenian tradition where such a decorative motif is widely attested (Herzfeld 1941, pl. LXXXV). Achaemenian bell-shaped column bases have been found also in Western Iran at Hamadan and Shahabad, a site on the 'Royal Road' between Kermanshah and Qasr-i Shirin (Kleiss 1972, 198, ab.73), evidencing the dissemination of this ornament also in provincial contexts. The Post-Achaemenian rock tomb of Fakhrikah, next to the modern city of Mahabad (South-western Iranian Azerbaijan), shows conical column bases, apparently derived by the Achaemenian bell-shaped bases (Huff 1971, 163-5; Huff 2004, 600). It offers a link between the heritage of the old royal art and the later tradition of Western Iran; this evidence undeniably states how this element was absorbed by the local school of masonry, which was able to elaborate this motif with a certain degree of innovation. A bell-shaped base found at Istakhr, in the site of the Great Mosque (Herzfeld 1941, 280, fig. 377, pl. XC), where it was reemployed in Early Islamic period (Whitcomb 1979, 364), may provide the closest Sasanian parallel to the Paikuli piece. Similar elements continued to be employed in Islamic art as attested at Samarra (Herzfeld 1941, 281) and at the tomb of Shaikh Yūsof Sarvestānī (c. 1283 AD) in Sarvestān, where a slightly flattened bell-shaped column base still stands on the spot (Kleiss 1972, 207, pl. 58/2).

¹⁴Herzfeld (1924, 1) does not rule out the presence of a narrow staircases giving access to the platform on the top of the monument; he noticed this feature in the tomb-towers along the Euphrates River at Ḥalabiyya, which belong to the late Palmyra period and hence are more or less contemporary with the Paikuli monument.

¹⁵ Unfortunately different contingencies (e.g. looting, reuse, guerrilla activities) affected the site in the past, compromising the archaeological context. The escalation of violence that has affected Iraq since the summer of 2014 makes it at the moment impossible to plan a reliable schedule for future activities in the field.

¹⁶ After the discovery, during his last visit at Paikuli, of an uninscribed bell-shaped piece, Herzfeld supposed that the monument had both capitals and bases of this kind (Notebook N-83, p. 53, also in Cereti and Terribili 2012, 83).

¹⁷ The block F18 is rather damaged but arguably its shape is the same of f1. The two block measurements are: F18 48 cm height, 45.6 cm width and f1 46.5 cm height, 42.3 cm width.



FIGURE 2. THREE-QUARTER COLUMN BASES F18 AND F1 -(MAIKI - IMAGE PROCESSED BY STUDIO 3R).

Furthermore the Parthian corner block f1 has its own relevance also for the understanding of the Paikuli structure itself; it proves that the three-quarter column decoration adorned all four sides of the monument and not only the Middle Persian wall as thought by Humbach and Skjærvø (1978-1983, 2:10-1), who calculated the extent of the walls from the supposed length of the texts. This block however continues to present philological problems: fl contains only five inscribed lines instead of the six on the other blocks of the same row. The comparison with the corresponding lines of the Middle Persian version (G6,01; G6,02; G2,05) and a new reading of the first line on f1 force us to revise somewhat the textual reconstruction proposed by Cereti and Terribili (2014, 356). The epigraph on the basecolumn would start indeed directly from the second line of the Parthian f row (i.e. f1 line 01 matches with line 02 of the following blocks of f-row). The reason for this discrepancy should be the requirements of the writing possibly at that point the scribes widened the 'margins' of the inscribed surface that apparently did not usually include, for the Parthian version, the convex space on the three-quarter columns. No other three-quarter column blocks inscribed in Parthian have ever been recovered, while those written in Middle Persian all belong to the left edge of the inscription, i.e. to the ends of the lines. All these data let us suppose that the epigraph on fl was

due to some kind of improvised adjustment and was not a standard feature. According to the new arrangement, the presence of a further (now lost) block between f1 and f2 must be supposed in order to match the continuity of the lines of text and to include the words already recognized in the Middle Persian version. The new distribution of the f1 lines, within the f-row order, is here proposed as follows:18

f-row lines	fl epigraph
02	(B) $tw(h)[m]^{19}$
03	(g)t(w)
04	$[\ldots](p\s)[\ldots]$
05	$[\dots \dots]g[\dots]$
06	H(QA)YMW[]

Amongst the most noticeable elements of the monument are the five busts of Narseh, all of them bearing the commonest features of Sasanian royal iconography. Their documentation, carried out in collaboration with Studio 3R, has been achieved through an integrated topographic and digital photogrammetric system. In

 $[\]overline{^{18}}$ The new readings do not add any data to what is already known from the corresponding Middle Persian passages: §71; §72 and §78 (Humbach and Skjærvø 1978-83 3.1: 61 and 64).

19 The reading *tōhm* [**twhm**]: 'family, seed' confirms the hypothesis

made by Humbach and Skjærvø (1978-83, 3(1): 61, 128).

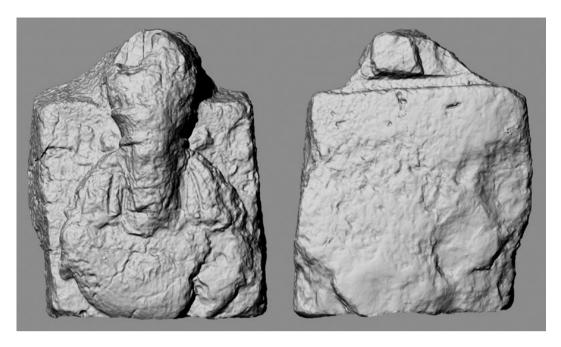


FIGURE 3. 3D RENDERINGS OF NARSEH'S HIGH-RELIEF BUST — (MAIKI — IMAGE PROCESSED BY STUDIO 3R).

order to obtain an optimal level of point cloud quality and image mapping on the resulting 3D models, the data were processed with a software capable of providing a stereo-photogrammetric restitution from freely acquired images; furthermore, by measuring control points with a topographical instrument, the exact georeferencing of models and images has been set.

Four of these busts are sculptured in high relief (Fig. 3) and were shaped after one and the same model, according to Herzfeld (1924, 8). Regarding their location within the structure, Herzfeld (1924, 3) supposed that they were embedded in the middle of each wall. Such a placement however poses some problems since the uppermost part of the bust reliefs emerge with a rounded shape from the roughly squared backdrop, a feature that would demand a tricky solution in order to fit the rounded outline within the masonry. Moreover, the new documentation has highlighted at the back of two busts a horizontal and smooth slot (Fig. 3), carved at a point corresponding to where the profile of the upper part of the relief rises from the squared framing. The slot marks the lodge of some kind of juncture and it is doubtless connected with the joining system devised for two of the four massive pieces. One may wonder whether the presence or absence of the slot implies a different placing of the

busts; unfortunately, at the current stage of study, we are not able to give a definitive answer.

Regarding some iconographic aspects of these pieces, we may instead provide final responses and clarify some obscure points. During his reign Narseh wore two different crowns:20 a lamellar headgear characterized by a 'palmette' motif adorning its upper rim, and a simpler model of hollow moulded lamellar crown without any twigs (Alram 2012, 281). In his first work on Paikuli, Herzfeld referred only to a 'fluted cornice' without mentioning the 'palmette' motif (1924: 9). However, during his last campaign in Paikuli (1923), the German archaeologist briefly recorded in his notebook the discovery of the beautiful large palm motif adorning the royal crown.²¹ Quite oddly no description or mention of it is given by Herzfeld in his Reisebericht (1926), while in a further paper (Herzfeld 1938, 112) he provided a drawing of Narseh's Paikuli crown without giving any kind of additional information. Today the remains are

²⁰ According to the numismatic evidence, Narseh was the first Sasanian king to adopt two crowns; the chronological order between the two typologies has been recently fixed by Alram folloing internal criteria on the portrayal styles of Narseh's coinage. The earlier crown has been identified with Type I 'palmette' crown (Alram 2012, 281-7).

²¹ Notebook N-83, p. 53 (Cereti and Terribili 2012, 83).



FIGURE 4. 3D PROFILE OF NARSEH'S HIGH-RELIEF BUST WITH DETAILS OF THE CROWN – (MAIKI – IMAGE PROCESSED BY STUDIO 3R).

poorly preserved, however the 3D documentation shows that, at least in a high relief bust, half of a large 'palm' leaf is still barely visible on the right side of the crown (Fig. 4). The decoration looks indeed similar to the flat and stylized representation of the acanthus leaf adorning the Sasanian column base found in the mosque of Istakhr (Herzfeld 1941, 280). On the other three high-relief busts the decoration is much abraded and only faint signs of it can be glimpsed. With the fragments of the fifth all-round bust (Fig. 5) 3D rendering enabled us to detect the contour of the leafs decoration, both on the right side and on the front of the crown, this latter detail fully matching with Narseh's Type I coinage (Alram 2012, 295-300).

Particularly noteworthy are further remarks on this fifth bust of Narseh: it was regarded by Herzfeld (1924, 3) as a rejected piece abandoned on the spot²² and for this reason it has not been taken into consideration by modern scholarship ever since. Such a hypothesis may be now

revised; the Sulaimaniyah Paikuli collection preserves a further element that had never been examined by Herzfeld. It is a massive fragment of Narseh's crown and korymbos, the silk gauze that covered the Sasanian Kings' hair topping their crowns, one of the distinctive symbols of royal majesty. It surely fell off from the fifth bust; in the 3D restitution (Fig. 5) the two fragments have been reconnected, consistently rendering the proper dimension of the whole piece, despite the absence of the king's face and forehead.²³ The original bust was sculptured in the round and the care with which even the back was carved out is still clearly visible. Likewise remarkable is the dreadlocks hairstyle falling behind Narseh's shoulders and ending with well carved spiral curls. Pretty clear also are the two ribbons shaped in horizontal folds and tying the royal diadem that descend along the centre of the King's back. The way in which the curls and ribbons are engraved recall, though in a coarser fashion, the manner adopted for the back of Shabuhr I's statue at the cave of Bishapuhr. A further respect in which the Paikuli bust resembles the Šābuhr's statue is the way in which the folds of the garment, still visible on Narseh's right shoulder, are rendered with a wet-cloth style. They belong to the royal robe or possibly to the royal cloak, commonly represented on Sasanian monumental reliefs. All these similarities could be seen in the frame of the propaganda promulgated by Narseh who, striving for full legitimacy, claimed connection with the authority of his father, the great Sābuhr, even adopting visual recalls. The abundance of such details unquestionably rules out the possibility that the fifth bust of Narseh was discarded by the monument builders; contrariwise, the 3D rendering of the two fragments offers us one of the rare specimens of Sasanian royal statuary in the round. Moreover these data not only force us to reconsider the location of this bust but even to ponder on the actual shape of the whole structure itself.

In order to answer the many questions that Paikuli still rises MAIKI plans to improve visual restitutions of the inscribed walls as well of all the other ornamented elements which we were able to document in the past;²⁴ we are nevertheless fully aware that it is only through targeted archaeological campaigns that new data can be collected to address the striking gaps in our knowledge.

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 $^{^{22}}$ The piece laid next to the monument northern wall (Herzfeld 1924, 2).

²³ The bottom of the bust fragment is broken so the original statue should have been higher than the about 1.86 m measured after the 3D reconstruction

reconstruction. ²⁴ We hope the renderings will also provide an effective support to the correct musealisation of the Sulaimaniyah Paikuli-collection.

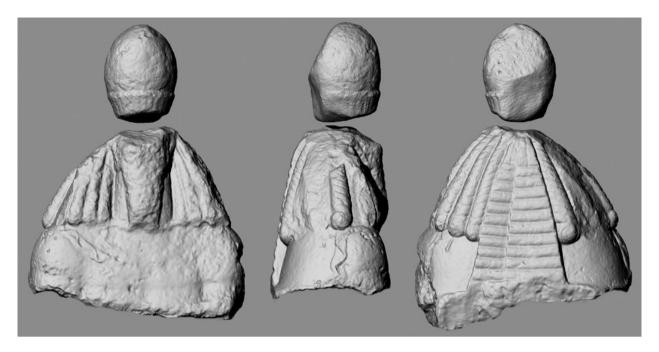


FIGURE 5. 3D RECONSTRUCTION OF THE ALL-ROUND BUST OF NARSEH - (MAIKI - IMAGE PROCESSED BY STUDIO 3R).

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The Kani Shaie Archaeological Project

André Tomé, Ricardo Cabral and Steve Renette

The Kani Shaie Archaeological Project is a scientific cooperation between André Tomé and Ricardo Cabral of the University of Coimbra and Steve Renette of the University of Pennsylvania. The project entails a multi-stage, long-term research program to explore and document the history of occupation at Kani Shaie and its regional setting within the Bazyan Valley.

At the first stage of exploration, the team was kept small, but as of 2015 the team was expanded to include an osteologist, an archaeobotanist, an archaeozoologist, and a ceramicist from various universities. The project is conceived to collaborate closely with other archaeological teams in Sulaimaniyah to contribute efficiently to the emerging archaeological exploration of Iraqi Kurdistan.

During a short visit and informal survey of the Tanjaro and Bazyan regions in March 2012, the Department of Antiquities pointed out Kani Shaie as a good candidate for our research goals. Based on a cursory analysis of satellite imagery of the region, we had selected the Bazyan Valley as a promising option to investigate how the rugged, hilly landscape restricted movement through the region and if sites were positioned to take advantage of the few routes and passes through almost impassible hill ranges. The Bazyan Valley has never been subjected to archaeological exploration, although it has been visited and commented upon in the context of Neo-Assyrian incursions into the Zagros Mountains (Speiser 1926-7; Levine 1973; 1974a). In addition, during our short visit in 2012, the valley and Kani Shaie in particular appeared to have readily accessible archaeological remains spanning several millennia, but especially the Chalcolithic and Early Bronze Age, as well as later Parthian to Islamic periods that form our main research interests. Given the relatively small scale of our team and research project, the geographically well-defined Bazyan Valley and the small size of Kani Shaie fit our site selection criteria perfectly.

In September 2013, we conducted a first season of fieldwork at Kani Shaie in order to test our preliminary impressions of the date and nature of the site based

on surface material and geographical setting. Our exploration focused therefore on exposing a stratigraphic sequence. In this report we discuss the project in more detail and lay out our research goals for the coming years, making use of the results gained from the first season of excavations.

The Bazyan Valley

The Bazyan Valley straddles part of the road between the Kirkuk Plain and the Sulaimaniyah Plain (Fig. 1). This narrow valley is formed by the Bazyan Range, which is the northern extension of the Qara Dagh Range, on its western border and the Baranand Hills to the east. The Bazyan Valley consists of small northwest-southeast stretches of flat land divided by the low limestone outcrops of the Pila Spi Formation (Jassim and Goff 2006, 165-6; Hamasu 2009). Several springs and snowmelt runoff form two small streams, including the Tainal,

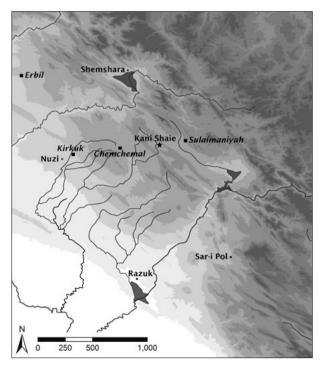


FIGURE 1. MAP OF SULAIMANIYAH REGION WITH LOCATION OF KANI SHAIE.

Our research project has been generously supported by the Portuguese Foundation for Science and Technology (FCT), the Center of Studies in Archaeology, Arts and Heritage at Coimbra and Porto (CEAUCP), the Louis J. Kolb Society of Fellows, the Penn Museum of Archaeology and Anthropology, the School of Arts and Sciences at the University of Pennsylvania, and the American Schools of Oriental Research.

that gather the water throughout the Bazyan Valley and breach through the Bazyan Range at the Basira Pass where they form the beginning of the Tauq Chai, a main tributary of the Adhaim River. Further south, the Qara Dagh region is a rugged landscape, difficult to traverse. In contrast, the Bazyan Valley is easily accessible through the Bazyan and the Basira passes and allows easy traffic to the Tasluja Pass across the Baranand Hills to reach the Tanjaro River in the Sulaimaniyah plains. As such, the Bazyan Valley is the most direct way to reach the Central Zagros Mountains from Kirkuk and Assyria (or vice versa), while at the same time it allows easy defense and control of that route. This fact is illustrated by two famous battles at the Bazyan Pass. In 1805, the Kurdish prince 'Abd al-Rahman Pasha of the Baban Emirate built a wall across the pass and stationed canons on top of it to fend off the forces of the pasha of Baghdad. In 1919, Shaykh Mahmud fought his last stand at the Bazyan Pass against the British onslaught led by General Fraser (Jwaideh 2006, 181). While both battles were lost, by overwhelming force and betrayal, they illustrate the strategic location of Bazyan. For this very reason, it has been suggested that this is the Babite pass of Neo-Assyrian sources where Assurnasirpal marched against Zamua who had 'fortified and closed up with a wall' this important route into their territory (Speiser 1926-7; Levine 1973). On the other hand, the modern road through this region today does not allow us to sufficiently appreciate the difficulties to travel across these formidable hills. Reports from the 19th and early 20th century describe their route as difficult, hazardous, and only barely fit for caravans, let alone armies (Rich 1836; Speiser 1926-7; Rajkowski 1946). They also describe the Bazyan Valley as relatively empty, with only a few seasonally inhabited villages, and muddy roads. People inhabiting the larger plains of Sulaimaniyah might have preferred to leave the Bazyan Valley in this state, thereby functioning as a buffer against any unwelcome visitors from the west. Or to use Speiser's words, to 'keep nations apart" (Speiser 1926-7, 7).

The Bazyan region is a typical intermontane valley with annual rainfall averaging about 500 to 750 mm (Braidwood and Howe 1960, 16). The valley has plenty of sources of fresh water and is well drained, resulting in stretches of arable land and good pastures. Early European travellers noted the presence of lush gardens, vineyards, and barley fields, as well as cotton plantations (Rich 1836, 60). Today the population in the Bazyan Valley is expanding significantly, especially around the Tasluja Pass, and every part of arable land is farmed or used for greenhouses. In addition, several large cement factories and an oil company are mining the natural resources. As in many places of Kurdistan, this industry is contributing significantly to the economic development of the local population, but at the same time the landscape is being altered drastically and archaeological sites are being destroyed systematically. The Sulaimaniyah Department of Antiquities is doing all they can to prevent destruction of cultural heritage and record the archaeological sites, but a plan for heritage management and systematic archaeological exploration is urgently required as sites are disappearing rapidly.

Except for a limited exploration as part of the Jarmo Project lead by R. Braidwood in the 1950s, the valley remains terra incognita for archaeologists. On his way through the valley Speiser noted the prominent Neo-Assyrian site of Qopala which sits close to the Bazyan Pass, while at the Bazyan Pass itself extensive Sasanian period remains testify to a long history of this pass as a border outpost. Parts of these remains are currently being investigated and mapped by a joint French-Iraqi Kurdish team at Bazyan. The German team working at Chemchemal and the French team at Kunara and Bingird will include the Bazyan Valley in their surveys of the region. Apart from the defensive remains and surrounding towns spanning the Assyrian to early Islamic period at the Bazyan Pass, the Bazyan Valley contains evidence for the full range of human existence, including several important Paleolithic sites (e.g. Palegawra), although the region was undoubtedly never densely inhabited. The Bazyan Valley offers a valuable opportunity to explore life in a small mountain valley on the border between Mesopotamia and the Zagros, as well as investigations into how the great empires of the ancient world dealt with, conquered, and controlled this difficult landscape.

Our immediate research goal is to establish a stratigraphic sequence of material culture for the Bazyan region. Archaeological surveys and excavations in the vicinity of the Bazyan Valley have already illustrated the gaps in archaeological understanding of Iraqi Kurdistan considering the local peculiarities of the material culture during several historical periods. During our visits at sites in the Bazyan Valley we encountered the same problem, making it difficult to date the sites in the valley based on heavily eroded surface sherds alone.

The main chronological focus of the Kani Shaie Archaeological Project is the Late Chalcolithic and Early Bronze Age. While most projects in Sulaimaniyah are working on reconstructing the role of the region during the historical periods, we are particularly interested in the local development of ethnic identity and polity formation during centuries before the first mention of Zagros peoples in the cuneiform records. Given its position on a major route connecting part of Mesopotamia with the Zagros Mountains, the Bazyan Valley was likely integrated in interaction networks facilitating communication and exchange over a long distance. Just to the south, in the Qara Dagh region, the Darband-i Gawr rock relief, most likely to be dated to the centuries after the fall of the Akkadian Empire or perhaps even as late as the early second millennium BC, is very directly inspired by the imagery depicted on the

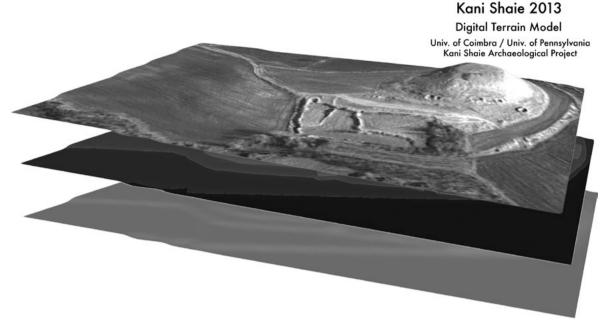


FIGURE 2. DIGITAL TERRAIN MODEL OF KANI SHAIE.

famous Naram-Sin stele (although not necessarily by the stele itself). The relief testifies to close interactions with the Mesopotamian world, and its location might signify a border function of the Qara Dagh and Bazyan Ranges. It is possible that the Bazyan region was part of the territory of the infamous Lullubi, whose defeat is memorialized on the Naram-Sin stele. Our research in the Bazyan Valley aims to provide insights in the local sociocultural development and the development of socioeconomic complexity unique to this landscape. In order to address such issues, it is crucial to determine the degree of interaction with the outside world and the amount of influence from the Mesopotamian lowlands and the Iranian highlands.

The site and its position

Kani Shaie is a small site consisting of a fourteen meter high main mound and a low extension to its north (Fig. 2). The entire site covers no more than one hectare, while the main mound itself is only c. 60 m in diameter. Material collected during our short visit to the Bazyan Valley in 2012 suggested a long sequence of occupation during the Bronze Age. The promise of revealing a stratigraphic sequence spanning several millennia at a small site made Kani Shaie particularly interesting with regard to our research goals. Despite its small size, Kani Shaie is one of the most prominent and largest archaeological sites in the Bazyan Valley. It

is located at the center of the valley, close to one of the easiest roads across the Baranand Hills, the Tasluja Pass, and at the opening to four different, small arable plains. Furthermore, the site sits next to a spring and between several small streams, providing ample water supply and a pocket of lush vegetation with shade and small animals. Finally, it is only a few minutes walk to the rocky Pila Spi outcropping that bisects the valley and offers a supply of basic building material. In many ways then Kani Shaie is ideally situated to take full advantage of the available resources and to access the local agricultural potential and the routes that connect the Bazyan Valley to the outside world. Slightly to the north of Kani Shaie, well within sight, is another similarly shaped site, Gerdi Koyik, that might have fulfilled the same function during later periods after Kani Shaie was abandoned. A few kilometers to the south another site, Gerdi Drozna, of similar size and shape as Kani Shaie sits close to another pass across the Baranand Hills. The Bazyan Valley never seems to have been densely occupied and the few sites that are visible in the landscape are even smaller than Kani Shaie.2

² The names of sites in the Bazyan Valley are often unclear or confused. Kani Shaie itself is sometimes referred to as Kani Gawra, Derwishan, or Tui Awlia. All of these are place names in the vicinity of the site, while tell sites themselves do not seem to have their own name. Place names also appear to change or migrate across the map, perhaps a result of population displacement or rapidly shifting settlement patterns. Future surveys in the Bazyan Valley might therefore record different names of the same sites.

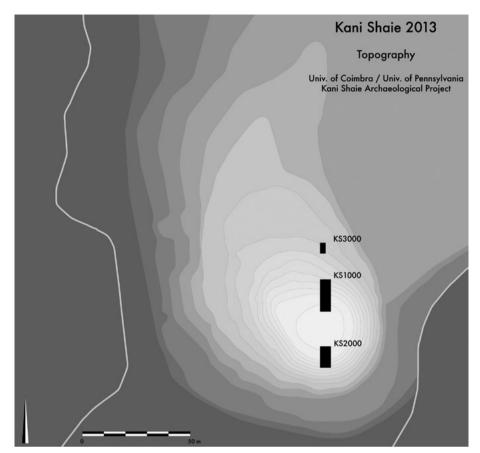


FIGURE 3. TOPOGRAPHIC MAP OF KANI SHAIE WITH LOCATION OF TRENCHES IN 2013.

The ideal position of Kani Shaie already suggests that this site might have fulfilled a central role within the Bazyan Valley. This has been confirmed by the results of our first season of excavation in September 2013 when we opened two step trenches (KS1000 and KS2000) on the north and south slopes to determine the sequence of occupation (Fig. 3). We were unable during the first season to reach natural soil, but based on the remaining depth of deposits and material collected from the surface it appears that Kani Shaie might have been first occupied during the later Ubaid period and continued throughout the Late Chalcolithic fourth millennium. The lowest levels reached so far belong to the end of the Late Chalcolithic. In the step trench we may have exposed the outer edge of a large building that was destroyed in a conflagration. The heavy erosion on the slopes of the site and water percolation from the heavy rains and snowfall in the region during winter made it difficult to define mudbricks and wall edges. In the limited exposure in the southern trench, we encountered what appears to be a slightly curving wall, ca. 1.5 m wide. The spaces on both sides of the wall were filled with burnt debris containing bricks of the Riemchen type, enormous amounts of broken pottery, and large amounts of animal

bones (including large cattle bones and horns). The pottery consisted of hundreds of pieces of beveled rim bowls, many thin-lipped conical cups with pouring lip and string-cut base, several fragments of red-slipped jars with nose lugs and fingernail impressions, and sherds of large jars. The assemblage collected from the small exposure was very restricted in number of types, but all of them are of the typical southern Uruk tradition (Late Chalcolithic 4-5) (Fig. 4). Associated with these remains, but unfortunately found out of context, was a fired clay tablet with seal impressions of a single cylinder seal on one flat surface and around the sides, and with a single round numerical mark (Fig. 5). The seal impression fits stylistically within the Late Chalcolithic 4-5 period, but the iconography is unusual and so far unique. The seal depicts an overseer standing behind a horned animal pointing forward. In front of him is a boat with two rowers. Between these two rowers are five animals with twisted horns. We can suggest a tentative hypothesis for the meaning of this scene in the context of Kani Shaie. The scene clearly depicts a mundane activity that can be interpreted as a downstream shipment of horned quadrupeds from the Zagros Mountains. In such a scenario, Kani Shaie could have been a stop on the route

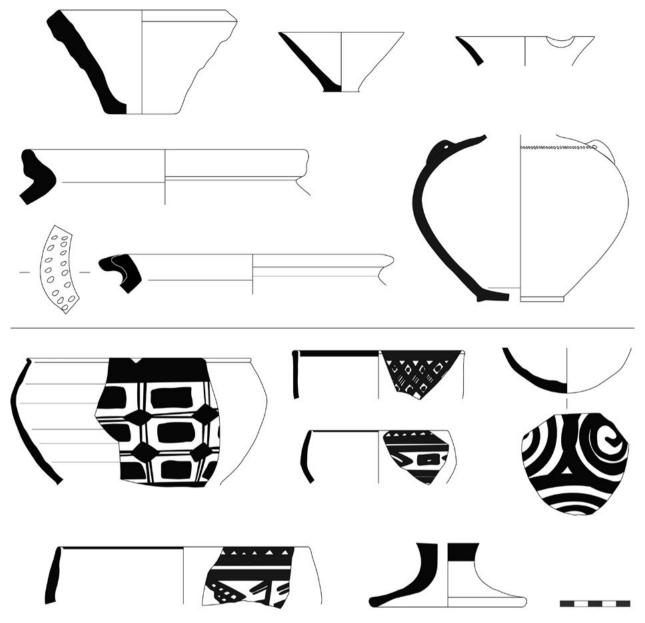


FIGURE 4. SELECTION OF LATE CHALCOLITHIC AND EARLY BRONZE AGE POTTERY FROM KANI SHAIE.

between the mountains and the closest river, or a local center where horned animals were gathered to be shipped off to the Mesopotamian plains downstream. While the Bazyan Valley does not have a navigable stream, the Little Zab to the north and the Diyala/Sirwan River to the south are surely within range, while the Tainal stream that passes Kani Shaie forms the Tauq Chai beyond the Bazyan Range.

The Late Chalcolithic settlement came to a violent end, immediately (or after a short hiatus) followed by a leveling operation and the first phase of a long period of small-scale architecture, sometimes on a stone foundation. In the northern trench (KS1000) we found part of the remains of a grill structure with ashy debris filling the space between single rows of mudbricks, typical of the transitional period between the Late Uruk and Ninevite 5 periods in Northern Mesopotamia. The material culture of these levels shows a radical change with the previous period of occupation and is marked by a wide range of painted pottery styles (Fig. 4). Apart from a few sherds that clearly belong to the Ninevite 5 tradition,



FIGURE 5. LATE CHALCOLITHIC SEAL-IMPRESSED NUMERICAL TABLET FROM KANI SHAIE.



FIGURE 6. EARLY BRONZE AGE SEAL-IMPRESSED SHERD FROM KANI SHAIE.

the majority of the ceramic material only shows distant affinities with that northern pottery style. In addition, few sherds show close affinities in decoration style, albeit not in fabric, with the so-called Hasan Ali Ware found southwest of Lake Urmia in northwestern Iran (Kroll 2004). Finally, many sherds of bowls decorated with large painted spirals do not seem to have parallels anywhere known so far and could represent a much more localized tradition native to the Bazyan region. Future studies of this ceramic material will address issues of imports versus locally produced material, but based on the current evidence it is already clear that Kani Shaie and the Bazyan Valley were in close contact with distant regions in all cardinal directions. That the site probably still fulfilled a role as a local administrative center is demonstrated by the discovery of a jar sealing with a glazed steatite style seal impression and a seal-impressed body sherd of a large jar depicting a very lively row of animals (Fig. 6).

Following this long sequence of constant building and rebuilding during the first half of the Early Bronze Age, the site probably became too high and small to sustain further development. The settlement probably moved away to another location, possibly to Gerdi Koyik two and a half kilometers northwest. The upper levels of Kani Shaie remain unclear. The top meter of deposits contain incoherent piles of large stones, small oven features, and stone-lined cist burials most likely belonging to the Islamic period, but still of uncertain

date. In the small exposure no indication of architectural plans could be discerned, however the large stones presumably come from collapsed buildings that stood on top of the tell. Ceramic material retrieved from between these stones is mixed and contains only few diagnostics. Few sherds suggest that the site remained in use at the end of the third millennium and the beginning of the second millennium BC. Other remains could be related to ephemeral activities of visitors to the site throughout the millennia.

The mound of Kani Shaie has suffered significantly from erosion. In a test trench at the foot of the mound, two meters of slope wash containing Late Chalcolithic and Early Bronze Age material covered in situ deposits of a much later date. The small exposure prevented us from identifying an occupational level, but at the very end of the season we found a complete green-glazed jar with two shoulder lugs. This vessel is of a type with a long life span, beginning during the Hellenistic period and lasting into the early Islamic era. Surface sherds from the lower extension demonstrate the presence of an early Islamic village at the foot of the mound, but an earlier Classical or Late Classical period settlement beneath it can not be excluded at this point. The burials on top of the mound of Kani Shaie are presumably associated with the lower settlement.

In more recent times, and to this day, Kani Shaie remains a locus of activity given its lush setting and prominent position in the valley. The site is used as a playground for children, and a picnic spot for families. The presence of several Ottoman pipe fragments might suggest that Kani Shaie was a social gathering place during the past few centuries. On the southwestern slope, the ruins of a small stone room is a local holy place, while the remains of two recent houses might testify to a more tragic episode of life in the Bazyan Valley when people left their villages seeking refuge from Saddam Hussein's attacks. Finally, a map of the US military from 2003 marks Kani Shaie as the location of a small tank battalion, which again indicates the strategic location of this small tell site.

Conclusion

Kani Shaie is an important site for our understanding of indigenous developments at the beginning of the Bronze Age. Traditionally, the mountainous Zagros region is regarded as a periphery to the major cultural developments that took place on the Mesopotamian plains. The new wave of research in Iraqi Kurdistan allows a reevaluation of such an approach and will provide much needed new information on the Zagros region and its Piedmont. The Late Chalcolithic developments, that have been the focus of intense research in other parts of the Near East, are currently very poorly understood in the Zagros region. Abu al-Soof has documented the spread of Uruk material on sites in Iraqi Kurdistan, while on the Iranian side of the border Uruk material has been found at several sites during surveys (Abu al-Soof 1964; 1985; Algaze 1993; Goff 1971; Levine and Young 1987; Young 1986). Kani Shaie may have been an outpost on the route that connects the Kirkuk Plain with the Shahrizor Plain and reaching the Hamadan Plain via Sanandaj or Kermanshah. Interestingly, in the limited sounding the Late Chalcolithic levels contain an exclusively southern Mesopotamian ceramic assemblage, while Algaze and others have stated that Uruk material is usually found within local contexts in the Trans-Tigridian and Zagros region (Algaze 1993, 63-9). Our excavation project at Kani Shaie is the first to systematically explore a site of this period in the Trans-Tigridian region and we hope to provide crucial new data on the unresolved issue of local development versus Urukian colonization.

The centuries following the Uruk network collapse are somewhat of an archaeological Dark Age in the Central Zagros region (Altaweel *et al.* 2012, 29; Levine 1974b, 489). While part of the problem is certainly due to a failure to recognize ceramics from this period, shifts and changes in settlement patterns and subsistence strategies might also provide part of the answer. The best evidence for the early centuries of the Early Bronze Age come from the Eski Mosul Salvage projects on the Tigris River in the 1980s. Further south, early third millennium settlements and cemeteries have been excavated in the Hamrin Valley and in Luristan. Kani Shaie fills a gap

in our knowledge. The limited excavations so far have already illustrated that communication and exchange routes remained in use after the Uruk collapse and that Kani Shaie was connected to northern Mesopotamian, northwestern Iran, the Trans-Tigridian Corridor and the southern part of the Central Zagros. The sites in the Eski Mosul and Hamrin regions were excavated under severe time restraints as part of salvage operations. Our work at Kani Shaie will allow a more comprehensive and detailed analysis of a settlement during this enigmatic period. While most projects in the region tend to focus currently on the historical periods, we hope to provide some insights in the local developments in the period leading up to the formation of polities and ethnic groups known from cuneiform records later in the third and during the second millennium BC.

Acknowledgements

We are greatly indebted to Kamal Rasheed, director of the Board of Antiquities and Heritage in Sulaimaniyah, whose continuous hospitality, support, and encouragement made the development of this project possible. We are also very grateful to Hashim Hama, director of the Museum of Sulaimaniyah, for supporting our project. We further wish to extend our gratitude to their staff, especially Zana Abdulkarim and Saber Ahmed Saber, for their enormous assistance during field reconnaissance and excavation. Everyone in Sulaimaniyah has been extremely generous in their support, making sure that setting up this project went as smoothly as possible. In particular, Mr. Abdulrahman, our driver, housekeeper, guard, and friend, was of indispensable help during our stay in 2013.

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Philological and scientific analyses of cuneiform tablets housed in Sulaimaniya (Slemani) Museum

Chikako WATANABE

The aim of our study, in collaboration with Sulaimaniya (Slemani) Museum, is to examine the source material of cuneiform tablets in order to identify their provenance through chemical analysis as a complement to textual information. The museum holds over 7000 cuneiform tablets, which were, for the most part, collected rapidly after the Iraq War in 2003, when extensive looting occurred in southern Iraq destroying and devastating many archaeological sites. Numerous pieces of cultural heritage, including cuneiform tablets, were illegally excavated and smuggled out of the country in the aftermath of the war. The Kurdistan Region of Iraq was fortunately not badly affected during the war, placing it in a position to offer some level of assistance for cultural preservation and protection. Kurdish authorities captured smugglers and confiscated many stolen cultural objects and stepped up the protection of stolen Iraqi cultural heritage by purchasing items which were already being sold in neighbouring countries.

Thus the cuneiform tablets in Sulaimaniya Museum consist principally of those which were looted during and after the Iraq War, although there are some which were entrusted to the museum by other Iraqi museums (e.g., the Mosul Museum) prior to the 1990s. Consequently, most of the tablets lack provenance data. While philologists can often tell where tablets were probably written based on textual evidence inscribed on the tablets, our analysis aims to provide additional information using chemical data in order to determine their lost provenance.

The background of this study

The focus of our study on the material aspects of cuneiform tablets was originally developed from examining the palaeoenvironment of Mesopotamia (Watanabe 2011, 379-91). The chemical analysis was intended to provide evidence that local clay was used for tablets, based on the local origin of biological indicators contained in the clay. The presence of diatoms on the surface of clay tablets was observed (Tuji *et al.* 2011, 403-7; Tuji *et al.* 2014, 101-6), and these diatoms indicate the level of salinity of the water at the time, thus providing valuable data for tracing environmental changes in the past.

The chemical examination began in 2009 and was carried out on cuneiform tablets owned by Western institutions. These results were intended to serve as base data for a comparison with those of the Sulaimaniya Museum

collection in order to shed light on their possible provenance. Non-destructive analysis using a portable X-Ray Fluorescent analyser (pXRF) was carried out on over 600 tablets (mainly from southern Iraq) in the Yale Babylonian Collection in 2009-12, as well as 84 tablets (from northern Iraq) at the British Museum in 2013. We aimed to find specific chemical fingerprints through pXRF and Neutron activation analysis (NAA). The study of the chemical analysis was undertaken by Etsuo Uchida, who focused on data for strontium (Sr) v rubidium (Rb), and St v magnetic susceptibility (Uchida et al. 2011, 393-401). These elements were chosen as the result of data comparison between the NAA and pXRF which were undertaken in 2009. The NAA was conducted by Max Bichler prior to non-destructive analysis in 2008 at Yale University, and was examined at the Atomic Institute in Austria by Johannes Sterba (Sterba et al. 2011, 403-50). The samples for NAA were taken from inside the tablets, whereas pXRF was conducted on the surface of the tablets. The results show a reasonable correlation between pXRF and NAA – in particular, a good correlation in the analytical results was obtained for Rb and Sr.

It has been demonstrated by Uchida that the results indicate two types of origin for the raw materials of the cuneiform tablets. According to his study, two areas, A and B, are distinguished in both 'strontium/rubidium' and 'strontium/magnetic susceptibility' diagrams (Uchida et al. 2011, 396-8). Area A shows homogeneity in both chemical composition and magnetic susceptibility. This area is considered to correspond to river and canal deposits which were formed gradually during the slow movement of water. These tablets come from Umma, Adab, Ur, Uruk and Sippar. Area B shows heterogeneity in chemical composition and magnetic susceptibility. This area is considered to correspond to flood plain deposits. Drehem tablets belong to this category. Those from Nippur and Lagash are considered to belong to both categories. These results were presented at the 55th Rencontre Assyriologique International held in Paris in 2009, and also at the 7th International Congress on the Archaeology of the Ancient Near East held in 2010 in London, and were published in Scienze dell'Antichità Volume 17.

Examinations carried out in 2013 and 2014

The results of this analytical method have indicated the possibility of examining precious cultural objects without damaging them. However, it simultaneously revealed the method's limitations in distinguishing chemical characteristics from one source to the other. Since the majority of tablets in the third millennium BC came from southern Iraq, where many ancient cities were in close proximity, and even shared the same rivers or canals, other analytical methods are needed.

In March 2013, we carried out our preliminary investigation at Sulaimaniya Museum. Since the tablets are still being classified and catalogued, there is no public database, so we requested a random group of economic tablets which came from the same archive. For our examination, 15 clay tablets belonging to the archive of Bēli-ili were provided for which analysis by pXRF. By courtesy of the museum, we were granted leave to take small samples from eight tablets for further chemical analysis, and 20 samples for biological investigations. The chemical analysis was carried out by Etsuo Uchida at Waseda University, Tokyo, and the biological analysis by Nigel Cameron at University College London. We also performed sampling of some living diatoms in the Tanjero River and the Lower Zab, which were analysed by Akihiro Tuji at the National Museum of Science and Technology in Japan. This was an important first step in identifying diatom assemblages in Iraq, an investigation which has not been carried out for more than 50 years. It should provide essential background information in identifying ancient diatoms, should we discover any.

Our second investigation was carried out in February 2014, when Mark Altaweel analysed 106 tablets from seven different groups using pXRF. In addition, by courtesy of the Museum, small samples from 31 tablets, plus 15 tablet fragments, were granted for further analysis (e.g., ICP-MAS and ICP-AS). A geological survey was conducted in Mawat, Penjwen and Jarmo, where rock and sediment samples were collected. Living diatoms were sampled from these locations to be analysed by Akihiro Tuji. We intend to share this diatom data with the Geology Department of Sulaimaniya University, as a tool for monitoring the water quality of the rivers in the region.

In pursuing this research, our code of ethics prohibits us from providing data to antique dealers. All the data and information acquired from the Sulaimaniya cuneiform tablets in our analysis will be primarily shared with the Sulaimaniya Antiquities Directorate as well as Sulaimaniya Museum of Antiquities. We will never cooperate with any parties whose interests lie outside academic investigation.

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'Carrying the glory of the great battle'. The Gaugamela battlefield: ancient sources, modern views, and topographical problems

Kleanthis ZOUBOULAKIS

Introduction

During April 2011 the Department of History and Archaeology of the University of Athens conducted its first mission in Northern Mesopotamia. One part of this mission concerned aspects of the history of this wider area during ancient times and more specifically the pivotal historical event of the battle of Gaugamela. The third and final battle between Alexander III (the Great), king of Macedonia and Darius III, king of the Persian Empire, took place on the 1st of October 331 B.C., at a site to be approximately located in the area of the modern governorate of Erbil (Iraq), the capital of which is the modern city of Erbil, corresponding to the ancient Arbela.² The governor of Erbil Mr Nawzad Hadi Mawlood invited a historical team from the University of Athens, a member of which was the author, to conduct a preliminary field survey in combination with a detailed study of the extant historical sources, in order to clarify the battle topography. For the topography of the Gaugamela battle is still a controversial subject in Alexander scholarship.3 This is due to the fact that the historical sources concerning Alexander,4 as well as a series of historiographical approaches,5 focus on the shining aura of the remarkable historical personality of Alexander the conqueror of the East and take for granted (in the best case) or simply bypass (in the worst) the practical parameters of his historical actions. For example, regarding the Gaugamela battle, that is his final victory over the mighty Persian Empire, which after this battle virtually ceased to exist: we can assess the strategic and military virtues of the young Macedonian king only by the result. In other words, if we fail to form a clear picture of the battlefield, we lack critical evidence to definitively attribute his victory to ability or fortune.

¹ Sachs-Hunger 1988, no. 330, *verso* 15-6, 178-9; Bernard 1990, 515-28; Nawotka 2010, 228 n. 28.

The aim of the present paper is not to fully reconstruct the battle but rather to elucidate the main topographical problems in dialogue with current scholarship, and thus to prepare the necessary canvass for a historical synthesis. This effort has been based on a preliminary on-site research, which has led me to a reevaluation of some data on the subject.

Current views

Two main different views have been put forward regarding the location of the Gaugamela battlefield (Fig. 1). The older view regarding the location of the battlefield has been summarised, after on-site research, by Stein.⁶ According to him, the battlefield lies in the area of modern Keremlis. Based on the information of Arrian that Alexander marched four days after crossing the Tigris before he met Darius,7 he suggested that the point of his crossing was Abu Wanjam.8 Further utilising the information of Curtius that Darius had his headquarters in the citadel of Arbela, forded the river Lycus and camped 80 stadia further on near the river Bumelos, 9 a site that Arrian confirms, 10 Stein suggests Darius' route: from modern Erbil to Eski Kellek on the Great Zab, the usual point of crossing (even today), he identifies a ford of the river Hazir distance of 6 miles (about 9.6 kilometres) away. He identifies this river with the Bumelos or Bumodos. After 2 miles (about 3.2 kilometres) he reports a sizeable plain located between the elevation of Jabal Ain-as-Satrah and the village of Keremlis.11 He maintains that Alexander followed a course from the left bank of the Tigris, passing by the ruins of Nineveh, to modern Bartella which covers the distance of 60 stadia mentioned by Arrian. 12 From there Keremlis is not visible, but it can be seen from Minarah Shebek,13 which covers the distance of 30 stadia also mentioned by Arrian.14 He also identifies the hill which Mazaeus abandoned and Alexander then took over and from wheih he watched the Persian army (thus Curtius)¹⁵

² For brief overviews see Hansman 1987; Kessler 2002.

³ All the studies about Alexander deal with Gaugamela. The bibliography down to 1970 is treated in Seibert 1972, 127-30, 282-3. For some recent starting points, Hammond 1980, 131-49; Devine 1986; Bosworth 1988, 76-85; Badian 2000; Nawotka 2010, 225-36; Reade-Anderson 2013, 76-8.

⁴ The literature is vast as there is a significant chronological distance from the facts they describe and the accounts are therefore are secondary. For some recent overviews see Baynham 2003; Heckel-Yardley 2004, xvi-xxvi; Cartledge 2005, 243-70; Zambrini 2007; Briant 2009a.

Some representative assessments on the relevant scholarship: Badian 1962; Bosworth 1996; Anson 2009; Briant 2009b.

⁶ Stein 1942.

Arr., An., 3.7.7.4.
 Stein 1942, 157.

Curt., 4.9.9-10.

¹⁰ Arr., An., 3.8.7.2

¹¹ Stein 1942: 160-61.

¹² Arr., An., 3.9.2.7.

¹³ Stein (1942: 162).

¹⁴ Arr., An., 3.9.3.1.

¹⁵ Curt., 4.12.18, 13.16.

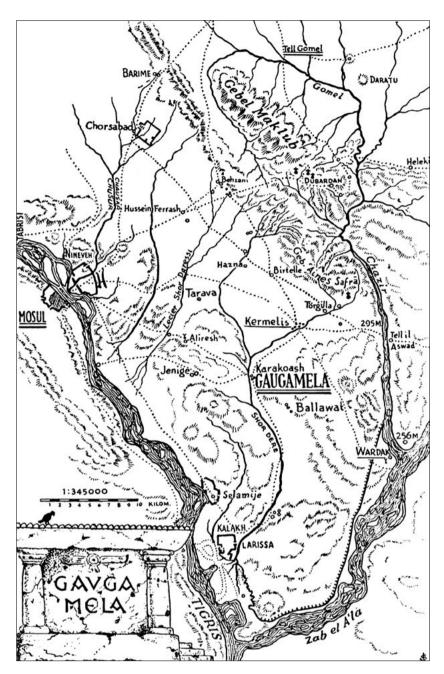


FIGURE 1. GAUGAMELA ACCORDING TO SHUSKO (AFTER SHUSKO 1936: 39).

with the elevation of Jabal Ain-as-Satrah.¹⁶ Finally he asserts that during his flight Darius crossed the Hazir and the Great Zab and considers that the information of Curtius that he reached Arbela by midnight is an indirect clue that the distance of 600 stadia given by Arrian is inaccurate.17

16 Stein 1942, 163.

This topographic view is the culmination of the older scholarship, beginning since 1776 when Niebuhr visited the area, and was the first to identify the plain of Keremlis with the Gaugamela battlefield.¹⁸ Stein's interpretation was also prefigured by Droysen in his second edition of 'Geschichte des Hellenismus.19 Later, Stein has been followed by most historians of Alexander, notably by Tarn²⁰ and especially Fuller, who in his relevant work

¹⁷ Stein 1942, 160; Arr., An., 3.8.7; 3.15.4-5; 6.11.5-6. 600 stadia are equivalent to ca 111 kilometers. All the estimations of distances in the present paper are based on the Greek stadion of 185 meters, used by Greek geographers. For details on this complicated subject: Atkinson (1980, 381, 450); Engels 1985; Pothecary 1995.

¹⁸ Niehbur (1778, 348-9). Here (349 n.): 'Es war ohne Zweifel in dieser Gegend, wo Alexander den großen Sieg über Darius erhielt.

¹⁹ Droysen 1877, 329-31.

²⁰ Tarn 1948, 1:46, 2:189.

has published two aerial photos of the plain around Keremlis, which render his views very convincing.²¹

A few years before Stein's publication, another variation of the battle's topography appeared in the work of Shushko,²² who argued that an area adjacent to Keremlis named Qaraqosh is to be identified with Gaugamela. Again based on the information of Curtius, 23 he suggested that the ford at the confluence of rivers Hasir and Great Zab near modern Wardak was the place at which Darius forded Lycus. From there he set up camp at modern Oaragosh, which corresponds to the distance of 14 kilometres²⁴ and is near a small river named Shore Dere. which he identifies with the Bumelos or Bumodos.²⁵ Darius drew up his battle formation with Qaraqosh as its center, in the line defined by modern Keremlis on the right and Tarava on the left.26 Alexander's army had set up camp in modern Hussein Ferrash and formed their battle line south of it, between Hasna and Bartella.²⁷ He finally explains the route of Darius' escape from the battlefield by having him cross the Great Zab south of Wardak in the vicinity of modern Al Kuwaur, where there is a road even nowadays.²⁸

These two views regarding the battle topography encompass the line of scholarly investigation so far, which for our convenience will be called the 'Southern Hypothesis'. This tradition of topographical reconstruction based on the geographical data related by Curtius and Diodorus locates the general scene of the battle on the south side of Jabal Maqlub, the great elevation in the plain between the ruins of Nineveh on the left bank of the Tigris and the Great Zab, and beyond the river, in a line that ends in the city of modern Erbil. It is based mainly on the geographical information related by Curtius and Diodorus, assuming that the distance between Gaugamela and Arbela mentioned in Arrian is inaccurate. It also does not take into account another aspect.

Already in the 17th century, there was an effort to explain through etymology the meaning of the place-name Gaugamela²⁹ in the Aramaic language, mainly based on the information of Strabo and Plutarch that it meant 'camel house'.³⁰ One of these philological efforts was made by Streck,³¹ who proposed that Gaugamela was

a composite word, consisting from Gau and Gamela. Though Gamela is well attested in Aramaic variations, the same does not apply for Gau, which he explained through a dissimilation of gabbai taken from the biblical Aramaic. According to him it means back, citing also as parallel the Assyrian word *gabbu*. This way, Camel's house is understood as Camel's back, meaning an elevation. Thus Gaugamela was connected with an elevation named Tell Gommel. According to Streck, and later Fiey,³² who cite Arabic sources, this place name is a corrupt form of Gaugamela. This area was located by Schachermeyr, who used two independent authorities,³³ and later Fiey, who has collected the testimonies,34 north of the Maglub Mountain, in the modern Navkur plain, at a distance of about 80 kilometres northwest of Erbil. Tell Gomel has in the vicinity a small river also named Gomel that can be identified with the Bumelos. Though the distance does not agree fully with Arrian's information, it has been considered more reliable than the specific distances given by Curtius.

According to Schachermeyr, besides the fact of the etymological connection of Gaugamela with Tell Gomel, which he locates on the north side of the Jabal Maglub, Darius had little choice but to use a northern direction for his deployment, as he had to use the Royal Road, the main artery for troop movements in the Persian Empire.³⁵ According to Schachermeyr, this road was running from modern Elgosh through Tell Gomel down to Mangube, a ford on the Hazir River. There the Royal Road met the old Assyrian route coming from Nineveh. Schachermeyr claims that this ford, probably the same that Stein mentions, is 14 kilometres distant from Eski Kellek (while Stein gives a distance of 9.6 kilometres). From the junction of Manqube Darius moved to the right, crossed the Hazir and reached Tell Gomel. By this reconstruction, Schachermeyr, implicitly, circumvents the information of Curtius (without even mentioning it) that Darius camped only 14 kilometres from the Lycus, the modern Great Zab. From his autopsy³⁶ he concludes that the northern side of the Maqlub is more suitable for the deployment of large armies.

That the Royal Road had a northern direction is also maintained by Fiey.³⁷ Based on testimonies from the Sassanian period he relates that there was a bridge on a ford of the Great Zab further north than Eski Kellek, Gird-i Mamik, the remains of which were noted by Herzfeld. According to him, the route ran from there to Tell Gomel, near the confluence of the Gommel River

 $^{^{21}}$ Fuller 1958, 163. With aerial photos of Keremlis on 169, which were taken on the 21st of September 1928.

²² Sushko 1936. As Seibert (1972, 130) notices: 'Diese Arbeit fand in der moderner Forschung zu Unrecht keine Beachtung'. This work, besides its argumentation, is invaluable, as it collects numerous travellers' accounts and reproduces old maps.

²³ Curt., 4.9.9-10.

²⁴ Sushko 1936, 73-4.

²⁵ Sushko 1936, 90.

²⁶ Sushko 1936, 68.

²⁷ Sushko 1936, 66.

²⁸ Sushko 1936, 72.

²⁹ Bochart 1646, 272; Annotationes in Stephanum (1825, 533).

³⁰ Str., 16.1.3., Plut., *Alex.*, 31.6-7.

³¹ Streck 1910, 862 ff.

³² Fiey 1965, 180-5.

³³ Schachermeyr 1973, 268 map 4, p. 270 n. 311.

³⁴ Fiey 1965, 181 n. 1.

³⁵ For a recent collection of the relevant testimonies: Kuhrt 2007, 730-

³⁶Schachermeyr had served as an officer in Austrian army during World War I and was stationed for some time in Mosul as he reports in his memoires, Schachermeyr (1984, 92-114). A colourful report, though not very helpful in scholarly respect.

³⁷ Fiey 1965, 180-3.

with the Hazir River. Recent reports, nevertheless, have been unable to verify the existence of such remains.³⁸ Besides this, Gird-i Mamik is about 30 kilometres distant from Tell Gommel, contradicting the distance of 14 kilometres related by Curtius.

Based on the identifications of Schachermeyr, Marsden³⁹ has proposed a reconstruction of the events leading up to the battle, which attributes to Alexander the strategic initiative. He regards Alexander's decision to follow a north direction after crossing the Euphrates⁴⁰ of critical importance, because he overturned Darius' plan to fight in front of Babylon. According to him, Gaugamela was Darius' last choice after the disruption by Alexander of his two first plans to fight in a battlefield of his own choosing.41 Though this proposition has found little acceptance,42 it represents the tendency of modern scholarship to connect the northern direction of Alexander's march with the location of the battlefield on the north side of the Jebel Maglub, at modern Tell Gommel. This line of scholarly investigation, which, again for reasons of convenience, will be called the 'Northern Hypothesis', is the one accepted by the majority of modern scholarship, though not without reservations.⁴³ It mainly draws arguments from Arrian's information about the northern route of Alexander from the Euphrates and the significant distance between Gaugamela and Arbela, the etymological connection of the name Gaugamela with modern Tell Gommel and the north direction of the Royal Road, which Darius was bound to utilise for his military deployment. However, this reconstruction disregards or even ignores the details found in Curtius and Diodorus. All these arguments can be challenged.

A reconsideration of the 'Northern Hypothesis'

In order to reconsider the 'Northern Hypothesis' certain points about the wider strategic and geographical context should be addressed. After the victorious battle of Issus, Alexander made a crucial decision regarding his grand strategy. He did not chase Darius and the remains of the Persian army beyond Euphrates, but chose to conquer first Syria and Egypt. The aims of this decision were to minimize the risk of diversions being attempted by the enemy behind his line and to establish a strong foothold to help him proceed in his next objective: to claim the whole of the Persian Empire.44 There was only one way to achieve this – defeating and capturing the incarnation of the Persian state, king Darius,45 in another major and decisive battle. Darius' objectives were analogous. The Greek army commanded by Alexander was a bad tumor in the body of the Persian Empire that had to be removed, preferably by annihilation.⁴⁶ So the objective of both commanders was now to meet each other soon and not to conquer or to defend ground.⁴⁷

Another essential point, not so clear in our sources, due to the fact that they are of secondary character, is the timeline of events beginning with Alexander's crossing of the Euphrates. Despite the elaborate reconstruction of Marsden, and the difficulties ancient writers had describing simultaneous events in the absence of fixed dates, ⁴⁸ a standard pattern does emerge from our sources about Alexander's and Darius' objectives: both aspired to a pitched battle. ⁴⁹ Darius started his preparations

³⁸ Reade-Anderson 2013, 77-8.

³⁹ Marsden 1964. This certain work remains the only monograph about the Gaugamela battle. Though it still remains the most intelligent synthesis about the battle and a standard point of reference, it must be used with caution. As Badian (2000, 333) characteristically calls it: 'ingenious but arbitrary and unaware of source problems'. Marsden is based on the first edition of the monograph about Alexander, Schachermeyr (1949, 511 n. 153). He also cites Streck 1910 (supra n. 31). ⁴⁰ Arr., An., 3.7.

⁴¹ Marsden 1964, 11-23.

⁴² Hammond 1966, 253; Bosworth 1980, 286. In favor of the possibility Seibert (1985, 95 n. 21).

⁴³ Judeich (1931, 375-6) based on the northern direction of Alexander's march and on Arrian's information, puts the battlefield 10 kilometres west of Tell Gomel. Bosworth (1980, 293-4) accepts Schachermeyr's identification but mentions Stein. Devine (1986, 94-6) also accepts Schachermeyr, but contradicts himself in various points, something that is representative of the confusion that the 'Northern Hypothesis' brings. Lane-Fox (1986, 228-43) takes Schachermeyr for granted, as do Bernard (1990, 520-1), Nawotka (2010, 226) and Reade-Anderson (2013, 76-8). A notable exception: though in Badian (1985, 435) Tell Gomel is mentioned, in Badian (2000, 332) the 'Southern Hypothesis' is advocated.

⁴⁴ Badian 1985, 431-2; Nawotka 2010, 180-226.

⁴⁵ For the context of the Persian King as incarnation of the State: Nylander 1993; Briant 2002, 204-54.

⁴⁶For the Persian perspective between Issus and Gaugamela: Briant 2002, 828-40.

⁴⁷ According to all the major sources (all in favour of Alexander) a final decisive battle was Alexander's objective. As Cartledge (2005, 152) puts it 'The morale value of defeating Darius on even terms in an open and fair fight was deemed (by Alexander) to be of overriding importance, both militarily and politically'. Nevertheless, as Briant (2002, 836) rightly observed: 'It was Darius who determined the strategy at this time (after Issus); Alexander had to adapt to the plans worked out by the Persian staff – not the other way round'. That means that he also wanted the confrontation.

⁴⁸ As rightly observed by Atkinson (1980, 386).

⁴⁹ A fact declared in various occasions. Some examples from the three major sources: Arrian: 'I will come against you wherever you are', Alexander's answer to proposals made by Darius at Marathus (Arr., An., 2.14.4.), 'to pursue Darius', in Alexander's speech to his soldiers before the siege of Tyre (Arr. An., 2.17.1.), '(Darius) began to prepare for war', after receiving Alexander's answer to his second attempt to negotiate during the siege of Tyre (Arr. An., 2.25.3.), 'Alexander must win his victory openly and without sleight', when Alexander denies the proposal of Parmenio to attack Darius' camp at night on the eve of the Gaugamela battle. (Arr. An., 3.10.2.). The same spirit in Curtius: 'Alexander should cease to summon him (Darius) to come to him; for he would come on his own accord, to his enemy's destruction', 'if Darius alone did not know in what relation they both stood (with Alexander), let him settle the question as soon as possible in the field of battle', 'Whither-so ever Darius should have been able to flee, he (Alexander) could follow', at the negotiations during the siege of Tyre (Curt., 4.5.6-8), 'Darius, despairing of peace, which he had believed that he could obtain through letters and envoys, devoted his attention to recruiting his forces and vigorously renewing the war', when Alexander was at Gaza, (Curt., 4.6.1.), '...when report spread abroad on good authority that Alexander with all his forces would seek him in whatever region he should take refuge, being aware with how energetic a foe he had to deal...', during the preparations in Babylon (Curt., 4.9.2.), '(Alexander) began vigorously to follow the enemy, for fear that Darius might make for the interior of his kingdom and that it might be necessary to follow him through places altogether deserted

shortly after Issus.⁵⁰ Therefore, he was ready to move to his chosen ground of battle when he was informed that Alexander had crossed the Euphrates.⁵¹ The latter was looking for Darius,⁵² who had every reason to avoid the mistakes of Issus.⁵³ Taking in account these points, in

and without supplies', after crossing the Euphrates (Curt., 4.9.13), Alexander refuses to attack Darius' camp at night (Curt., 4.13.9.), just before the battle, Alexander states to Parmenio who expresses his surprise about the fact that Alexander had slept free of care the night before: 'for when Darius was setting fire to the land.... I was beside myself; but now what I have to fear, when he is preparing to contend in battle? By Hercules he has satisfied my heart's desire' (Curt., 4.13.24.). Finally, Diodorus says nothing different: again in a context of negotiations before Gaugamela, Alexander answers to envoys of Darius: 'he bade them tell Darius that, if he desired the supremacy, he should do battle with him to see which of them would have sole and universal rule' (Diod., 17.54.5) The unanimity indicates credibility, no matter how effective the pro-Alexandrian propaganda might have been.

⁵⁰ Diod., 17.39.1; Curt., 4.6.1-7.

⁵¹ When Arrian describes the events of Alexander's approach to Darius' camp after the crossing of the Tigris and the skirmish with the Persian vanguard he states: ἐστρατοπεδεύκει ἐν Γαυγαμήλοις (Arr. An., 3.8.7). The use of the pluperfect clearly shows that this action took place before Alexander's movements, as Atkinson (1980, 386) rightly observes. Besides this, the information of Curtius (4.9.1-5; 4.9.5-10.) backed up by Diodorus (17.39; 17.52.7.; 17.53), confirm this timeline. Darius equipped his army, gathered scythed chariots, and trained his troops in Babylon. But the training continued at Arbela as well. There is also a possibility as Charles (2008) maintains that there were also elephants in the Persian army. If all these actions took place after Alexander crossed the Tigris, the conclusion is that the Persian army could move faster than Alexander's, even though it was more numerous and had slow moving units like chariots and elephants. This sequence can be indirectly corroborated by an astronomical diary from Babylon referring to the Gaugamela battle. In line 14 the following reading has been proposed: 'That month on the 11th panic occurred in the camp before the king'. This has been connected with the reaction of Darius' army when it was known that Alexander had crossed the Tigris. Surely the camp could not have been in Babylon itself. Probably Darius was already in Arbela when Alexander forded the Tigris. This reading is accepted by all editors and commentators of the tablet: Sachs-Hunger 1988, no. 330, verso 14-6; Bernard 1990, 516; van der Spek 2003, 297-

⁵² Alexander did not know the exact place of Darius's camp. He learned where he was, according to Arrian, after the decision to take the northern road: 'while on the march (κατά την όδον) a few of the men captured from those who had broken off from Darius' army for scouting, reported that Darius was encamped on the river Tigris, determined to check Alexander should he try to cross' (Arr., An., 3.7.4.). Arrian's exact phrase Δαρεῖος ἐπὶ τοῦ Τίγρητος κάθηται gives us again an indication that he was in the vicinity of Gaugamela before Alexander reached the same river, as Bernard (1990, 521) observes. The same after the crossing of Tigris and the skirmish that followed: from prisoners' reports Alexander is informed where Darius has set camp (Arr. An., 3.8). In the same line is the information we have from Curtius: Alexander was unaware of Darius' preparations, which were done in secrecy (Curt., 4.6.1-7). Though there are stylistic reasons for this construction of events by Curtius, as Atkinson (1980, 343-4) shows, there is no reason to doubt the sequence of events. After Issus we are informed that Darius 'was not crushed in spirit in spite of the tremendous setback he had received' (Diod., 17.39.1).

⁵³ The lessons from Issus were that he had to equip his forces with more effective weapons. (Curt., 4.9.1-5; Diod., 17.39), and that he had to choose a battlefield with ample space, since this was one of the reasons he lost at Issus (Arr. An., 3.8.7; Diod., 17.53). There is another lesson that is implicit. During the Issus campaign Darius moved his forces from the chosen battlefield on the plain of Sochoi in search of Alexander's army. This happened either because he saw a chance to split Alexander's army in half, something that did not eventually happen as Murison (1972, 420-2) maintains, or because Alexander lingered in Cilicia and Darius was driven to search for Alexander due to shortage of supplies as Engels (1978, 44-53) suggests. For the complicated

regard to the options of the two commanders, we can now deal with the vexed subject of Alexander's route⁵⁴ and his choices since Thapsacus (Fig. 2).

These choices were not dictated by the objective of reaching Babylon,⁵⁵ but by the aim of forcing Darius to fight.⁵⁶ Arrian relates another factor that affected

topography and strategy of the Issus battle (not in the scope of this paper) a most recent overview is Nawotka (2010, 160-74). In any case, Darius had learned his lesson. Having settled the matter of provisions for his army (Curt., 4.9.5-10; 4.14.12.) and chosen a battlefield he had no reason to move, knowing that Alexander had to come in search of him. As Cartledge (2005, 151) rightly remarks: 'It would be wrong, though, to say that Alexander was enticed by Darius to Gaugamela. For Alexander too needed and wanted one final, decisive encounter, with no holds barred'.

⁵⁴ Rightly Bernard (1990, 522 n. 38) characterizes it 'le problème de la stratégie d'approche de Gaugamèles'. The campaign began when Alexander reached Thapsacus, the traditional crossing point of the Euphrates, in full force (Arr. An., 3.7).

55 Marsden 1964, 12: 'The prime purpose of the new Persian army was to cover Babylon and Susa'. He gives two possible routes for Alexander to reach Babylon from Thapsacus: straight down the Euphrates or across the north of Mesopotamia and down the east bank of Tigris. As he puts it 'it would be a sheer lunacy for Darius to move up northwards up either route before Alexander had committed himself irretrievably to one of them'. This estimate is based on the precedent of Cyrus' expedition. Cyrus reached Thapsacus and then headed for Babylon where Artaxerxes was waiting for him (X., An., 1.4.13). Nevertheless, Cyrus' purpose was to surprise his brother and not to leave him time to organize his defense by gathering larger numbers of troops (Xenophon An., 1.5.9). Even the choice of the route cannot be regarded as usual. As Tuplin (1999, 354) summarizes the matter: 'The Euphrates route was not the normal means of access to Babylonia from the Levant; and travelling on the left bank was doubly unusual. The choice is certainly related to a desire for speed, surprise, and avoidance of entanglement with imperial forces along the normal northern route.' Cyrus' route at this part was difficult and certainly out of the ordinary, as at least Xenophon describes it (An., 1.5.4-8). Therefore, since Alexander's strategy was totally different, as he gave Darius ample time to prepare, the precedent could not have been an option for him. Furthermore, as has been convincingly argued recently (McGroarty 2006), Alexander's knowledge about Cyrus' expedition is more in the mind of modern scholarship and less in the indications from our sources. In this respect, Babylon as an objective can be questioned, at the least.

⁵⁶ Arrian presents Alexander delivering a speech to his soldiers before the siege of Tyre (An., 2.17.1-4). Among other things he states that they could not leave behind the untrustworthy Tyrians and move on to pursue Darius. He was afraid that the Persians would seize the coastal places, when they had gone in full force towards Babylon and Darius. In that light, the objective is Babylon only because Darius is there. Alexander, when at Thapsacus, is heading to Babylon (3.7.3.), but he modifies his route and heads for Tigris the moment he learns that Darius is already there (3.7.4-5). We hear again about Babylon after the battle. Darius chooses his escape route through Media because he supposes that 'Babylon and Susa seemed the prizes of war' (3.16.2). The implication that the primary objective of Alexander was the battle is more than suggestive. The same attitude in Cutrius: Alexander crossed the Euphrates and began vigorously to follow the enemy (4.9.11-25). No mention of Babylon. And if we accept the timeline of Curtius, backed up by that in Diodorus, then Darius was already out of Babylon by the time Alexander was crossing the Tigris. The city is again mentioned only after the end of the battle, in the context of Darius' escape. All the cities of the realm, Babylon among them, should for the moment be abandoned. The victorious Macedonian army would be lured by the prospect of easy booty, and the Great King would have the opportunity to raise another army as he headed into Media. (5.1.1-9). A totally different strategic logic developed after the defeat in Gaugamela: the capture of Babylon made sense only in the absence of a standing Persian army. As Curtius makes Darius say: 'Everything fell to those who were armed' (5.1.8). Suggestive about Alexander's agenda is an incident recorded by Plutarch (Alex. 34.1): when at Arbela

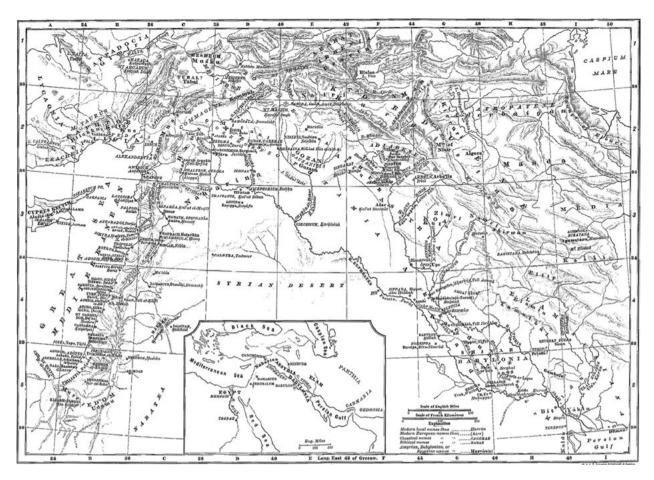


FIGURE 2. GENERAL MAP OF ASIA: FOR THE MAIN PLACE NAMES DISCUSSED CF SQUARES D2 TO G2 (AFTER CHEYNE & BLACK, 1899: 252, s.v. ASSYRIA).

Alexander's decisions: the need to secure provisions for his army.⁵⁷ This is why he turned north. According to Engels,⁵⁸ Alexander reached Thapsacus by the first week of August. Since the harvest of grain in the whole Euphrates valley takes place in June, it would have been stored in the granaries. The route down the Euphrates has many walled cities that Alexander would have to siege in order to obtain the necessary provisions, as Darius could make arrangements for the cities along the south and middle valley of Euphrates to resist. Besides this, the cultivation in the aforementioned areas is based on

and before marching to Babylon Alexander was proclaimed King of Asia. Probably this marked the end of the Persian Empire after Darius' defeat, which was the objective. For the historicity and implications of the incident: Nawotka 2012.

irrigation, so the areas not irrigated remain desert. That means that fodder for the animals cannot be obtained. In the north, there were only open villages and towns and it would have been easier for Alexander's army not only to obtain the harvested grain more easily, but also to secure fodder for the animals from the non-cultivated but still grassy areas.

Nevertheless, a possible northern direction from Thapsacus on does not necessarily mean that Alexander could dictate to Darius the choice of the battlefield. Arrian clearly states that Alexander, whatever his course was, modified it when he learned that Darius was waiting for him by the riverbed of Tigris. The majority of our sources agree that when he learned where Darius was, he hurried to meet him.⁵⁹

⁵⁷ Arr., An., 3.7.

⁵⁸ Engels 1978, 67-8. To agree with the insightful comment by Nawotka (2010, ix), not much real progress has been made in military history regarding Alexander 'except for the critical assessment of the study of Macedonian army logistics pioneered by Engels...'.

⁵⁹ Arr., An., 3.7.5.1: 'Alexander hurried off to the Tigris'. Curt., 4.9.14: After crossing the Euphrates' (Alexander) began vigorously to follow the enemy'. Diod. 17.55.3 maintains that Alexander surprised Mazaeus

So the two points, starting and ending, of whatever course Alexander took, are Thapsacus and an unnamed ford on the Tigris. From Strabo we learn that the distance covered was 2,400 stadia (about 444 kilometres).60 Since the location of Thapsacus resists certain identification⁶¹ and there are many options regarding the fording points of the Tigris, 62 to base oneself on that specific distance is not the least helpful, and by result, any reconstruction of Alexander's route remains hypothetical. A reconstruction of it, following considerations of logistics, was proposed by Engels: Carchemish, Harran, Resaina, Thilapsum, Abu Wanjam. 63 It is based however, on the presupposition that Alexander started from Carchemish, something that is not certain. About the ending point of Alexander's march again no definite conclusion can be reached, at least one independent of the assumption that Gaugamela is to be connected with Tell Gomel.

The most northern possibility, Kirze, the Roman Sapha ad fluvium Tigrim⁶⁴ or $\Sigma \acute{\alpha} \pi \phi \eta$ in Greek⁶⁵ is too far away, even from Tell Gomel (about 145 kilometres) to be a viable candidate.⁶⁶ Alexander marched either four days after crossing Tigris, as Arrian⁶⁷ relates, or just one as Curtius⁶⁸ and Diodorus⁶⁹ state. In any case, he could not cover such a distance with his whole army.⁷⁰ Downstream to the south, Abu Dahir and Abu Wanjam are closer to Tel Gomel. But, Abu Wanjam, where the ruins of two roman castella were situated, probably controlling the crossing, is just as close to Nineveh.⁷¹ Marsden is also in favour of Abu Wanjam,⁷² but for the wrong reasons.

by crossing the Tigris by an unguarded ford. Certainly, if this maneuver of surprise took place, speed is implied.

He presupposes that the site of the battle is in the vicinity of Tell Gomel and regards that Alexander's army was advancing from the northwest. He thus excludes the possibility of a march from Mosul, which is far enough from Tell Gomel for the time involved. Nevertheless, a southern direction from Abu Wanjam towards Nineveh cannot be eliminated.

The usual reason for preferring a northern crossing is the vague geographical indication (both in Arrian⁷³ and Curtius⁷⁴) that when Alexander began his course towards the battlefield after crossing the Tigris he had the Gordyaean Mountains on his left and the Tigris on his right. The mountains of Gordyaea are the great massif in Kurdistan, east of the Tigris, south of Van, and west of Urmia.⁷⁵ Very probably, the mention of these mountains makes it unlikely that Alexander crossed Tigris at Eski Mosul, the ford which lies even further downstream to the south, for beyond this point, as well as at Mosul itself, he could not have had these mountains to his left.⁷⁶

But there are no compelling reasons to accept this reasoning. As aptly remarked, for ancient historians 'Geography was not the parent or even the sister of Clio, but merely a handmaid, employed for exterior decoration, rather than to afford strength and sustenance'.77 Therefore, the relevant sources can be read in various ways. For example, we know from Arrian and Curtius that Alexander started his march from the Euphrates. The distance he covered, as Strabo relates, was about 444 kilometers.⁷⁸ Whatever the course, he then reached the riverbed of the Tigris as Arrian, Curtius and Diodorus all report. The time-span of Alexander's march is between the last weeks of August⁷⁹ and the eclipse of the moon that took place on the 20th or 21st of September.80 In other words, Alexander had one month or more to cover the certain distance, through various routes.81 When he started his march from Thapsacus he had the Euphrates and the Armenian mountains on his left.82 This element indirectly supports the proposition that Thapsacus is identical with Zeugma,83 as it is close enough to the modern Karaca Dag, a mountain range which is the extremity of the northern Taurus that separates Armenia from Mesopotamia⁸⁴ From there he could only march to the right, that is to the south towards Harran, Resaina and Thilapsum.85

⁶⁰ Str., 2.1.24,38, 16.1.22.

⁶¹ Marsden (1964, 82) puts it near modern Sura. Engels (1978, 64 n. 61) puts it in modern Carchemish, which lies further north up the Euphrates. Nevertheless, Gawlikowski 1996 (who reviews the previous relevant scholarship) has argued, convincingly that Thapsacus could be indentified with Seleucia-Zeugma (modern Balkis) located ever further upstream. Regarding Strabo's information, Gawlikowski (1996, 128-9) stresses the following points: (i) Strabo (16.1.23) confuses Zeugma proper which should be indentified with Thapsacus with another crossing in the south; (ii) this confusion becomes apparent, among other things, specifically with regard to the information about the distance of 2,400 stadia. The purpose of mentioning this distance by Eratosthenes, whom Strabo quotes, was to be a starting point for delimiting the region that extended further to the Caspian Gates, so it should be as north as possible. If this possibility exists, a route from Seleucia-Zeugma with a northern direction takes us very far from the mark. Besides this, since this distance can be applied in various points between the two rivers, for example from Zeugma to Kirze, or from Meskene to Mosul, it has little use for the fixing of Thapsacus on the

map. ⁶² As summarised by Atkinson (1980, 383) the possible options are: Kirze, Abu Dahir, Abu Wanjam and Mosul.

⁶³ Engels 1978: 69-70.

⁶⁴ Peutinger 11.5.

⁶⁵ Ptol. Geog., 5.17.6.

⁶⁶ Supra n.62.

⁶⁷ An. 3.7.

⁶⁸ 4.10.8-15.

⁶⁹ 17.55.

 $^{^{70}\,\}mathrm{As}$ Judeich (1931, 376) and Stein (1942, 157), among many others, correctly suggest.

⁷¹ As Stein (1942, n. 8) indicates.

⁷² Marsden (1964, 20).

 $[\]overline{^{73}}$ An. 3.7.

⁷⁴ 4.10.8-15.

⁷⁵ Syme 1995, 30.

⁷⁶ Atkinson 1980, 390; Syme 1995, 31.

⁷⁷ As rightly Syme (1995, 27) observes.

⁷⁸ Str., 2.1.24, 38, 16.1.22.

⁷⁹ Arr., *An.*, 3.7., supra n. 58.

⁸⁰ Bernard 1990, 516 n. 9.

⁸¹ For an overview of the itineraries in the wider area the standard treatment remains Dillemann 1962, 149-92.

⁸² Arr., An., 3.7.3.

⁸³ Supra n. 61.

⁸⁴ Syme 1995, 4-5, with map.

⁸⁵ Supra n. 63.

This route brings Alexander to the vicinity of the later Nisibis, the place which Trajan used many years later, (114-116 A.D.) as a base in order to cross the Tigris during his campaign against the Parthians.86 Trajan forded the Tigris κατὰ τὸ Καρδύηνον ὄρος.87 That brings him to the area of the Carduchi, whose later name is Gordyaei.88 So the mention of the Gordyaean mountains by Arrian and Curtius can be taken into account, since we have a historic parallel which is very close to Arrian's time and interests⁸⁹ and is backed up by Curtius.

Nevertheless, alternatives can be evoked. There are indications in the available, but by no means adequate. sources that Trajan had occupied a great part of the territory south of Nisibis before crossing the Tigris.⁹⁰ In fact, one of the first signs of Roman organisation in northern Mesopotamia exactly in Trajan's time is a milestone, indicating the construction of a road from Nisibis south to Singara. 91 Singara and Hatra even further in the south were the centres for controlling, among other things, the fords of the Tigris, even after Trajan,92 which means the areas of Eski Mosul, and Mosul itself. In other words, Trajan had the option of using the fords further south in order to cross the river. So there is a strong possibility that Alexander turned south from the general area of Nisibis looking for a ford to cross the Tigris surprising Mazeus, as Diodorus⁹³ implies.

In this light, the information that Curtius provides about Alexander's route can be read differently. According to the better codices⁹⁴ the relevant excerpt⁹⁵ regarding Alexander's march after crossing the Euphrates can be read: igitur quarto die praeter Arbela penetrat ad Tigrin 'Accordingly, on the fourth day in the vicinity of Arbela he crossed Tigris'. This excerpt has undergone critical emendations. The fourth day has been emended to fourteenth, and even fortieth (quardagesimo) has been proposed by Atkinson, 96 on the ground that the distance of about 500 kilometres from the Euphrates to the Tigris

86 The latest standard treatment remains Lightfoot 1990.

cannot be covered in such a short time. Yet, Atkinson himself notes when he examines Alexander's route from Egypt to Thapsacus that Curtius⁹⁷ does not mention its starting point when he states that he arrived there after having camped eleven times. So the same could apply in this case. The starting point of Alexander's march could have been at any point south of Nisibis, when he learned where Darius was, and with a forced march, within four days, he could reach any of the fords. The phrase praeter Arbela penetrat ad Tigrin has been emended by Mützell praeter Armeniam, and translated:98 he penetrated beyond Armenia to the Tigris. This emendation is based on the reference of the Armenian mountains by Arrian.⁹⁹ As Atkinson¹⁰⁰ remarks Arbela lays to the east of the Tigris and cannot be connected with its crossing.

However, we happen to have a testimony that in fact connects the crossing of the Tigris with Arbela. From the so-called Nabonidus Chronicle we learn that Cyrus I in 547/6 B.C. crossed Tigris 'below Arbela' in order to invade a hostile territory, probably the kingdom of Urartu.¹⁰¹ Of course, this testimony by itself cannot constitute proof to retain the certain reading in question, nevertheless it is at least suggestive. Because neither is Arrian's information about Armenia enough to emend Arbela to Armenia, especially if we consider what Arrian says about Darius' escape route after the battle. 102 'As for Darius, he fled straight from the battle 103 by the Armenian mountains towards Media', probably reaching the region of Lake Urmia, northeast of Erbil. 104 That reference shows the extent and vagueness of the geographical term Armenian mountains, since it could refer to any part of the extended Zagros mountain range, in this particular case from the Euphrates to Lake Urmia. Moreover, as Xenophon relates, 105 the boundary between Armenia and the Carduchoi is the river Kentrites, the modern Bohtan Su, which lies even further to the north. So if Alexander marched through Armenia, the western boundaries of which in relation to the Euphrates are extremely vague, ¹⁰⁶ he should have crossed the Tigris even further upstream than Kirze, something very unlikely, if we consider the distances, 107 even if we accept that the battlefield is at Tell Gomel. Furthermore, there are indications that Alexander's route from Abu Wanjam, or even from Abu Dahir, 108 brought him in front of Nineveh, suggesting a

⁸⁷ D.C., 68.26.1.

⁸⁸ Str., 16.1.24.

⁸⁹ Arrian also wrote the *Parthika* in 17 books. In this work, now lost, Arrian described in detail the expedition of the emperor Trajan against the Parthians, the successors of the Achaemenids, in 114-116 A.D. Trajan himself is reported to have had the sense that he followed Alexander's footsteps (D.C.68.29.1). Trajan's campaigns described in the Parthica covered more or less the same area through which Alexander also passed. For details Bosworth (1988b, 20).

90 For the inadequacies and limitations of the sources concerning

Trajan's Parthian War: Lepper (1948, 1-21). Before advancing beyond the Tigris during a second campaign against the Parthians in 115 A.D. Trajan's forces had occupied Singara (D.C.68.22.2). Furthermore, a portrait head found at Hatra and attributed to Trajan according to Lightfoot (1990, 118 n. 20) suggests a brief period of Roman occupation.

⁹¹ Lightfoot 1990, 123 n. 47; Millar 1993, 101 n. 9.

⁹² Dillemann 1962, 201-2; Pollard 2000, 274-5, 285-6.

⁹³ Diod. 17.55.

⁹⁴ Those deriving from archetype A, according to Rolfe (1946, xi-xii).

⁹⁵ Curt. 4.9.14.1-2.

⁹⁶ Atkisnon 1980, 382.

⁹⁷ Curt. 4.9.12.2-3.

⁹⁸ Rolfe 1946, 247.

⁹⁹ An. 3.7.3. ¹⁰⁰ Loc. cit.

 $^{^{101}\,\}mathrm{II}.16$ in the web-edition of Lendering 2008, with comments and bibliography.

¹⁰² An. 3.16.1.

 $^{^{103}\,\}mathrm{Not}$ from the battlefield, but from the city of Arbela, Arr. An. 3.15.4-5.; Curt. 4.16.8-9.; Str. 2.24.

¹⁰⁴ Bosworth 1980, 313.

¹⁰⁵ An. 4.3.1.

¹⁰⁶ Hewsen 1983, 140.

¹⁰⁷ Supra n. 62.

 $^{^{108}}$ The route of the Tigris has been modified in this area, as an artificial lake exists since the construction of the Saddam dam, between 1981-5, that has affected the topography between Abu Dahir and Abu Wanjam,

southern course, that brings him closer to Keremlis and Qaragosh than to Tell Gomel.

Wherever Alexander crossed, he started moving to the south through Aturia, in order to meet Darius.¹⁰⁹ An incidental reference to Sardanapalus' tomb and his funeral inscription located at Nineveh by one of Alexander's bematists could be an indication that he passed through the vicinity.¹¹⁰

On the connection between Nineveh, Gaugamela and Arbela we have a first picture from a geographical description by Strabo, in a very important passage.¹¹¹

As Strabo mentions, Nineveh lies in Aturia in surrounding plains bordering with the region around Arbela, on the far side of the river Lycus, which served as the border between the two. This region was where Darius planned to deploy his troops as Diodorus informs us.¹¹² Gaugamela

then is located between Nineveh and the region (not the city) of Arbela, 113 which starts from the left side of river Lycus. Since Nineveh was abandoned or at least had lost its importance as an administrative center, 114 Strabo justifies the confusion between Gaugamela and Arbela as the site of the battle because Arbela was a notable settlement, probably meaning that it controlled a large territory, 115 while Gaugamela was a small village located in Aturia, an area distinct from the territory that Arbela controlled. Arbela with its territory in turn, though distinct from Babylonia, is regarded as a part of it. 116

Strabo in his *Geographica*, completed a little after 23 A.D., ¹¹⁷ has used to a great extent sources that had to do with Alexander's campaign, without refraining from critising them. ¹¹⁸ However, the mention of the city Demetrias, a little further below, ¹¹⁹ shows that Strabo also used Hellenistic sources regarding the area, which reflect later administrative arrangements, ¹²⁰ and he does not always make it clear when any such later further developments in specific areas took place. ¹²¹ In other words, Strabo's information does not necessarily reflect the administrative conditions of the area during Alexander's campaign.

This becomes evident from the later work of Pliny the Elder (23-79 A.D.)¹²² *Historia Naturalis*, where one gains a different picture for the region of Arbela and its

a factor that makes the documentation of Alexander's march even more elusive. For a starting point: Roaf 1997, 265-8.

¹⁰⁹ διὰ τῆς Ἀτουρίας χώρας (Arr., An., 3.7.7.2).

¹¹⁰ FGrH 122 F2, Amyntas. It is mentioned in Ath., 12.39.15-27 (ed. Kaibel). Though it is not stated explicitly that Amyntas was a bematist (for their function and importance see Engels 1978, 158); the title of the mentioned work, Stathmoi (Stations) corresponds with a similar work attributed to Alexander's bematist Baeton (Ath. 10.59.2-3). For the little we know about Amyntas see Heckel (2006, 26 s.v. Amyntas[10]). If Amyntas was present in Alexander's camp, something that can not be ruled out, the only possible context for the mention of Nineveh is before the battle when Alexander passed it heading for the battlefield, as Olmstead (1948, 514-5) rightly noticed. The context in Athenaeus has to do with the folk tales about Sardanapalos, popular in Greek sources, for which Meyer (1966, 203 ff.). Modern scholarship has focused on the mentions of Assyrian monuments attributed to Sardanapalos that Alexander came across in Cilicia (for example Arr., An. 2.5; Ath. 12.39.1-15, 28-39; Bosworth 1980, 193-4). Nevertheless, Sardanapalos, whichever Assyrian king this was, is primarily connected with his capital Nineveh and therefore the mention deserves notice. For Sardanapalos' myth and its connection with Alexander: Gilley (2009, 152-3).

^{111 &#}x27;Now the city of Ninos was wiped out immediately after the overthrow of the Syrians. It was much greater than Babylon, and was situated in the plain of Aturia. Aturia borders on the region of Arbela, with the Lycus River lying between them. Now Arbela, which lies opposite to Babylonia, belongs to that country; and in the country on the far side of the Lycus River lay the plains of Aturia, which surround Ninos. In Aturia is a village Gaugamela, where Dareios was conquered and lost his empire. Now this is a famous place, as is also its name, which, being interpreted means 'Camel's House.' Dareios, the son of Hystaspes, so named it, having given it as an estate for the maintenance of the camel which helped most on the toilsome journey through the deserts of Skythia with the burdens containing sustenance and support for the king. However, the Macedonians, seeing that this was a cheap village, but that Arbela was a notable settlement (founded, as it is said, by Arbelos, the son of Athmonon), announced that the battle and victory took place near Arbela and so transmitted their account to the historians. After Arbela and Mt. Nikatorion (a name applied to it by Alexander after his victory in the neighbourhood of Arbela), one comes to the Kapros River, which lies at the same distance from Arbela as the Lycus. The country is called Artakene. Near Arbela lies the city Demetrias: and then one comes to the fountain of nanhtha, and to the fires, and to the temple of Anea, and to Sadrakai, and to the royal palace of Dareios the son of Hystaspes, and to Kyparisson, and to the crossing of the Kapros River, where, at last, one is close to Seleukeia and Babylon.' Str., 16.1.3-4. The translation used here is from Jones

¹¹² 17.53.

¹¹³ τοῖς περὶ Ἄρβηλα τόποις Str. 16.1.3.4.

¹¹⁴ Xenophon (An. 3.4.10) mentions a place Mespila, which has been identified with Nineveh; according to Tuplin (2003:370-1) villages probably existed there, which were inhabited by those who cultivated the area.

115 Strabo (16.1.3.16-7) regards Arbela as κατοικίαν ἀξιόλογον and in

³ Strabo (16.1.3.16-7) regards Arbela as κατοικίαν άξιόλογον and in 16.1.4., informs us that it lies in equidistant between the Lycus (modern Great Zab) and the Kapros (modern Little Zab). In 16.1.4.4 the land between the two rivers is Artakene (Άρτακηνή), which is textually suspicious and has been corrected either to Arbelene or to Adiabene. Another possibility is the correction to *Αρπαχηνή in correspondence to Άρραπαχῖτις mentioned by Ptolemy Geog. 6.1.2, proposed by Herzfeld (1968, 228-30). In this case the territory of Arbela extended south of Little Zab to the vicinity of Arrapha (modern Kirkuk). For details: Biffi 2002, 136; Marciak 2011, 182.

¹¹⁶The certain part of the text is textually controversial. The latest interpretation, that of Marciak (2011, 182 n. 16), accepts that Strabo regards Arbela as being, administratively, part of Babylonia.

¹¹⁷ Niese 1878, 35 n. 1. The latest historical event mentioned is the death of Juba II, king of Mauritania (Str. 17.3.7), which occurred on 23-34 A.D. (Roller 2003, 244).

¹¹⁸ For a list of sources regarding Alexander Strabo uses Pearson (1960, 274). For Strabo's criticism on Alexander's historians, op.cit. (passim). One representative example about the floods of the Euphrates: Str. 16.1.13

^{16.1.13. &}lt;sup>119</sup> 16.1.4.4-5: 'Near Arbela lies the city Demetrias'. From the name, it can be assumed that this city was founded by a Seleucid king, bearing that name, probably in the 2nd cent. B.C. For details Marciak 2011, 9. ¹²⁰ For the Hellenistic sources that Strabo used about the specific area: Clarke 2001, 377. For example, though Strabo tells us explicitly that Arbela and its region belong administratively to Babylonia, we know that in 320 B.C., shortly after Alexander's death, Arbeletis was part of Mesopotamia, distinct from Babylonia (Diod., 18.39.6.3-4).

¹²¹ As characteristically Clarke 2001, 329 notices: 'Although Strabo does give glimpses of periods at which the world as a whole was being transformed, the synchronic approach is clearly subordinate to other preoccupations.'

preoccupations.' 122 Murphy 2004, 2-6.

connection with Aturia. Pliny informs us that Assyria (another name for Aturia¹²³) is now called Adiabene. 124 In another part of the same work we read in connection with Gaugamela: '...Adiabene, where the land of the Assyrians begins; the part of Adiabene nearest to Syria is Arbelitis, where Alexander conquered Darius. The Macedonians have given to the whole of Adiabene the name of Mygdonia, from its likeness to Mygdonia in Macedon. Its towns are Alexandria and Antiochia, the native name for which is Nisibis; it is 750 miles from Artaxata. There was also once the town of Ninos, which was on the Tigris facing west, and was formerly very famous'.125 According to Pliny, then, the battle took place in the region of Arbela called Arbelitis, 126 which is a part of Adiabene, former Assyria, as is Ninos, ancient Nineveh.

The Gaugamela battle is connected even more closely with Nineveh, if we accept a better reading¹²⁷ of an excerpt in Tacitus' Annales, composed around 120 A.D.¹²⁸ Referring to events of 49 A.D., the campaign of Meherdates, a pretender to the Arsacid throne who started from Roman Syria, 129 Tacitus states: 'Crossing the river Tigris, they (Meherdates and his troops) made their way through the Adiabeni whose king, Izates, had publicly taken up an alliance with Meherdates, but secretly favoured Gotarzes and had greater loyalty to him. En route, the city of Ninos, the ancient Assyrian capital, was captured, as was a stronghold that had become famous as the site of the final battle between Darius and Alexander, which signalled the collapse of the power of Persia'. 130

The fact that Adiabene, former Assyria, comprises Nineveh, Gaugamela and Arbela is also mentioned by

123 The terms Assyria Aturia and Syria do not have a uniform use in the relevant sources. As a consequence, the same applies for modern scholarship. They can be used to designate a specific territory of the Persian Empire or in general the territory between the Euphrates and the Tigris. Whatever the use, it involves both Arbela and Nineveh. For the various uses: Herzfeld (1968, 306-8); Frye 1997; Jacobs (1994, 153-61). ¹²⁴ Plin. *Nat.*, 15.13.66: *Adiabene Assyria ante dicta*. Though in Str.

16.1.34., quoted above, Adiabene is not mentioned, there are references of the name in 16.1.19. The connection has been considered selfevident, for example: Herzfeld 1968, 229; Marciak 2011, 182.

125 Plin. Nat., 6.16.42: ... Adiabene, Assyriorum initium, cuius pars est Arbilitis, ubi Darium Alexander debellavit, proxime Syriae. totam eam Macedones Mygdoniam cognominaverunt a similitudine. oppida Alexandria, item Antiochia quam Nesebin vocant; abest ab Artaxatis DCCL fuit et Ninos, inposita Tigri, ad solis occasum spectans, *quondam clarissima*. The translation used here is by Rachkam 1942. ¹²⁶ The term Arbelitis can be verified by Greek sources: Diod.

18.39.6.3-4; Plut. Pomp., 36.2.6; Arr. Fr., 1.25.2.; Ptol. Geog., 6.1.2.12.;

Str. Byz., 111.7 (ed. Meineke). ¹²⁷ Tac. *Ann.*, 12.: urbs Ninos, vetustissima sedes Assyriae, castellum insigne fama, quod postremo inter Darium atque Alexandrum proelio Persarum illic opes conciderant. Though this reading can be found in the better manuscripts, it has been restored to... sedes Assyriae <et Arbela> castellum... or sedes Assyriae <et> castellum... The matter is discussed by Hutcinson 1934, in favour of the original reading, accepted by Reade (1998, 66).

Syme 1958, 473.

Cassius Dio, who wrote about 229 A.D., 131 in connection with Trajan's campaign in the area. We read in the relevant passage: '... And the Romans crossed over and gained possession of the whole of Adiabene. This is a district of Assyria in the vicinity of Ninos; and Arbela and Gaugamela, near which places Alexander conquered Darius, are also in this same country'. 132 The same impression is gained from Ammianus Marcellinus in his Res Gestae, composed between 390 and 400 AD., 133 in the context of Julian's expedition against the Sassanians in 363 A.D.¹³⁴ 'In this Adiabena is the city of Ninus, which once possessed the rule over Persia, perpetuating the name of Ninus, once a most powerful king and the husband of Semiramis; also Ecbatana, Arbela, and Gaugamela, where Alexander, after various other battles, overthrew Darius in a hot contest'. 135

This topographical picture, has been attributed¹³⁶ to the geopolitical developments that took place in the area during the Hellenistic and Parthian periods, that is after Alexander, when the relatively small area of Arbela, defined by the two modern Zabs (ancient Lycus and Kaprus rivers), belonging administratively to the Achaemenid satrapy of Babylonia, as Strabo reports, expanded beyond the Lycus and Tigris rivers. This is when it took the name Adiabene and was connected with the adjacent Assyria because it controlled Nineveh, the place remembered as the primeval capital of the old Assyrian Empire. The interest of ancient authors in Alexander's presence in the area has saved a great deal of information about Adiabene. This land was 'emancipated' from Babylonia, and underwent an expansion from the second half of the 1st century B.C on, which culminated in the first three decades of the 1st century A.D. with the control not only of Nineveh beyond the Lycus, but of

¹²⁹ For details: Boyce 2001.

¹³⁰ Translation of Yardley (2008, 241), which accepts the reading suggested supra n. 127.

¹³¹ Swan 2004, 1-13.

 $^{^{132}}$ D.C., 68.26.4.: Καὶ ἐπεραιώθησαν οἱ Ῥωμαῖοι καὶ τὴν Αδιαβηνήν απασαν παρέστηντο (ἔστι δὲ τῆς Ἀσσυρίας τῆς περὶ Νίνον μέρος αὕτη, τὰ τε Ἄρβηλα καὶ τὰ Γαυγάμηλα, παρ 'οἶς ὁ Ἀλέξανδρος τὸν Δαρεῖον ἐνίκησε; The translation used here is that of Cary 1925. At the end of the passage we learn: 'Adiabene, accordingly, has also been called Atyria in the language of the barbarians, the double S being changed to T.

¹³³ Kelly 2008, 104-58.

¹³⁴ For a starting point Kettenhofen 2009.

¹³⁵ Amm., 23.6.22: In hac Adiabena Ninus est civitas, quae olim Persidis regna possederat, nomen Nini potentissimi quondam regis Samiramidis mariti declarans, et Ecbatana et Arbela et Gaugamela, ubi Dareum Alexander post discrimina varia proeliorum incitato Marte prostravit. The translation used here is that of Rolfe 1940. Ammianus is also the third testimony which informs us that the ancient name of Adiabene was Assyria. In 23.6.20 we read: Intra hunc circuitum Adiabena est, Assyria priscis temporibus vocitata. As correctly Marciak (2011, 196 n. 107) notices (with references), though the mention of Ecbatana could be considered a lapsus, alternatively it could be connected with Alexander's tradition, since they were captured by him one by the other. Another indication is Darius' escape route after the battle, mentioned by Str. 2.24: Gaugamela, Lycus, Arbela, Ecbatana.

The latest overview of Adiabene and its formation during the Hellenistic and Parthian periods is Marciak 2011, who has collected all the relevant testimonies. His conclusions: Marciak 2011, 199-202.

the whole area northwest of the upper Tigris and even beyond, up to the area of Nisibis.¹³⁷

Nevertheless, however vague the administrative picture of this area during the Achaemenid period¹³⁸ may be, there are indications that Arbela was the centre of a territory that extended beyond the river Lycus. As already mentioned, the Tigris crossing was connected with Arbela already from Cyrus' I times. 139 From the correspondence of Arshama, the satrap of Egypt during Darius' II reign, 140 we have certain indications about the administrative status of Arbela and its territory. One of the letters, probably issued around 406 B.C., is an authorisation by Arshama for a travelling party of fourteen people (from his stuff) to receive rations of food during their travel from Babylon to Egypt. This authorisation is addressed to the officials in charge of administrative divisions called provinces.¹⁴¹ One of them is Upastabara whose jurisdiction included Arbela, Halzu and Matalubas. 142 Thus we can detect an administrative division within this triangle. One safe point is Arbela. Halzu has been identified with the Assyrian province of Halahhu, around modern Khorsabad, lies northeast of Nineveh.143 If this identification is accepted, it

automatically brings the territory of Arbela beyond the Great Zab. Matalubas in turn has been identified with modern Tel Huweish, which lies on the west bank of the Tigris, just north of Assur.¹⁴⁴

A few years later, in 401 B.C. the Ten Thousand, with Xenophon among them, as he relates in the *Anabasis*, traversed through more or less the same area.¹⁴⁵ We get a different picture, not necessarily accurate, about the administrative dispositions of the wider area, since he places the route of the Greek army as 'through Media' for a considerable part, from the vicinity of modern Bagdad until they enter the land of the Carduchi, far up north in the vicinity of modern Kirze.¹⁴⁶ Though Arbela or Arbeletis are not mentioned, the Great Zab, an integral part of Arbeletis, is mentioned, and does not constitute some form of boundary.¹⁴⁷ The Ten Thousand, led by the Persians, and more specifically by Tissaphernes,¹⁴⁸

¹³⁷ In the context of the 3rd Mithridatic War (74-63 BC) Arbelitis is still confined between the two Zabs or perhaps with a small area around Arrapha attached (Plut., *Pomp.*, 36, supra n. 115). But according to Josephus in about 23 to 41 AD the kings of Adiabene control Gordyene (Ant., 20.24) and Nisibis (Ant., 20.68).

¹³⁸ Herzfeld (1968, 304-8), where the satrapies of Babylonia and

¹³⁸ Herzfeld (1968, 304-8), where the satrapies of Babylonia and Athura (Assyria) are discussed together during Darius' I reign, an indication of their close connection. Jacobs (1994, 151-2), who accepts that Strabo's information could apply to the Achaemenid period and that Arbeletis belongs to Babylonia. Briant (2002, 719), who stresses the fact of how little detail we have about the subdistricts of Babylonia during the time of the Achaemenids.

¹³⁹ Supra n. 101.

¹⁴⁰ A dossier of letters in imperial Aramaic, attributed with relevant certainty to the satrap of Egypt Arshama, active 465-404 B.C, the period when Darius II was king, now kept at the Bodleian Library in Oxford. The latest detailed publication: Allen *et al.* 2013, in four volumes.

¹⁴¹ For the Aramaic text Allen *et al.* 2013, 2:8, for the English translation op.cit.: 23. For chronology op.cit. 1:27.

¹⁴² The administrative terminology could apply both to the public sphere, meaning that the travelling party received the rations from state warehouses, and to the private sphere, in the sense that it could reflect the way with which a wealthy Persian satrap managed his private estate having at his disposal land property throughout the empire. Modern scholarship regards the procedure reflected as public, e.g. Kuhrt (2007, 741) and Briant (2012, 193-5). Though this view has weaknesses, rightly stressed recently by Tuplin (Allen et al. 2013, 3:61 ff.), it remains dominant. As Tuplin himself admits (op.cit. 59) 'It may in the end be correct.' The authorization mentions eight toponyms. From them three are under the supervision of one official, Upastabara. The remaining four are mentioned in combination with one official, and one, Damascus in combination with two. The case of Upastabara clearly shows, as Tuplin correctly notes, that the purpose of this is to define the regions from which the travelling party should pass in order to reach its destination. If this view is adopted, the travelling party did not actually pass, for example, from Arbela, Halzu and Matalubas, but through the region these places denote and received their rations from

the state warehouses existing in this region.

143 The Persian road system and its administration owes much to the previous Assyrian one, as summarised by Graff (1994, 171-2). In the case of Arshama's authorisation, the provinces mentioned in northern Babylonia most probably originate closely from the old Assyrian ones,

as pointed out by Kuhrt (1995, 244) and Allen *et al.* (2013, 3:67). For the detailed geography of the document: Allen *et al.* (2013, 3:56-8). In the case of Halzu, though the name is not clear on the document, it has been restored as Halahhu, an Assyrian province whose main city is located in modern Khorsabad and has given its name to one of the gates of Nineveh.

¹⁴⁴ The most probable identification, accepted by the most of editors and commentators is with Assyrian Ubase, modern Tel Huweish. Another possibility suggested by Fales, quoted by Kuhrt (2007, 741), is a place in the middle Euphrates called Talbisu, near modern Anat. Nevertheless, as correctly stressed by Tuplin in Allen *et al.* (2013, 3:57), it is highly improbable that one official was responsible for such a vast region. Another possibility proposed by Tuplin op.cit. is the Assyrian capital of Talmusa, which lies about 50 kilometers northwest of Nineveh. Whatever the truth, the fact remains: Arbela can be associated with a territory on the right bank of the Great Zab.

¹⁴⁵ For a historical overview: Briant 2002, 612-34. For the specific topographical and historical problems regarding the march through the area: Tuplin 2003. For a recent overview of the whole march: Lee 2007, 18-41

¹⁴⁶ In Xenophon An. 2.4.27, after crossing the Physcus river near Opis the army is stated as marching through Media. Opis has been identified with modern Tulul al-Mujaili, a mound 32 kilometers southeast of modern Bagdad according to Talbert (2000, map 94 F4). From there, only in 3.5.17-18 is it indicated that the Greeks are about to enter in the land of the Carduchi. Xenophon fails to report, either because he did know or because he did not care, the Assyrian background of the area. According to Tuplin (2003, 385), who reviews the available evidence, no definite conclusion can be reached about the matter. Xenophon could simply be wrong, or have in mind a historical tradition about Media and its expansion over Assyria not preserved outside the Anabasis. Nevertheless, as collected by Tuplin (2003, 364), there are references (indicative but not decisive) in other Greek sources that point to the Medes as overlords of northern Mesopotamia and the northern Tigris valley from the fall of Nineveh in 612 BC until the coming of Cyrus.

¹⁴⁷ However vague the geographical descriptions in the *Anabasis*, as is the case with respect to this area, since the landscape description is not the primary objective, some steady geographical points constitute a pattern. In this case, in many occasions the rivers are used as markers for the transition from one territory to another. For example in 4.3.1 the Kentrites separates Armenia and the country of the Carduchi. Some other apparent river frontiers: 1.2.6; 1.4.4; 1.4.19; 4.7.18; 4.8.1.

¹⁴⁸ Until the Ten Thousand cross the Zapatas, after the death of their generals, they are led and supplied by the Persians who accompany them. This dependence is obvious from what Clearchus and Tissaphernes discuss before the capture of the generals (2.5.3-23), when they both state that the Greeks would be in a terrible danger if the Persians decided to treat them as enemies, since without their help the crossing of rivers and provisioning would be difficult, as well as by the distress (for the same reasons) of the Greek army when the news of the fate of their leaders reached their camp (3.1-3).

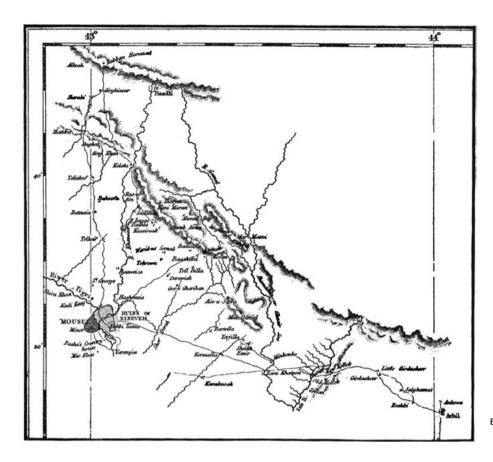


FIGURE 3. THE TOPOGRAPHY BETWEEN ARBELA AND NINEVEH (AFTER SHUSKO 1936:51).

camp near an easy and frequented crossing on the left side of the river, close to the confluence with Tigris, as the stations of Larissa (Nimrod) and Mespila (Nineveh) beyond the river and the northern direction towards the Carduchi indicate (Fig. 3).

More specifically, the Ten Thousand reach river Zapatas where they camp for three days. ¹⁴⁹ For both geographical ¹⁵⁰ and linguistic ¹⁵¹ reasons this river has been identified with the Lycus whose modern name is the Great Zab. ¹⁵² The description of the march from Babylon is too confused to help us determine where the Ten Thousand crossed. ¹⁵³ But the indications from the march beyond the river can give us some hints. After the massacre of their generals ¹⁵⁴ the Greeks prepare themselves for a march through hostile territory. They cross the Zapatas and under the pursuit and harassment of Persian light troops they cover only 25 stadia, about

river were part of a unified and well-populated territory. These villages are mentioned by Xenophon as the first station when the march was planned.¹⁵⁶ After the army crosses the river, despite the pursuit, which started only after the crossing, marches 25 stadia and manages to arrive at *those specific* villages.¹⁵⁷ The next day, again under pursuit, after a successful battle they reach the Tigris and a place called Larissa, an ancient city formerly inhabited by the Medes. From there they march one day covering 6 parasangs (about thirty kilometers) reaching another large ancient town, also formerly inhabited by the Medes, called Mespila.¹⁵⁸ The identification with the Assyrian cities Nimrod and Nineveh is evident from the description of the ruins and is accepted unanimously in

4.5 kilometers, reaching a cluster of villages. 155 Here we

have another strong indication that the two sides of the

¹⁴⁹ Xen., An. 2.5.1.

¹⁵⁰ Already noted by Rennel 1816, 124-5.

¹⁵¹ The Greek word Zαπάτης is very close to its semitic original as the modern name Zab indicates, according to Kessler (1999, 575).

¹⁵² Weissbach 1927, s.v. 'Lycus' 12, 2391-2; Fiey 1965, 99, 181; Bosworth 2002, 366.

¹⁵³ For the problems: Tuplin 1991, 51-4.

¹⁵⁴ Xen., An., 2.5.30-33; 2.6.1.

¹⁵⁵ Xen., An., 3.3.6-11.

¹⁵⁶ Xen., An., 3.2.34: Then Xenophon arose once more and said: 'Give ear, gentlemen, to the further proposals I have to present. It is clear that we must make our way to a place where can get provisions; and I hear that there are fine villages at a distance of not more than twenty stadia.' The translation used here is that of Brownson 1980.

¹⁵⁷ Xen., *An.*, 3.3.11., ἀφίκοντο εἰς τὰς κώμας.

 $^{^{158}}$ Xen., 2 An., 2 3.4.6-12. 1 parasang equals 30 stadia (Hdt. 2.6;5.53;6.42). That gives a number of 5,550 kilometers. For a full discussion: Tuplin 1997, 404-9.

all relevant scholarship. 159 If we take into account that Nimrod as a station precedes that of Nineveh which lies further north up the Tigris, then the only logical assumption is that the Ten Thousand used the crossings at modern Wardak, very close to the confluence of the Great Zab with the Hazir, or even further to the south at modern Al Kuwaur.160

From there they march a distance of 4 parasangs (about twenty kilometres) when they are confronted by a much larger force assembled by Tissaphernes on their rear and flanks. 161 After a series of skirmishes they turn north, until they reach modern Zakho. There, still under pursuit, they enter an area with hills and after descending to the plain near Tigris, but unable to cross the river, probably in the vicinity of modern Kirze, they decide to turn once more north through the land of the Carduchi. 162 The part of their march from their first encounter with Tissaphernes' forces until they enter Carduchia does not need to concern us here, since it is not likely that it corresponds with Alexander's march, as explained above.

So far, from sources independent from Strabo and Arrian, and very close to the era of Alexander's campaign, we can establish, however vaguely, two crucial points: (a) that Arbela and its territory extended beyond the Great Zab: Arshama's authorisation, as interpreted above, in combination with the military operations that Xenophon describes yield a picture in which the southern part of the plain beyond the Great Zab, namely between Nineveh and the south part of Zab, is suitable for battle;163 and (b) that Nineveh is mentioned in connection with the left side of river Zab, an integral part of Arbeletis, as part of a unified administrative landscape, some considerable time before Alexander.

The question of the administrative landscape brings us to the matter of the Persian Royal Road, whose northern direction is considered as another point in favour of the Northern Hypothesis. The reconstruction of the Royal road has been focused on Herodotus' description, 164 and the relevant scholarship, during the time that the Northern Hypothesis was formulated, had an unbalanced picture of its geopolitical perspective. Since then, the study of the Persepolis Fortification Archive, as well as several random discoveries of Aramaic documents in recent times, among them Arshama's authorisation, has broadened this perspective. 165 Current scholarship has come to accept not the existence of a single Royal Road around which the Persian Empire is organised, but rather a wide network of roads connecting the empire in various ways from the Mediterranean to the Indus. 166

Regarding the area in question, the geography of Arshama's authorisation provides an alternative itinerary, since the three points that define Upastabara's province denote the south part of the plain between the Great Zab and the Tigris. This impression can be enhanced by the measurement of distances in Xenophon's account when crossing the area. In the first stage of the march beyond the Great Zab the first station is measured in Greek Stadia, 167 but from Larissa on, Xenophon again uses stations and parasangs, distance measures of Persian origin, reverting to his standard scheme of narration.¹⁶⁸ Though the matter is far from settled in current scholarship, 169 it is an indirect hint suggesting the connection of the route with the imperial road system, especially if we take into account the further historical existence of an old Arab route parallel to the Tigris crossing the southern part of the two Zabs and leading to Nineveh.¹⁷⁰

If, then, there are alternatives for the northern direction of both Alexander's and Darius' route, the only piece of evidence that connects Tel Gomel with Gaugamela is their alleged etymological connection. Nevertheless, even this poses many problems. First of all the word Gaugamela has not come down to us in sources other than in Greek and later Latin. It is what the Greeks heard, and there is no way to verify if what they heard corresponds to any of the Semitic languages spoken in the area, since no

¹⁵⁹ Supra n. 114.

¹⁶⁰ Supra n. 28.

¹⁶¹ Xen., An., 3.4.13.

¹⁶² Xen., An., 3.4.14f.f. For details about the topography after Nineveh: Tuplin 2003, 360-2. For technical aspects of marching and fighting: Lee 2007, 155-63.

¹⁶³ It is worth remarking that after crossing the Zab and for a considerable distance after Nineveh the Ten Thousand face threats on their rear. The fixed points of Nimrud and Nineveh suggest a southern course during which the Persian light troops had plenty of room to skirmish and retreat. In front of Nineveh the Greeks come across a hostile army 'exceedingly large' (Xen., An. 3.4.14) stationed in their rear and flank and not in front of them, indicating a southern deployment, as the Ten Thousand move to the north. Even if we take into account that Alexander's army was significantly larger, numbering about 50,950, according to Marsden (1964, 38), the plains to the south of Nineveh can accommodate the maneuvers of such figures. As Rennel (1816, 153) characteristically remarks about the plain through which the Greeks marched: 'But from Mosul eastward and south-eastward (the emphasis is mine), it expands to a great extent; and terminates in the great plain of Arbela and Gaugamela, the scene of Alexander's warfare with Darius in Assyria.'

¹⁶⁴ Hdt. 5.52-4. For overviews of the Royal Road: Graff 1994; Briant

¹⁶⁵ For the complexity of the Persian Road System and a collection of the relevant evidence: Kuhrt 2007, 730-62. For new Aramaic documents from Bactria and the implications regarding long distance travel in the Persian Empire Allen-Ma-Tuplin-Taylor 2013, 3:54-6.

¹⁶⁶ The point is stressed most recently in Briant 2012, 186.

¹⁶⁷ Supra n. 157.

¹⁶⁸ Supra n. 158. For the formula of stathmoi and parasangs most recently: Rood 2010. For placing Xenophon's use of this formula in the general context of ancient narrative: Purves 2010, 159-95.

¹⁶⁹ Despite the fact that there are stylistic reasons for the use of the formula, the fact that Xenophon used a source outside the Anabasis in order to give the numbers of parasangs cannot be discounted. The fullest and most important discussion of the matter remains Tuplin (1997, 404 ff.), who proposes, among other possibilities, that Xenophon utilised the figures of milestones placed on Achaemenid roads. As attractive as this proposal may be, without the solid proof that only archaeology can provide (as Tuplin himself admits op.cit. 417), it remains a hypothesis. From a later period, however, we have bilingual (Aramaic and Greek) milestones found in Pasargade, dated around 280 BC For a recent discussion with references: Merkelbach-Stauber 2005, 62.

¹⁷⁰ Fiey 1965, 1: 100, with the map in: 42.

written form of this word, at least contemporary with the Greek one has survived. Any restoration of the Semitic prototype does not derive from the sound of the word, but from the meaning, that again only Greek sources provide, namely Strabo and Plutarch, who both agree that it means 'House of Camel'. 171 Strabo is the only one who connects Gaugamela and the camel story with Darius I. Plutarch, while retaining the meaning, states that they say it means House of Camel in the local dialect because one of the old kings, not Darius I, allotted some villages for its care. 172 Again, we have no indication of what this local dialect is.¹⁷³ The accuracy of the story, especially in Strabo, cannot be verified by any other source, 174 and should be regarded within the framework of mythical geography, which Strabo used for his own literary and historical agenda. 175 We must bear in mind that in the same context, we learn that Arbela was a Greek foundation, founded by the mythical Arbelus, son of Athmonon.¹⁷⁶ This way the area is integrated into a Greek mythical context, something that has to do with later developments in the history and historiography of the whole area, 177 not directly connected with Alexander and the battle itself. So the historical value of 'linguistic' information is at least dubious.

As a matter of fact, any attempt to reconstruct a Semitic toponymy of Gaugamela, and Streck's is only one of many, presupposes that Strabo is wrong.¹⁷⁸ Modern

171 Str. 16.1.3., Plut. Alex., 31.6-7. In Strabo, Γαυγάμηλα is suspiciously close to $A\rho\beta\eta\lambda\alpha$, the hellenized form of the well attested Arbailu in Assyrian inscriptions (Luckenbill 1926-7 s.v. Arbela) or Arbaira in Persian inscriptions (Kent 1950:30) or Arbel in Aramaic documents (Allen et al. 2013, 2:41).

172 Σημαίνειν φασι οἶκον καμήλου τὴν διάλεκτον, ἐπεὶ τῶν πάλαι τις

βασιλέων...(Plut. Alex., 31.7.1-2).

173 The multilingualism of the Persian Empire is self-evident and fairly

Gomel has been connected with Gogemal mentioned in Syriac sources¹⁷⁹ and Qantarat al Gomel, meaning vaulted bridge at Gomel in Arabic sources.¹⁸⁰ These variations have even been given an Assyrian predecessor, the placename Gagammara attested in Assyrian inscriptions, related with the irrigation canals constructed by King Sennacherib (705-681 BC) in the Navkur plain. 181 Nevertheless, whatever the connection of these variations with modern Gomel is, there is no way for us to establish what exactly the Greeks heard, and in what way they misinterpreted the meaning of the place-name, if in fact they did such a thing. For example according to the coordinates given in Ptolemy's Geography there is a village Gaugamela, located in the south part of the plain, since the distance recorded from Arbela puts it on the south flow of the modern Hazir River. 182 Even though the reading of the coordinates is far from certain, and little reliance can be put to Ptolemy's mapping system, 183

(Nat., 6.30.118) by Hermolaus Barbarus, Payne-Smith associates this reading, Gave Gaumela, with the Hebrew word gabbay, which means tax-collector (Payne-Smith 1879, s.v.: 636). Thus Gave Gaumela is understood as camel's tribute. This explanation is considered as the most likely by Annotationes in Stephanum (1825, 533): Verum optime omnium. Olmstead (1948, 515 n. 4) proposes the combination of the Persian Gau which means grazing place with the Aramaic Gamela. Nevertheless, in Old Persian the word for camel is ustra (Kent 1950, 178). This is a representative example of the controversial results this line of investigation produces, if it is not combined with solid evidence from the written sources and archaeology. Finally, Sushko (1936, 75-80) connects Gaugamela with the Greek καυκαμέλα, meaning black bird. His argument is based on two points. The first is that the name Oaragosh, where he proposes that the battle took place, means black bird in Turkish, retaining the meaning of the lost Assyrian name. The second is that the Greeks translated this meaning in their language and eventually it found its way to the works of the ancient historians and geographers. While the original meaning of the word was lost, it was retouched by oriental colors thus becoming an eastern fable, one of the many encountered in the works of Greek and Roman ancient writers. The common denominator in all these attempts to explain the meaning of the word Gaugamela is that there is a misunderstanding in the original reference, which is rectified, not by the use of ancient sources, but by linguistic assumptions, which should have indicative and not decisive character in matters of ancient topography. Besides this, the very existence of so many options shows the limits of this methodology.

well attested. For an overview: Briant 2002, 507-10. The best estimation is that we have to deal with the variation of Imperial or Official Aramaic. For the more or less fluctuating distinctions of the Aramaic language and its variations: Fitzmyer 1979, 57-84. Nevertheless, the late Babylonian cuneiform can not be ruled out. There is a reference in the well known Murashu archive from Nippur, a city south of Babylon, dated in the time of Darius II (424-404 B.C.) of place named Gammalie, town of Camels (Clay 1904, 68). Streck (1910, 864) mentions it in order to document the connection of Greek Gaugamela with an Assyrian prototype.

¹⁷⁴ Even Streck (1910, 862) admits: 'Die Strabonische Erklärung darf wohl lediglich als eine orientalische volksetymologische Legende bewertet werden; daß mit solchen die Semiten bei ihrer ausgesprochenen Vorliebe, um jeden Preis die Bedeutung geographischer Namen zu entziffern, von jeher gern bei der Hand waren, ist bekannt.' ¹⁷⁵ Some examples and their use: Clarke 2001, 319-24.

¹⁷⁶ Supra n. 111.

¹⁷⁷ Correctly noticed by Marciak (2011, 183). The name Athmonon seems to be a hint at the Attic Demos with the same name. Therefore, Strabo relays a founding myth that links the area with Athens, a most prestigious Hellenic origin. Additionally, it can be an indirect indication that the toponymy of the wider area was influenced by the interpretatio Graeca, probably after Alexander.

¹⁷⁸ Strabo's mistake is stressed already by Scaliger (1629, 421). He estimates that Gaugamela means intestines of a camel, which was buried there, connecting Gau with the Assyrian gabbu, which in Mesopotamian texts, as later readings verify, denotes the internal organs of animals (Assyrian Dictionary 1956 s.v. gabbu B). Bochart (1646, 272) accepts the etymology camel's back as described by Streck, giving another alternative. Based on a better reading of the MSS of Plinius

¹⁷⁹ More specifically by the Syriac writer Thomas of Marga: Streck 1910, 863; Fiey 1965, 230.

¹⁸⁰ Streck 1910; Fiey 1965, 181.

¹⁸¹ The waters of the river with the modern name Gomel were brought to Nineveh according to Reade-Anderson (2013, 75). For the association of the place-names: Reade 1978, 169.

¹⁸² Ptol., *Geog.*, 6.1.5., Stückelberger-Grasshoff 2006, Karte Asien 5.

¹⁸³ A point rightly stressed already by Stein (1942, 159 n. 2). The numbers in Ptolemy can be read either as 200 or 320 stadia. Whatever the distance, we are definitely in the context of 'cities and villages of Assyria at the side of Tigris' (op.cit. 6.1.3). The purpose of Ptolemy's Geography was to provide future mapmakers with a handy tool for drawing a map of the inhabited world, or regional maps. In order to achieve that, he collected previous information and arranged it within a systematic table of coordinates. He was, however, fully aware of deficiencies in some of his information (Geog., 2.1.2). For a brief overview: Dilke 1987. Besides this, the textual tradition of Ptolemy's work (dated around 150 AD) is complicated and very insecure. The earliest manuscripts, along with their drawn maps are dated in the 13th century AD. Thus, there is a great possibility of textual errors and later corrections in the reconstructed maps, although a continuing map tradition, dating back to Ptolemy himself, can be traced. For the most recent overview of Ptolemy's textual tradition and map reconstruction: Mittenhuber 2010.

we have textual evidence that disassociates Greek Gaugamela from modern Gomel.

Why has this line of etymological interpretation of an obscure and probably irretrievably hellenized placename whose original meaning is at the least dubious. prevailed over other options? This happened because that interpretation was associated first by Herzfeld¹⁸⁴ and later by Fiey¹⁸⁵ with the concept of a single Royal Road that left no other option for the movement of troops than the Navkur plain. 186 In other words we have the construction of a circular argument. The Royal Road was at the north of the plain beyond Tigris, so Gomel which is located on its supposed route should correspond to Greek Gaugamela. And in reverse if Gomel corresponds to Gaugamela, then the Royal Road had a northern

Most characteristic: Herzfeld (1968, 228). According to him 'Alexander everywhere followed the great highways', and since Stein did not locate the Gomel correctly, he missed the 'real point'. He uses the identification of Gaugamela with Gomel not on its own merit, but in the context of establishing the route of the Royal Road, citing a combination of later Syriac and Arabic sources. More specifically he mentions an unidentified Syriac place- name Nigator, which in the Chronicles of the Syrian Martyrs is designated as a post-house (Hoffman 1880, 48, 277). According to him the place-name reminds of the Νικατόριον ὄρος mentioned in Strabo (supra n. 111). He claims that the name was attributed by Alexander to the hill of Gomel. Nevertheless, the Gomel elevation can hardly be considered as a mountain. It has been proposed that Nikatorion, if we can believe Strabo (supra n. 174), could be the Maqlub mountain range further south (Sturm 1936, 283). Even Herzfeld himself in earlier works (Sturm op.cit.) admits the possibility that Nikatorion could be near Qaragosh, meaning the south part of the Maqlub, or even the Demir Dagh, an elevation located before crossing the Great Zab in the immediate plain surrounding modern Erbil (Stein 1942, 156). Besides this, a most plausible identification has been made already by Ainsworth (1842, 135-6). He considers Jebel Ain el Beitha (modern name Jabal Bashio, according to J-38 sheet-map of the Army Map Service of U.S. Army, edition June 1942, courtesy of Jason Ur), as 'Mons Nicator'. In this respect, the post house could just as easily be located in the south part of the plain. The next point has to do with the Arabic place name Qantarat al Gomel, which suggests that there was a bridge in the vicinity, probably at the confluence of the Gomel and Hazir rivers. Then about 30 kilometers to the south lies a ford at modern Gird-i Mamik where the Great Zab can be crossed. This way, Gomel takes its place in the itinerary of the supposed Royal Road. Nevertheless, if the concept of a single Royal Road is put aside, and sources closer to Alexander's era are taken into account, a different pattern emerges. ¹⁸⁵ In Fiey (1965, 180-3), again the matter is considered not on its own

merit, but under the characteristic subtitle 'La Route du Roi et le Pont du Roi'. The arguments again have to do with later sources concerning the Royal Bridges, in order to establish the Royal Road. For example Syriac sources mention a 'convent of the bridge' around 562 A.D. which Fiey locates near the confluence of the Gomel and Hazir rivers. And Fiev claims he saw himself the remains of the bridge first reported by Herzfeld at Gird-i Mamik. Nevertheless, this report has not been verified by later surveys (supra n. 38), and even if we accept it as accurate, there is no reason to suppose that it reflects the situation in Alexander's era, since most probably a supposed permanent structure of such a bridge could be of Sassanian origin (Reade-Anderson 2013, 77). An interesting notice is that in Herzfeld's later writings (see previous note) the bridge at Gird-i Mamik is not mentioned.

186 As correctly noticed by current scholarship, the Navkur plain

constitutes only one of the alternatives regarding the travelling patterns through the area. Due to historical developments as we reach the Hellenistic and the Roman periods, the routes tend to move to the north, but such a fact does not necessarily apply to Alexander's time. For details: supra n. 81; Reade 1998, 81; Marciak 2011, 201; Reade-Anderson 2013, 76.

direction. All this argumentation however is based on later sources that largely reflect later arrangements, not necessarily in connection with Alexander. As explained above, there is a series of incidental sources, chronologically very close to Alexander's era that offers an alternative reconstruction of the battle topography: they can not only explain the confusion between Arbela and Gaugamela, but also correspond to the geographical background of the south part of the plain in question.

Concluding Remarks: Towards the clarification of an elusive battlefield

The 'Northern Hypothesis' from its broader picture to the very particular topographical aspects does not attempt to match the textual details with the topography, but the topography with part of the textual details and in particular Arrian's miscalculated distance, enhanced with speculation on modern toponymy. As a result, even in the latest attempts, there is a notable lack of precision in locating the exact battlefield.¹⁸⁷ In contrast, the two variations of the 'Southern Hypothesis' fulfil this task in a great degree, under one condition: abandoning the identification of Gaugamela with Tel Gomel located north of Jebel Maqlub. If this identification is put aside, the suggested battlefield would be in accordance with the great majority of our available sources. For they seem to place it south of the aforementioned elevation, around the broad area of modern Keremlis and Oaragosh, where the manoeuvres described by them coordinate much better than in the north. Hopefully, more detailed surveys, exploring the data of both options will offer a definite solution to the problem.

The exact topography of the Gaugamela battlefield has been deemed of little importance, since the battle in every case was fought in an open plain which had little effect on its course and outcome. 188 However, the topography of the battle can certainly elucidate crucial aspects of it, allowing insights into the qualifications that made it Alexander's strategic masterpiece.

The time plan of events suggests that it was Darius who had the strategic initiative and thus the opportunity to dictate the terms of engagement regarding the upcoming battle, which was a desideratum for both parties. He mustered his troops and carefully selected as battlefield the area around Arbela, a crucial junction of the empire's

¹⁸⁷ As noted in Reade-Anderson (2013, 77) 'The Gaugamela battlefield still needs detailed study and field observations'. The view of the southern part of the plain beyond the Great Zab does not leave room for doubts, as firstly noticed Niebuhr (supra n. 18). Most representative about the confusion that Arrian's information causes to those who travelled through the area is Rich (1836: 2:302) who visited both parts of the plain in 1820: 'The six hundred or even five hundred stadia of Arrian are quite unintelligible; and had it not been for the same distance being again given more circumstantially in another part of the work, I should, without hesitation, set this down as an error of the copyists.'
¹⁸⁸ Seibert 1972, 129.

road system with a surrounding area suitable for sustaining a large army and controlling the major river passes, a crucial parameter for the defence of the empire. Having as headquarters the city of Arbela, he deployed his troops in the wider vicinity, which probably included both sides of the river Lycus, with the western side of this river reaching as far as the Tigris, certainly at a point not very far from the ruins of ancient Nineveh. There are precedents close enough to the era in question that justify a southern course towards the battlefield.¹⁸⁹ If Arbela is considered as a firm point in Darius's deployment and the confusion of our sources is taken into account, both facts evident enough, then the battlefield ought to be as close to Arbela as possible, meaning the south part of the plain beyond the Great Zab. Whatever the specific details of his war-plan were, they were disrupted by Alexander's unique coup d'æil, deriving from his personal inspection of the area in question. 190 Even after 1683 years, the opportunity to explore and estimate what he saw, remains not only fascinating but essential in order to fully identify and understand the culminating point of his great victory.

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¹⁸⁹ As correctly noted by Sushko (1936, 73): 'To imagine that Darius forced all his regiments to go through Arbela-Erbil is ludicrous.' Arshama's authorization and Xenophon's march indicate the use of the crossings in the south part of the river, where the immediate plain surrounding Erbil broadens. Of course the option of modern Eski Kellek, from where the modern road passes, cannot be eliminated. ¹⁹⁰ As Arrian (An. 3.8-9.1) and Curtius (4.12.18-24.) inform us Alexander personally inspected the field before the engagement.

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- ¹⁹¹ For the Greek-speaking reader the Greek translation of this work (Athens 1993) by Apostolides R., which comprises critical and bibliographical notes by H. Apostolides and S. Apostolides is highly recommended.

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