ACT Project
Reports and
Memoirs
Vol. III

EXCAVATIONS AT THE PROTOHISTORIC
GRAVEYARDS OF GOGDARA AND UDEGRAM

EDITED BY M. VIDALE, R. MICHELI
AND L.M. OLIVIERI

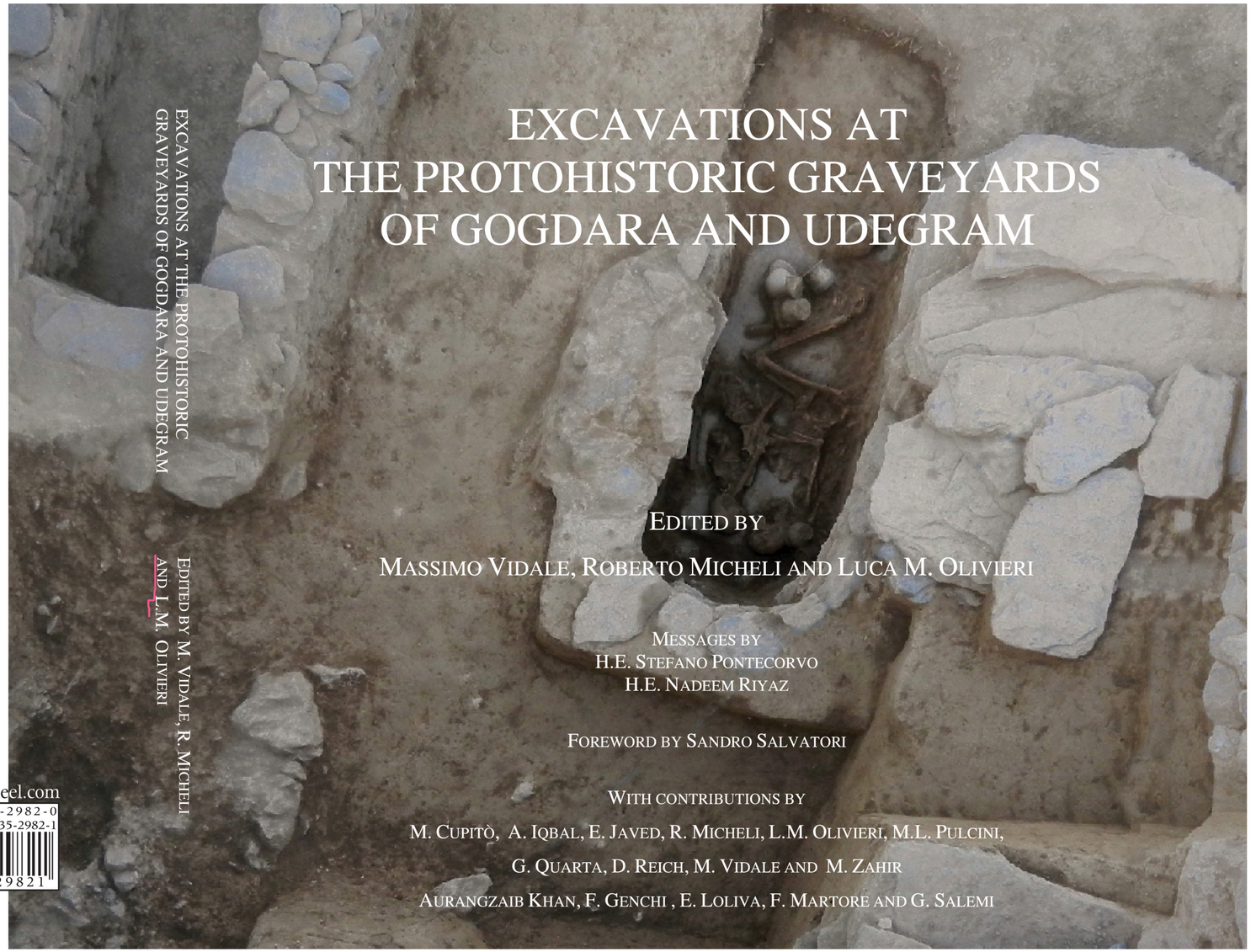
www.sangemeel.com
ISBN-10: 969-35-2982-0
ISBN-13: 978-969-35-2982-1

Sang-e-Meel Publications
Lahore - Pakistan

ITALIAN AGENCY FOR DEVELOPMENT COOPERATION

ACT-FIELD SCHOOL PROJECT REPORTS AND MEMOIRS, III

EXCAVATIONS AND CONSERVATION ACTIVITIES
IN SWAT DISTRICT (2011-2013)
KHYBER PAKHTUNKHWA – PAKISTAN. 2



EXCAVATIONS AT THE PROTOHISTORIC GRAVEYARDS OF GOGDARA AND UDEGRAM

EDITED BY
MASSIMO VIDALE, ROBERTO MICHELI AND LUCA M. OLIVIERI

MESSAGES BY
H.E. STEFANO PONTECORVO
H.E. NADEEM RIYAZ

FOREWORD BY SANDRO SALVATORI

WITH CONTRIBUTIONS BY
M. CUPITÒ, A. IQBAL, E. JAVED, R. MICHELI, L.M. OLIVIERI, M.L. PULCINI,
G. QUARTA, D. REICH, M. VIDALE AND M. ZAHIR
AURANGZAIB KHAN, F. GENCHI , E. LOLIVA, F. MARTORE AND G. SALEMI

ACT 2 SWAT

Pakistan-Italian Debt Swap Program
Italian Archaeological Mission in Pakistan
Directorate of Archaeology and Museums, KP Province

ACT-FIELD SCHOOL PROJECT REPORTS AND MEMOIRS, III

EXCAVATIONS AND CONSERVATION ACTIVITIES
IN SWAT DISTRICT (2011-2013)
KHYBER-PAKHTUNKHWA – PAKISTAN. 2

EXCAVATIONS AT THE PROTOHISTORIC GRAVEYARDS OF GOGDARA AND UDEGRAM

EDITED BY

MASSIMO VIDALE, ROBERTO MICHELI AND LUCA M. OLIVIERI

MESSAGES BY

H.E. STEFANO PONTECORVO

H.E. NADEEM RIYAZ

FOREWORD BY SANDRO SALVATORI

WITH CONTRIBUTIONS BY

M. CUPITÒ, A. IQBAL, E. JAVED, R. MICHELI, L.M. OLIVIERI, M.L. PULCINI, G. QUARTA, D. REICH, M. VIDALE AND M. ZAHIR

AURANGZAIB KHAN, F. GENCHI , E. LOLIVA, F. MARTORE, AND G. SALEMI

PAKISTAN-ITALIAN DEBT SWAP PROGRAM

ISMEO ITALIAN ARCHAEOLOGICAL MISSION IN PAKISTAN

DIRECTORATE OF ARCHAEOLOGY AND MUSEUMS, GOVERNMENT OF KHYBER-PAKHTUNKHWA

930.01 Massimo Vidale, Roberto Micheli and Luca M. Olivieri
Excavations at the Protohistoric Graveyards of Gogdara and Udegram/ ed. by Massimo Vidale, Roberto Micheli and Luca M. Olivieri.-Lahore: Sang-e-Meel Publications, 2016.
284 pp.
1. History - Archaeology. I. Title.

2016
Published by
Afzaal Ahmad
Sang-e-Meel Publications

ISBN-10: 969-35-2982-0
ISBN-13: 978-969-35-2982-1

Sang-e-Meel Publications
25 Shahrah-e-Pakistan (Lower Mall), Lahore-54000, PAKISTAN
Ph. + 92-423-722-0100 / +92-423-722-8143 Fax: +92-423-724-5101
http://www.sang-e-meel.com e-mail: smp@sang-e-meel.com

Cover: A detail of the excavation at Udegram.
(Orthophoto by F. Genchi)

ACT-FIELD SCHOOL PROJECT REPORTS AND MEMOIRS

VOLUME III

EXCAVATIONS AND CONSERVATION ACTIVITIES IN SWAT DISTRICT (2011-2013) KHYBER-PAKHTUNKHWA – PAKISTAN. 2

EDITED BY

MASSIMO VIDALE, ROBERTO MICHELI AND LUCA M. OLIVIERI

MESSAGES BY

H.E. STEFANO PONTECORVO

H.E. NADEEM RIYAZ

FOREWORD BY

SANDRO SALVATORI

WITH CONTRIBUTIONS BY

MICHELE CUPITÒ, AATIF IQBAL, EHSAN JAVED, ROBERTO MICHELI, LUCA M. OLIVIERI, MARIA LETIZIA PULCINI, GIANLUCA QUARTA, DAVID REICH, MASSIMO VIDALE AND MUHAMMAD ZAHIR

DRAWINGS BY

FRANCESCO MARTORE, ROBERTO MICHELI AND MASSIMO VIDALE

GIS DATA BY

FRANCESCO GENCHI

PHOTOGRAPHS BY

EDOARDO LOLIVA (ISCR) AND M. AURANGZAIB KHAN, FABIO COLOMBO, MICHELE CUPITÒ, ROBERTO MICHELI, LUCA M. OLIVIERI, GIUSEPPE SALEMI AND MASSIMO VIDALE

ACT-FIELD SCHOOL PROJECT REPORTS AND MEMOIRS

PUBLICATION PLAN
(to date)

VOLUME I (2013)[1]

Construction Activities in Swat District (2011-2013)
Khyber-Pakhtunkhwa – Pakistan

THE NEW SWAT ARCHAEOLOGICAL MUSEUM.
ARCHITECTURAL STUDY AND MASTERPLAN
Ivano Marati and Candida Vassallo

VOLUME II (2014)[1]

Excavations and Conservation Activities
in Swat District (2011-2013) Khyber-Pakhtunkhwa – Pakistan. 1

THE LAST PHASES OF THE URBAN SITE OF
BIR-KOT-GHWANDAI (BARIKOT).
THE BUDDHIST SITES OF GUMBAT AND AMLUK-DARA (BARIKOT)
Luca M. Olivieri and others

VOLUME III (2016)

Excavations and Conservation Activities
in Swat District (2011-2013) Khyber-Pakhtunkhwa – Pakistan. 2

EXCAVATIONS AT THE PROTOHISTORIC
GRAVEYARDS OF GOGDARA AND UDEGRAM
Edited by Massimo Vidale, Roberto Micheli and Luca M. Olivieri

VOLUME IV (in preparation)

Excavations and Conservation Activities
in Swat District (2011-2013) Khyber-Pakhtunkhwa – Pakistan. 3

RESTORATION AND CONSERVATIONS ACTIVITIES
AT SAIDU SHARIF I AND JAHANABAD
Edited by Luca M. Olivieri

VOLUME V (2015)

Excavations and Conservation Activities
in Swat District (2011-2013) Khyber-Pakhtunkhwa – Pakistan. 4

THE GHAZNAVID MOSQUE AND THE ISLAMIC SETTLEMENT
AT MT. RĀJA GĪRĀ, UDEGRAM
Alessandra Bagnera

SPECIAL VOLUME (2014) [1]

BUDDHIST ARCHITECTURE IN THE SWAT VALLEY, PAKISTAN.
STUPAS, VIHARAS, A DWELLING UNIT
Domenico Faccenna and Piero Spagnesi

SERIES MINOR, 1 (2014) [1]

DIGGING UP.
FIELDWORK GUIDELINES FOR ARCHAEOLOGY STUDENTS
Luca M. Olivieri

SERIES MINOR, 2 (2015)

TALKING STONES.
PAINTED ROCK SHELTERS OF THE SWAT VALLEY
Luca M. Olivieri

SERIES MINOR, 3 (in preparation)

ON SWAT.
BIBLIOGRAPHIC REPERTORY FOR ARCHAEOLOGY STUDENTS
Edited by Aatif Iqbal and Rafiullah Khan

SERIES MINOR, 4 (2016)
LIVING AND ARCHAEOLOGICAL LANDSCAPES OF SWAT
A GUIDE TO KANDAK AND KOTAH VALLEYS
A FIELD COMPANION TO *TALKING STONES*
Carla Biagioli, Matteo De Chiara, Efrem Ferrari, Aftab ur-Reman Rana, Shafiq Ahmad Khan and Massimo Vidale

* * *

ARCHIVAL STUDIES, 1 (2015)

SIR AUREL STEIN AND THE 'LORDS OF THE MARCHES'
NEW ARCHIVAL MATERIALS
Luca M. Olivieri



Archaeology Community Tourism -Field School (ACT)

a project by
Pakistan-Italian Debt Swap Agreement (PIDSA)

Implemented by
Italian Archaeological Mission in Pakistan (ISMEO)

Directorate of Archaeology and Museums, Khyber-Pakhtunkhwa Province

with the collaboration of
Istituto Sindacale per la Cooperazione allo Sviluppo (ISCOS-CISL)

under the vigilance of
Department of Archaeology and Museums (DOAM)
Ministry of Information, Broadcasting and National Heritage, Government of Pakistan

technical support by
PIDSA Technical Support Unit - Islamabad
funded by
Ministero degli Affari Esteri della Cooperazione Internazionale (MAECI)
Agenzia Italiana per la Cooperazione allo Sviluppo (AICS)
Embassy of the Italian Republic in Pakistan
Unità Tecnica Locale (UTL) Pakistan, Agenzia Italiana per la Cooperazione allo Sviluppo
(Italian Agency for Development Cooperation - Local Technical Unit, Pakistan)

Supporting Institutions

Ministero per gli Affari Esteri e la Cooperazione Internazionale (MAECI), Direzione Generale per la Promozione del Sistema Paese (Ufficio VI)

Istituto Superiore per la Conservazione e il Restauro (ISCR), Ministero dei Beni, delle Attività Culturali e del Turismo (MiBACT)

Ministero dei Beni e delle Attività Culturali e del Turismo (MiBACT), Direzione Generale per il paesaggio, le belle arti, l'arte e l'architettura contemporanee

Ministero dei Beni e delle Attività Culturali e del Turismo (MiBACT*), Soprintendenza Archeologia del Friuli Venezia Giulia

Civil Military Logistic Center (CMLC), Pakistan Army, Mingora

Embassy of the Islamic Republic of Pakistan in Italy

University of Engineering and Technology, Peshawar

Quaid-i Azam University, Taxila Institute of Asian Civilization, Islamabad

Hazara University, Department of Archaeology, School of Cultural Heritage and Creative Technologies

Sustainable Tourism Foundation Pakistan

**Università di Bologna, "Alma Mater Studiorum"
Dipartimento di Beni Culturali**

Università di Firenze, Dipartimento di Gestione dei Sistemi Agrari, Alimentari e Forestali

Università di Firenze*, Facoltà di Architettura, Dipartimento di Costruzioni e Restauro

Università di Padova, Dipartimento dei Beni Culturali: Archeologia, Storia dell'Arte, del Cinema e della Musica

**Harvard University, Department of Genetics,
Harvard Medical School**

Management and Technical Staff

Luca M. Olivieri, scientific co-Director, Project Manager (IsIAO and University of Bologna; currently ISMEO)

Fazal Dad Kakar (Director General DOAM, Govt. of Pakistan, until May 2014) scientific co-Director until April 2011

Saleh Mohammad (late), scientific co-Director (Director DOAM KP; until July 2011)

Nidaullah Serai, scientific co-Director (Director DOAM KP; until January 2012; April-August 2013)

Shah Nazar Khan, scientific co-Director (Director DOAM KP; until April 2013)

Mohammad Nasim Khan, scientific co-Director (Director DOAM KP; until June 2014)

Abdul Samad, scientific co-Director (Director DOAM KP, current)

Arshad Khan, Honorary Project Advisor

Feryal Ali-Gohar, Project Consultant

Irma Gjinaj, Financial Manager (ISCOS; until September 2011)

Mario Barberini, Financial Manager (ISCOS, until September 2015)

Efrem Ferrari, Financial Manager (current)

Shehryar Mannan Rana, Administrator (until September 2014, and from January 2016)

Zeeshan Kazmi, Administrator (from March to December 2015)

M. Hafeez, (Administrator; Representative DOAM, Govt. of Pakistan, retd. until April 2016)

Ilyas Awan, (Administrator from May 2016)

Ivano Marati, Architect

Candida M. Vassallo, Architect

Claudio Cristilli, Engineer (AIRES, University of Naples 'Federico II')

Zareef Khan, Site Engineer

Roberto Dentici, Technical Advisor (March-June 2012)

Faiz-ur-Rahman, DOAM KP Focal person, Curator Swat Museum

Amanullah Afridi, DOAM KP Representative, Curator Reserve Collection Swat Museum (currently Field Officer DOAM HQ Peshawar)

Munir, DOAM KP, Technical Responsible Swat Museum

Balqees Begum Durrani, DOAM KP Representative

Nawaz-ud-Din, DOAM KP Representative

Syed M. Niaz Ali Shah, Assistant Curator Swat Museum, DOAM KP Representative

Saeed Akbar, Tourist Consultant (until September 2014)

Aftab Rana, Tourist Consultant (current)

Massimo Vidale, Chief Trainer (ISCR; currently University of Padova)

Michele Cupitò, Trainer University of Padova)

Roberto Micheli, Trainer, (MiBACT*)

Francesco Martore, Restorer (Italian Archaeological Mission)

Cristiano Moscatelli, Trainer (University of Naples "L'Orientale")

Fabio Colombo, Restorer (Italian Archaeological Mission)

Danilo Rosati, Restorer (Italian Archaeological Mission)

Giuseppe Morganti, Consultant Restorer (MiBACT)

Roberto Sabelli, Consultant Restorer (University of Firenze*)

Francesco Genchi, Trainer (University of Bologna)

Livia Alberti, Restorer

Giuseppe Salemi, Trainer (University of Padova)

Maria Letizia Pulcini, Trainer (University of Padova)

Elisa Iori, Trainer (University of Bologna)

Carla Biagioli, Consultant (Raymond Lemaire International Centre for Conservation, Leuven)

Edoardo Loliva, Photographer (ISCR)

M. Aurangzaib Khan, Photographer

Ilaria Scerrato, Consultant (University of Roma 1)

Shafiq Ahmad, Project Assistant

Akhtar Munir, Field Officer

Ali Khan, Driver

Fazal Mabud, Driver

Hamid Shehzad, Driver

Aziz-ur-Rahman, Guesthouse Manager (until June 2014)

Yusuf Khan, Guesthouse Manager (current)

Ubaid Khan, English Teacher (until June 2013)

Murad, Artist

List of Participants in the Fieldwork

Season 1: March-June 2011

Amanullah Afridi (Assistant Curator Swat Museum)
Ghani-ur-Rahman (Quaid-e Azam University)
Faiz-ur-Rahman (Curator Swat Museum)
Ivano Marati
Luca M. Olivieri
Abdul Samad (DOAM Consultant; Hazara University)
Zain-ul-Wahab (Hazara University)

Season 2: September-December 2011

Aatif Iqbal (Hazara University)
Amanullah Afridi (DOAM Representative)
Arsalan Butt (Quaid-i Azam University)
Ashraf Khan (Quaid-i Azam University)
Faiz-ur-Rahman
Ghani-ur-Rahman
Haroon Khan (Quaid-i Azam University)
Idris Khan (Quaid-i Azam University)
Ifqut Shaheen (Quaid-i Azam University)
Ikram Qayyum (Quaid-i Azam University)
Edorado Loliva (ISCR)
Francesco Martore (IsIAO)
Ivano Marati
Luca M. Olivieri
Misbah-ullah (Peshawar University)
Muhammad Amin (Quaid-i Azam University)
Muhammad Ibrahim (Quaid-i Azam University)
Muhammad Rizwan Mughal (Quaid-i Azam University)
M. Shoaib Alam Khan (Quaid-i Azam University)
Muhammad Shoaib Riaz (Quaid-i Azam University)
Munir (Engineer, Swat Museum)
Noor Agha (Hazara University)
Qamar-un Nisar (Quaid-i Azam University)
Rafiullah (Quaid-e Azam University)
Rimsha Asghar (Quaid-i Azam University)
Sadeed Arif (Quaid-i Azam University)
Saiba Lai-Venti (Quaid-i Azam University)
Saiqa Akhtar (Quaid-i Azam University)
Samina Batool (Quaid-i Azam University)
Sajad Ahmad (Quaid-i Azam University)
Sangeen Khan (Peshawar University)
Syed M. Niaz Ali Shah (DOAM Representative)
Tayyba Jadoon (Quaid-i Azam University)
Tehmina Shaheen (Quaid-i Azam University)
Uzma Sumro (Quaid-i Azam University)
Massimo Vidale (ISCR)

Season 3: March-June 2012

Aatif Iqbal
Amanullah Afridi
Arsalan Butt
Fabio Colombo (IsIAO)
Michele Cupitò (University of Padova)
Ehsan Javed (Hazara University)
Faiz-ur-Rahman
Idris Khan
Ikram Qayyum
Edorado Loliva
Ivano Marati
Francesco Martore
Misbah-ullah
Giuseppe Morganti (MiBACT)
Muhammad Ibrahim
Muhammad Rizwan Mughal
Munir
Luca M. Olivieri
Roberto Sabelli (University of Firenze)
Sangeen Khan (Hazara University)
Syed M. Niaz Ali Shah
Massimo Vidale

Season 4: September-December 2012

Aatif Iqbal
M. Aurangzaib Khan
Fabio Colombo
Faiz-ur-Rahman
Francesco Genchi (University of Bologna)
Ehsan Javed
Irfan Ali (Hazara University)
Ivano Marati
Francesco Martore
Roberto Micheli (MiBACT*)
Misabh-ullah
Munir
Syed M. Niaz Ali Shah
Luca M. Olivieri
Ilaria Scerrato (University of Roma 1)
Saddam Hussain (Hazara University)
Massimo Vidale (University of Padova)
Muhammad Zahir (Hazara University)
Sangeen Khan

Season 5: March-June 2013

Amber Batool (Quaid-i Azam University)
Arsalan Butt
Amanullah Afridi
M. Aurangzaib Khan
Ivano Marati
Faiz-ur-Rahman
Balqees Begum Durrani Ikram Qayyum
Ivano Marati
Francesco Martore
Massehullah Khan (Quaid-i Azam University)
Muhammad Ibrahim
Munir
Nawaz-ud-Din
Luca M. Olivieri
Ilaria Scerrato
Candida Vassallo

Seasons 6-7: October 2013/June 2014

Amber Batool
M. Aurangzaib Khan
Ferooz Balochi (Quaid-i Azam University)
Fawad Khan (DOAM Representative)
Francesco Martore
Luca M. Olivieri
M. Letizia Pulcini (University of Padova)
Massimo Vidale

Seasons 8-9: October-December 2014/April-June 2015

Faiz-ur-Rahman
Luca M. Olivieri

Seasons 10-11: September-October 2015*/April-June 2016**

Amanullah Afridi
Livia Alberti**
Carla Biagioli (Centre Raymond Lemaire, Leuven)*
Fabio Colombo*
Elisa Iori (University of Bologna)
Cristiano Moscatelli (University of Naples)**
Luca M. Olivieri
Danilo Rosati (Italian Archaeological Mission)
Giuseppe Salemi (University of Padova)
Syed M. Niaz Ali Shah

List of Contributors

Aurangzeib Khan, indipendent photographer (zaibhere@gmail.com)
Fabio Colombo, ISMEO (colombo@3asnc.it)
Michele Cupitò, University of Padova (michele.cupito@unipd.it)
Francesco Genchi, University of Bologna (genchifrancesco@yahoo.it)
Aatif Iqbal, Swat University (aatifyousafzai@gmail.com)
Edoardo Loliva, ISCR, MiBACT (edoardo.loliva@beniculturali.it)
Francesco Martore, ISMEO (francesco.martore@yahoo.com)
Roberto Micheli, MiBACT* (roberto.micheli@beniculturali.it)
Luca M. Olivieri, University of Bologna/ISMEO (lucamaria.olivieri@unibo.it)
Maria Letizia Pulcini, University of Padova (marialetiziapulcini@gmail.com)
Gianluca Quarta, CEDAD, University of Lecce (gianluca.quarta@unisalento.it)
David Reich, Department of Genetics, Harvard Medical School (reich@genetics.med.harvard.edu)
Giuseppe Salemi, University of Padova (giuseppe.salemi@unipd.it)
Sandro Salvatori, MiBACT (sandro.salvatori@beniculturali.it)
Massimo Vidale, University of Padova (massimo.vidale@unipd.it)
Muhammad Zahir, Hazara University (muhammadzahirpk@yahoo.com)

This volume is dedicated to

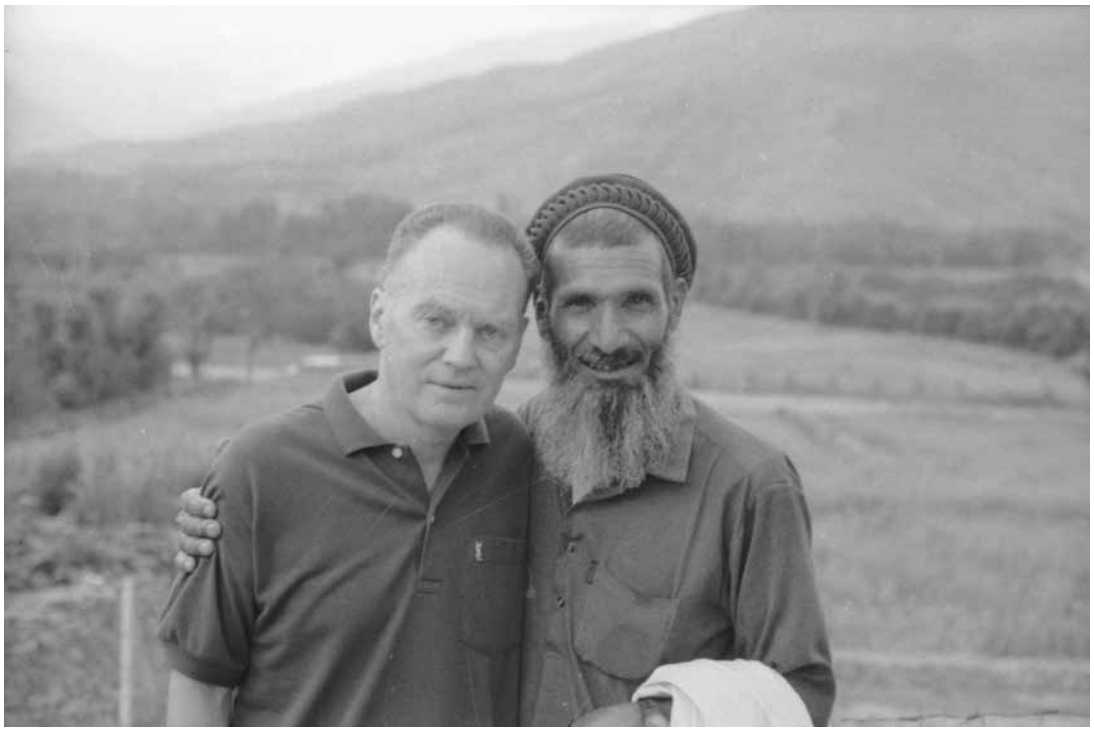
Prof. (retd.) Giorgio Stacul

University of Trieste, Italy
for his pioneering contribution to the knowledge of prehistory of Swat

and

Dr. Fazal Dad Kakar

Director General (retd.), DOAM, Government of Pakistan
Officer of the O.S.I.
(Order of the Star of the Italian Republic)



Giorgio Stacul with Mr. Zamani,
the late great foreman of the Italian Archaeological Mission in Swat from late 60s to late-90s
(Swat, Jambil Valley, mid-90s; photo by R. Micheli)

Dr. Fazal Dad Kakar
(Swat, Gumbat, 2015; photo by L. M. Olivieri)

TABLE OF CONTENTS

MESSAGE

From Giuseppe Tucci's times onwards, Italian archaeologists have been operating in Swat for nearly sixty years. Their work, and the support that Italian Authorities have always granted them, have been motivated by our passion, love and respect for Pakistani cultural heritage. Nowadays, after six decades of constant presence of Italian archaeological missions in the Swat, an emotional link, over and above a purely scientific one, connects Italy and the Swat and we like to consider the cultural heritage of Pakistan as our own legacy.

Discovering, protecting and passing on to future generations the historical legacy of Pakistan is one of the major achievements that Italy, together with the local Authorities, is trying to achieve in Swat, as well as in other sites of this historically rich country such as Banbhore (Sindh) and Multan (Punjab). In a forward-looking approach, preserving the past is a catalyst for a better future since cultural heritage can be instrumental to the social and economic development of a country.

Italian commitment in the preservation of the archaeological heritage and the cultural legacy of Swat has played an important role in portraying a more comprehensive image of Pakistan and Kyber Pakhtunkhwa, showcasing the "soft" side of this beautiful country. This is not just the "hard country" that too often international media focus on, it is also a land boasting a very rich historical patrimony that needs to be known and understood inside Pakistan and abroad.

I therefore congratulate Massimo Vidale, Roberto Micheli and Luca M.Olivieri for this book on the excavations at the graveyard of Godgara and Udegram. This volume, together with the other books that have already been published, are crucial to bringing archaeology back to the public and in transforming data into shared knowledge, education and culture.

The Ambassador of Italy, H.E. Stefano Pontecorvo

MESSAGE

Pakistan and Italy share strong, vibrant and multifaceted relations that cover political, economic as well as the fields of education, arts, culture and archeology. The support which the Italian government and institutions have provided to the conservation of Pakistan's cultural and historical heritage over the last sixty years is greatly appreciated by the Government and the people of Pakistan.

The cooperation in the field of archeology started with the establishment of the Italian Archeological Mission in Swat by Professor Giuseppe Tucci in 1956 and continues to this day. During this period, four generations of Italian archeologists have discovered nearly 200 sites that include the largest stupa of Pakistan, the ancient mosque Udegram dating to 1048 and the 2200-years old Indo-Greek settlement of Barikot.

In addition, the Mission has led the restoration of the giant Buddha of Jahanabad, whose face was blown up by the Taliban in 2007. The restoration is in its final stage. The Mission also helped in rebuilding the Swat museum that was damaged during the unrest in the valley in 2009. Furthermore, the Mission has assisted in the training of local archeologists to carry on this work.

Pakistan has a rich heritage. It is home to some of the most ancient cultures and civilizations in the world. The restoration of archeological sites and making them accessible to visitors will go a long way to ensure that our future generations benefits from the knowledge and the treasures that are discovered and preserved. Pakistan is deeply appreciative and thankful for the support which Italian archeologists have provided to Pakistan.

I would like to congratulate Massimo Vidale, Roberto Micheli and Luca M. Olivieri on the publication of the book "Excavations at the Protohistoric Graveyards of Gogdara and Udegram". Together with the other publications of the Mission, this book will go a long way in documenting Pakistan's historical heritage and making it available to researchers and enthusiasts internationally.

I am positive that the cooperation between Pakistan and Italy in the field of archeology will continue in the future.

The Ambassador of Pakistan, H.E. Nadeem Riyaz

FOREWORD

SANDRO SALVATORI

The Swat Valley in the north-western mountainous regions of Pakistan is well known to ancient and contemporaneous historians as part of the Gandhara province of the Achaemenid Empire from the 6th century BC to the invasion of Alexander the Great (327 BC). Soon after, the area was included in the Maurya Empire - till the beginning of the 2nd century BC, when it was conquered by the Greco-Bactrian kings. These latter possibly introduced in the area new Hellenistic aesthetic canons. While Buddhism seems to have entered Swat at the end of the Maurya period, and developed a syncretic artistic language during the 1st century BC, the flourishing of the local Gandharan art is to be assigned to the Kushana supremacy, which at the beginning of the 1st century AD displaced the Saka-Parthian rule.

This brief sketch of the local history, notoriously enlightened by eloquent written sources, helps understanding the strategic role the north-western regions of Pakistan, and Swat above all, played as a contact area between Central Asia and Iran on one side and the Indo-Pakistani subcontinent on the other. Moreover, it explains, after the pioneering explorations of the valley by Sir Aurel Stein in 1926 and limited, non-scientific excavations by Barger and Wright in 1938 (Barger and Wright 1941), the highest interest that Giuseppe Tucci developed for the archaeology of Swat after his survey of the valley in 1955; and his resolution to launch an Italian archaeological project in the valley in 1956. The project – the oldest Italian archaeological mission abroad - is still alive and explored all the cultural periods of the region from the Palaeolithic beginnings to the Islamic period[1].

Prehistoric and protohistoric explorations of the Swat valley brought to light, since the first steps of the project, many ancient cemeteries. Some were firstly investigated by Tucci (1958, 1963a) and in the following years by Maurizio Taddei at Butkara II (Faccenna 1964), Chiara Silvi-Antonini (1963) at Loebanr I, and Editta Castaldi (1968) at Katelai I. In 1964, the direction of the pre- protohistoric research in the valley was committed to Giorgio Stacul, supported from the early '70s of the last century by Sebastiano Tusa. The amazing efforts of Stacul both on the field as well as in fast publishing the results of his excavations in prehistoric shelters (Ghaligai), settlements (Barikot, Aligrama) and cemeteries (Kherai, Loebanr, Katelai) in the Swat valley and beyond (Chitral valley: Noghormuri, Bala Hisar, Tamunak; Buner valley: Tarike, Lalbatei, Sogalai, Pulanr; Swat Khoistan range: Ushoram, Rashnel), produced the first complex picture of the local prehistory and a continuous cultural sequence extending from the beginning of the 3rd to the mid 1st millennium BC (compare Stacul and Silvi-Antonini's conclusions with Salvatori 1975; Dani 1992; Müller-Karpe 1983; Vinogradova 2001).

More recently, and in spite of the recent political events along the Afghan border, the Italian Archaeological Mission has carried out, among others targets, intensive surveys and documentation of prehistoric sites in wide

[1] For an organic and exhaustive history of the Italian Archaeological Mission in the Swat valley see Olivieri (2006a, 2009). The copious scientific production of the many scholars involved in the project is recorded in Olivieri 2006b, 2011.

areas of the middle Swat, including the Kandak, Kotak, Najigram, Zalam-kot and Saidu valleys (Olivieri and Vidale 2006); the recording and the study of important rock art documents (Olivieri 1998, 2010; Vidale and Olivieri 2002; Olivieri and Vidale 2006; Vidale et al. 2011); the discovery of the first Palaeolithic industries (Micheli 2006); the excavation at the Early Historic site of Bir-kot-ghwandai, and at two major Buddhist sacred areas, namely Gumbat-Balo Kale and Amluk-dara (Olivieri et al. 2014); the final study of the excavated Islamic settlement and Ghaznavid mosque at Udegram (Bagnera 2015); and finally the excavation of two important groups of protohistoric graves at Gogdara IV and Udegram, that are the subject of the present book. In spite of the limited number of excavated graves, and the temporary stop of other archaeological projects in Khyber Pakhtunkhwa and the surrounding regions (Sharma 1992, 1998; Khan 2000; Ali and Zahir 2005; Ali et al. 2002, 2005, 2005a, 2005b, 2008, 2010; Magee et al. 2005), the Udegram and Gogdara IV excavation by Massimo Vidale and his colleagues marks a new frontier of the archaeological research in the region. This is represented, above all, by a well settled approach based on a strict stratigraphic control and micro-stratigraphic excavation method, an integrated graphic and photographic recording policy, and a suggestive reconstruction of complex burial practices providing the basis for the building of binding protocols in archaeological practice.
I think that only well established protocols can supply the archaeological discipline of the status of science. It is indeed hard to think a social science attaining a paradigmatic (sensu Kuhn) construct because the variability of human groups response to the countless environmental and relational (social) pressures that they had and have to face with along very different geographic, environmental, climatic, social, political histories cannot be constrained under any predictive and explicative theoretical construct. The misleading attempts to build up covering laws (Watson et al. 1974) as tools of archaeological explanation definitely faded and replaced from about the '80 of the past century by a long season of theory building that produced a variety of apparently rival theories with different explanation capability[2]. I think that many of those theories could turn to be much more useful to archaeology and anthropology if combined and supported by shared protocols acting as a prerequisite to any scientific attempt to explain cultural variability and change in human societies.
A first step would be, as suggested by the present publication, a well planned excavation strategy and method, the analytical description of the natural and cultural transforms of the physical context, the abandonment of selective practices in data collection, and the widening of the range of macroscopic and microscopic data to be systematically collected. Moreover, a set of shared protocols could provide a firm base for a factual integration in the archaeological practice of a number of scientific disciplines that day after day are demonstrating their capability to impressively widening our effectiveness tackling cultural, social and economic complexity and to make us more free from a yet largely present asymmetrical thought and practice in archaeology (Shanks 2007).
In order to stick to the subject of this book I would suggest to expand the research program to: 1) isotopic analysis of human bones that, can provide direct information on the diet and mobility of the local population as well as on the environment[3] (e.g., Iacumin et al. 1998; White et al. 2004; Bentley et al. 2007; Tafuri et al.

[2] Agency theory (e.g., Dornan 2002; Martin 2005; Knapp and Dommelen 2008); social brain hypothesis (e.g, Dunbar 1998; Coward and Groove 2011); evolutionary theory (e.g., Durham 1992; Barton and Clark 1997; Prentiss et al. 2009; O'Brien and Shennan 2010); niche-construction theory (Kendal et al. 2011; O'Brien and Laland 2012; Shennan 2011; Smith 2011); theory of practice (e.g., Bourdieu 1977); post-processualism (e.g., VanPool and VanPool 1999; Shanks 2009; contra: Arnold and Wilkens 2001); resilience theory (e.g., Redman and Kinzig 2003; Janssen et al. 2006; Leslie and McCabe 2013); self-organized criticality theory (e.g., Bentley and Maschner 2001; Kohler 2012); cultural transmission theory (e.g., Evans and Plato 2006; Eerkens and Lipo 2005, 2007); catastrophe theory (e.g., Renfrew 1978); behavioural theory (Schiffer et al. 2001; Shiffer 1976, 2010) just to mention some.
[3] Preservation of collagen in the Gogdara and Udegram human bones is ascertained by extraction for dating purposes and it allows the analysis of the main relevant isotopes ($\delta^{13}C$, $\delta^{15}N$, $\delta^{18}O$ and $^{87}Sr/^{86}Sr$).

2006; Smits et al. 2010; Pearson et al. 2013); 2) phytolith and starch analysis from dental calculus, artefacts and soils (e.g., Harvey and Fuller 2005; Barton 2007; Hardy 2007; Henry and Piperno 2008; Piperno 2009; Gong et al. 2011; Ryan et al. 2016) that would contribute direct insights on diets and environmental conditions.
A third field of research, paleogenomic, would be of relevance in the context of Swat pre- proto-history, to try to solve the debated problem of the arrival of Indo-Aryan speaking peoples into the Indo-Pakistani subcontinent. Linguistic, archaeology and physical anthropology (see, among others, previous traditional discussions in Dani 1968 and 1992, Mallory 1989 and Allchin 1980) failed to give unambiguous answers to the problem, as well reviewed by Lamberg-Karlovsky in 2002. Also Modern-DNA research has produced ambiguous results: the suggested hypothesis (Quintana-Murci et al. 2001, 2004) of a demic diffusion from western Iran possibly linked to the spread of the agriculture and a later one from Central Asia borrowing Indo-Iranian/Indo-Aryan into Pakistan and India at about mid 2nd millennium BC is rejected by others (Sahoo et al. 2006; Sengupta et al. 2006) because of a scanty influence of Central Asian genes.
The problem seems hard to be solved by means of modern DNA studies (Kivisild et al. 2003; Haber et al. 2012); nonetheless, the emerging science of paleogenomic, thanks to new and less expensive DNA extraction techniques (Shapiro and Hofreiter 2014)[4] can more effectively contribute to the current debate on population movements. Important results have been reached on ancient DNA samples from Central Asia, Near East, Siberia and Mongolia (Keyser-Tracqui et al. 2003; Lalueza-Fox et al. 2004; Zhang et al. 2010; González-Ruiz et. al. 2012; Der Sarkissian et al. 2013; Witas et al. 2013). Ancient DNA studies from the Gogdara and Udegram cemeteries as well as from southern Central Asia cemeteries (Turkmenistan, southern Uzbekistan and southern Tajikistan) of late 3rd to mid 2nd millennium BC could surely contribute in a positive way to the discussion of the Indo-Iranian/Indo-Aryan question.
Finally, I hope that the presently published excavations at the Udegram and Gogdara IV cemeteries can be resumed as soon as possible because the new approach developed by the cooperative efforts of Luca Maria Olivieri, Massimo Vidale and Roberto Micheli in the study of the prehistoric periods of the Swat valley will surely greatly advantage our knowledge on a key region linking the Iranian plateau, Central Asia and the Indo-Pakistani subcontinent.

[4] A basic but updated bibliography on the most important/useful studies on ancient DNA is available at http://www.ancestraljourneys.org/bibliography.shtml

Organized chaos

From A. M. Larsson (2012) Organized Chaos. Defleshing, Cremations and Dispersal of the Dead in Pitted Ware Culture. In *Döda personers sällskap*, Stockholm University, 110-130.

Ikka no fushi
Father and son in the same house

Kangai adzu
Box and lid fit exactly together

Anshitsu ni to o kakusu
Keep a lamp lit in a dark room

From V. Sogen Hori (2003) *Zen Sand. The book of capping phrases for koan practice*. Honolulu, University of Hawai'i Press (diacritics omitted).

INTRODUCTION

M. Vidale

The protohistoric graves of Swat, Dir, Buner and the nearby valleys have always been well known by the local inhabitants, who for centuries used to unearth them by the thousands in their land, searching curiously for the graves' contents. Nowadays, farmers of these areas still remove stone cists, bones and vessels whenever they have to enlarge or maintain their fields, or just look for unlikely treasures. In spite of the usual and expected legends, the protohistoric graves – as far as the antiquarian market is concerned - are generally rather poor. They rarely contain valuable finds such as ornaments in precious metals and semiprecious stones, and the ceramics that may be fascinating to the historian and the archaeologists, in their severe look, dull colors, and very limited decoration have little appeal for local traders and even less for foreign collectors. The protohistoric material culture of the region, in short, is threatened by economic development and agriculture, and only as a secondary consequence by illegal digging for commercial purposes.

However, the destruction of the protohistoric cemeteries of the whole region is massive and relentless, for the simple reasons that the funerary sites are widespread, both in the piedmont strips and in the alluvial terraces. Many burial grounds contained hundreds of graves, while the current demographic growth constantly pushes the contemporary urban settlements into areas of great archaeological interest. Also, the intensification of agriculture and land management by the means of earthworks of variable scale (mainly by cutting the local substrata for creating new systems of terraces) has a major negative impact on the survival of this ancient heritage.

The Swat graveyards of the 2nd-1st millennia BCE came to the attention of the archaeological world in the early 1960s, when the Italian explorer and orientalist Giuseppe Tucci, after a survey in November-December 1955, selected this valley as the focus of his future archaeological interests (Olivieri 2006a, Id. 2006b; Id. 2011a in Ghani-ur-Rahman and Olivieri 2011). For Tucci, whose great insight always envisaged the major framework of history and cultural evolution behind the contingencies of material relics, the settlements and graves of the latest prehistory of Swat had witnessed not only the rise of one of the most important, epochal cradles of Buddhism, but also the ancient peoples that the soldiers of Alexander the Great met and fought in 327 BCE. Callieri (in Ghani-ur-Rahman and Olivieri 2011: 1-15) well stressed the impressive modernity of Tucci's vision, when the co-founder of IsMEO placed the unbroken cultural evolution of Swat, from prehistory to the advent of Islam, as a primary goal of research, rather than focusing on a single prestigious site or monument, or selecting a favorite historical phase against the others.

In the 1960s, Italian archaeologists excavated hundreds of protohistoric graves in the sites of Katelai, Loebanr I, Butkara II (Silvi Antonini 1963; Stacul 1966a; Castaldi 1968; Silvi Antonini and Stacul 1972; Olivieri 2006a) and in other minor sites. Although the cultural sequence needs to be further tested and reconstructed in greater detail, and considering later criticism, the graveyards seem to have been used in an early phase between 1400

and 1100 BCE (final Bronze Age), then ca. between 1100 and 700 BCE (early Iron Age) and finally between 700 and 400 BCE (middle-late Iron Age). Other protohistoric graves were later excavated by the archaeologists of IsMEO in Buner, Chitral and Indus Kohistan, while Pakistani archaeologists independently dug other sites in Dir and in the Peshawar plain, providing different interpretations of this phenomenon indicated as "Pre-Buddhist" (Tucci 1963a: 27; 1977; Stacul 1966a) or "Gandharan Grave Culture" (Dani 1967: 3-11, 24-31; 1978; Allchin and Allchin 1982: 237) and "Swat Culture" (Gupta 1979: 206-219) or else "Swat Complex" and "Swat Aspect" (Dittmann 1984: 155, note 1). For a full bibliography on such issue see Ghani-ur-Rahman and Olivieri 2011: 321-327; Dani 1967a, 1968; a tentative review of the history of research and shifting interpretations can be found in Zahir 2012.

In 1967, G. Stacul (1987) excavated a major stratigraphic trench at the rock shelter of Ghalegai. The dig revealed an unbroken sequence of occupation, and correlated the three periods of the graveyards with the local occupation phases. The Ghalegai chronology envisages, in fact, four late prehistoric periods: Period I, late Neolithic, ca. 3000-2700 cal. BCE; Period II, "Harappan"-middle Bronze Age, ca. 2300-2000 cal BCE; Period III, "northern Neolithic", ca. 2000-1800 cal BCE; Period IV, late Bronze Age, ca. 1800-1400 cal BCE. The three phases of the cemeteries (respectively final Bronze Age, early Iron Age, middle to late Iron Age) became respectively Periods V, VI and VII of the same general sequence.

This preliminary effort established an important general frame of reference, but also left many unanswered questions. First, Periods I and II are almost exclusively known from the limited exposures of the Ghalegai test trench – too little for the wide historical implications emerging from such preliminary assessment. The so-called "Harappan" vessels of Period II are doubtless wheel-made, and they would postulate permanent settlements near the best stretches of agricultural land with substantial architecture and a certain level of overall craft organization. Although such "Harappan" wheel-thrown wares were local products (as ascertained by Morigi and Bianchetti 2005), settlements of the Integration Era were never found in other locations of the Swat valley.

Furthermore, the "northern Neolithic" levels of Ghalegai, dated by Stacul after 2000 BCE and distinguished by coarse basket- and mat-marked wares, were reportedly found on top of the layers containing the "Harappan" materials of Period II. In contrast, in the site of Sarai Khola, near Taxila (Islamabad) the same ceramics were found below the early Harappan horizon, in earlier contexts dated ca. 3200-2900 cal BCE (Halim 1970-71; 1972; Possehl 1994: 95). Thus, there is a difference of one thousand years between the date of the "northern Neolithic" basket- and mat-marked wares in Swat and at Sarai Khola, and the evidence is therefore questionable, or, at least, needs a further field testing before being generally accepted. Given the highly dynamical sedimentological context of Ghalegai, on the left bank of the Swat river, it is possible that in the deepest deposits some layers were in secondary, reverted deposition, but we repeat that the matter needs to be substantiated by new excavations.

Another serious drawback is the scarce information available on the settlements, as compared with the substantial archaeological research done on the graveyards. This bias is at the root of the label of "Gandhara Grave Culture" given by Dani to a whole spectrum of protohistoric cultures of the region, and of the ensuing controversy.

Can we label an ancient culture only from after its graves? The excavation of the hill settlement of Aligrama, in the early 1970s, revealed a long sequence of occupations stretching from Period IV to Periods VI-VII of Stacul's sequence. Other settlement contexts were unearthed at Loebanr III, Barikot/Bir-kot-ghwandai and later

at Kalako-dherai (complete references in Ghani-ur-Rahman and Olivieri 2011: 321-327). However, the results of the dig at Aligrama, the key-site, were published only to a minimum extent (Stacul and Tusa 1975, 1977), and the exposures at the other sites, including Kalako-dherai, were too limited to balance the archaeological image of a set of cultures represented solely by their funerary practices.

Today, Tucci's paradigm of continuity still dominates our understanding of Swat's cultural history. After the still completely unknown settlement phases of the 3rd millennium BCE (Periods I-III in Stacul 1987, for which we have no idea of the interactions between Swat and the early urban developments of the plains in the early Harappan and Indus periods) the protohistoric cultures of Swat, from the mid 2nd to the 1st millennia BCE onwards, are viewed as a part of a wider process of socio-cultural adaptation, known as Localization Era, immediately following a great stage of relative cultural Integration in the early-middle Bronze Age (2600-1800 BCE), the Indus Civilization (Kenoyer 1988, 1991). Stacul's Period IV (ca. 1800-1400 cal BCE, see Vidale et al. 2011: 95, Fig. 1) was a period of agricultural intensification, due to a generalized adoption of rice agriculture, substantial demographic growth and – apparently – deep ideological change.

The little that was observed of the material culture of Period IV seem to have had links with the so-called Cemetery H culture of Punjab, as defined by old and recent excavations at Harappa. It is well known that its time span, together with the following Period V (final Bronze Age, ca. 1400-1100 BCE) matches the commonly accepted scenario for one of the foundational processes of ancient Eurasia, the so-called migration from the North-West of the Indo-Aryan speaking communities: or better, in a wider perspective, the spread into the Indo-Pakistani Subcontinent of elites who mastered Vedic Sanskrit, and the following Sanskritization of the north-western regions of the Subcontinent (Possehl and Witzel 2002; Hiebert 1995; Southword 2005). The last centuries of the 2nd millennium BCE also witnessed the very gradual adoption of iron-based metallurgies across a vast area (Possehl and Gullapalli 1999: 154-156). The crucial geographical setting of Swat, Kashmir and the nearby sub-Himalayan regions, in this broader picture of deep culture change (Dani 1978), can hardly be overlooked. And as the archaeological record of the protohistory of Swat is still dominated, to a great extent, by its pilfered cemeteries, we have to consider what we can rescue of the relative record in the greatest possible detail.

Protohistoric graves of Swat: beyond pits and pots

Silvi Antonini and Stacul (1972: 11-12) stated that in the Swat cemeteries they encountered two types of graves. The first type was a simple rectangular pit in the subsoil, called "upper cavity" in which was dug a deeper pit or "lower cavity", with the same shape, separated from the first by the means of large horizontal stone slabs (usually three, joined on the long sides). The slabs of the ceiling, according to the published reports, were supported on the margins by an earthen ledge carved or spared in the subsoil. The filling of the upper cavity appeared as a patch of darker sediments contrasting with the lighter color of the natural subsoil. The lower cavity, below the stone slabs, was usually empty and contained the objects and the skeletons. The second type of grave structure they describe is identical, but for the fact that the walls of the lower cavity are faced with other stone slabs forming a large stone cist.

Out of this basic description, some variants envisage rarer graves with circular or oval pits, simple pits, and larger pits in some cases provided with divisor or containing walls, made of stone blocks or large slabs. The authors reportedly found in the upper cavity human bones, fragments of charred bones, and sometimes part of

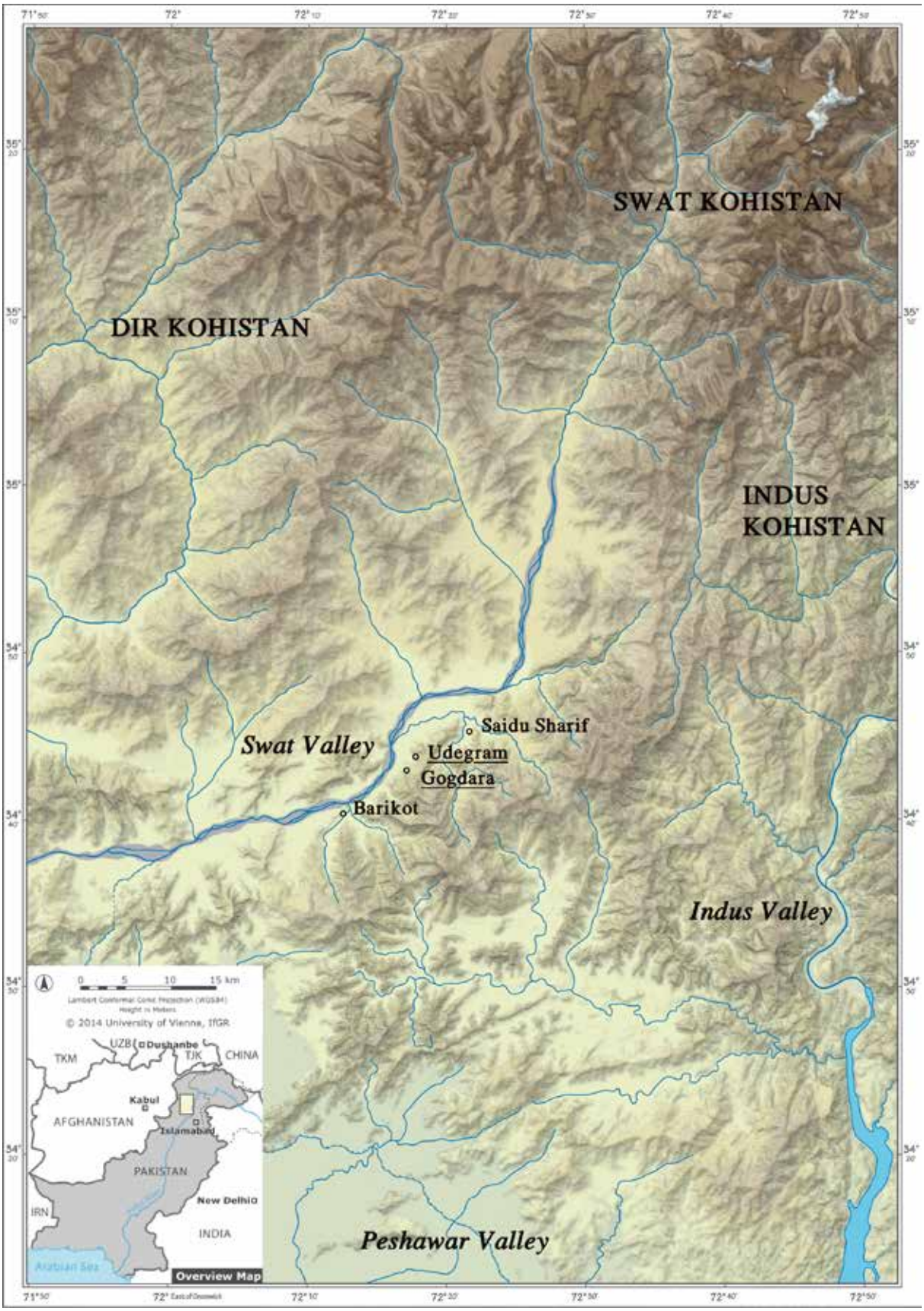


Fig. 1. Map of the middle Swat valley, with the location of the protohisoric cemeteries of Gogdara IV and Udegram. (Map by Karel Kriz and Daniel Nell, University of Vienna, Department of Geography and Regional Research; elaborated by L.M. Olivieri).

the furnishings embedded in sediment. In the lower cavity, the skeletons were set crouching, with the face - as a rule - looking upslope. Always as a rule, the larger vessels were set near the feet of the dead, while smaller vessels, pins and other personal objects were clustered near the face and the hands. More variable, in these burials, seems to have been the way of treating and disposing the skeletal material. Inhumation brought in the cists single, double or multiple burials, found in primary or secondary contexts of deposition.

The frequency of double contemporary burial containing the skeletons of female/male couples suggested to some authors the possibility that females "went sati", i.e. were killed or committed suicide at the death of their husband. However, this peculiar and dramatic possibilty has never been scientifically confirmed, and in the light of the new archaeological evidence here presented it seems rather unlikey (see below).

Also, Silvi Antonini and Stacul (1972: 326-328) frequently found incomplete secondary burials and hypothesized that in such cases the bodies had been exposed to natural agents before being recollected and buried. In other cases they recorded empty tombs, or cists containing only phalanges or isolated vertebrae, where small vessels were left inside the cavities. The evidence showed that bodies and furnishings had been removed and brought somewhere else for different treatment. These empty graves were frequently encountered in the burials of the earlier periods of use of the cemeteries (Stacul 1975: 325-326). These topics will be discussed at length, also in the light of the results the excavations here reported, in the concluding remarks of the present volume.

Reportedly, the graves also contained urns sealed by terracotta lids with cremated, often semi-charred bones, again belonging to one, two or more individuals; and the cremated remains could be deposited or scattered in a variety of manners.

In the cemetery at Timargarha, in Dir, A.H. Dani (1967a: 62-65) described in greater detail a similar variability in the treatment of the human remains. Rectangular pits contained, above all, primary single burials, the skeletons in flexed position; primary burials aside reduced and lateralized skeletons; collective burials, often disturbed mixing the bones of different individuals. Some grave contained urn burials with cremated remains, aside secondary, disordered bone burials. Dani moreover describes graves that contained only secondary burials, single or multiple. He recognizes the preferential association between primary, complete skeletons in flexed position with secondary fractional burials (single or multiple); and of urns with cremated bones together with fractional multiple burials. The burial pattern might be less chaotic than it appears at a first sight, if we assume that the funerary rituals followed an ideal cycle, namely: burial, decomposition, re-opening the cist, reduction in the same cist; removal, treating the removed bones with other skeletons; cremation (?), gathering in urn, final re-burial. Fractional secondary burials might be casual or intentional left-overs of the central steps of this ritual cycle.

Obviously, it is impossible to say if such a hypothetical cycle could have been the same for every category of people, or if persons of different sex, age, status or individuals who died in different circumstances deserved and were given different ritual trajectories. These latter would be extremely difficult to recognize in the partial and discontinuous record of the excavated graves. But that different age/sex groups were treated in different ways is quite likely – for example, Dani reports that at Timargarha children were exclusively found in rectangular pits lined with slabs or stone walls (Silvi Antonini and Stacul's Type 2), and covered with other large stones.

Dani moreover describes the architecture of the graves at Timargarha in a partially different and more complex manner than Silvi Antonini and Stacul did for the Swat cemeteries. His recurrent type of grave, on top, was square with rounded corners, oval or round; in every case the mouth of the grave was delimited by large rounded stones. The upper pit was dug to a depth of 1-1,80 m, and then within this vertical trench was dug

a smaller rectangular pit, internally lined with a dry wall of superimposed stones, up to seven courses high. The floor of the lower pit was made of beaten earth and stone grit; after receiving bodies and furnishings, the empty cavity was sealed with horizontal stone slabs or possibly with wooden planks, and the upper trench was re-filled up to the topsoil. After this, a low earthen pile was erected on top of the filled trench, delimited and supported at the base by a circle of stones. A main headstone, taller or larger than those used for the basal circle, marked on the edge the spot of each mound.

The two models (Dani's and Silvi Antonini and Stacul's) are partially consistent, in that both present two superimposed cavities, one filled with earth on top, and a burial cist or chamber below, covered with large stone slabs and containing the burial. The lowermost space was left empty and if it was found filled with earth, this was entirely due to post-depositional processes. This implies that decomposition always took place in the empty space of the cist or lower cavity, and all the taphonomic evidence we obtained from the field records is coherent with this conclusion.

However, only Dani's model envisages the possible presence of an earthen pile or mound marking the location of the grave on the cemetery's surface. How much, of the structures, signals or layers above ground or at the mouth of the pits, was identified by the excavators?

Consider the following statements in Silvi Antonini and Stacul 1972: "…Erosion has destroyed the external aspect of the graveyard. The original ground level is lost...(with) also part of the stratum in which the graves were dug" (11). The "upper cavities", according to the authors, in many cases would have been completely wiped off. But in reality, on the contrary, as stated above, many burials showed on top the more or less regular outline of an "upper cavity" filled with darker sediments. However, at least judging on what has been archaeologically recorded, nothing demonstrates that such upper layers were filled trenches, and not the bases of the earth mounds signaling (like in Timargarha's reconstructions) the location of the funerary constructions. Although at Katelai, Loebanr I and Butkara II burials (with their skeletal remains and objects) were mapped with care, there are no stratigraphic limits on and outside the graves' pits, and the description of the graves' contexts is quite simplistic, even considering the reported cases of tombs excavated and filled from different levels, re-opened for re-exhumation, or more rarely cutting each other. This would certainly indicate that substantial accumulation (artificial and/or natural), and not only erosion, took place above and around the grave pits (see for example *ibid.*, Pl. CXVII, a and b). In fact, in their report, the graves are represented as plain cavities or "boxes" set in groups or lines, containing objects – human skeletal remains and artifacts for furnishings. Where the graves are not superimposed, only the presence of more than one individual in the same cist, or the more ambiguous recorded evidence of double sets of identical or similar sets of ceramics, may suggest that the pits and cists were used in different moments and for more than one burial.

The new excavations of the ACT project at Gogdara IV and Udegram (Fig. 1) have been an effort at testing some of the hypotheses emerging from a careful reading of Timargarha's excavation report. How exactly were the graves constructed? What did people use to do around and above the burials? If ritual cycles were performed in the Swat graveyards, which specific actions could be archaeologically detected?

The digs, in first place, revealed that, contrarily to what repeatedly stated by the Italian excavators (Silvi Antonini and Stacul 1972: 11, 13, 60, 250, 427) the original trampling levels of the Swat graveyards are not necessarily and regularly destroyed and effaced by erosion. We actually detected on surface not only remnants of little mounds piled above the funerary chambers, but also the traces of complex constructions made with silty clay and wooden posts. We also mapped on top of the ancient cemeteries later erosive interfaces, whose

distribution helped in the reconstruction of the site's formation processes. The evidence gathered at Gogdara IV and later ad Udegram ultimately suggests that the static archaeological descriptions of the protohistoric graves in part of the previous literature are just due incomplete excavation, poor recording and – more generally – a general lack of interest for what was not pits and the objects inside.

NOTE

In the following reports, differently from the standard adopted in Volume II of the same series (Olivieri et al. 2014), numbers between round brackets indicate both structures (walls, floors, etc.), and layers (deposit, surfaces, filling, etc.). Angle brackets indicate negative stratigraphic units <pits, razed surfaces, cuts, etc.>.

GOGDARA IV

Gogdara IV - Fieldwork season, November 2011

M. Vidale, N. Agha, A. Iqbal, L.M. Olivieri, and M.L. Pulcini.
(with contributions by G. Quarta on radiocarbon dating)

The site and its discovery

Gogdara IV is the name given to a protohistoric cemetery near the present Gogdara village, located about 2 km South of the center of Udegram, on the left bank of the Swat river (Figs. 1-3). Reportedly very large, this protohistoric cemetery, like many others, must have been extensively damaged and plundered both in ancient and recent times, as the settlement and contemporary burial grounds gradually expanded from the river banks upslope. At present there is no information on the size and chronology of the ancient graveyard, which occupies the eastern periphery of the modern village. The area of Gogdara seems to have hosted important prehistoric and protohistoric settlements, at least since the 16th century BCE, as attested by the analysis of the rock carvings at Gogdara I (Ghani-ur-Rahman and Olivieri 2011: 61).

Although the three other sites of Gogdara (respectively I, II and III) are partially known, with the exception of Gogdara I, they were never well studied, nor adequately published. Gogdara I is a famous protohistoric rock-art monument (Fig. 2), the most important in middle Swat. It was noticed first by Tucci in 1955 (Tucci 1958: 291-2, fig.1), but published in its complexity only in 1998 (Olivieri 1998). According to this latter report, the site houses two major carving phases, one attributed to the late Bronze Age, the second to the period of the protohistoric graveyards. On the top of the cliff overlooking Gogdara I rock wall, lies the site of Gogdara II, a Buddhist complex associated to two post-Gandharan rock reliefs, and an ancient quarry area (Filigenzi 2015; Di Florio et. al. 1993). North-East of Gogdara I, a trench was opened in 1963 (Gogdara III), with the aim of exposing some structures apparently belonging to a small

Fig. 2. Gogdara I, June 2011. A detail of the rock wall with Iron Age carvings: carts and horses (Photo by L.M. Olivieri).

Fig. 3. Gogdara IV, November 2011. The entrance to the fruit orchard grown above the protohistoric cemetery (Photo by M. Vidale).

Fig. 4. Gogdara IV, November 2011. The site before the excavation of a small portion of the protohistoric cemetery (Photo by M. Vidale).

Fig. 5. Gogdara IV, November 2011. Students, workers, colleagues ready to leave the site at the end of an excavation day (Photo by M. Vidale).

Iron Age settlement. Little or nothing is known about the results of the work (see e.g. IsMEO Activities 1966, published in East and West, 4, pp. 384-5; see also; Tucci 1963a: 156 ff.; Stacul 1973: 245, fn. 2). Recently in the Italian Mission archives we recovered some drawings and few handwritten notes, from which in future we will certainly try to reconstruct the excavation sequence.

Coming back to Gogdara IV, it is worth noticing that the site lies approximately 500 m West of the other three. It is included within the boundaries of the present village of Gogdara, on the right side of the main road Malakand-Saidu. The part investigated with the test trench of November 2011 was the northern end of a narrow strip of gently sloping land (Fig. 4). This was the property of Mr. Muhammad Amin, the uncle of Mr Zarawar, a friend and a colleague from Swat University. Luca M. Olivieri first met the landlord with Mr. Zarawar in June 2011. During the meeting - as always accompanied by several cups of tea - the landlord, a real gentleman, Principal at the Govt. High School Amankot (Mingora), showed to Luca some vessels and the area from where they were recovered. A series of vessels found in the plundered burials was temporarily given to us for recording and study (see below). Olivieri thought that the area - flat, at the foot of a rocky cliff - would have been ideal for a trial-trench aimed at investigating the surviving trampling surface of a protohistoric graveyard. Eventually, he rented a portion of the area, inside a cemetery lot belonging to the landlord's family. The portion, a walled field at the end of a fruit orchard inside the village, ends against a system of artificial terraces on which rise some densely packed private dwellings. This patch of land, at the time of our dig, showed under a thick cover of grass the open rectangular pits left by six or seven graves dug by local farmers who took away their contents. The following section illustrates these objects and reviews their possible chronology in the light of the available information. The land we explored is recently used as a family cemetery. Our hosts seemed look with favor to our excavation, because in this way we were clearing part of the ground they planned to use for further new burials.

Materials recovered by the villagers; comparisons

The following finds (a set of ceramic vessels) were reportedly recovered by local inhabitants from two graves opened during agricultural works in the same fields where we dug our trench. Although they do not form a reliable context, they nonetheless helped us to preliminary assess, by the means of typological comparisons, their chronology and cultural belonging.

The vessels, being without context, will be described following the typological order proposed in Silvi Antonini and Stacul 1972; also the abbreviations of the types will be those used in the mentioned publication. The description of the vessels is mainly accomplished after the photographs, as we could examine the finds only for a very short time. Therefore we will not include detailed records of texture, surface treatment, other technological information.

Vessel 1 (Fig. 6).

Description: Fine grey ware. High stemmed cup, or deep hemispherical bowl, straight rim and ridge under the rim, mounted on an high stem and with hollow pedestal.

Typological attribution: type VT5; the profile of the pedestal and the form of the join between stem and pedestal is however more similar to type VT6.

Comparisons: for the piece there are no very close parallels; however, we can establish the following comparisons, all, significantly, from the Loebanr cemetery: Silvi Antonini and Stacul 1972, Pl. CXXXIXa, T. 71/6 (LB); *ibid.*, Pl. CXLIIIb, T. 172/1 (LB), mostly for the profile of the bowl; *ibid.*, Pl. CXXIIa, T. 19/6 (LB), only for the profile of the stem and the pedestal; for the profile of bowl and the position of the ridge in relief, very similar is also the specimen in *ibid.* 1972, Pl. CXXXVIIIb, T. 129/1 (LB), although the vessel must be attributed to the variant VT5I of the type.

Vessel 2 (Fig. 7).
Description: Fine grey polished ware. Deep hemispherical bowl, slightly everted rim and ridge in strong relief under the rim, mounted on an low stem and with pedestal ending in a disk.
Typological attribution: variant VT5I of type VT5.
Comparisons: for this form there is a good number of more or less close matches, mostly, also in this case, with grave goods of Loebanr cemetery, but also with vessels of Buktara II; in particular see: Silvi Antonini and Stacul 1972, Pl. CXLIIIc, T. 179/1 and Pl. CCLIc, T. 10/5; moreover: *ibid.*, Pl. CXXXVIII, b, T. 129/1, in which, however, the rim is simple and slightly inverted, and, only for the profile of the bowl, because the specimen has a very long stem, *ibid.*, Pl. CXXXIa, T. 45.

Vessel 3. (Fig. 8).
Description: Fine grey ware. Globular-shaped bowl with narrow mouth, high and slightly everted rim, and band of grooves on the shoulder; low stem and low pedestal with an edge distinguished by a deep groove.
Typological attribution: the vessel seems ascribable to variant VT8I of type VT8; it shows however some particular features.
Comparisons: for this specimen there are few precise matches; all, however, came from Loebanr cemetery; from the point of view of its general shape, the better parallel is with Silvi Antonini and Stacul 1972, Pl. CXXVIIIa, T. 39/5, though this specimen has a rich engraved and impressed decoration on the point of maximum expansion of the bowl; only for the profile of the bowl see *ibid.*, Pl. CXXXVId, T. 63/2; apparently, for the detail of the pedestal (edge with a deep groove) there are no comparisons; however, this may be due to the bad photographs available.

Vessel 4 (Fig. 9).
Description: Fine grey ware. Restricted beaker pot with globular body and long simple everted rim; decorated with two flat horizontal ridges on the throat and in a single groove with what looks like pairs of pending triangles, equally grooved, above the point of maximum expansion.
Typological attribution: the vessel falls in type VT20.
Comparisons: the majority of comparisons come from grave goods of Loebanr cemetery, with vessels with a small disk-base. Other parallels were also found with Butkara II and Katelai; in particular: Silvi Antonini and Stacul 1972, Pl. XIVa, T.45/4 (LB), c, T. 71/10 (LB) and d, T. 17/17 (BTK); *ibid.*, Pl. CXXVIIb, T. 31/1 (LB); *ibid.*, Pl. CXXXIa, T. 45/4 (LB); *ibid.*, Pl. CCXVIIc, T. 23/2 (KTL).

Vessel 5 (Fig. 10).
Description: Grey ware. Carinated sub-cylindrical beaker, with simple rim projecting outwards, and a small disk-base.
Typological attribution: the vessel shows typical features of both types VT23 and VT32.
Comparisons: the best comparisons come from the grave goods of Loeabanr and Katelai; in particular: Silvi Antonini and Stacul 1972, Pl. CXXXVIII, T. 129/2 (LB); *ibid.*, Pl. CXXXb, T. 207/7 (KTL), in which, however, in the upper part of the vessel are visible two horizontal ridges.

Vessel 6 (Fig. 11).
Description: Grey ware. Carinated deep bowl, with simple rim with a strong external projection; three flat horizontal ridges are visible in the median band of the body.
Typological attribution: the form belong to type VT32; this type is however characterized by a wide range of variations.
Comparisons: the type seems very widespread; however, the number of close parallels for this specimen, characterized, as we said above, by a strongly projecting rim and a low corner point, is quite limited. The best comparison come mostly from Loebanr, but also at Katelai there are similar vessels; in particular: Silvi Antonini and Stacul 1972, Pl. XXIc, T. 70/7 (LB); *ibid.*, Pl. CXXVb, T. 28/4 (LB); *ibid.*, Pl. CXXXIc, T. 45/2 (LB); *ibid.*, Pl. CCXVIIb, T. 21/3 (KTL).

Vessel 7 (Fig. 12).
Description: Grey ware. Bowl with a S-shaped profile with simple rim projecting to the exterior; the decoration is three parallel grooves in the middle of the body.
Typological attribution: for the absence of corner points and the general profile, wide and low, the specimen does not belong to a specific type of the classification of Silvi Antonini and Stacul 1972; at any rate, it is similar to type VT32.
Comparisons: the parallels - not always very close for the above exposed reason - come mostly from grave goods of Loebanr and Katelai cemeteries, but a single similar vessel was identified also in a grave of Buktara II; the most precise comparisons are those identified in Katelai and Butkara II; specifically: Silvi Antonini and Stacul 1972, Pl. CXLIIIa, 132/7 (LB); *ibid.*, Pl. CXLIVa, T. 90/6 (LB); *ibid.*, Pl. CCXIVa, T. 3 (KTL); *ibid.*, Pl. CCXIXc, T. 36/9 (KTL); *ibid.*, Pl. CCLVIc, T. 22/1 (KTL).

Fig. 6. Vessel 1.

Fig. 7. Vessel 2.

Fig. 8. Vessel 3.

Fig. 9. . Vessel 4.

Fig. 10. Vessel 5.

Fig. 11. Vessel 6.

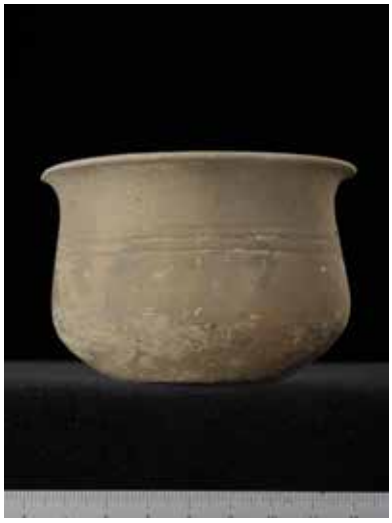


Fig. 12. Vessel 7.

Fig. 13. Vessel 8.

Fig. 14. Vessel 9.

Figs. 6-14. Gogdara IV, ceramics excavated by the villagers, Vessels 1-9 (Photo by E. Loliva).

Vessel 8 (Fig. 13).
Description: Fine polished grey ware. Cylindrical beaker with a slightly inflected simple rim, set on a low stem and conical pedestal; the body of the beaker bears a thin horizontal ridge in the middle and, in the lower part, a impressed zig-zag line made, apparently, with an pointed tool or, perhaps, with the nail.
Typological attribution: this specimen belongs to type VT36; however, also the type in question shows a very wide range of variability.
Comparisons: the shape is common in the three funerary complexes published in Silvi Antonini and Stacul 1972; the best comparisons are however the following: Silvi Antonini and Stacul 1972, Pl. XXIVc. T. 157/6 (LB), but with very different decoration; *ibid.*, Pl. CXXXc, T. 43/5 (LB); *ibid.*, Pl. CCXVb, T. 9/7 (KTL); *ibid.*, Pl.CCXIa, T. 39/4, (KTL); *ibid.*, Pl. CCLIX, T. 38/17 (BTK).

Vessel 9 (Fig. 14).
Description: Fine grey ware. Cylindrical beaker with a slightly inflected simple rim, set on a low stem and cone-like short pedestal; the body bears three horizontal ridges, that grow in thickness from the carination upwards.
Typological attribution: this specimen belongs to type VT36; however, also the type in question shows a noticeable variability.
Comparisons: the basic shape, quite common, is the same of Vessel 8 (see the above remarks); see Silvi Antonini and Stacul 1972, Pl. XXIVa, T. 157/6 (LB) and b, T. 9/15 (KTL); *ibid.*, Pl. CXXIb, T. 17/6 (LB); *ibid.*, Pl. CCXVc, T. 30/4, 6 and 7 (LB); *ibid.*, Pl. CXXXIVc, T. 55/2 and 3, (LB); *ibid.*, Pl. CCXVa, T. 9/15 (KTL); *ibid.*, Pl. CCXVb, T. 9/4. Variants of this type are present but much less common in the graves excavated at Butkara.

Vessel 10 (Fig. 15).
Description: Polished grey ware. Squat restricted beaker with a S-shaped profile, a simple rim and a horizontal ridge above the maximum expansion.
Typological attribution: the form would fall under Silvi Antonini and Stacul's (1972) "Small Beakers", more specifically type VT34 (conical or cylindrical beaker with flat or disk base), 27, Fig. 11 b.
Comparisons: in its simplicity, this form is not common as one would expect. See some examples in Silvi Antonini and Stacul 1972, for example Pl. CXa, T. 15/5, and variant at the following Pl. CXXIIa, T. 19/5 (LB); or *ibid.*, Pl. CXXXIVa, T. 49/1 (LB); or always *ibid.*, Pl. CCXXIa, T. 39/5 (KTL); see also Pl. CCLIXc, T. 38/14 and Pl. CCLXIc, T. 42/4 and 15 (BTK).

Vessels 11 (Figs. 16) .
Description: Fine grey ware. Small sub-globular restricted jars with short concave neck and everted rim.
Typological attribution: variants of type VT53, defined "small globular or pear-shaped bottle with flaring rim and flat or disk-base" (Silvi Antonini and Stacul 1972, 30, Fig. 12, f; Pl. XXXb).
Comparisons: Silvi Antonini and Stacul 1972, Pl. CXXIb, T. 17/3 (LB); *ibid.* Pl. CXXIXc, T. 51/5, 12 and 9 (LB); squatter specimens in *ibid.*, Pl. CXXXIVa, T. 49/4, 5 (LB); other variants *ibid.*, at Pl. CXXXVb, T. 57/6, 7 (LB) and at Pl. CCXXXIIc, T. 242/20, 19 (KTL); see also *ibid.*, Pl. CCLIa, T.1/14 and CCLVIIIb, T. 28/18 (KTL).

Vessels 12 and 13 (Figs. 17, and 18). Description: Fine grey ware. Small carinated biconical bottle with two-three ridges above the maximum expansion, or on the shoulder, and a short concave neck.
Typological attribution: the form is transitional betweeen Silvi Antonini' and Stacul's types VT53 (for neck and mouth) and for the form of the carinated body VTbd57 (Silvi Antonini and Stacul 1972: 28-29, Figs. 12 f and 13 c).
Comparisons: the type is not common in the published repertories, where small pottery bottles are rather subglobular and have a taller neck (cf. the following type). See *ibid.*, Pl. CCXIIa, T. 1/5 (KTL).

Vessel 14 (Fig. 19).
Description: Fine polished grey ware. Small globular bottle with a tall cylindrical neck, simple vertical rim and a disk-base.
Typological attribution: this vessel closely matches with Silvi Antonini and Stacul's (1972) type VT48 ("small globular or pear-shaped bottle with high cylindrical neck and flat or disk-base"): 1972, 28-29, Fig. 12, a; *ibid.*, Pl. XXIXa, T. 19/9 (LB); *ibid.*, Pl. CXXIVb, T. 22/3 (LB); *ibid.*, Pl. CCXVIIc, T. 34/4 and Pl. CCXXXIIc, T. 242/2 (KTL). The type was not recorded in the graves of Butkara II.

Vessel 15 (Fig. 20).
Description: Coarse red ware. Small subcylindrical jar with rounded shoulder and everted rim. Typological attribution and comparisons: this type of small vessel does not find meaningful comparisons in the published records.

Fig. 15. Vessel 10.

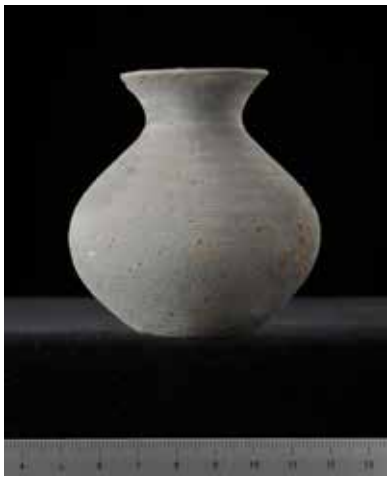


Fig. 16. Vessel 11.

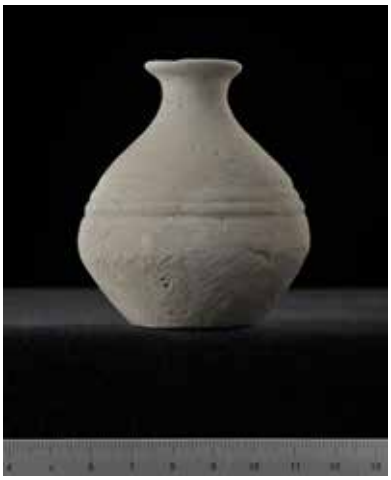


Fig. 17. Vessel 12.

Fig. 18. Vessel 13.

Fig. 19. Vessel 14.

Fig. 20. Vessel 15.

Figs. 15-20. Gogdara IV, ceramics excavated by the villagers, Vessels 10-15 (Photo by E. Loliva).

The excavation and its stratigraphic units

The dig at the ancient cemetery of Gogdara IV took place in November 2011. Originally planned as a rectangular trench measuring 8 x 10 m, the area was extended in the north-eastern corner with an additional opening of 3.50 m (West to East) x 2.65 m (North to South) in order to clear the complete outline of Grave A, that turned out to be a burial re-opened and emptied in ancient times (Fig. 21). Fieldwork took about 20 days, and was carried out with about 15 specialized workers of the ACT project teams. Besides Grave A (the re-opened burial) we uncovered Grave B and Grave C, this latter a large rectangular burial oriented West-East in the center of the original trench (Fig. 23). The list of the stratigraphic units (SU) recorded at Gogdara IV is reported below.

Fig. 21. Gogdara IV, November 2011. General view of the trench with the excavated features in the last days of work (Photo by E. Loliva).

Fig. 22. Gogdara IV, November 2011. Objects included in SU (3), witness of a recent private orchard (Photo by E. Loliva).

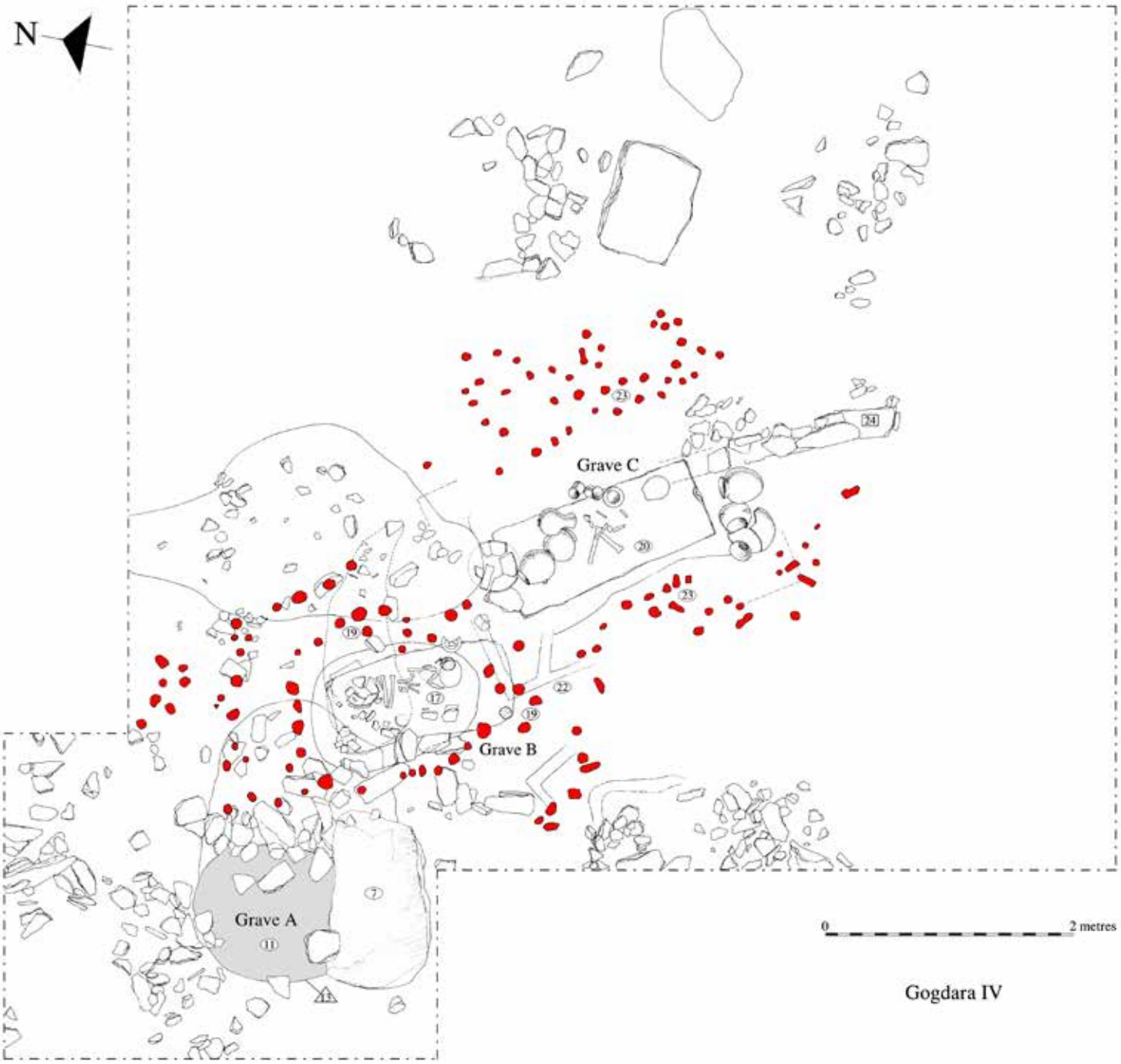


Fig. 23. Gogdara IV, November 2011. General map of the excavated features (Drawings by M. Vidale, F. Martore, R. Micheli).

SU (1) The thick grass covering of the orchard. The grass had a thick and dense roots layer, very difficult to remove, about 10 cm thick.

SU (2) Discontinuous patches of concrete tempered with gravel, on average 5 cm thick. Probably residues of the yard for the construction of the nearby mosque.

SU (3) Recent orchard, obtained by plowing up a dumping ground, about 20-30 cm thick. The matrix is an olive brown silt (2.5Y 4/4), with abundant small angular grains of schist (less than 1 cm). Other inclusions are glass sherds, brown glass medicine flagons, a plastic doll, tea china ware, a collection of glass marbles, and other modern industrial potsherds, and other artifacts among which a recent machine gun cartridge (Fig. 22).

SU (4) Ancient colluvial layers (2-3 superimposed sheets) linked to an extensive cultivation of the local slopes, for a total thickness of 40-60 cm, getting thicker in the lower slope of the excavated trench. The matrix is a slightly clayey silt, dark greysh brown (2.5Y 4/2). SU (4) contains abundant potsherds, averaging 4-5 cm in diameter, with edges and corners smoothed by downslope transport and the involved erosion processes, and abundant schist fragments with angular contours, larger in size than

Fig. 24. Gogdara IV, November 2011. Objects included in the colluvial layers of SU (4): worn potsherds coming mostly from red-slipped water jars of Kushana phase, originally in dumps used for manuring upslope terraces (Photo by E. Loliva).

Fig. 25. Gogdara IV, November 2011. Objects included in the erosive surfaces SU (5): early historic and protohistoric sherds on the eroded surface of the cemetery (Photo by E. Loliva).

Fig. 26. Gogdara IV, November 2011. Grave A: detail of one of the schist slabs showing repeated impacts (probably ancient and recent) from iron-steel plowing marks (Photo by E. Loliva).

those observed in SU (3), above. The potsherds are red-slipped and exclusively belong to medium-sized Kushana restricted jars and pots (Fig. 24). The top of this SU shows traces of intensive plowing, the same process that created the East-West oriented traces on the edge of the big burial slab SU (7) in the north-eastern corner of the trench (see below). Given the very homogeneous nature of the included sherds, we are dealing with the results of the extensive exploitation cum-erosion of the local slopes from the times of the Kushana settlement (I-IV centuries CE) onward. The total absence of glazed ware sherds reveals that this major agricultural phase had come to an end around 1000-1200 CE.

SU (5) At the base, SU (4) ends in negative, cumulative interface which caused an extensive areal erosion of the local slope. This surface is at the same time the final result of the use of the cemetery (its ancient trampling surface) and its abandonment. SU (5) actually contained the first protohistoric ceramics encountered in the trench (both miniature vessels fragments and larger sherds, together with stones set vertically in the ground), but also some Saka-Parthian wheel-made small bowls (2nd-1st centuries BCE) and an Indo-Greek iron arrow-head (1st century BCE) (Figs. 25 and 27). The matrix is a yellowish brown (10YR 5/4) silt. Along the East and West portions of the trench, SU (5) is cut by the erosive SUs (14), (15) and (16), to be separately described (see below).

SU (6) The substratum of the (presumed) upper phase of use of the cemetery. The matrix is a pure silty clay, pale yellow (5Y 7/3) with little or no inclusions. Possibly a clay bank deposited by the Swat river, or a deposit of the same origin locally affected by human (burial?) activities.

SU (7) A large schist slab, originally the bottom slab of a grave which had been re-excavated (labeled Grave A) disturbing and removing the skeletal remains and leaving the stone itself in an oblique position along the western edge of the re-excavated pit (Fig. 21, lower left). SU (7) is distinguished by the parallel traces of many East-West plowing marks during the progressive formation of the agricultural layers SU (4) (Fig. 26). This feature, together with SU (8), see below, are the final results of the cycle of use and destruction of Grave A.

SU (8) The uppermost filling of the destroyed Grave A, partially covering SU (7). The matrix is a dark brown clayey silt. See below, SU (11) and (12) within the same pit SU (13).

SU (9) A cluster of stones outcropping from SU (6), partially unearthed near the northern wall of the trench. It possibly marks the location of another grave (not excavated).

SU <10> A large pit partially filled with medium-sized stones, about 3 m from West to East and 2 m from North

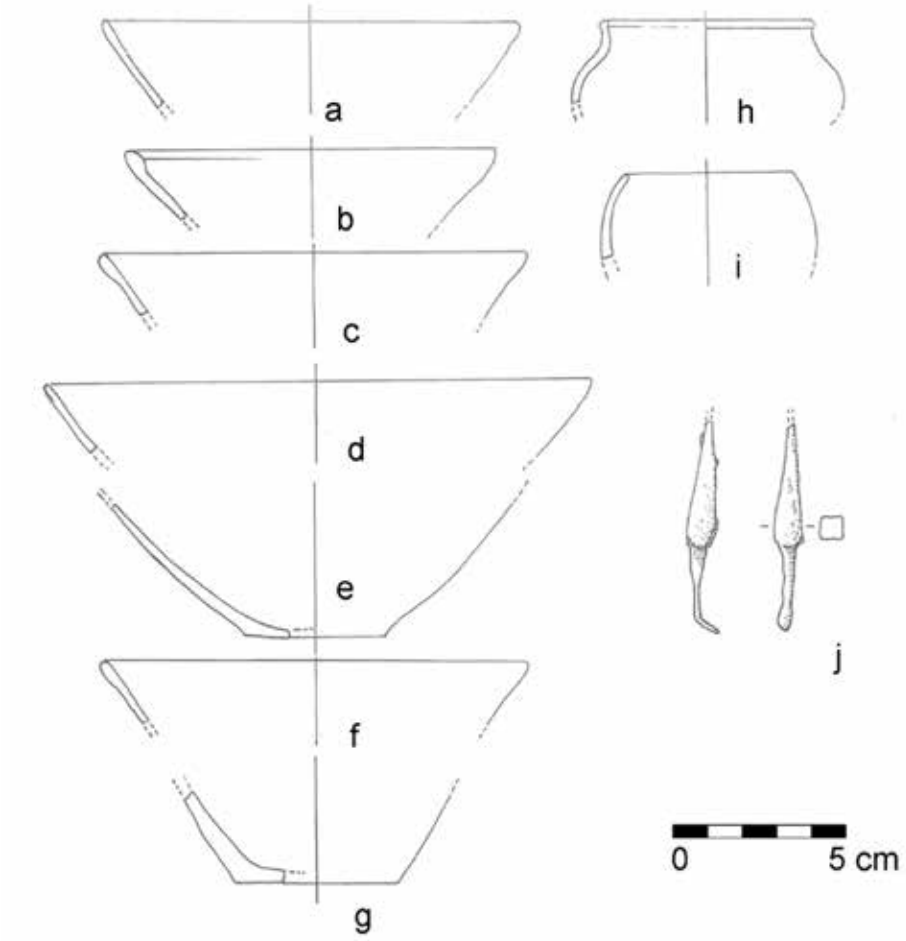


Fig. 27. Gogdara IV, November 2011. Ceramics and an iron arrow-head datable to the Early Historic period from the erosive interface on top of the ancient graveyard, SU (5) and others. a-g, fine red ware bowls, reddish brown (5YR 6/3) to reddish yellow paste (5YR 6/6), wheel-thrown; h and i, thin-walled globular bowls of the same fabric, equally wheel-thrown. j, iron arrow-head (Drawings by M. Vidale).

Fig. 28. Gogdara IV, November 2011. Grave B: general view of the traces of wooden fences around the Grave, SU <16> and SU (17); the postholes of the wooden construction, SU (19), are sunk into the oval clay bench SU (18). See also Pl. I. (Photo by E. Loliva).

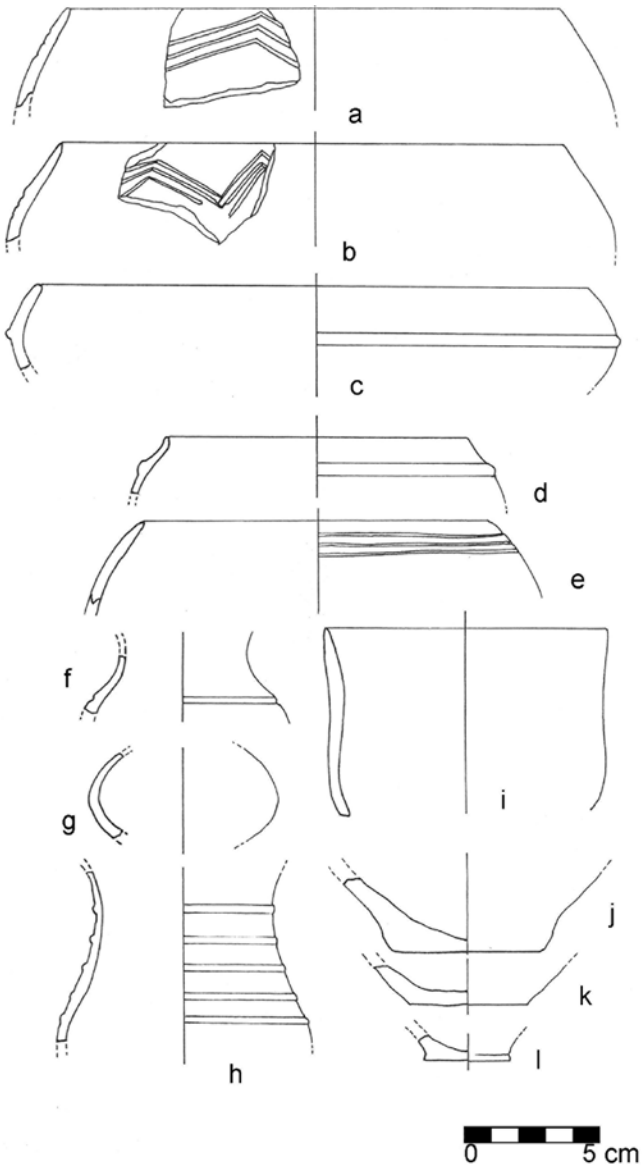


Fig. 29. Protohistoric pottery spread on top of the cemetery's surface or eroded from the Graves of the local cemetery. a, coarse ware, coiled and fashioned at the potter's wheel. Incised decoration. Dark red slip (2.5YR 3/6) on red paste (2.5 YR 5/8); b, medium coarse ware, coiled and fashioned at the potter's wheel. Incised decoration. Dark reddish brown slip (2.5YR 2.5/4) on a reddish yellow paste (5YR 6/8); c, fine ware with schist flakes, made with coils fashioned on the potter's wheel. Reddish yellow paste (5YR 7/6); d, fine ware, wheel thrown, brown paste (7.5YR 5/4); e, medium coarse ware, made with coils thinned on the potter's wheel and incised with a comb-like tool. Reddish yellow paste (5YR 6/6); f-h, medium ware, made with coils fashioned on the potter's wheel, brown pastes (10YR 5/3); i, grey ware, wheel-thrown, grey paste (2.5Y 6/0); fine brownish ware, wheel-thrown, brown paste (10 YR 5/3). j-l, medium to fine ware, wheel-thrown with or without coils (7.5YR 5/4) (Drawings by M. Vidale).

to South, and about 60-70 cm deep. This pit, cutting SU (5) and later sealed by SU (4), is chronologically framed between the end of the use of the cemetery and the conversion of the whole slope to agricultural purposes, since Kushana times.

SU (11) In the re-opened Grave A, SU (12) is a lens of pale yellow (5Y 7/3) silty clay forming within the cavity of the re-opened Grave A during its partial filling. SU (11) was produced by trampling the head of SU (6) and contemporarily walking on top of the partial filling SU (12).

SU (12) Bottom filling of the removed Grave A. Dark brown clayey silt, including many stones, large potsherds and abundant scattered small fragments of human bones (sampled for 14C dating).

SU <13> Pit resulting from the re-excavation of Grave A.

SU <14> The erosive interface above SU (6), contemporary with SUs <15> and <16>, as observed in the lower slope (i.e. along the southern wall of the trench). In this SU we observed small fragments of human bones.

SU <15> Along the West side of the trench, this identification labels a series of erosive gullies in phase with SU <5> and <16>. It contains not a few coarse protohistoric potsherds and flakes of burnt human bones.

SU <16> A cumulative erosion interface exposing a cluster of fragments of ceramics, most of which probably belonged to the furnishing of Grave B (Figs. 28-31, map in Fig. 32). It includes part of a restricted pot with horizontal lugs (Fig. 33 B/1), emerging below SU (10) at the south-western corner of the pit SU (13), part of a globular cup on a raised foot (Fig. 33 B/2) and the foot of a tall pedestalled cup (Fig. 33 B/3) still in situ on the edge of the basal stone slab SU (17) in front of the cranium of the second individual which was finally deposited in the cist. The high stemmed cup of Fig. 33, B/3 was later reconstructed by finding and re-assembling the rest of the vessel, scattered by the erosive interfaces across an area of ca. 6-8 square metres. Note in the plan the downslope scattering of the ceramics and bones of Grave B, southwards. The pedestalled cup was placed in front of the second skeleton

Fig. 30. Gogdara IV, November 2011. Detail of Grave B during excavation, with a partial exposure of the manipulated remains of Individual 2. Note the remains of a four-lugged globular pot under the lower limbs of the deceased (Photo by M. Vidale).

Fig. 31. Gogdara IV, November 2011. Detail of Grave B during excavation with the skeletal remains on the basal slab of the Grave. Near the facial region of Individual 2, marked with 1, note the base of a stemmed cup originally placed vertical on the floor of the cist, marked with 2. 3 is the skull of Individual 1, embedded in the oval clay bench SU (18) (Photo by E. Loliva).

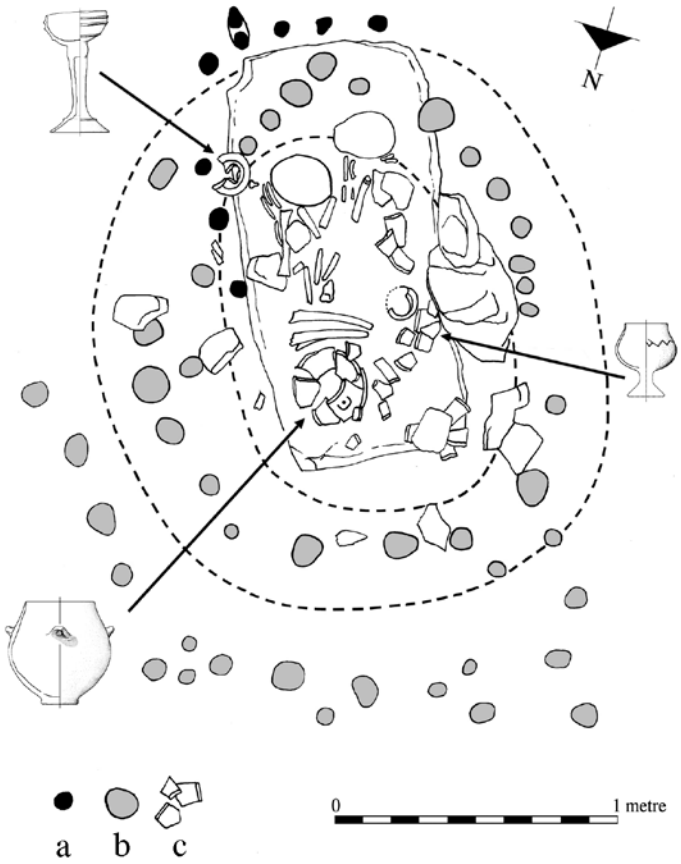


Fig. 32. Gogdara IV, November 2011. Grave B and the surrounding wooden fences: a) Post-holes belonging to the wooden (?) feature of the earliest burial phase, SU (17a); b) Post-holes of the second burial phase, SU (19); c) Potsherds. The dashed line marks SU (18) (Drawings by M. Vidale, F. Martore, R. Micheli).

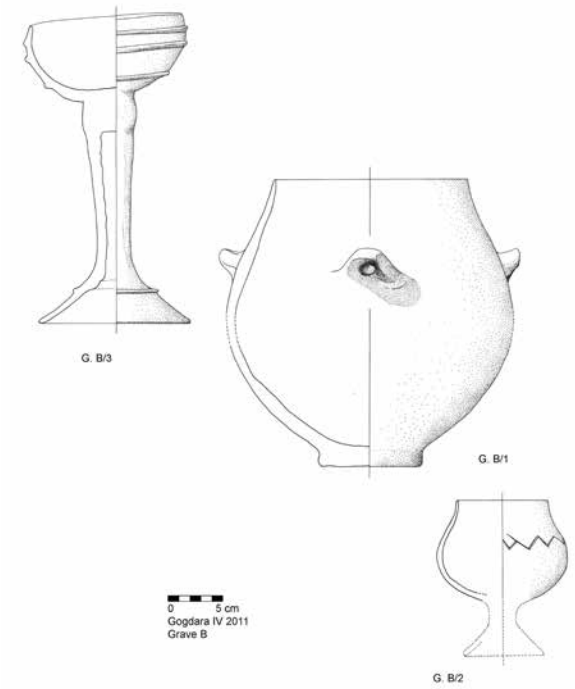


Fig. 33. Gogdara IV, November 2011. The furnishings of Grave B (Drawings by M. Vidale).

after the first individual was lateralized on the northern edge of the basal slab of the cist SU (17), see below. Some bones of the second and last individual found in Grave B above the slab SU (17) (Figs. 28-31) were sampled for 14C dating.

SU (17) The basal rectangular slab of Grave B supporting its skeletal remains. Some post-holes, here defined SU (17a), suggest that the grave was a cist made by vertical wooden planks, supported by rows of logs. The slab supported Individual 1, a fractional burial along the northern edge (a cranium, some phalanges and a few other long bones) and a second burial, Individual 2, deposited later, near the southern edge.

SU (18) An oval bench, with an internal cavity, made of yellowish silt excavated from a local substratum like SU (6) (Figs. 29-32; Pl. Ib). SU (18) was built above the stone slab SU (17). This must have happened after the removal of the lateral stone slabs or wooden planks of the original cist. This structure measured about 1.5 m on the West-East axis and about 1 m in the North-South one; it was about 30 cm thick and had approximately the same height. The inner cavity was probably filled with a low-rising mound, surrounded and protected by the wooden poles of SU (19), see below. The silty clay bench included the first cranium and the lateralized long bones within this feature, while keeping in its center the second and last skeletal remains which had entered the cist. While the bench was built, the stemmed cup in Fig. 33, Grave C/3 was taken away in pieces. The foot of the vessel remained where it had been placed (in front of the second skull), its fragments were abandoned and trampled outside the bench, and subsequently scattered downwards by the local erosion interfaces.

SU (19) A double arc-shaped series of post-holes set on the northern and eastern sides of Grave B (Figs. 29, 32), probably in origin belonging to two concentric circles of poles erected around the grave. The filling of these post-holes was described as sandy silt and fine gravel, olive brown (2.5 Y 4/4). The post-holes of both SU <20> and those of the later and nearby Grave C, SU have been entirely excavated. In both series they turned out to be from ca. 4 to ca. 30 cm deep (or more) from the top of SU (6). They were almost always described as having a pointed end. Their setting is sub-vertical or slightly oblique.

SU (20) Pit and basal stone slab of Grave C (Fig. 34), supporting the skeletal remains and part of the funerary furnishing. SU (20), (21) and (22) – see below – are contemporary, and because SU (22) cuts the double ring of post-holes, i.e. SU (19) of Grave B, we established that this latter was built and probably abandoned in an earlier series of events.

SU (21) A rectangular bench of yellowish sandy silt (partially visible in Figs. 35 and 36), similar for composition to SU (19) and like this latter perhaps excavated from a local substratum linked to SU (6). This constructed bench surrounded the rectangular slab SU (20); originally the structure was about 2 x 1,20 m wide, the bench itself being about 35 cm wide and as much high from the basal stone slab. This bench probably hosted part of the vessels and of the rest of the furnishing of Grave C. The vessels and the other objects of the furnishing occurred in three groups (respectively on the opposed short sides of the rectangular space and in the center, where they were associated to the skeletal remains). The spatial distribution and association patterns of the different types in these three points of Grave C allowed us to reconstruct some interesting aspects of the funerary practices in play (see below).

SU (22) Two post-holes and the associated traces of planks sunk vertical on their long side or wooden chambers built above surface of the above described erection, corresponding to the first phase of construction of Grave C (Figs. 35, 36). We found only the well-preserved evidence of a north-western corner of this hypothesized charnel house (Fig. 36), but its regular position outside the corner of the bench allowed, following principles of symmetry, us to reconstruct with some likeness its original ground-plan. In the reconstruction it measured 2.40 x 1.90 m on the exterior. In the surviving corner, a third trace bisects the inner angle (Figs. 35 and 36), suggesting a complex and peculiar basal wooden frame. This trace was easily excavated to a depth of 3-4 cm. The matrix of the filling was quite different from that of the previous and later wooden post traces: a pure clayey silt, olive (5Y 5/4) – compare with the fillings described for SU (18) and (23). These linear and angular traces appear three times between the northern edge of Grave A and the northern wall of the trench, suggesting that in this spot of the cemetery a rectangular wooden construction (a room or a very large "chest") was built or shifted its location three times, with orientations that gradually diverged.

SU (23) In a further phase of use of this complex funerary structure, a double line of posts was built along the northern and southern edge of the pit and bench SU (21) of Grave C. It seems that at this point the wooden chamber or "chest" SU (22) was not anymore standing, because the post-holes of SU (23) cut through their traces. The filling of these post molds appeared quite similar to that of the concentric ring SU (19): sandy silt with fine to coarse gravel, olive brown (2.5 Y 4/4). Although this second wooden construction (a rectangular fence or possibly a support for a raised platform, measuring on the ground about 2,50 x 1,50 m) had a slightly diverging orientation, it was evidently being a part of the same grave construction. On the southern side, the fence or line of posts was joined to two small circles of posts (diameter ca. 70 cm-1 m) of uncertain function.

SU (24) The surviving portion of a retaining wall running

from West to East, erected above SU (6) in 3-4 courses of flat schist slabs where the erosion of the filling of Grave C was more intensive. This wall and the associated sediments, found about 35 cm from the topsoil, showed traces of roots and ancient biological activity.

SU (25) A cluster of stones near the southern wall of the trench. Like SU (9) at North, it possibly marks the nearby location of other graves (not excavated).

Interpreting the stratigraphy: after the graveyard

The test trench revealed that the explored part of the explored part of the Gogdara IV site, before becoming a fruit orchard and a family cemetery for the local community, had been partially covered by localized thick crusts of concrete, SU (3), probably by the yard of construction of the nearby mosque. Before the yard and a temporary abandonment, in the last decades the site had also been used as a domestic dumping ground (Fig. 23).

For an unknown range of time, but after rise of the Kushana power and before the Islamic Era (roughly speaking, across good part of the first millennium CE) the slopes of the local relief seem to have been intensively cultivated. In time, the fields located upslope produced series of colluvial sheets, SU (4), which slowly moved downslope onto the piedmont strips, being at the same time partially eroded and washed off, but also constantly replaced by new sediments transported by hydraulic-gravitative processes. The origin of SU (4) should be looked for in the lots cultivated upslope by the means of terraced strips of land. The Kushana potsherds found in large number in these colluvial deposits (Fig. 24) probably come from ancient practices of fertilizing these fields with manure and domestic dumps. The sherds, in fact, are highly worn and abraded at the edges, and it is easily observed that many of those those surviving this damage belong to rims, bases and other corner points of the form – the most resistent to the mechanical abrasion of hoes, plow's blades and friction with gravel.

One of the grave stones – SU (7) of Grave A (Figs. 21 and 26) –, abandoned in an oblique setting on the edge of its original pit, retains on the upper edge patterns of multiple plowing grooves, witnessing this (and probably later) phases of agricultural exploitation.

At the base of the colluvium, the top surface of the protohistoric graveyard is affected by a series of erosion fans and gullies which included artifacts typologically datable to the Indo-Greek and Saka-Parthian periods (2nd-1st centuries BCE, Fig. 27). As the Graves we excavated, roughly speaking, can be dated between the second half of the 2nd millennium BCE and the early centuries of the 1st millennium BCE (see below), we have to hypothesize that after the local abandonment of the graveyard took place a phase of strong, destructive erosion triggered by intensive plowing. This is attested not by the many plowing marks running from West to East on the edge of the displaced stone slab of Grave A (Fig. 26), but also by the abundant plowing marks recorded on the abandonment surface of the Graves at Udegram (see below). The recurrent evidence of plowing on the piedmont slopes without local colluvial deposition, resulting in a strong soil washout, suggests that the upper slopes, until the rise of the Kushana dynasty, had not been extensively cultivated.

The topmost level of the cemetery as an archaeological context

The original trampling surface of the graveyard – the level from which people dug, infilled, re-opened and visited the graves – was intensively affected by hydraulic run-off processes, identified by our SUs <5>, <14> , <15 and <16>. This explains the construction of a badly preserved retaining stone wall – SU (24) – where Grave C was most severely eroded, and possibly of other walls dismantled by erosion in ancient times.

Fig. 34. Gogdara IV, November 2011. General view of Grave C during excavation, showing two groups of ceramic containers at the opposite ends of the decayed funerary structure. On foreground, a line of post-holes of the second fence SU (23) (Photo by E. Loliva).

Fig. 35. Gogdara IV, November 2011. Aside the burial space of Grave C, the palimpsest resulting from the superimposition of SU (22) and SU (23). Post-holes of the two building phases are filled with darker, granular matrixes formed in a post-abandonment phase. Note the darker angular features, probably corners of rectangular wooden erections, removed or possibly decayed in the ground. See also Fig. 36 (Photo by M. Vidale).

Fig. 36. Gogdara IV, November 2011. A detail of the possible wooden decarnation construction, i.e. Grave C. Note (lower left) the corner of the construction, with traces of orthogonal planks or logs joined to angular post-holes, other aligned post-holes (belonging to a second phase of construction) and the remnants of two concentric steps in rammed yellowish silty clay from which the ceramics fell down (Photo by M. Vidale).

Fig. 37. Gogdara IV, November 2011. Lateral view of the core of the funerary assemblage of Grave C; a skull, a high stemmed cup (C/7, see text), two beakers and a medium-sized pear-shaped jar partially embedded in the collapse of the surrounding earthen feature SU (21) (Photo by E. Loliva).

Fig. 38. Gogdara IV, November 2011. The same funerary assemblage, seen from above. In the centre, among scattered fragments of long bones, is visible a copper/bronze pin (C/12) (Photo by M. Vidale).

Fig. 39. Gogdara IV, November 2011. Grave C: detail of three vessels deposited in the funerary space (Photo by E. Loliva).

Fig. 40. Gogdara IV, November 2011. Grave C: excavating the filling of cooking pot C/3: beaker C/15 and terracotta spindle whorl C/14, intentionally shattered and found in two refitting fragments. The section shows altered sediments, possibly affected by the decay of other perishable objects and containers. Some of the terracotta objects were certainly supported by cloth or other decayed objects (Photo by E. Loliva).

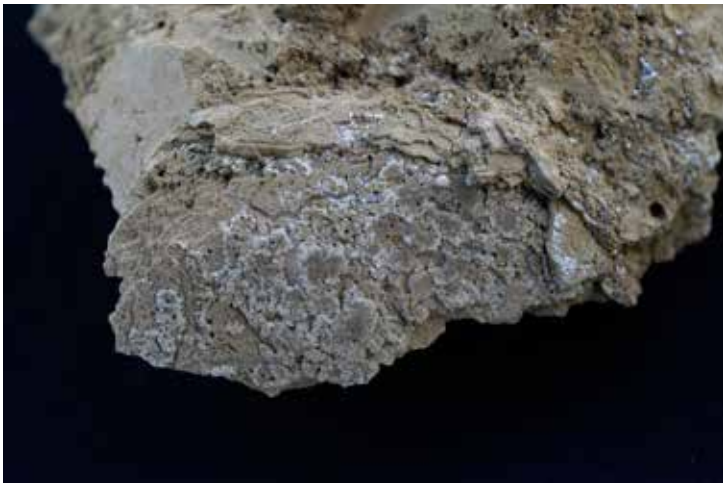
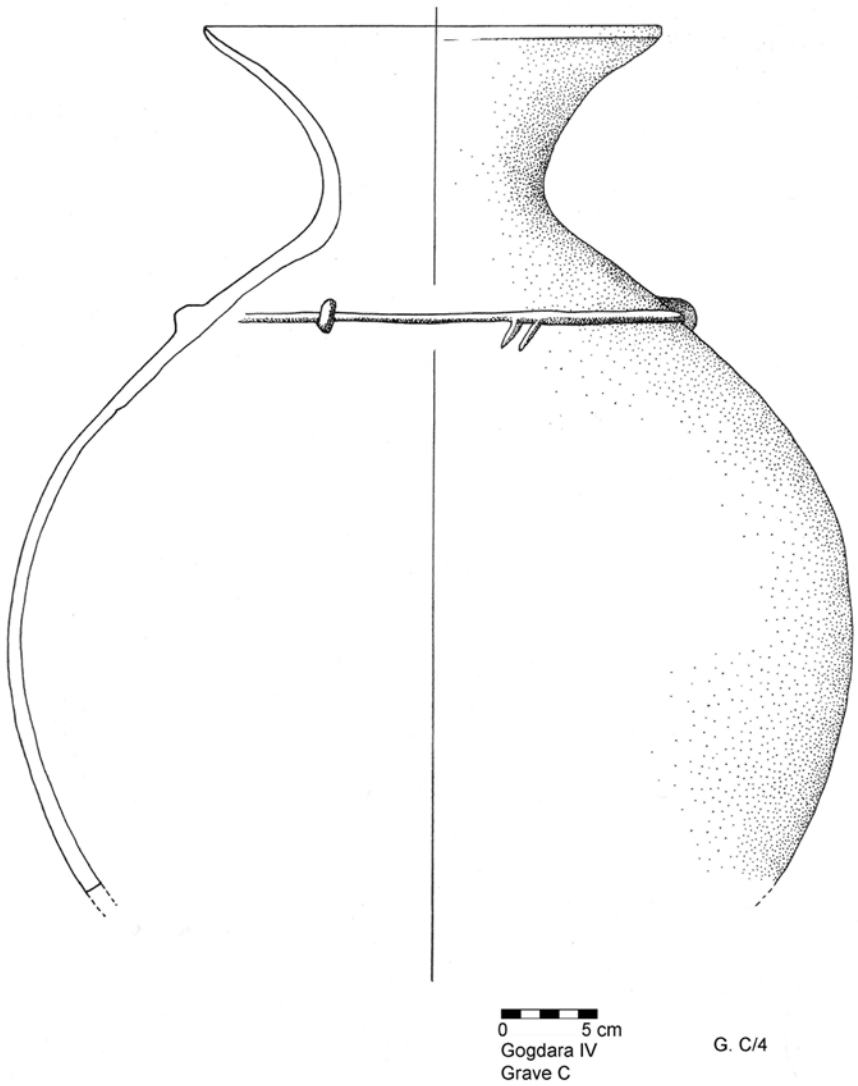


Fig. 41. Gogdara IV, November 2011. Grave C: a trace possibly left by the rim or bottom of a basket or bark container, found in the filling of cooking pot C/3 (Photo by E. Loliva).

Fig. 42. Gogdara IV, November 2011. Grave C: spindle whorl C/13, intentionally broken in four pieces, found in the bottom of the filling of cooking pot C/3 (Photo by E. Loliva).



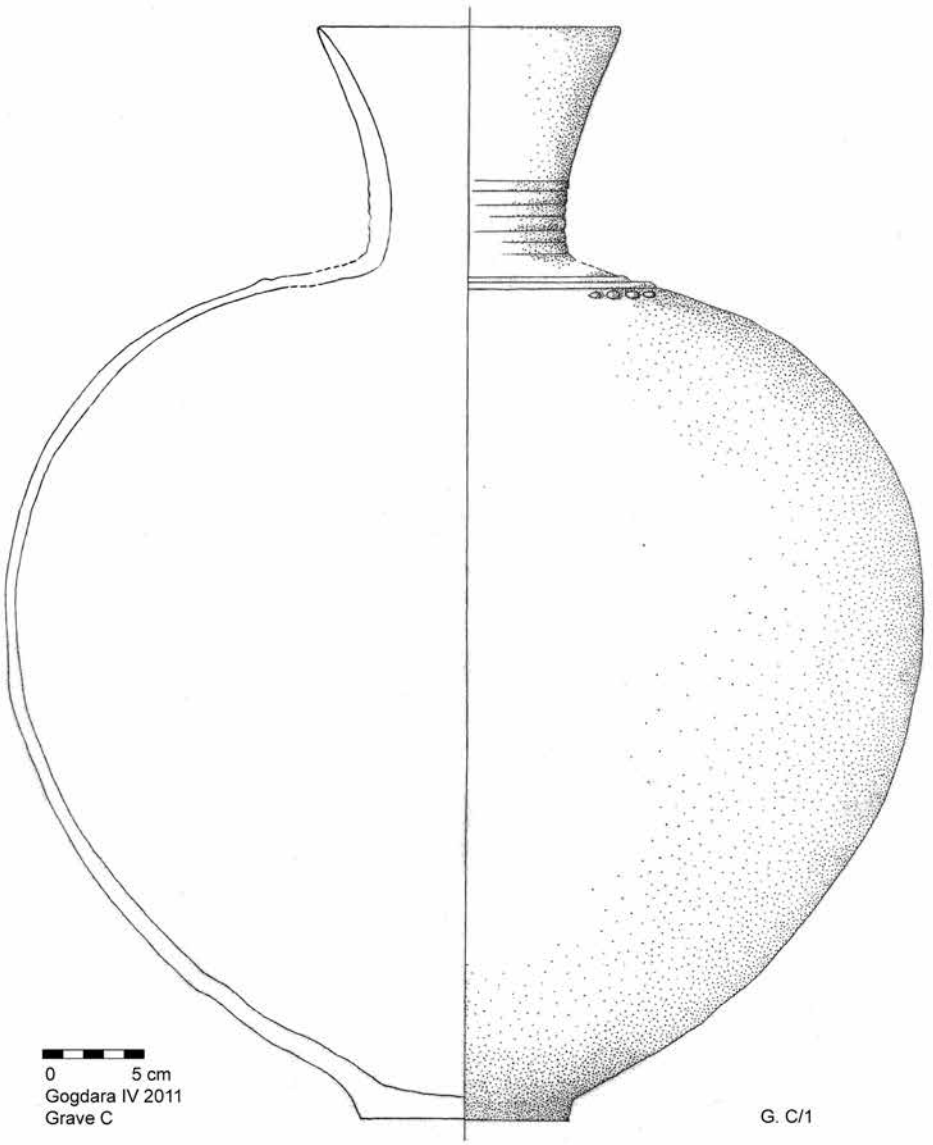


Fig. 43b

Fig. 43a

Fig. 43. Gogdara IV, November 2011. The furnishings of Grave C: a) Vessel C/1; b) Vessel C/4; c) Vessels C/7, C/10, C/15, C/9, C/2, C/5; d) Vessels C/8, C/3, C/6 (Drawings by M. Vidale).

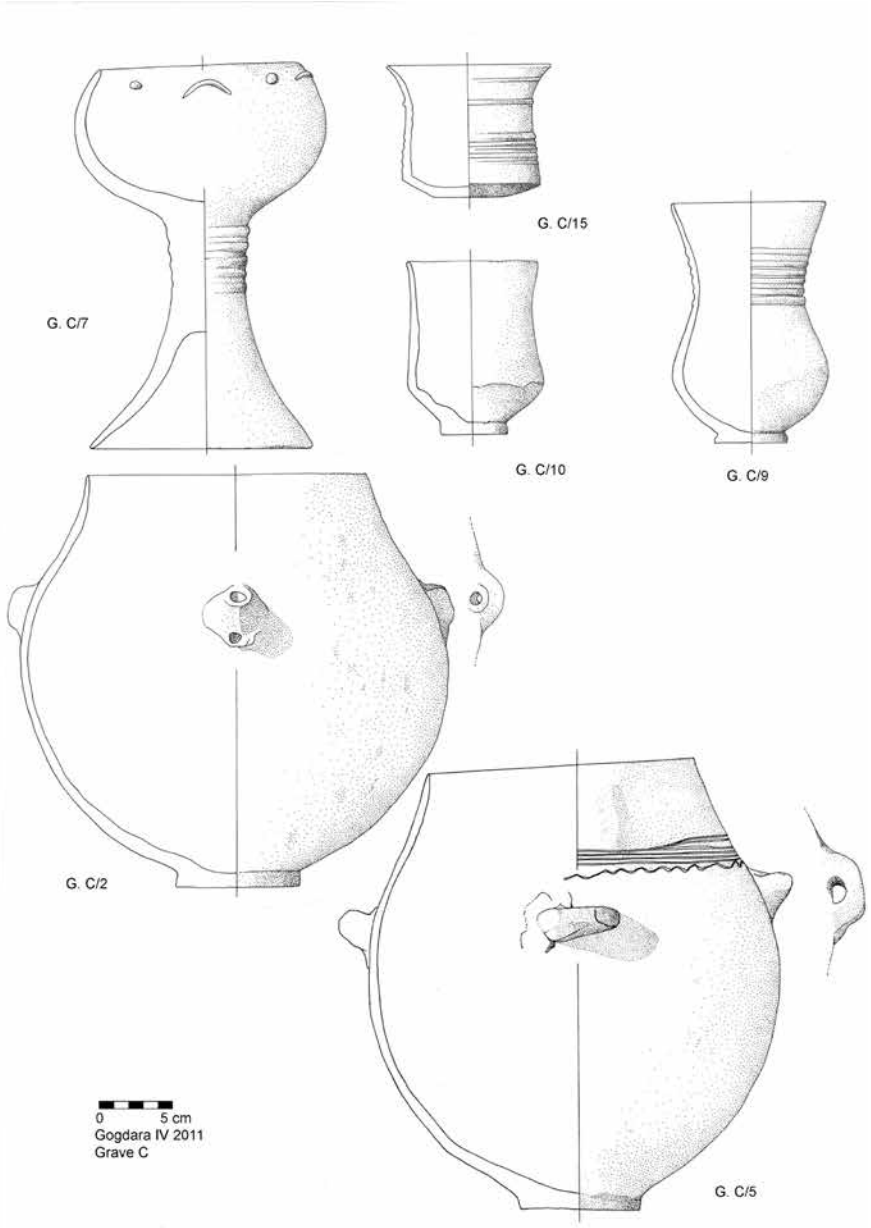


Fig. 43c

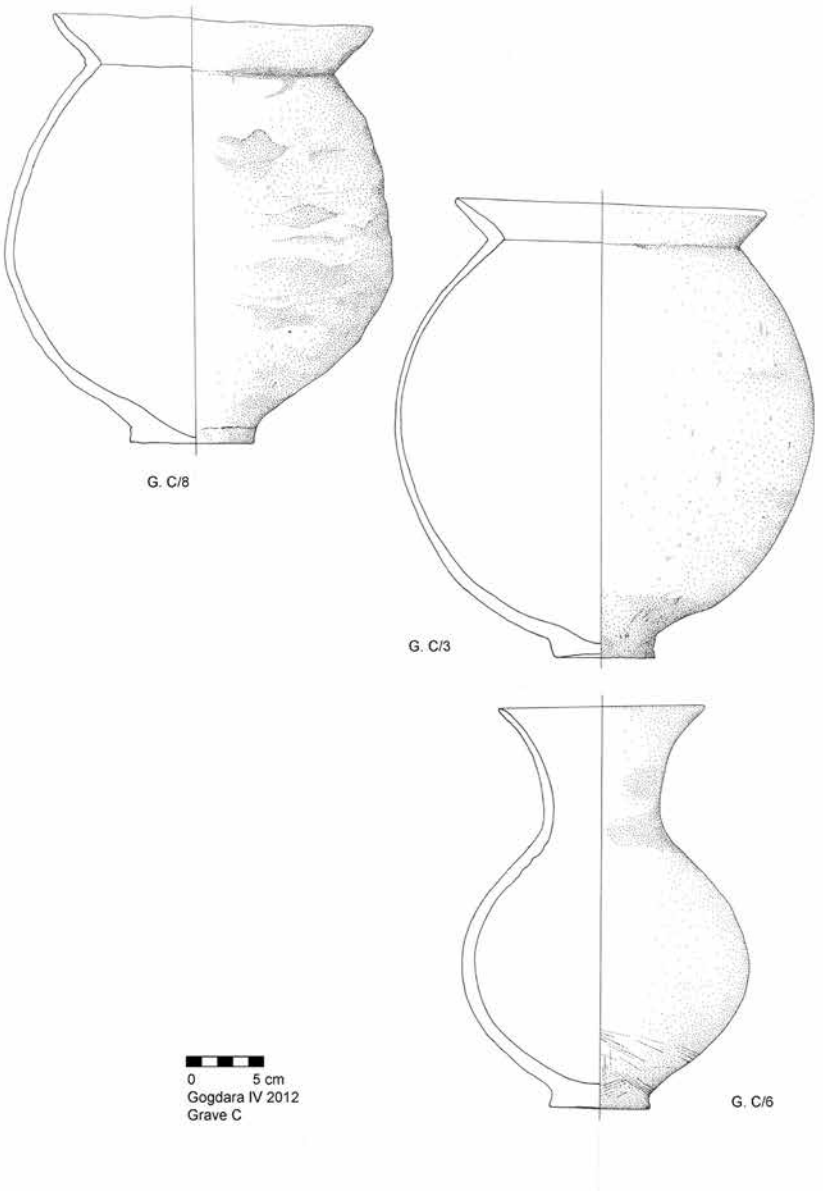


Fig. 43d

Fig. 43. Gogdara IV, November 2011. See also Pls. II and III. The furnishings of Grave C: a) Vessel C/1; b) Vessel C/4; c) Vessels C/7, C/10, C/15, C/9, C/2, C/5; d) Vessels C/8, C/3, C/6 (Drawings by M. Vidale).

Thus we may figure a gently sloping cemetery, with rows or clusters of graves supported by large terraced steps (in 2012, while excavating the other protohistoric cemetery at the nearby location of Udegram, we established that such terraces were, at least partially, artificial constructions). Such an extensive artificial surface, weakened by continuous digging and presumably free from natural soil covering, was easily spoiled by natural processes, and required a continuous maintenance. However (besides the scattering on the ancient erosive interface of potsherds from later periods) the eroded top of the protohistoric cemetery also contained the sherds of some protohistoric vases (Figs. 25, 28), that might have been deposited as offers on top of the graves, and even a few miniature vessels possibly used in the same fashion. Actually, also the published information confirms that pottery containers smaller than 5 cm were not common in the graves' furnishings.
The potsherds we found in this horizons are often fine wares. Put on the graves or scattered on surface, near or inside the graves' mouths, such small containers broke to be easily displaced by water and gravity. Also, fragments of human bones, some of which possibly burnt (?), were recorded as inclusions of both SU <14>, <15> and <16>. The bone fragments might come from graves affected by erosion and/or re-excavations (like Grave A), or directly from the locations where the skeletal remains were manipulated and processed before re-burial.

Reconstructing the sequence of the graves, funerary practices and rituals

In this and in the following pages, Figs. 37-39 provide details of the excavation of Grave C – possibly, the reader will remember, a charnel room – while Figs. 40-42, 43a-d and 44 document the artifacts belonging to the inventory of the Grave's furnishings. The excavation of Graves A, B, C allowed us to reconstruct in detail a complex series of depositional and removal events, and probably of a peculiar funerary ritual act (the placement of a stemmed bowl in front of a skull detached from the post-cranial skeleton, see below). We feel confident to use the world "ritual" instead (or better, conceptually aside) of that of funerary practice because in the sequence

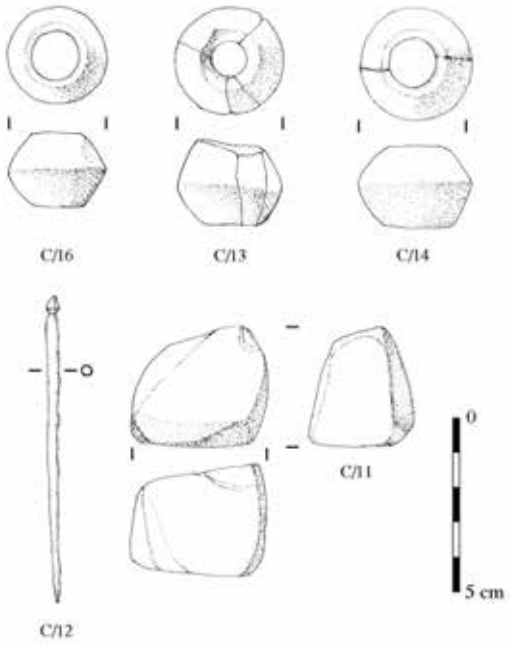


Fig. 44. Gogdara IV, November 2011. Grave C: details of small-sized artefacts buried in the Grave's space (Drawings by R. Micheli).

we reconstructed this highly symbolic action is repeated twice, in two different burials, thus suggesting the performance of a socially accepted representation. Our reconstruction of these events is presented in graphic forms in Figs. 45 and 46 for Grave B, while Fig. 47 illustrates the stratigraphic superimposition of the "charnel room" of Grave C onto the edge of Grave B; eventually, the two reconstructions of Fig. 48, 1 and 2, illustrate the probable sedimentary evolution of the "charnel room" of Grave C from its original erection to its later collapse and final decay, as encountered in excavation.

In traditional reports on excavated ancient graveyards, at least in many cases,

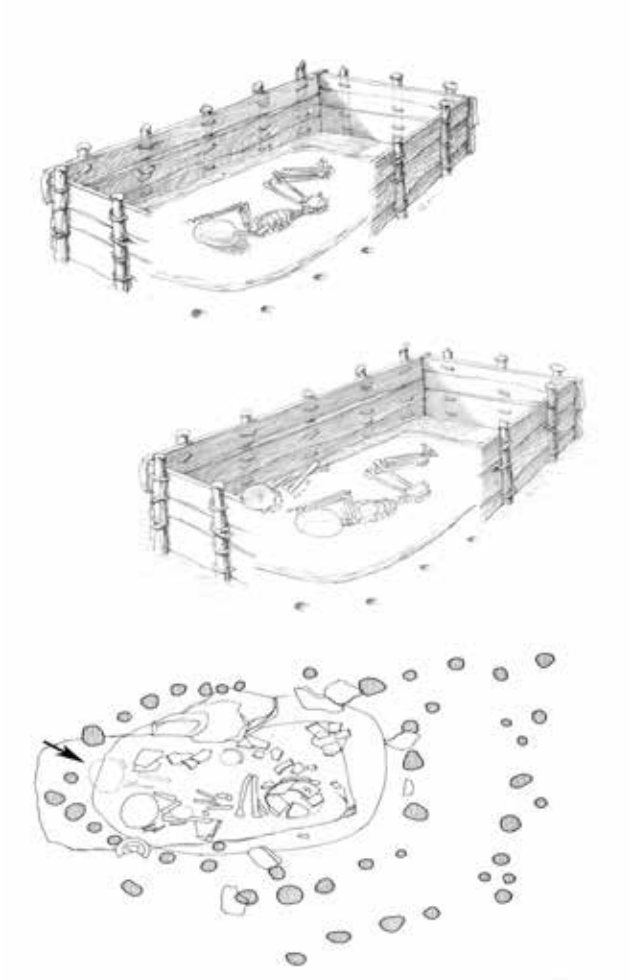


Fig. 45. Reconstruction of the depositional processes of Grave B. The first occupant, Individual 1, was put in a wooden cist with a stone slab as floor, as revealed by a perimeter of log holes, SU (17a), around its contour. As a second step, Individual 1 was lateralized, his/her bones were to a large extent removed, and its place was taken by Individual 2. The arrow in the map shows the position of the skull of Individual 1, when the cist was dismantled and the stone slab of the grave was surrounded by SU (18), an oval clay enclosure on which a double fence of wooden posts , SU (19), was constructed (Drawings by F. Martore). See also the following Fig. 46.

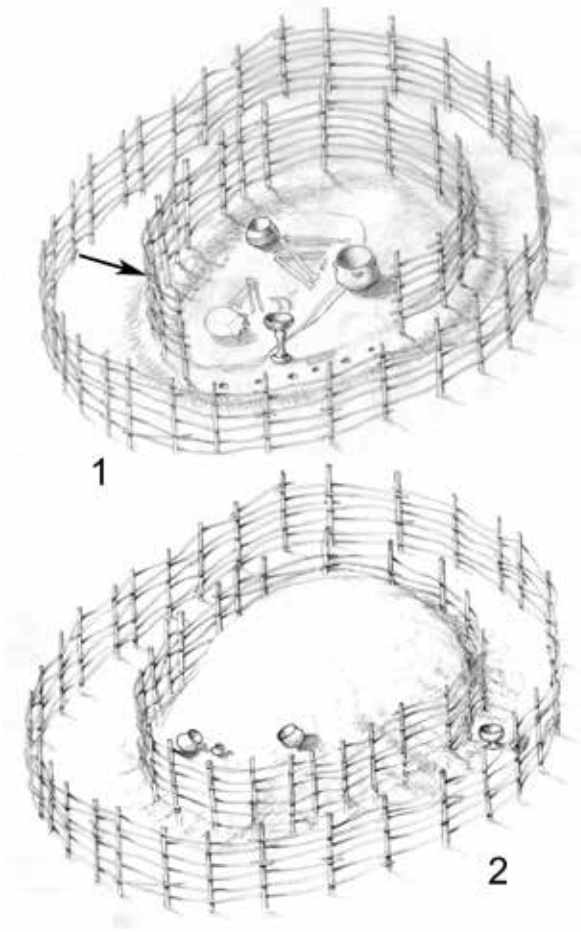


Fig. 46. Gogdara IV, Grave B, last phase of construction. This reconstruction shows the position of the skeletal remains of Individual 2 and three vessels, among which a four-lugged globular jar (B/1), a globular form (B/2) and a high-stemmed cup placed near the skull (B/3) (cf. see Fig. 32). The arrow marks the setting of the skull of Individual 1, now embedded within SU (18). At the end of the construction process, Grave B was covered with a low mound of earth. Small vessels were scattered around (Drawings by F. Martore).

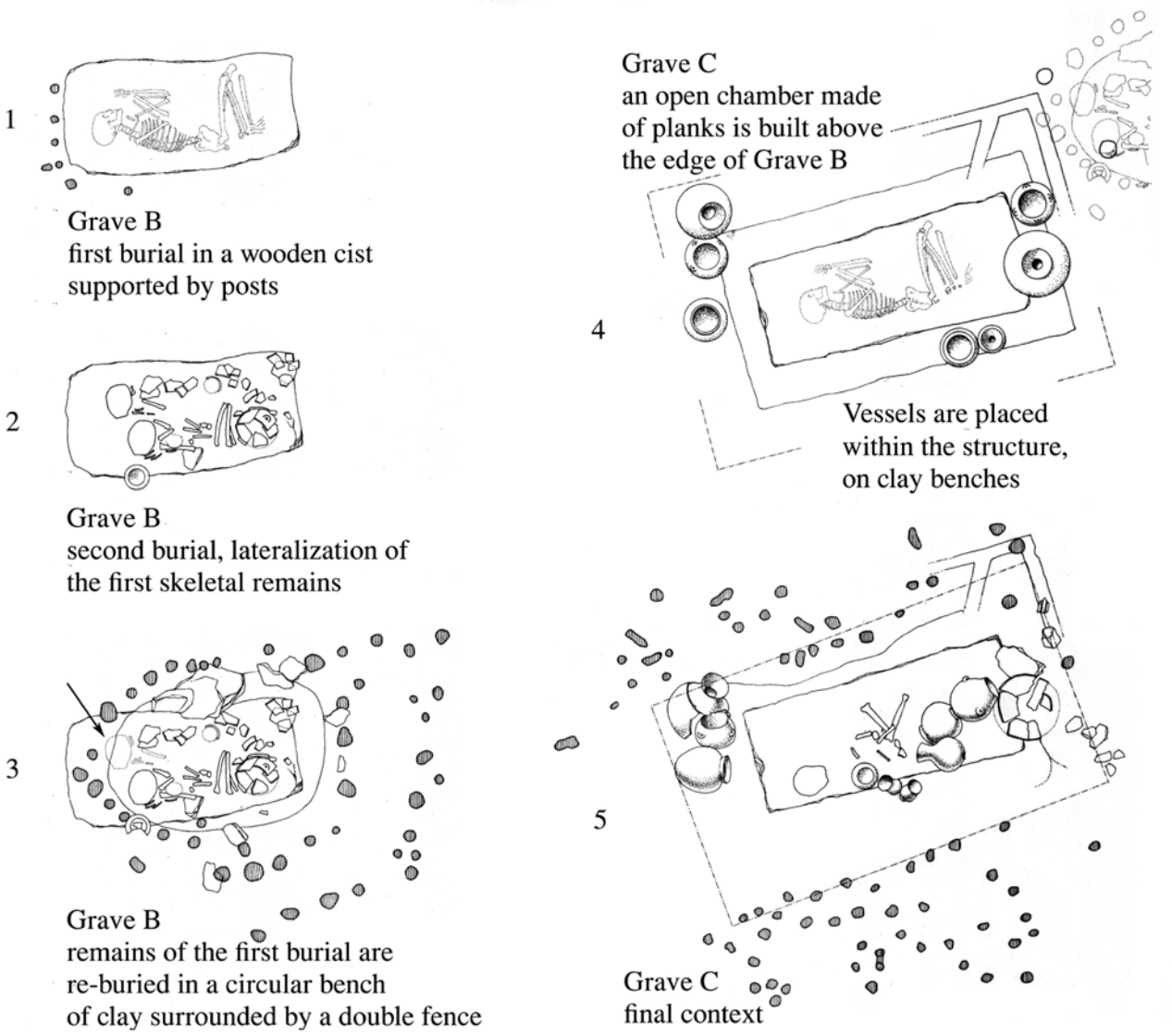


Fig. 47. A summary of the changes of Grave B (left) and the transformation of the funerary erection of Grave C (right), possibly a decarnation room enclosed by wooden walls, stratigraphically superimposed to Grave B (Drawings by F. Martore and M. Vidale).

> "…the focus shifts almost immediately to what the material culture and archaeological context tell us about the body, rather than vice versa " (Larsson 2009: 109)

and this information is often relegated in separate "anthropological" sections and Appendixes that fragment or even relegate specific information outside the flow of archaeological reasoning.

In purposeful contrast, this text, hereafter, will include descriptions and osteological identifications of the human remains, that we will include as a primary source of information in the description of each Grave, as the most personal residual witness of her/his identity. Therefore, the description of the little we can say on the life history of the deceased (hereafter "The occupant") are discussed before the mortuary construction and its artefactual load, that rather represent the output of a collective construction by the social group most closely linked with the dead.

Grave A

Of the probable Grave A, the first to be excavated in the explored area, we know very little. The original Grave seems to have been built as a square or rectangular pit, most probably with a large rectangular stone in the bottom, our SU (7). For some reason, the burial was re-opened and emptied of its skeletal parts and objects. In this process, the original pit was probably enlarged to the negative interface SU <13>, then partially filled up to its mid height with SU (12), a mixed deposit containing a dark silty-clayey sediment with large sherds and human bone fragments. We know that in the filling process there was a short pause, marked by the deposition on top of SU (12) of SU (11), a lens due to trampling the yellowish silty general substratum of the cemetery. The basal stone was abandoned against the western wall of the pit, outcropping from the upper fill of the emptied pit, SU (8), and never used again. Its last re-opening was also an intentional and permanent destruction, possibly in a late moment, before the cemetery was finally abandoned.
The pit with which Grave A was emptied and destroyed was contiguous with that of Grave B, but, because of the strong local surface erosion – see SU <16> and related erosion surfaces - we were not able to define the relative stratigraphic relationships. The calibrated radiocarbon dating of the human bone fragments from SU (12), the bottom filling of Grave A, places this latter one or two centuries after Grave B, and thus gives a preliminary post-quem term for the abandonment of the burial ground.

Grave A – The occupant

The disturbed Grave A had hosted an adult, perhaps a male. The limited assemblage of bone fragments does not provide further details.

Grave B

Although Grave B was badly disturbed by the areal erosive interface SU <16> and related erosive areas, what was left revealed a history of deep changes in time. The grave was first built as a cist burial, the walls being stone slabs or more probably wooden planks. This second alternative is more probable, because on two sides of the stone we detected some small post-holes left by vertical logs which could have supported such planks, see SU (17). As a first step, Individual 1 was placed in the cist, where his/her body decomposed in an empty space (Fig. 45, top; Fig. 47, 1). Then, after decomposition, the skeleton of Individual 1 was manipulated to reduce it to the northern edge of the basal stone slab the cranium, lateralizing part of the long bones, in order to leave its original space to an Individual 2 (Fig. 45, middle picture; Fig. 47, 2). Also this process of decomposition took place in the empty cist, and this implies a certain, prolonged care of the grave's architecture and outer micro-environment. As a third step (Fig. 45, bottom; Fig. 47, 3), after decomposition, the skeleton of Individual 2 was manipulated removing part of the post-cranial skeleton (at the beginning the two skeletons were recovered as a whole with the basal slab, without removing them from the stone and excavated only later in laboratory by M. L. Pulcini). In this process, some vessels and a tall stemmed bowl, SU (16b), was placed in standing position in front of the facial side of the displaced cranium of Individual 2 (Fig. 44, 1). It was impossible to ascertain in which precise order the globular pot SU 16a, clearly belonging to the furnishing, and possibly other vessels were placed in Grave B, because the strong areal erosion labeled SU <16> deeply cut through the grave's deposits. At any

rate, the two vessels of the furnishing that could be positively identified and reconstructed (the stemmed bowl and the globular pot with horizontal lugs; Figs. 33, 34) are also found, in much better conditions, in Grave C, pointing to a basic similarity in the funerary practices and the attached symbolism. The placement of a stemmed bowl in front of the skull might be an act of salute and homage to the dead whose bones had been manipulated, and possibly an allusion to the consumption of wine or other (intoxicating?) beverages.

In a following event, the grave was radically transformed (Fig. 46; Fig. 47, 3). The walls of the cist were removed, and an oval bench of yellowish silt - SU (18) - was built on the grave, most probably as the base of an upper low earthen mound. This latter was not preserved because of the surface erosion. The earthen bench covered and buried the bones of Individual 1, so that only the remains of Individual 2, at this point in time, were commemorated and protected. In this process, the stemmed bowl was roughly detached from the floor of the cist: the foot remained in front of the cranium (see Figs. 31, 32 and 46 top), while the rest of the vessel was smashed, dumped aside and finally scattered around by erosion.

Around the bench and the hypothetical mound of Fig. 46, bottom, the perimeter of the burial was marked by a double ring of post-holes, SU (19). In short, the main transformations were the sudden change from and empty cist hosting the bones of two persons to a solid earthen mound surrounded by a fence of wooden poles, ignoring the first skeleton and dedicated solely to the second buried person.

At a symbolic level, this change implies a formal break in the post-mortem relationships between the two individuals and the sacralization of the memory of Individual 2, to the loss of Individual 1, by the means of a larger emerging funerary mound, protected from trampling by a double concentric ring of posts.

In Grave A, most of the skeleton had been removed and treated somewhere else in an unknown manner, and that both individuals in Grave B have incomplete skeletons. Evidently a good part of the bones, after decomposition, were selected and removed to be diverted in different funerary practices, outside the range of the investigated record.

Grave B – The occupants

Grave B hosted at least two partial burials: Individual 2, a later primary interment, flexed on the left side, that possibly decomposed in void chamber; and a previous occupant, Individual 1, found as a secondary interment, at the upper right of Individual 2, probably lateralized by the arrival of Individual 2, few bones of which (including the cranium) had been embedded in the earthen bench SU (18). The lower limbs of Individual 2, in fact in spite of a generally poor preservation, were still anatomically articulated.

Few details are available on the age and sex of these two persons. Individual 2 was probably a male, more than 45 year old at the moment of death, as suggested by a very sturdy mandible. The advanced age is suggested by the state of the dentition. Nothing can be said of the few remains of Individual 1.

Grave B – The furnishings

Grave B/1 (Fig. 33)

Medium-sized globular pot with horizontal lugs on the shoulder. This vessel, SU (16a) was found in large pieces scattered by the erosive interface SU (16) across the slope below Grave B. Height (reconstructed) about 28 cm, mouth diam. 18 cm, max. diam. 26 cm and 9,5 cm at the base. Slipped medium-coarse ware with abundant angular schist inclusions visible also on surface. While the lower body was shaped on a mould, the upper part was built with coils gradually fashioned on the potter's wheel. The slip is pink (7.5YR 7/4) and covers a reddish yellow paste (7.5YR 7/6). In Silvi Antonini and Stacul

1972: 31, fig.16a, this uncommon type, a variant of VTf67, is described as "…Large-mouthed ovoid jar with vertical on disk base" but with four narrow vertical lugs or handles attached on the shoulder. The same type, with "eye" holes and scarcely visible horizontal lugs on the shoulder, appears in Grave 13/2 of Loebanr (Silvi Antonini and Stacul 1972: Pl. XXXVIIa; see also *ibid.*: type VTc16, Pl. XI, b). The four horizontal lugs projecting below the mouth remind those of jar LA.1 from the cemetery of Lalbatai in Buner (Stacul 1967: Fig. 25). For the functional interpretation of this type, also found ad Grave C as C/1, and in some Graves at Udegram, see the section "Searching for ritual aspects".

Grave B/2 (Fig. 33)
Fragment of a globular restricted cup, possibly on a raised foot. Fine grey ware, wheel-thrown; maximum diameter at the mouth ca. 12,5 cm. The surface color is dark grey (5YR 4/1). Similar specimens are reproduced in Silvi Antonini and Stacul 1972: Pl. XIVb and c; Pl. Vic; Pl. VIId; for Katelai see Grave 9/13, Pl. CXXVc.

Grave B/3 (Fig. 33).
Tall stemmed bowl placed in front of the cranium of Individual 1. Height about 28,5 cm, mouth diam. 14 cm, base diam. 13,5. Its reconstruction shows that the cup was strongly skewed, to the point of looking defective. Fine ware with mica, low fired. The surface is strongly abraded and powdery at the tact. Its color is reddish yellow (5YR 7/6). This vessel was made in three sections (upper cup, bulb, base) separately fashioned on the potter's wheel and then carefully joined together. The foot, found in situ in front of the cranium of Individual 1 (Fig. 31, 2), re-joined with many other fragments found outside the perimeter of Grave B, in SU (16) and across the nearby sloping surfaces. When the grave was re-opened for dismantling the cist and infilling the cavity, for rising there a low mound, the bottom of the cist was partially filled with some cm of mud percolated from the walls and corners. This is certain, because only in this way, when the standing stemmed cup was removed, the foot stuck to the grave's bottom without being scattered away.
Although as a class stemmed cups are well known in the Swat valley, this vessel finds no precise comparanda in Silvi Antonini and Stacul 1972. In their typology, the form may be considered a variant of VTd3 (Fig. 2b, Pl. 2b). This vessel is similar for its horizontal ridges on the cup and foot, but differs from the mentioned type for its height, for the shape of the bulb and the overall upper contour. Bulbs like this, in particular, are rarely encountered in the Swat cemeteries (see graves Katelai 39/2, Pl. CXXIa, and Loebanr 35/1, Pl. CXXVIId and 138/1, Pl. CXLII). In the light of these differences, it might be transitional to type VT1, defined "…Stemmed bowl with carinated body and large mouth; pedestal hollow within" (Silvi Antonini an Stacul 1972: 6). See also, at Thana, the vessels in Dani and Durrani 1967: Figs. 46, 41; at Timargarha, Dani 1967: Figs. 22, 36, 37.

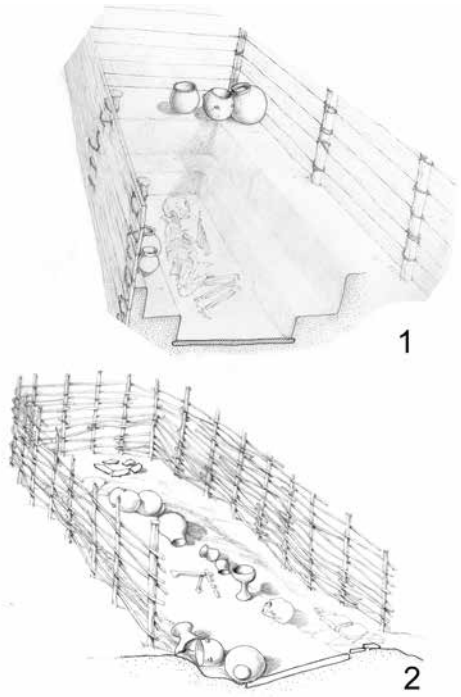


Fig. 48. The transformation of the funerary erection of Grave C: at the beginning, an open-air mortuary house or decarnation room that hosted exposed bodies and ceramics, these latter placed on a double bench of yellow silty clay (1). Around the decaying, heavily eroded chamber was later re-built an irregular fence of wooden logs, while a small wall was set counter-slope to relent the erosion of the whole funerary deposit (2) (Drawings by F. Martore and M. Vidale).

Grave C

Grave C, as stated above, was stratigraphically superimposed to the western side of the wooden fence of Grave B (see simplified summary of stratigraphic process in Fig. 47). It might have been built after such wooden fence collapsed or fell in disuse. In its original form, Grave C seems to have been a rectangular structure, built in two-three concentric and degrading steps. The outer perimeter, at the upper level, as reconstructed from the traces surviving on the North side, was a wooden construction – SU (22) - based upon thick wooden elements set vertically into the ground, possibly a room or a very large "chest". The function of the plank or log bisecting the corner of the base of this erection

is unknown, as unidentified is the role of the two round isolated post-holes near the north-eastern corner of the chamber (details in Figs. 35 and 36; general plan in Fig. 22).
SU (22) enclosed, at a lower step, the rectangular bench SU (21), in turn delimiting the lower basal stone slab of this erection. As far as we could see, these three elements were built at the same time as parts of the same funerary construction, and we interpreted it as a "charnel room" – large wooden enclosure where the bodies were left to decompose in an empty space. The rectangular earthen bench may have hosted at least part of the vessels which accompanied the dead in the grave, because on both sides of the funerary chamber these pots were found in collapse, with the mouth downwards but complete, as if fallen from the nearby step.
In its final stage of use, Grave C was restructured (illustration of its changes in Fig. 48). It was lined along the northern, eastern and southern sides by lines of vertical logs, SU (23), well visible in Figs. 35 and 36. The relative post-holes traces draw on the ground the perimeter of a rectangular space, having almost the same size the construction had in the previous phase, but slightly shifted towards South-West. Apparently, the western side of this building or enclosure was left open. Because on the northern side the row of post-holes, SU (23), insists on a portion of earthen bench, SU (21), and in this point the same structure appeared to be affected by erosion and gravitational slumping, we think that the wood logs enclosure was built after the funerary construction had been already affected by surface erosion processes. In this light, the damaged portion of a limited retaining wall SU (24), clearly built to counteract erosion and the loss downslopes of the contents of Grave C, might have been contemporary to this last architectural change, or immediately later.

Grave C – The occupant

Grave C hosted a few bones (including a faceless cranium) probably belonging to an adult male. Given the scanty skeletal record, there are no further details.

Ritual deposits in Grave C: vessels, other objects, manipulation of human bones

As stated above, the contents of Grave C appear arranged in three separate groups, and the composition of these groups helps us to reconstruct some peculiar aspects of the funerary rituals at Gogdara IV.
Two groups of vessels, at the opposed end of the chamber (Figs. 22 and 34), have exactly the same composition: a single very large globular jar with a restricted mouth and a short conical neck; a large globular vessel with simple rim and four horizontal lugs on the shoulder, identical to that found in Grave B; and another coarser globular pot or jar with a short conical neck, that, stained with sooth, may be considered a cooking pot (Figs. 36 to 39). While the vessels of Grave C were generally empty, this third form, in both groups, was found to contain other objects (broken and unbroken spindle whorls, a ceramic beaker, and probably a small woven basket: Figs. 40-42). For some unexplained reason, of the larger jar of the western group remained the upper part, while in the eastern group the corresponding vessel was preserved mainly in the lower body (although we found nearby sherds of the shoulder and the neck, and the large vase could be graphically reconstructed in its entirety). Although we cannot exclude that the two groups of containers were placed in the grave together, this identity would suggest the repetition in two separate events of the same ritual deposition, possibly accompanying in time two different individuals, only one of which would be represented in the final arrangement of bones and furnishings visible in the map of Grave C.

In the eastern group, one sees a fourth pot, a pear-shaped jar whose form (the *lota*-like vessels) seems to be a distinctive 2nd millennium BCE type across different regions of the Indo-Pakistani Subcontinent (Figs. 37, on the top; 43c C/6). This vessel was supported by an upper layer of the earthen filling and might have been deposited with the described nearby group, or, on the contrary and more likely with the third group of objects, found in the center of the basal stone slab SU (20) together with the human remains. These latter belong to a secondary burial including the long bones, few other small fragments and the cranium, without the mandible and the fragile facial bones (close-up views in Figs. 37 and 38). Near the cranium and the bones, besides the mentioned pear-shaped jar, we found a copper/bronze pin with a simple conical head, a polishing tool (?) made of black shining hematite, two ceramic beakers, and a tall, sturdy stemmed ceramic bowl placed in front of the cranium (Figs. 38 and 44), with a fluted tall cone-shaped base and a decoration suggesting a human face. (Figs. 37, 38, 43c C/7). This setting seems to replicate what observed in Grave B, whose stemmed bowl, before the cist was transformed in a low earthen mound, had been originally placed in front of the cranium of the last occupant (as hypothesized in Fig. 46).

To sum up, the most likely reconstruction for Grave C is that, while the mortuary construction changed in time, it had hosted two consecutive burials, accompanied by the placement within the grave of a double set of the same large, restricted containers; while the older occupant was removed, the last in time, in form of a secondary deposition, might have been saluted, again, by the means of a ritual involving the drinking of some beverage, perhaps wine, as suggested by her/his stemmed cup, the two beakers and the pear-shaped jar.

In this perspective, Grave C seems to have been more a decarnation or charnel room (a special structure where bodies were left to decompose in a secluded space, see Duday 2005: 35) rather than a grave *strictu sensu*. It became a permanent grave – or a buried cavity hosting human remains – only after the end of its use, i.e. after the performance of a complex sequence of events, performed in an unknown number of redundant, cyclic rituals.

Grave C – The furnishings (Pls. II-III)

Grave C/1 (Fig. 43). Large globular jar with a short conical neck, this latter decorated with a series of horizontal grooves. On the shoulder, there are series of little knobs in relief. The vessel was found shattered in pieces in the eastern group of containers, and, as stated above, was mainly preserved in the lower part, to which the shoulder and neck could be refitted only graphically. Height 59 cm, with diameters of 23 cm at the mouth, ca. 50 cm at the maximum expansion and 11,5 cm at the base. Fine red ware, with a reddish brown slip (2.5 YR 5/4) covering a reddish yellow paste (5YR 6/6). The bottom was fashioned on a mold, the rest coiled on the potter's wheel.

The vessel reminds type VTf70 in Silvi Antonini and Stacul 1972: 34, Fig. 16,d, described as a "Globular, narrow-mouthed jar with low, almost vertical rim and disk base". However, the neck of this specimen is different, looking like a transitional form to their VTf71 (for the general form, the ridges on the neck, the dots in relief on the shoulder). See also for comparisons Stacul and Tusa 1975: Figs. 15a, 57; at Timargarha, Dani 1967: specimens in Figs. 37, 41, 43; at Balambat, see Dani and Rahmani 1967: Fig. 51, n. 1, 2, 4. Actually, both jars Grave C/1 and Grave C/4 (the corresponding large jar in the western group of artifacts) might also be considered larger-sized versions of the variant Katelai 1288, mentioned in Silvi Antonini and Stacul's report (1972: 34) as VTf72, and with the quite similar description "Globular, narrow-mouthed jar with ellipsoide outline, flaring rim and disk-base." In particular, this vessel resembles closely Katelai 1288 for the decoration and the shape of the neck.

Grave C/2 (Fig. 43c). Medium-sized globular jar with four thick horizontal lugs on the shoulder. Another specimen of the uncommon variant of VTf67 (Silvi Antonini and Stacul 1972: 31, Fig. 16a) discussed for Grave B/1. Height 28 cm; mouth diam. 19 cm, max. diam. 29 cm, base diam. 8.5 cm. Medium-fine ware, slipped from the mouth to the shoulder. The slip is weak red (10R 4/4), the paste reddish yellow (5YR 6/8). The bottom was made by pressing slabs and then coils into a mold, the upper part fashioned with coils thinned on the potter's wheel.

Grave C/3 (Fig. 43c; Pl. IIIa). Medium-sized cooking pot with a truncated cone-shaped neck, everted rim and a large mouth. Height 30 cm; max. diam. 28 cm. Medium-fine ware, well fashioned, with smooth surfaces. The paste has no slip (cf. Grave C/8, below) and its color is strong brown (7.5YR 5/6).The bottom is molded, the upper body was built with superimposed coils, modified on the potter's wheel.
Silvi Antonini and Stacul (1972: 34) define this form, VTf68, see Fig. 16, as a "large-mouthed, ovoid or globular jar with flaring rim and disk-base". Similar vessels are extremely common in the protohistoric funerary contexts of Swat. They are illustrated in Silvi Antonini and Stacul 1972: Pls. XXXVI, a, b; XXXVIII, a-d; XXXIX, a-d. The form of Grave C/3 may be compared with similar vessels from the graveyard of Loebanr (*ibid.*: graves 10/2, Pl. CXX, a; 12/3, Pl. CXX, b; 19/11, Pl. CXXII, c; 39/4 and 40/3, Pl. CXXVIII, b and c; 43/2, Pl. CXXX, b; 56/2 e 57, Pl. CXXXV, a and c; 58/1, Pl. CXXXV, a; 71/3, Pl. CXXXIX, 6; 179/3, Pl. CXLIII, c. The best match is with a jar found in grave of Katelai (*ibid.*: 170/1, Pl. XXXVI, a). Always at Katelai, see *ibid.*, graves 38/1, Pl. CXX, 6; 88/1, 213/1, 219/1, Pl. CCXXb, 217/1; Pl. CCXXVId; 160/1; Pl. CCXXVIIIa, 182/3;, Pl. CCXXXI. At Butkara II, *ibid.*, 10/1, Pl. CCLVIIIc (a ovoid variant) 42/9; Pl. CCLXIa. The form is common also in the graveyard of Timargarha, cf. Dani 1967: Fig. 21, n. 23; Fig. 22, n. 16, 36, 40; Fig. 23, n. 28, 31; Fig. 24, n. 1; Fig. 26, n. 1; Fig. 28, n. 1; Fig. 29, n. 7; Fig. 32, n. 1; Fig. 39, n. 1. For Thana, cf. Dani and Durrani 1967: Fig. 47, n. 40.

Grave C/4 (Fig. 43b). Tall globular jar with a narrow conical neck decorated with horizont ridges on the shoulder, bearing raised knobs. Of this tall, massive vessel, as stated above, was found only the upper part, lying in the western group of the funerary chamber. The surviving part of this jar measures about 60 cm in height (but the vessel was originally taller); mouth diam. 24 cm, max. diam about 45 cm. Fine slipped ware, with a yellowis red slip (5YR 5/6) on a reddish yellow paste (5YR 6/8). This jar was built in its bottom part by molding, and with coils modified on the potter's wheel in the upper body. In the Swat cemeteries, jars of the same general type may have anthropomorphic features and sometimes contain cremated bones.
The form is classified by Silvi Antonini and Stacul (1972: 34, Fig. 16e, Pl. XLIIa) as VTf71, a "Globular, narrow-mouthed jar out-turned rim and disk base." The match is close, mainly for the general form and the ridge in relief with attached lugs running on the upper shoulder. This kind of vessels, in other protohistoric cemeteries, seems to have kept human remains.

Grave C/5 (Fig. 43b). Another medium-sized globular jar with horizontal lugs on the shoulder. Height 31 cm; mouth diameter 19 cm, max. diam. 28.5 cm; base diam. 8,5 cm. Medium-fine ware, slipped from the mouth to the shoulder. The vessel is slipped from the mouth to the shoulder. The slip is red (2.5YR 5/8), the paste reddish yellow (5YR 6/8). The shoulder is decorated with a sequence of horizontal lines, incised with a comb like tool on the vessel in plastic state, underlined by a single continuous zig-zag line (decoration D7 + D11 in Silvi Antonini and Stacul 1972: 48-49). The bottom, covered on the exterior by a layer of sand, was made with a mold, while the upper part was fashioned with coils gradually thinned and formed on the potter's wheel.
Like Grave B/1 and Grave C/2, the vase is a variant of Silvi Antonini and Stacul's type VTf67. The same precise type, identical also in the shoulder decoration, was found in one of the graves of the nearby cemetery of Thana (Dani and Durrani 1967: Fig. 45, 2).

Grave C/6 (Fig. 43c). A medium-sized pear-shaped jar with a restricted mouth (*lota*). It measures 26.5 cm in height, the mouth diameter is 13 cm, the maximum expansion is 19 cm, while the base diameter is 7 cm. Medium-fine ware, strong brown in color (7.5YR 5/6), slipped red (2.5YR 5/8). Entirely made with coils fashioned on the potter's wheel, the vase is extensively trimmed on the exterior surface of the bottom. Contrarily to the vessels with the lugs or handles on the shoulder, this jar had a strongly worn base, suggesting a prolonged use before burial. The rim shows marks left by rodents. Silvi Antonini and Stacul (1972) classify this form as type VTb43 (1972: 27-28, Fig. 11a), or "Narrow-mouthed globular bottle with high neck, flared rim and disk-base". At Loebanr, similar specimens are sometimes squat and shorter, with a more inflated body, like in Graves 51/3, and 44/2 (*ibid.*: Pls. CXXIXc and CXXXd). Better comparisons may be established with the Katelai graveyard (*ibid.*: Grave 243/5, Pl. CCXXVa; 249/5, pl. CXXX, 1) and again with a specimen from a grave at Loebanr (Grave 32/6, Pl. CXXVIb).

Grave C/7 (Fig. 43c; Pl. IIIb). A bulky, tall pedestalled bowl, with a high conical fluted foot supporting a hemispherical cup. The cup, placed in front of a cranium (see above) is decorated with a sequence of dots and crescents in low relief running two cm below the rim, suggesting in a minimalistic fashion an animal or human face. This motif seems a variant of pattern D69 "semicircle in relief" with alternating round boss as described in Silvi Antonini and Stacul 1972: 53. Height 25,4 cm, mouth diam. 14 cm., max. diam. 17, base diam. 15 cm. It was probably made with coils, with the aid of the potter's wheel, first in three separate pieces (two for the conical foot, one for the cup). Fine ware, without visible inclusions, reddish yellow (5YR 7/8) covered inside as well as outside by a red slip (2.5YR 5/8), with irregular darker

mottlings.
Silvi Antonini and Stacul (1972) call this type VTb1, or "Stemmed bowl with globular or bulging body, pedestal of varying height and hollow rim" (1972: 16). Positive comparisons are observed in graves of Katelai (*ibid.*: grave 238/3, Pl. CCXXIIc, a good match for the fluted upper part of the pedestal; 172/6, Pl. CCXXIIIb; 230/9, Pl. CCXXIIIc; 219/2, a miniature vessel, Pl. CCXXIVc; 243/3, Pl. CCXXVb; 163/1, Pl. CCXXVIIIc), as well as with the graves of Loebanr (23/3, Pl. CXXIVc; 32/5, Pl. CXXVIa; 67/8, miniature vessel, Pl. CXXXVIb; 83/1, with very tall stem, Pl. CXXXVIIc; 142/4, miniature vessel, Pl. CXXXVIIc; 137/c, very similar, also for the decoration, Pl. CXXXVIIIc). Further comparisons at Timargarha, see Dani 1967: Fig. 22, 15;Fig. 24, 3; Fig. 28, 3; Fig. 29, 2.

Grave C/8 (Fig. 43d). Medium-sized restricted pot, with a sub-globular to an almost biconical contour. Height 28 cm, max. diam. 26 cm. The ware, free from slip, is reddish brown (2,5YR 5/4). When compared to the forms of the western group of objects, it corresponds to Grave C/3, but on the whole it is coarser. Although the form and presumably the function were the same, as demonstrated by the fact that both contained other objects of the funerary furnishings, this coarse pot was manufactured by coiling, without the aid of the wheel (the base, however, was moulded). Like the above described pot C/3, this form is ascribed by Silvi Antonini and Stacul (1972: 34, Fig. 16) to type VTf68. The marked bi-conical profile of this piece may be considered an occasional variant of the same object. The interesting technical variations in the manufacture of the same type of vessel, presumably by the same social unit, might be taken as an example of a limited standardization in the pottery production processes of the time.

Grave C/9 (Fig. 43c). A tall grey, slightly burnished beaker with a sub-cylindrical body, constricted and grooved just above the center. Fine grey ware, entirely made on the potter's wheel, trimmed on the disk-like base. The color is grey (5YR 5/1). Height 16 cm, max. diam. (mouth) 10,5 cm, base diam. 4,5 cm. In Silvi Antonini and Stacul 1972: 21, Fig. 6, f and g (see also Pl. XIII, a and b) this type, rather common, appears as VTa19. There are positive comparisons with a grave at Loebanr (*ibid.*, 75/3, Pl. CXLV, a, but the beaker is less slender and has no disk-base), but the best matches are with the graveyard of Katelai (graves 229/4, Pl. CCXXIIIa; 290/6, Pl.C CXXIIIc; 94/2, Pl. CCXXIXa; 216/1, Pl. CCXXVIIe). Some similar vessels were also deposited in the graveyard of Butkara II (Grave 42/16, Pl. CCLXIc). Further comparisons are found at Timargarha (Dani 1967: Fig. 21, 8; Fig. 26, 4; Fig. 28, 4; Fig. 29, 4) and in the pottery of the settlement of Aligrama (Stacul and Tusa 1975: specimens in Figs. 16, 56).

Grave C/10 (Fig. 43c). A sub-cylindrical carinated beaker on a ring base. This grey ware beaker had been placed together with Grave C/9 on the edge of the stone slab SU (20), immediately aside the pedestalled bowl Grave C/7. Height 11,7 cm, max. diam (mouth and maximun expansion) 9.5 cm, ring base diam. 4 cm.
Curiously, this simple and quite common form is not efficiently described by the typology of Silvi Antonini and Stacul (1972). Actually, beakers of this type were found in many secondary variations in the graveyard of Loebanr (grave 41/6, but the foot is different, Pl.CXXIXa; 47/6, with a flaring mouth, see Pl. CXXXII, a; 53/2, 3, whose profiles are not as sharply carinated, Pl. CXXXIVb; 142/6, Pl. CXXXVIIc; 139/3, with a sub-cylindrical body, Pl. CXLII, 9; 172/2, CXLIIIb; 179/2, Pl. CXLIIIc). This vessel is present but apparently less common in the graves of Katelai, with similar secondary variations (Grave 1/6, with open mouth and no carination, see Pl. CCXIIa; 14/4, more restricted and without disk base, Pl. CCXa; 93/1, a good match, Pl. CCXXIIc; 219/5, with rounded body, Pl. CCXXIVc).

Grave C/11 (Fig. 44). Hematite polisher with flat faces.

Grave C/12 (Fig. 44). Copper/bronze pin with cone-shaped head. Type OMa8 in Silvi Antonini and Stacul 1972: 40-42, Fig. 24, d.

Grave C/13 (Fig. 44), found within the Vessel C/3. Biconical spindle whorl in terracotta. Maximum diameter 3 cm, height 2,1 cm, hole diameter 1,6 cm. Found broken in four refitting fragments. Fine ware, low-fired in reducing conditions, and probably slipped. The color of the outer slip is dark reddish brown, 5YR 3/3; the paste is brown, 7.5YR 5/2. Type TT1 in Silvi Antonini and 1972: 38, Fig. 20, a. Similar objects are illustrated in Silvi Antonini and Stacul 1972, Pl. XIVb and c; Pl. VIc; Pl.VIId. Cf. Stacul and Tusa 1975: Fig. 19, E; Figs. 99 and 100.

Grave C/14 (Fig. 44), found within the Vessel C/3. Biconical spindle whorl in terracotta. Maximum diameter 2,7 cm, height 1,9 cm, hole diameter 1,3 cm. Found broken in two refitting fragments. Fine ware, low-fired in reducing conditions, slipped. The color of the outer slip is dark reddish brown, 5YR 3/3; the paste is brown, 7.5YR 5/2.

Grave C/15 (Fig. 43c), found within the Vessel C/3. Cylindrical beaker with everted rim and a basal carination. Height 8,3 cm, mouth diam. 11 cm and base diam. 6 cm. The outer wall is decorated with a horizontal ridge in relief on the

lower neck and four parallel incised lines on the body. Fine black burnished ware, dark grey (5YR 4/1) fashioned on a potter's wheel. The base was trimmed with a blade in a leather-like state of hardness. The vase was finally fired in strongly reducing conditions.
This form corresponds to type VTc32 "Cylindrical or beehive-shaped vessel with out-turned rim and curved bottom" in Silvi Antonini and Stacul 1972: 25, Fig. 9 and Pl. XXI. It compares with many similar vessels found in the graves of Loebanr (*ibid.*: Grave 28/4, Pl. CXXVb; 46/2, Pl. CXXXI, 2; 164/2, Pl. CXXXVIIId; 174/9, Pl. CXLIa; 138/4, Pl. CXLIIa; 172/3, Pl. CXLIIIb (the most precise match); 90/6, Pl. CXLIVa). The type is also well represented at Katelai (Graves 9/10, Pl. CCXVb; 21/3, Pl. CCXVIIb; 28/2, Pl. CCXVIIf; 36/8, Pl. CCXIXc; 184/2, Pl. CCXXXIc; 207/7, Pl. CCXXXb), at Timargarha (Dani 1967b: Fig. 21, n. 1; Fig. 23, n. 32) , as well as at Thana (Dani and Durrani 1967: Fig. 46, n. 3, 44).

Grave C/16 (Fig. 44). Biconical spindle whorl in terracotta. Maximum diameter 2,7cm, height 1,9 cm, hole diameter 1,3 cm. Unbroken. Fine ware, low-fired in reducing conditions, probably slipped. The color of the outer slip is dark reddish brown, 5YR 3/3; the paste is brown, 7.5YR 5/2.

A multi-stage funerary cycle

The strong variability of the funerary practices which left patterned evidence on human skeletal remains, in the protohistoric graves of Swat, was noticed, in the past, by every excavator. In 1972, S. P. Gupta (pp. 160-169) reviewed the archaeological evidence in the light of the literary and religious information provided by Rgveda, Atharvaveda, Satapatha Brahmana and other written sources in matter of disposal of the dead. Gupta' s aim was to test the hypothesis, expressed in Dani 1967a that the protohistoric cultures of Swat could be identified with early groups of "Indo-Aryans" (see also Dani 1978; Parpola 1988; Mallory 1989: 47-48; Kennedy 2000: 337-340). His conclusion was negative ("...the whole hypothesis is premature, and the evidence of the graves does not support it", Gupta 1972: 168). The texts mention different types of ritual disposal (in particular the choice beween cremation and inhumation) that would directly reflect the rital status of the individuals, who might have performed or not some crucial sacrifices and have attained, or not, particular ritual identities. The reason of the mentioned variability might be searched in similar realms. On the other hand, there is the possibility that the various form of treatment were as many steps of one or more ritual cycles. The evidence of Gogdara IV provides some hints in this latter direction.
While the destroyed Grave A confirms that human remains might have been, at least in some cases, only temporary hosted in the shaft, the strong analogies between the funerary acts detected in Graves B and C allow the reconstruction of a cyclic burial ritual in which two or more persons were placed in funerary chambers or spaces to decompose in void, probably at least in one case, in a charnel room. We ascertained that while at Gogdara IV the skeleton of the previous occupants were reduced to secondary burials and lateralized and/or removed to other locations, the last to arrive, after decomposition, was treated and finally manipulated with rituals that might have alluded to the consumption of wine with special, perhaps male-related highly visible vessels, and thus indirectly displayed the social status of the deceased.
This contrasts, as we shall see in detail in the next sections, with the evidence gathered at Udegram, where in double burials, almost a rule, the primary deposition is the original interment, and the secondary one, exposed and sometimes defleshed with metal blades, is later. The domestic look of part of the vases, the cooking pots and the spindle whorls might allude to females, and in this case the described rituals and the prestige they signified might have been attached, in this cases, to feminine roles. In Grave C, if the deposition of the ceramic furnishings was actually contemporary with the last manipulation of the skeletal parts, the objects would reflect at the same time male-oriented offers (jars for beverages – ? – and a drinking cup) and female-oriented ones (cooking pots and at least three spindle whorls). As the last occupant, as we have seen, was probably a

male, the funerary assemblage would not plainly reflect the gender of the deceased, but rather the participation of men and women to the funeral and the ensuing funerary ritual cycle.
The impression is that while the funerary constructions were used for a long time in their cemetery lots, where they were maintained and substantially rebuilt with important changes, perhaps as "family graves", the skeletons were hosted there for shorter intervals, perhaps with a peculiarly limited generational memory. Funeral, burial, decomposition in void, and possibly public drinking rituals – for saluting skeletal remains in primary or secondary contexts of deposition – accompanied or alternating with the reduction or removal of older occupants, might have been as many steps of the same, prolonged funerary cycle. Of course, this perspective of interpretation does not rule out the possibility that we are dealing with different ritual cycles, and it would be quite unrealistic to try to reconstruct sequences of such complexity on the basis of a few graves alone.

Chronology

Grave C is later than Grave B – because of the superimposition of SU (20) onto SU (18), but belongs to the same general stratigraphic horizon and the two constructions do not seem to be separated by a wide chronological gap. This is also suggested by the identity of pots Grave B/1, Grave C/2 and Grave C/5. While attempting to correlate the grave furnishings of Gogdara IV with those excavated in the past, we have to consider in first place the assemblage of Grave C.
It is well known that Silvi Antonini and Stacul (1972) published the grave furnishings per se, without tackling with problems of relative or absolute chronology. Comparisons with the materials of the settlements of Loebanr III, Barikot/Bir-kot-ghwandai and with the later explored site of Kalako-dherai (Stacul and Tusa 1975, 1977; Stacul 1979; 1978-1979; 1995; 1997) suggest, grossly speaking, that the graveyards of Katelai and Loebanr III go back to Periods V and VI and that Butkara II is later (Periods VI and VII), as originally suggested by S. Salvatori (1975) on the basis of a preliminary seriation of the main pottery types found in the graves. The materials of Grave C, as stressed by the comparisons above reviewed, are consistently linked to the ceramic assemblages of the two older graveyards, apparently more with Katelai than with Loebanr. If the types on record are individually recorded in a high number of graves, it is less common to find the same types together, in groups of two or three containers. For example, Grave 243 at Katelai contains a pear-shaped restricted jar (VTb1) very similar to the vessel we labeled Grave C/6, a pedestalled cup (VTb43) identical to Grave C/7, and a smaller cylindrical beaker with a low carination and a disk-like foot very similar to our Grave C/10 (Silvi Antonini and Stacul 1972: Pl. CCXXVa). Other graves of Katelai (163, 238) less distinctively include pedestalled cups and beakers of the above description (*ibid.*: Pls. CCXXIIc and CCXXVIIIc).
As Salvatori refers both type VTb1 (the pedestalled cup) and VTb43, the pear-shaped jar, to the earliest chronological horizons of the Swat graveyards, Grave C at Gogdara IV could be preliminarily ascribed to Period V, i.e. to the final Bronze Age, the second half of the 2nd millennium BCE.

Radiocarbon dating

All samples of human bones from the excavated graves of Gogdara IV and Udegram underwent radiocarbon dating by the means of high resolution mass spectrometry (AMS), at the Centro di Datazione e Diagnostica

(CEDAD) of the University of Salento (Italy)[1]. The two samples from Gogdara IV (Table 1, Pl. XIV) come respectively from Grave A – bone fragments scattered in SU (12) in pit SU (13) – and Grave B - bones from the second inhumation, partially in situ (SU 17). The sample from Grave A was dated to 2850±45 BP[2], or 1192-902 cal. BCE, while that of Grave B was dated to 2964±45 BP, or 1372-1027 cal. BCE. Both dates are presented as 2 sigma (95.4%) confidence level[3].

Laboratory number	Context	Sample material	Radiocarbon age (BP)	$\delta^{13}C$ (‰)	Calibrated date (BCE) 68,2% probability	Calibrated date (BCE) 95,4% probability
LTL12130A	Grave A	small bone frag.	2850±45 BP	-21.0±0.5	1081-931	1192-902
LTL12131A	Grave B	small bone frag.	2964±45 BP	-18.5±0.5	1260-1115	1372-1027

Table 1. Radiocarbon and calibrated dates of Gogdara IV graves. Dates were performed by Accelerator Mass Spectrometry (AMS) by Centro di Datazione e Diagnostica (CEDAD) of Lecce University (Italy). Calibration: OxCal version 4.2.3 (Bronk Ramsey 2013); IntCal13 atmospheric curve (Reimer et al. 2013).

Conclusions

Grave C, stratigraphically later than Grave B, might have been constructed, used, modified and abandoned in the same general period of time. These dates would match reasonably both with the traditional chronological terms of the Swat sequence, Period V, as proposed in the past by Stacul, and with the ceramic comparanda considered above.

The excavation at Gogdara IV produced an image of the protohistoric graves of Swat completely different from that previously considered in the reports of the earlier Italian excavators. In these Graves, the lowermost cavity or cist, rather than being a final resting place, was the crossroad of long ritual cycles made of several inner steps returning to the cists for precise actions of transformation and secondary interment ceremonies. For this reason the graves had to be clearly marked and delimited on surface, to be re-opened and closed again at ease. It is also clear that these funerary practices involved prolonged contacts of the living community with the remains of their dead; perhaps different stages of transformation of the bones corresponded to precise steps of the immaterial components of the individuals in a supernatural world of the dead. Ultimately, if this is true,

[1] Many thanks are due to Lucio Calcagnile and Gianluca Quarta (CEDAD, Lecce) for their unvaluable collaboration in this project. The lines that follow are taken from the report submitted to us, and describe the treatment and elaboration of the 14C AMS data of these and the other datings of the excavated graves. The methodology is described by L. Calcagnile and G. Quarta as follows. After mechanically removing at the binocular microscope macroscopic contaminants, the samples were chemically cleaned exposing them to alternated acid-alkaline-acid chemical attacks. The extracted matter was then converted into in carbonic anhydride by the means of acidification, and to graphite by reduction. H_2 was used as reducing component and iron powder as a cathalizer. The amount of graphite from the samples of Gogdara IV was sufficient for a careful experimental assessment of the bones' absolute date.
The radiocarbon concentration was determined by comparing the measured values of the ^{12}C and ^{13}C currents, and the ^{14}C counts with the values obtained from standard samples of saccarose C6 provided by IAEA. The conventional radiocarbon date was corrected for the effects of isotopic fractioning both by measuring the $\delta^{13}C$ term, directly through the accelerator, and for the background of the measurements.
Samples of ossalic acid provided by NIST (National Institute of Standard and Technology) were use as a control of the results. For determining the experimental error in radiocarbon dates were considered both the scattering of the data around the average value, and the statistic errors involved in the ^{14}C counts. Tab. reports the non calibrated dates for the two human bone samples from Gogdara IV, with the indication of the absolute error of the measurements.

[2] BP means here a conventional dating, non calibrated, the calculation of which implies (cf. M. Stuiver, H.A. Polach, Radiocarbon, Vol. 19, No.3, 1977, 355-363): the use of Libby's half-life (5568 years) vs. the correct value of 5730 years; year 1950 as standard reference year; the use, direct or indirect, of ossalic acid as reference standard.

[3] The value of the isotopic fractioning term of the stable isotopes of radiocarbon (^{13}C) refer to that measured with the AMS system. Such value, therefore, may diverge from the natural fractioning term as well as from that measured by the means of IRMS. We conventionally define as "modern" samples with a conventional dating below the limit of 200 years BP.

what archaeologists recorded in the excavated graves in many cases might be the casually preserved evidence of some of the involved ceremonies, and not necessarily, or not in every case, the final results of the completed funerary ritual cycle.

A careful dig of the topmost levels of the cemetery allowed us to place two pits which were located nearby, but without physical contact, in a precise relationship of relative chronology. Stratigraphy and taphonomic observation showed the performance of a complex funerary strategy of manipulation, transformation, selection and transport of human remains. These practices at Gogdara IV left no local reliable evidence of cremation but included for both grave, apparently as a final step, a ritual association of crania with pedestalled cups, in a symbolic representation of libations and drinking. Grave B started as a cist, than became a low mound surrounded by a double ring of wooden posts. Such elaborate funeral practices, and the investment in rebuilding the Grave, seem to have been accompanied by a peculiarly short generational memory, because the new monument focused on the last individual who had decomposed in the cist, ignoring the previous occupant. Later, the nearby and larger Grave C was probably built as a chamber made of wooden planks containing a clay bench and paved below with a stone slab. Although this charnel room or *poirissoir* only contained the secondary fractional burial of a single person, the repetitive composition of the grave furnishing suggest that at least two bodies had decomposed and had been manipulated in the chamber. Like Grave B, Grave C - in a second stage of use - was covered by a fence, or by a construction made of wooden logs. On one side of this new construction there were two smaller, adjacent circular structures made with the same wooden elements.

At present, it is impossible to say what was the precise shape of these wooden erections, recorded only in forms of lines of holes in the ground. We also ignore if they were just fences protecting the graves, or if they had supported on top wooden platforms where the dead were exposed. Although at Gogdara IV we did not find near the post-holes fragments of small bones which, fallen from above, would have supported this latter model, this possibility should kept in mind, because exposure of the dead in mortuary wooden chests and/or on elevated wooden platforms is incidentally but clearly mentioned in the historical accounts of the expedition of Alexander.

> *Inde, domita ignobili gente, ad Nysam urbem pervenit. Forte castris ante ipsa moenia in silvestri loco positis, nocturnum frigus vehementius quam alias, horrore corpora affecit, opportunumque remedium ignis oblatum est. Caesis quippe silvis, flammam excitaverunt, quae lignis alita oppidanorum sepulcra comprehendit. Vetusta cedro erant facta, conceptumque ignem late fudere, donec omnia solo aequata sunt. Et ex urbe primum canum latratus, deinde etiam hominum fremitus auditus est. Tunc et oppidani hostem, et Macedones ipsos ad urbem venisse cognoscunt* (Curtius Rufus, Historiae Alexandri Magni, libri qui supersunt, VIII 10).
>
> "Therefore, having subdued that unknown people, he arrived at the city of Nysa. After having randomly set his fortified camp in front of the city's wall, within a wood, at night, a wind colder than usual froze the bodies of the soldiers, and a bonfire appeared to be the best remedy. The soldiers logged some trees and set their fire, but the flames, fuelled by the timber, reached the graves of the inhabitants. And the monuments, made of old cedar wood, started to burn. The firing then spread around, until all graves were burnt to the soil. From the city were heard barking dogs, then the cries of people. Only then, the inhabitants and the Macedonians realized how close they were each other." (translated in English by the authors)

The pass of Curtius Rufus, that in its vividness suggests a personal recollection, leaves no doubt about the presence, above the graves of the late prehistoric inhabitants of Swat, of wooden constructions such as exposed coffins, wooden fences or mortuary boxes made of "old wood". The funerary erections, closely packed one against the other on steep slopes, should have been an easy and immediate prey to a destructive firing. The post-holes and planks' traces excavated at Gogdara IV are the first possible proof of the truth of this Early

Historic tradition, and suggests that funerary constructions similar to those still used by the peoples of the Kailash area were common much to the South at least in the late 2nd millennium BCE. The 'Kafiro'-Dardic substratum (interpreted as the dominant culture in the late protohistory of Swat, and the subordinate element until mid-1st Millennium BCE), has been extensively discussed by L.M. Olivieri in one of his recent papers (Olivieri 2011b).

UDEGRAM

Udegram - First Campaign, May-June 2012

M. Vidale, M. Cupitò, A. Iqbal, E. Javed, L.M. Olivieri and M.L. Pulcini

Location and discovery

While excavations at Gogdara IV had enabled us to sample the local stratigraphy across a test trench area, and to expose substantial traces of piled silty clay and wooden architecture around the mouth of two graves, at the nearby site of Udegram (Bagnera 2015) (Fig. 49) the morphology of the site itself suggested the opportunity of excavating from a vertical surface (Fig. 50). In fact, we were brought on the spot by the evidence of a series of heavy, horizontal stone slabs which emerged from a recent vertical cut of the local slope, about 3-4 m from the present surface. Local farmers had taken from some chambers lots of prohistoric vessels (Fig. 51). The stones and the associated stratigraphy pointed to the possibility of finding and digging scientifically a row of undisturbed graves, clearing many unexplained aspects of the sites' formation processes. In February 2012, Luca M. Olivieri visited the site along with two prominent Udegram landlords Mr. Sikandar Bakht and his son Fahad (whose family has a long-term acquaintanceship with the Italian Mission). Olivieri, after Gogdara, thought that the site – a sloping ground, below the top of a rocky knoll - would have been ideal for an archaeological intervention, this time aimed at investigating the succession of phases in a protohistoric graveyard. After a complex negotiation with the owner, the site was leased for two years.

The presence of undisturbed graves was fully confirmed by our excavations in May-June 2012 (Pls. IV and V). By excavating and rectifying the existing section (Fig. 52), we progressively located a series of megalithic graves, arranged as a rather regular row above a wide artificial terrace grown on the bedrock. The downslope terrace's step run from North to South. Two of the uncovered Graves, numbered 2 and 7, were fully excavated and documented in the same season, thus revealing important aspects of the construction processes, the ritual use and the sedimentary transformations of the funerary structures.

What follows is the detailed description of each stratigraphic units (SU) encountered in the recording of the main North-South section (Figs. 53 and 54), in the southern wall of the Main Trench (recorded in Fig. 55) and in the following excavation of Graves 2 and 7 (see below).

Eastern and southern Sections of the Main Trench: description of SUs

SU (1) Recent fill excavated from a large pit, immediately upslope the main section. Sandy silt, light olive grey, 5Y 6/2, including small rock fragments (less than 4 cm) and tiny worn potsherds.

SU (2) Ancient plowing layer, containing Kushana potsherds (maximum 4-6 cm), with slightly worn edges, and tiny sherds of protohistoric ceramics (1-2 cm). Silt, pale olive (5Y 6/3); most rock inclusions are of the size

of gravel (= 1-2 cm). In the section US (2) is divided in two superimposed horizons, namely (2A) and (2B). These units are distinguished by the frequency of the gravel and rock flake inclusions, and by the grey shadow of (2B), light olive grey, 5Y 6/2). (2A) includes lenses of a brownish/ yellowish sediments dug from SU (5) and re-dumped along the slopes, and at the base has regular series of plowing furrows (about 20 cm wide on top, and about 10 cm deep). The negative interface of such plowing marks was labelled as SU <4>, and hypothetically dated to an early moment of the local Kushana occupation.

SU <3> Trampling surface of the contemporary Islamic graveyard, corresponding to a thin layer of soil, presently covered with grass. This underdeveloped soil is a fine silt, olive grey (5Y 5/2) hosting a continuous line of thin schist slabs (about 10 x 15 x 2 cm), presumably left by the activities of construction of the nearby contemporary graves.

SU <4>, see SU (2).

SU (5) Wavy layer of fine silt, pale yellow (5Y 7/3), cemented by diffuse veins of calcium carbonate (white, 2.5Y 8/2). Contains fine gravel (rounded grains, less than 1 cm) and rare schist slab fragments. With the exception of few protohistoric fragments, this layer has no pottery.

SU (6) Pure silt, light yellowish brown (2.5 Y 6/4), visible along the walls of the graves, here and in other parts of the Udegram cemetery, as thick vertical mud walls or "benches". The material is the same we observed in the analogous clay "benches" uncovered in Graves B and C at Gogdara IV. SU (6) is distinguished by its absolute homogeneity, diffuse fragments of landsnails, and by the large number of rodents' hole which stud its volume, particularly along the edges of he funerary pits. Inside these animal holes the matrix is that of SU (2B), suggesting that the holes were filled not much after the conversion of the funerary grounds to agricultural practices. In the northern side of the section some rodents' holes are filled with sediments which look rather linked to the upper horizon (2A).

SU <7> Negative interface of the pit of Grave 2.

SU (8) Shafts and fill of the contemporary Islamic graveyard, above SU (3).

SU (284) Covering schist slabs of the Grave 2.

SU (9) Main filling of the pit of Grave 2. Fine sandy silt, pale yellow (2.5 Y 7/4). It includes fine concretions of calcium carbonate (light grey, 2.5Y 7/3), fine gravels, few protohistoric potsherds and human bones fragments. SU (9) was excavated in two layers having the same sedimentological composition. The lowermost, SU (9A) contained the vessels of the grave furnishings, and, on top, the badly preserved bone fragments of a removed skeleton (including what was left of the skull, probably cut horizontally by a prolonged trampling on the same level). The uppermost layer, SU (9B) was free from ceramic remains or human bones. Both were results of an intentional refilling of the grave chamber.

SU (285) A dry stone masonry wall forming the chamber of Grave 2.

SU (286) Basal schist slabs of the floor of the Grave 2's chamber.

SU (10) Anthropogenetic layer, whose matrix is identical to SU (6), containing potsherds and animal holes. Most probably it is one of the vertical "walls" or "benches" described for SU (6), aside Grave 2.

SU <11> Negative interface of the pit of Grave 1.

SU (119) Wall, made of schist slabs, of Grave 3, built with an earthen mortar applied in plastic state (sandy silt, pale olive, 5Y 6/3).

SU (13) Filling on top of Grave 7. It includes Grave 8 (a secondary fractional burial with the bones of a small child and one or more persons, including an elder, mixed together and deposited nearby. A bone of a child was found in the bottom of Vessel 1 of this burial, a restricted jar). The filling is made of silt, with polyhedral structure, light yellowish brown (2.5Y 6/4) with white mottlings (2.5Y 8/2). This layer is covered by SU (35), the remnants of a large mound which sealed the whole group of graves in a late phase of the cemetery's use.

SU (14) Plowed surface of the large mound-like filling above Grave 2. Sandy silt, light brownish grey (2.5Y 6/2), containing gravel and scattered lumps of yellowish-white silty clay (2.5Y 8/2).

SU <15> Negative interface of the large pit dug from the head of SU (5) after the closure of Grave 2, before the Kushana plowing phase SU <4>.

SU <16> Negative interface of the pit of Grave 9.

SU (17) Filling of the pit SU <15>. Lenses of pure clayey silt, light brownish grey (2.5Y 6/2) alternating with silty clay lenses, white (2.5Y 8/2), these latter linked with the lumps of SU <4>. At the bottom, are visible a stone slab and two large pebbles.

SU (18) Filling of SU <16> of Grave 9, sandy silt, light yellowish brown (2.5Y 6/4). It includes gravel, schist flakes, nodules of calcium carbonate (pale yellow, 2.5Y 8/4).

SU <19> Negative interface of the pit of Grave 3.

SU (20) Filling of SU <19>, Grave 3. Massive sandy silt, pale olive (5Y 6/3). Includes schist flakes in chaotic setting, potsherds, diffuse granules of calcium carbonates.

SU <21> Negative interface of the pit of Grave 6.

SU (22) Filling of the cavity of Grave 6 after its destruction while building the chamber of Grave 3. Sandy silt, very pale brown (10YR 7/3). Contains abundant gravel and schist fragments, potsherds and bone fragments, and particles of calcium carbonate.

SU <23> Negative interface of the pit of Grave 4. Graves 4 and 5, observed in section, seem to share the same wall.

SU (24) Filling of Grave 4. Above the slabs of this latter, the sediment is a very homogeneous, massive sandy silt, very pale brown (10YR 7/4). Below the slabs, there are pure sheets of water-laid silty clay, pale yellow (2.5Y 7/4), with rare small flakes of schist in horizontal setting. The cavity of the cist was gradually filled by water, exactly as observed in Graves 7 and 5.

SU <25> Negative interface of the pit of Grave 5.

SU (26) Pure clay, water-laid, pale yellow (2.5Y 7/4) that filled in tabular sheets the empty cist of Grave 5. These sediment, free from inclusions, alternate with a coarser silty clay of the same colour.

SU (27) Fine sandy silt, light yellowish brown (2.5Y 6/4), including gravel and tiny schist flakes in horizontal setting. Borrowed on top by abundant animal holes, filled with the sediment of SU (5). A massive filling in secondary context of deposition.

SU <28> Negative interface of the pit for buiding SU (29), belonging to Grave 7.

SU (29) Mud wall built around the stone wall of Grave 7, thick on average 50-70 cm, and about 1 m high (from the head of the stone wall). Pure silty clay, white (2.5Y 8/2) to light grey (2.5Y 7/2). Hosts abundant animal holes filled with the same matrix of SU (5), like SU (27). The inclusions are very rare and tiny schist flakes.

SU <30> Negative interface of the pit of Grave 14 (recent).

SU (31) Layers piled above the recent Grave 14 of the contemporary cemetery lot, an alteration in secondary context of SU (2).

SU (32) Yellowish silty clay abundant on the terrace, possibly of natural origin in situ along the terrace's substratum.

SU (33) Filling of SU <30>, within the pit of Grave 14. Sandy silt, light brownish grey (2.5Y 5/2), with abundant loose gravel.

SU (269) Parallel schist slabs forming the roof of Grave 14.

SU (34) Plowed surface of the upper funerary mound-like covering, SU (35).

SU (35) Final mound which sealed extensively the local group of graves on the artificial terrace. The matrix is sandy silt, grey (2.5Y 6/2) with tiny carbonatic grains and veins (white, 2.5Y 8/2), rock fragments and gravel in a chaotic setting. Like SU (6), (10), (27), (29) is grooved by animal holes, here filled with the matrix of SU (5)

SU <36> Possible negative interface of the pit of Grave 7.

SU (37) Filling of Grave 7. Three phases of water-laid fine clay, alternating with as many layers of gravel, schist flakes and large horizontal potsherds (see what reported above for the fillings of Graves 4 and 5). The gravelly layers are the effect of three subsequent re-openings of the grave's cist. At least the uppermost episode saw the deposition and the decomposition in situ, above the partial filling of the cavity, of a corpse, as demonstrated by the fragments of human bones found in the same context.

SU <38> Negative interface of the pit of Grave 10.

SU (39) A series of water-laid clay layers, the filling of Grave 10. Along the edge of the cist, and near the corners, there are some vertical pointed traces left by small posts.

SU (40) A possible post-hole, at the edge of SU (29) (the SU is summarizes in this case both the negative interface and its filling). With a diameter of 35 cm, and a depth of about 50 cm, the cavity might have contained a large wooden element. It is filled with a pure and fine silty clay, light grey (2.5Y 7/2).

SU <41> Negative interface, cutting the surface of the clay "wall" or bench SU (29).

SU (42) Filling of the cut SU <41> above SU (29). Fine sandy silt, very pale brown (10YR 7/3), with abundant rock fragments in chaotic setting.

SU <43> Negative interface for the construction of the wall of Grave 17.

SU (44) Filling of SU <43>, most probably the retaining wall in collapse of Grave 17. Sandy silt, very pale brown (10YR 7/3) with abundant gravel and large rock slabs with pebble-like elements (diameters 20-30 cm and more).

SU (45) Horizontal layer of compressed schist flakes, rubble and small schist slabs, produced by the breakage of the bedrock SU (47). The matrix, artificial, is silty sand, pale brown (10YR 6/3).

SU <46> Horizontal cut in the bedrock SU (47), made for creating the artificial terrace of the cemetery.

SU (47) Natural bedrock, made of counter-sloping schist formations.

SU (273) Large covering slabs (Grave 7).

SU [274] Dry stone masonry walls forming the chamber of Grave 7.

SU (275) Basal schist slabs of the floor of Grave 7.

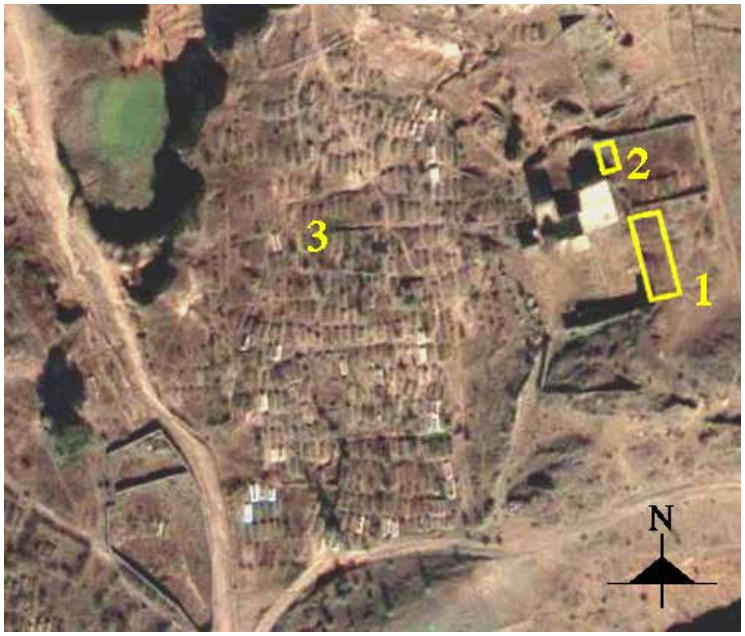


Fig. 49. a) Location of the excavated areas at Udegram in 2012: 1) Main Trench; 2) Trench North; 3) modern Muslim graveyard (source: Google Earth. Date on image: January 19, 2009. Date accessed: November 4, 2015).

Fig. 49. b) General view from the archaeological site of Udegram valley with the modern Muslim graveyard in the foreground (Photo by M. Vidale).

Fig. 50. Udegram, May-June 2012. The site of the protohistoric graveyard before the beginning of the archaeological excavations. Note the megalithic slabs of the Graves' roofs emerging from a recent agricultural cut (Photo by M. Vidale).

Fig. 51. Udegram, May-June 2012. Protohistoric ceramic collected by local villagers from dismantled graves (Photo by M. Vidale).

Fig. 52. Udegram, May-June 2012. The team at work for rectifying the section of the Main Trench (Photo by M. Vidale).

Fig. 53. Udegram, May-June 2012. The section of the Main Trench during the excavation of Graves 2 and 7 (Photo by M. Vidale).

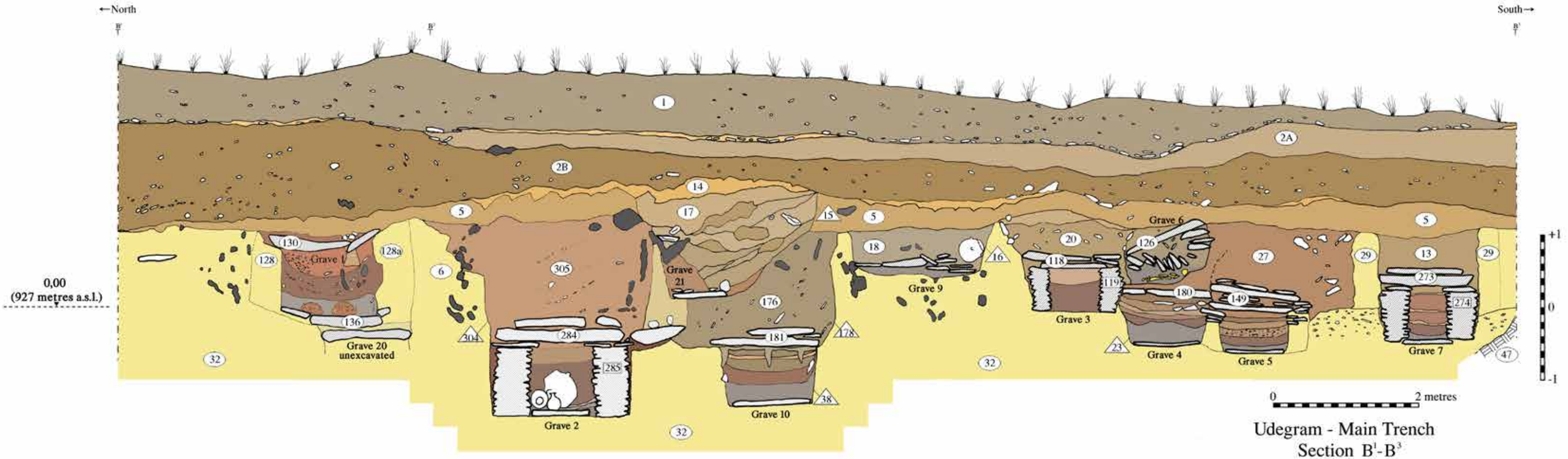


Fig. 54. Udegram, May-June 2012. The section of the Main Trench (Drawings by M. Cupitò, M. Vidale, R. Micheli).

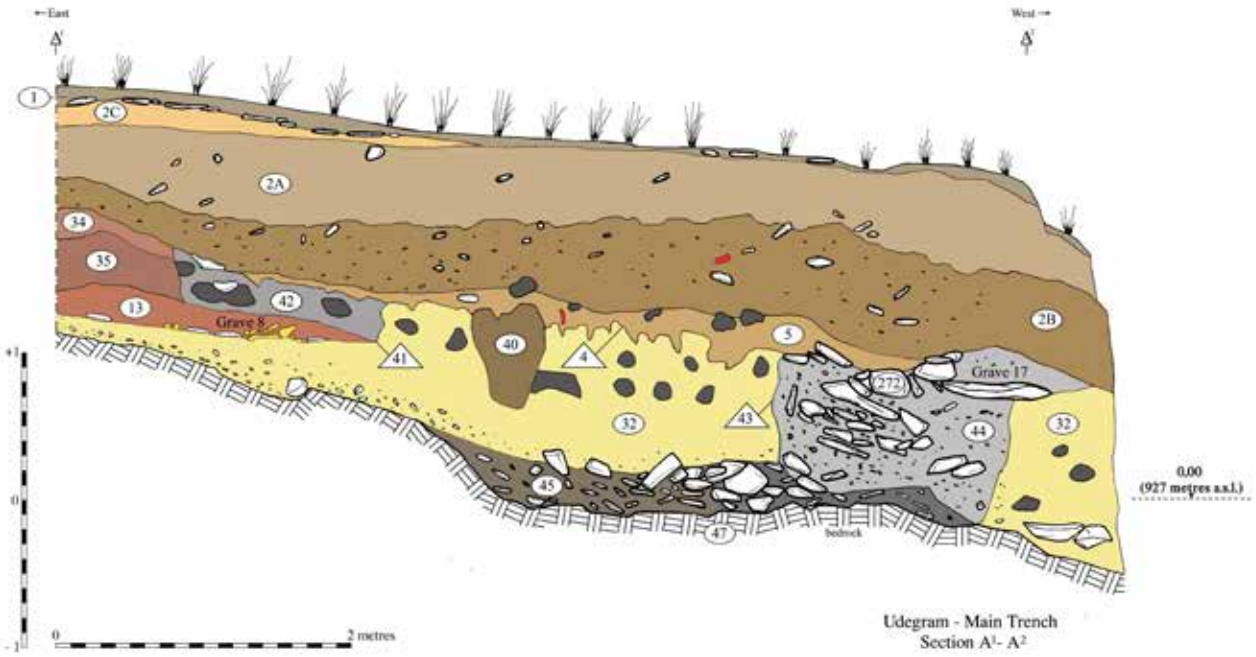


Fig. 55. Udegram, May-June 2012. Section recorded in the southern side of the Main Trench (Drawings by M. Cupitò, M. Vidale, R. Micheli).

Grave no.	Individual 1		Individual 2		Individual 3		Individual 4	
1	disarticulated	child 6-7 years	disarticulated	child 7-8 years	–	–	–	–
2	few bones	adult >18-20 years	–	–	–	–	–	–
3	articulated	mature male 40-50 years	–	–	–	–	–	–
4	articulated	mature female 40-50 years	disarticulated	adult male 35-45 years	–	–	–	–
5	articulated	old female	disarticulated	adut male 20-30 years	few bones	?	–	–
6	articulated	adut female 25-35 years	disarticulated	adult male 20-30 years	–	–	–	–
7	articulated	adult female 18-25 years	–	–	–	–	–	–
8	disarticulated	adult 30-40 years	one bone in Vessel 1	child 1 year	–	–	–	–
9	disarticulated	mature male 40-50 years	articulated	old female > 55-60 years	–	–	–	–
10	disarticulated	old male > 50 years	articulated	old female > 50 years	–	–	–	–
11	few bones	adult	–	–	–	–	–	–
12	articulated	old female > 50 years	disarticulated	adult male 25-35 years	–	–	–	–
13	few bones	male	few bones	female	–	–	–	–
14	few bones	?	–	–	–	–	–	–
15	disarticulated	adult female 20-25 years	–	–	–	–	–	–
16=23				*not excavated*				
17				*not excavated*				
18				*not excavated*				
19	disarticulated	adult > 20 years	–	–	–	–	–	–
20				*not excavated*				
21	disarticulated	old male >50-55 years	disarticulated	young 16 years	disarticulated	adult 30 years	few bones	female
22				*not excavated*				
23=16				*not excavated*				
24	articulated	adult male	–	–	–	–	–	–
25	few bones	?	–	–	–	–	–	–
26	articulated	adult male 30-40 years	disarticulated	old female > 55-60 years	–	–	–	–
27	articulated	mature male 40-50 years	disarticulated	adult female 35-45 years	–	–	–	–
28+Pit 1 North	disarticulated	adult female 30-40 years	disarticulated	mature male >40 years	–	–	–	–
29	articulated	adut male 25-35 years	disarticulated	child 10 years	–	–	–	–
30	articulated	child 3 years	–	–	–	–	–	–
31				*not excavated*				
32	no bones	–	–	–	–	–	–	–
33=29 (Ind. 2)	–	–	disarticulated	child 10 years	–	–	–	–

Table 2. Summary of the anthropological data of the Udegram graveyard.

Interpretation: a monumental cemetery on an artificial terrace

The stratigraphic evidence reveals that the local schist bedrock was cut horizontally, at least along in a strip of about 5-6 m of width. We ignore if the vertical faces of the step, upslope and downslope, was faced with one or more retaining walls. In this case, such constructions would have been built with large schist slabs and substantial cobbles, but material evidence is missing. We may remember that Gogdara IV were found ephemeral lines of stones set for contrasting in a point the erosion of the slope. The sub-horizontal negative surface was later filled and levelled with a layer of fine rubble and sand produced by the same cutting of the bedrock.

As a third operation, on the large step so obtained were brought large amounts of pure silty clay, yellowish-white (2.5Y 8/2), most probably excavated from a natural alluvial formation exposed downslope. These secondary deposits were mainly used to raise vertical walls, but also for levelling the horizontal trampling surface of the areas, clearly distinguished by the yellowish-white color of the silty clay, as well as by the high number of vertical and subvertical disturbances – both post-holes and, to a lesser extent, irregular rodents' holes. These latter that, exactly as observed at Gogdara IV, crowded the mouth of the graves following underground the vertical interfaces of their construction. These cavities had similar fillings, soft powdery sediments easily distinguished by darker matrixes and coarser textures. The map of the trampling surface of the cemetery (see Fig. 82) show a discontinuous distribution of these features, that sometimes take the form of circles of posts. The presumably structural remains are discussed in depth in a following section.

A careful scrutiny of the fillings within the rodents' holes contained tiny Kushana potsherds that had fell from the surfaces of abandonment and plowing of the protohistoric graveyard. The behaviour of the animals (and/or the peculiar visibility of their burrows) is probably explained by the softer, looser consistency of the yellowish silty clay used in the Graves' constructions.

This complex operation (cutting the rock, filling/levelling with rubble, building and filling with yellowish silty clay) involved a substantial collective effort and an efficient, rational planning. Considering the present local geomorphology, the cemetery most probably was built on a steep surface of bare rock, and this suggests a concern with saving land that could be better exploited for cultivation.

Although the limited size of the excavated area prevents us from fully understanding the details of its construction, the terrace was occupied by a row of rectangular grave chambers[4]. The Graves, enclosed in most cases by the described walls and benches of yellowish silty clay[5], were made as cists or chambers provided of stone walls (more rarely of wooden ones), whose height equalled the width of the chambers; floors were made of large, flat schist slabs of standard size and form set with plastering mud. On top of the walls, one or two courses of projecting flat slabs were meant to support the roof. The cists were finally sealed with three large rectangular stone slabs, aligned on the long sides. The joins among the three slabs, in turn, were covered by same-length smaller stones. While removing the covering slabs of the larger megalithic chambers, we realized that we needed not less than 8-10 workers to lift and move around one of its rectangular megalithic slabs (Pl. V, a), and this gives an idea of the collective efforts involved in the construction and re-excavation of similar graves.

[4] In the text sometimes we refer to these chambers as to "megalithic" constructions, because of the size of the schist slabs used for the roof and ceiling.

[5] At the time, given the vertical limits of the Stratigraphic Units around the Udegram Graves, we had a hard time in the effort of ascertaining whether the rectangular pits where the stone walls were dug into a basal accumulation of silty clay, or the walls were in beaten or pile earth, and built in elevation. In the later season we eventually ascertained that the second case was the reality, but – probably – not in every location of the terrace.

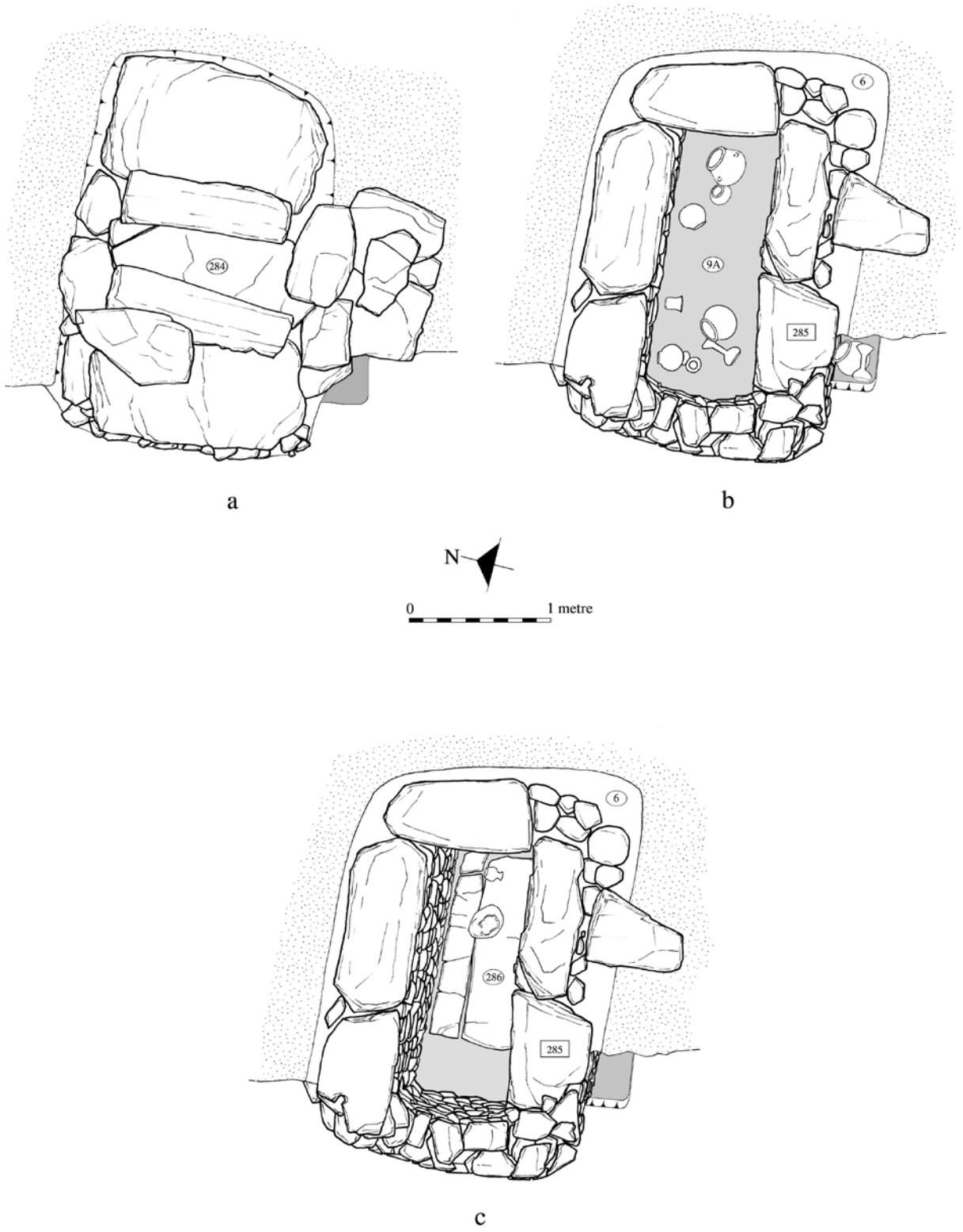


Fig. 56. Udegram, May-June 2012. Grave 2: a) Map of the schist slabs forming the roof of the funerary chamber; b) The main deposition level with Vessels 1-11 and human bone remains within the chamber; c) The Grave's chamber at the end of the dig (Drawings by M. Cupitò and R. Micheli).

Aside the top of the walls, and around the rectangular perimeter of the grave, yellowish silty clay was piled and shaped as a retaining wall (abouth 0.50 to 0.70 m thick, and approximately as high as the lower stone walls). This surrounding clay wall or bench might have had one or more wooden poles at the corners, that doubtless somehow marked the location of the chamber on the surface of the terrace. Further details and a more exhaustive visual reconstruction of the chambers of the graves are given in the records of Grave 24 (see below). These grave chambers might have been planned as many funerary lots in sight of repeated events of burial, re-excavation and new depositions, possibly by kinship or family groups whose members collaborated in the construction, as well as in the following rituals.

The top of the terrace, and the surface of the silty clay grave enclosures, was disturbed in depth by the later agricultural activities. The amount of silty clays used in the cemeteries was such that, in spite of the intensive, repeated plowing we ascribed to an early Kushana phase, we still could identify above the graves part of the extensive layers of silty material that had been placed on top of the terrace to seal their structure and contents. As stated in other works by two of the authors (L.M.O. and M.V.), it is highly probable that in the Early Historic period the spread of Buddhist funerary rituality, de-emphasizing the symbolic relevance of the extensive, monumental burial grounds of the previous ages, justified and allowed the plowing of similar areas. Like other cemeteries, because of the massive loads of silty clay piled upslope, the abandoned funerary terraces of Udegram provided along the valley's piedmont ready-to-hand agricultural lots that only needed a certain degree of adaptation, maintenance of small-scale terracing, manuring and artificial irrigation. At Udegram, the colluvial layers containing the worn Kushana potsherds are almost identical to those we had dug at Gogdara IV, and show what happened when at the end of the Kushana period such expedient artificial terraces collapsed because of over-exploitation and lack of proper maintenance.

Grave 2: stratigraphic formation processes and funerary practices

In the silty clay perimetral deposits surrounding Grave 2, while removing the wide shaft of the Grave from the sloping filling layers, and exposing the walls along the edges, we found what was left of another, less substantial cist, containing the upper part of a truncated skeleton (see below, Grave 11). We were unable to understand whether this grave pre-existed and had been dug before the main funerary construction, and was truncated during the excavation of the space for Grave 2, or if, in contrast, it had been placed on the edge of this latter, to be partially destroyed during one of the following episodes of its re-opening. In this second case, we have to assume that near the main chambers could be placed secondary burials (perhaps belonging to individuals of lesser importance, clients or the like) that in subsequent events could be carelessly cut and disturbed while re-excavating the mouth of the main chamber. But such evidence, at Udegram, is quite limited. The original planned space of Grave 2 (Fig. 56a-c) was probably a squarish trench, measuring about 3.60 x 3.60 m, with a probable depth of 1.60-1.80 m. Against the northern side of the trench, the excavation was deepened in form of a second rectangular trench, the main axis oriented from West to East, measuring about 2.60 x 2 x 1 m. Within such larger upper pit, was built an enclosure of yellowish silty clay, with average width of about 50 cm. The head of the wall reached an height of about 1 m; on the north-western corner was visible a post-hole (Fig. 57, upper right; Fig. 59, lower left, 5).

These features were not easy to excavate, due both to the similarity of the fine matrixes of the enclosure and the surrounding deposits, and to the intensive erosion and ubiquitous work of the rodents. On the opposite

Fig. 57. Udegram, May-June 2012. Grave 2: part of the stone slabs covering the chamber before its opening (Photo by M. Vidale).

Fig. 58. Udegram, May-June 2012. Grave 2: the stone slabs covering the chamber from South; in section is clearly recognizable the wide trench resulting from repeated re-excavations and re-opening of the Grave's mouth (Photo by M. Vidale).

Fig. 59. Udegram, May-June 2012. Grave 2 as seen on the eastern wall or the Main Trench: 1 and 2) Residues of a silty clay rectangular enclosure of rammed earth, intensively burrowed by rodents; 3) Multiple lenses of re-filling within the trench visible on top of the Grave's mouth; 4) SU (4) colluvial layer of the Early Historic period (Kushana phase) covering ancient plowing marks; 5) Possible post-hole in the corner of the rectangular silty clay enclosure (Photo by M. Vidale).

Fig. 60. Udegram, May-June 2012. Grave 2: ceramics and human bone remains abandoned in a earthen layer ca. 15 cm above the stone paving of the Grave (Photo by M. Vidale).

southern side, the silty clay wall opened where a series of irregular slabs was laid flat in the centre, forming a small platform (about 0.50 x 0.50 cm, mapped in Fig. 56a).

Then, against the inner face of the earthen chamber was built a wall made of flat rock slabs, with 14-15 courses, fixed with a mud mortar. The wall was about 25 cm thick, and the uppermost one-two courses projected inside, thus forming a better support for the large stone slabs of the grave's covering (Figs. 56a-59). The height of the wall, about 1 m, equals the width of the chamber, about 1.70 m long. The bottom of the grave was made with three rectangular stone slabs, aligned on the long side, leaving on the western side, corresponding to the area of the dead's feet, a patch of bare compact earth (see Fig. 61). Near the south-western corner of the stone wall was built a rectangular niche, for the purpose of depositing in it a globular cooking pot, evidently used before burial, and, on top, a stemmed cup (perhaps symbolizing feminine and male roles during the ceremony?) (Figs. 56b, 62).

The dead was placed in the chamber, with the vessels (or part of the vessels) subsequently found inside. Then the grave was sealed with three thick rectangular slabs, about 1.60-1.70 x 80-90 cm, also aligned on the long side (see the mentioned Figs. 56-59). The edges of the central slab were sealed by two elongated slabs (measuring 60 x 20 x 20 cm; placed on the gaps). The upper filling of this complex funerary structure show multiple sloping layers and lenses, SU (9), containing stone flakes, pottery and many fragments of human bones, easily explained after the evidence of the nearby disturbed Grave 11 and other graves excavated upslope.

These layers and their setting witness at least a major re-excavation (consider the section in Figs. 58, 59) in which the pit was re-opened, the slabs removed, the human remains and the objects – originally placed on the basal slabs of the chamber - manipulated. At the time, the chamber had been filled by sediments around what was left of the body of the deceased, to a thickness of 10-15 cm. Most of the skeleton was removed, leaving or discarding a set of pots at a filling level about 15 cm above the slabs of the floor (Fig. 60). It is not clear whether these vessels were those that originally belonged to the furnishings of Grave 2, or entered the Grave later, accompanying the exhumation ceremony. The globular jar G. 2/3 is frost-spalled, so

Fig. 61. Udegram, May-June 2012. Grave 2: globular cup on a high foot and, in centre, a very damaged human cranium, abraded while trampling the layer visible in the previous photograph (Photo by M. Vidale).

Fig. 62. Udegram, May-June 2012. Grave 2: globular cooking pot (see the sooth on the outer surface) in the lateral niche near the south-western corner of the earthen enclosure, after the removal of the high stemmed cup that had been placed on top (Photo by M. Vidale).

at some point of the cycle it must have been placed in the open and exposed for some time to ice and snow, possibly on the surface of the Grave. At the end, the whole cranium and mandible, with a globular cup on a raised foot and few post-cranial bone flakes, were left on the floor (Fig. 61). The cranium of the occupant - reduced to an almost powdery consistency - was abandoned in the centre of the chamber and simply truncated by trampling on the described earthen surface. Then the grave chamber was rapidly refilled. The megalithic covering was rebuilt, above the infilled chamber. On top of the structure, damaged by plowing since Kushana times, we found remnants of a large cap of piled earth, probably built to seal the manipulated Grave.

Grave 2 – The occupant

Grave 2 hosted few and, as we have seen, very damaged human bones remains. What was left of the bones, after a complicated cycle of burial and subsequent manipulation and removal witnesses an adult of non determinable sex, certainly older than 18-20 years, because the epiphyses of the long bones are completely soldered. Their bad state of conservation does not allow further inference.

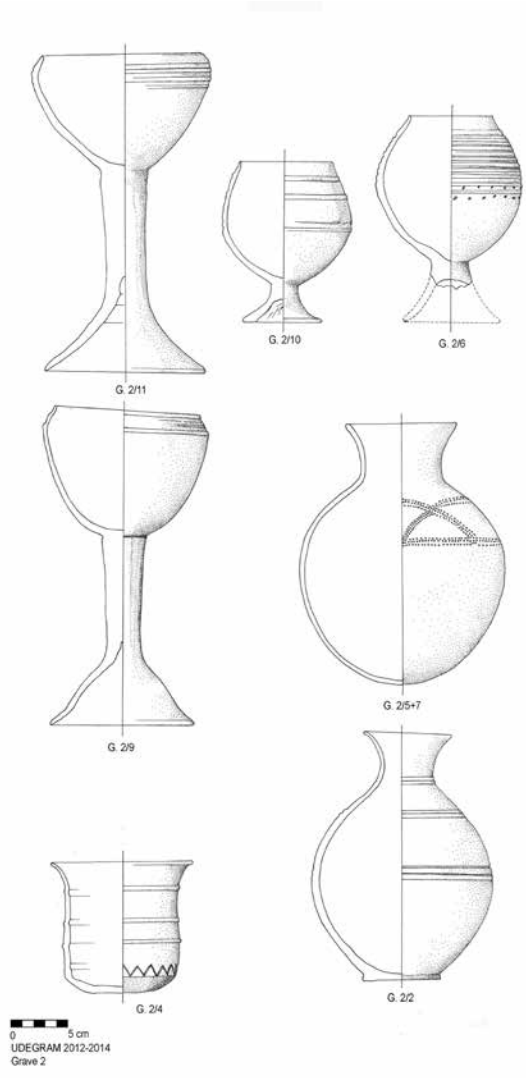


Fig. 63a

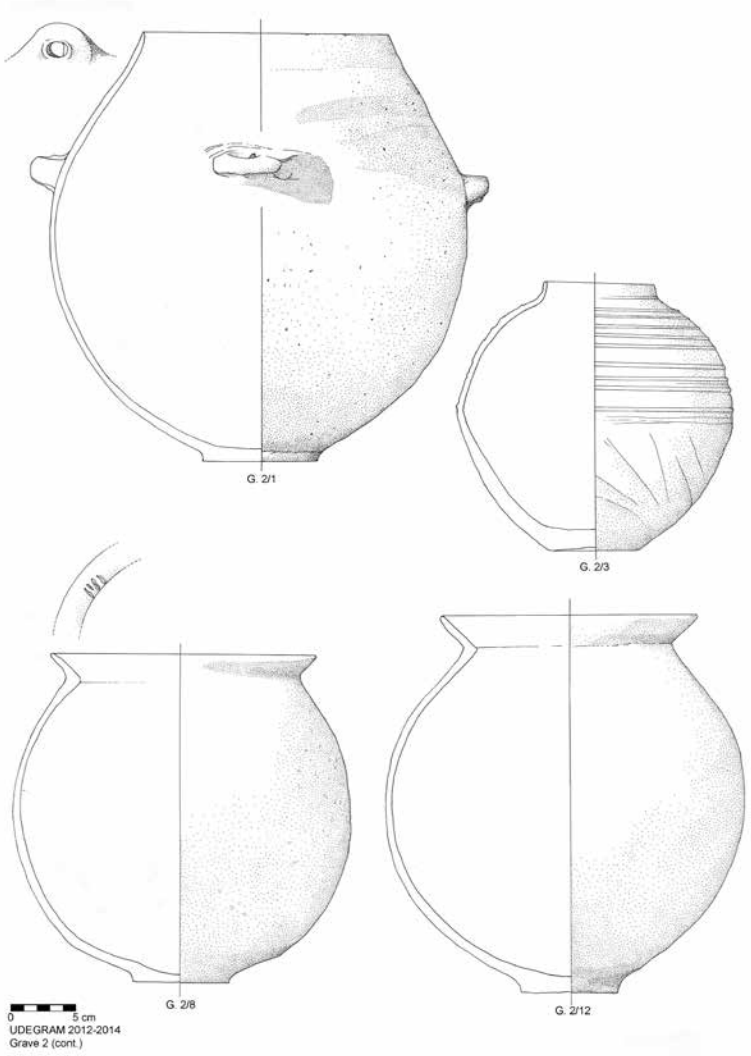


Fig. 63b

Fig. 63. Udegram, May-June 2012. The furnishings of Grave 2 (Drawings by M. Vidale).

Grave 2 – The furnishings

Vessel 1 (Fig. 63b G. 2/1). Large globular four-lugged pot with pointed rim. Height 33 cm, max. diam. 32 cm. Red-orange coarse ware, red slipped on the exterior. The base was formed in a concave mould, the rest of the wall built with coils and enlarged by flattening the wall by paddle and anvil. For comparisons see the discussion of the same type (a variant of Vtf67) for Vessels B/1, C/2 and C/5 at Gogdara IV.

Vessel 2 (Fig. 63a G. 2/2). Small globular necked jar with concave neck and everted rim; three couples of horizontal parallel ridges, at the base of the neck, on the shoulder and at the maximum expansion. Height 19 cm, max. diam. 15.8 cm. Broken in two parts, signs of strong wear and frost-spalled. Grey ware, wheel-thrown and trimmed on the base with a regular spiral-like movement. Variant of Silvi Antonini and Stacul's (1972) VTa44 (Loebanr, T. 122/2, Fig. 11c); form and horizontal grooves resemble a jar *ibid.*, Pl. CXLVIc, T. 136/7 (LB). See also type VTc45 *ibid.*, Pl. XXVIIIb, T. 24/6 (BTK), but with a quite larger mouth and shorter neck.

Vessel 3 (Fig. 63b G. 2/3). Globular hole-mouth jar with multiple horizontal parallel ridges on the upper part of the body. Height 21 cm, max. diam. 21.5 cm. Medium textured ware, slipped dark brown. Frost-spalled. Thrown on the potter's wheel, possibly in a single step. The form is absent in the basic typology of Silvi Antonini and Stacul 1972 and has not comparanda in the published repertories from the Swat valley; but see *ibid.*, Pl. CXXXVb, T. 57/3 (LB).

Vessel 4 (Fig. 63a G. 2/4). Cylindrical beaker with everted rim; three horizontal parallel ridges on the outer surface. Above the lower point of inflection, a incised zig-zag line. Height 10 cm, max. diameter (at the mouth) 12.4 cm. Dark grey burnished ware, wheel-thrown, trimmed on the base. The form and the decoration perfectly match Silvi Antonini and Stacul's (1972) type VTc32, T. 28/4, from Loebanr. Among other comparanda, cf. *ibid.*, PL. XXIc and d (two graves from LB); Pl. CCXVb, T. 9/10 (KTL); Pl. CCXVIIb, T. 21/3 (KTL); Pl. CCXXXb, T. 207/4 (KTL); Pl. CCXXXIc, T. 184/2 (KTL).

Vessel 5, see Vessel 7.

Vessel 6 (Fig. 63a G. 2/6). Fragmentary sub-globular cup on a high foot (missing). Multiple horizontal ridges and grooves on the upper part of the body; on the maximum expansion a double row of oblique impressions. Height (residual) 13 cm, max. diam. 12.5 cm, grey ware, made assembling two parts (cup and foot) separately formed on the potter's wheel. Silvi Antonini and Stacul's (1972: Fig. 4, c) type VTc8 (almost identical specimen from Loebanr, T/39/6); see also, among other similar vessels, *ibid.*, Pl. VII (different graves from LB); Pl. CXLIIb, T. 139, 4 (LB); Pl. CXLIIIa, T. 132, 6 (LB). For the broken and missing foot, see *ibid.*, Pl. CXLIVa, T. 90/1 (LB); the same use is recognizable in some other cases of broken high stemmed cups (*ibid.*, passim).

Vessel 7 (made with fragments numbered as 5, the body, and 7, the neck) (Fig. 63a G. 2/5+7). Globular necked jar with concave neck and slightly everted rim. On the shoulder, a pattern made by bands of a threefold row of small dots, forming large, discontinuous intersecting arches on a horizontal band. Height 20 cm, max. diam. 18 cm. Dark brown burnished ware, made with coils and enlarged by paddle and anvil. The piece was broken in two before being discarded in the grave's chamber. It corresponds to Silvi Antonini and Stacul's (1972) VTe46. An almost identical vessel found at Loebanr, T. 55/1 – see *ibid.*, Pl. XXVIIIc - was discussed at length by G. Stacul in a dedicated paper (1973).

Vessel 8 (Fig. 63b G. 2/8). Large globular cooking pot with everted rim, with abundant sooth on the exterior. Height 25.5 cm , max. diam. 26 cm, coarse red ware. The base, as usual, was formed in a mould, the wall was constructed with coils and later thinned by paddle and anvil. Four incised lines on the rim as a potter's mark. The form is Silvi Antonini and Stacul's (1972) Vtf68, cf. comments on Gogdara IV C/3 and C/8.

Vessel 9 (Fig. 63a G. 2/9). High stemmed cup, with a restricted mouth and a thinned rim, underlined by two ridges. Height 24 cm, max. diam. 14.4 cm. grey ware, made with three parts (foot, stem and cup) separately made on the potter's wheel and later joined. The outer surface of the stem shows long, regular vertical trimming traces. Silvi Antonini and Stacul's (1972) type VTc5 (Loebanr T. 55/5): Fig. 3,b. See also *ibid.*, Pl. III; Pl. CXXIc, T. 18/7 (LB); Pl. CXXVb, T. 28/5 (LB); Pl. CXXXIa, T. 45/3 (LB); Pl. CXXXVIId, T. 164/1 (LB); Pl. CXLIIa, T. 138/1 (LB); Pl. CXLIIIa, T. 132/4 (LB); Pl. CXLIIIb, T. 172/1 and 5, and other similar cups from Loebanr; Pl. CCXXVIIIa, T. 160/2 (KTL); PL. CCXXXb, T. 207/9 (KTL); Pl. CCXXXc, T. 228/1 (KTL); Pl. CCXXXIIIa, T. 165/1 (KTL); Pl. CCXXXIIId, T. 158/5 (KTL); Pl. CCXXXIVa, T. 210/17 (KTL). At Butkara there are similar stemmed cups but the forms are slightly different.

Vessel 10 (Fig. 63a G. 2/11). Restricted cup on a high foot. Height 12.5 cm, max. diam. 11 cm. Three horizontal ridges on the upper part of the cup, grey ware, slightly burnished. Made of two parts (cup and foot), separately thrown on the potter's wheel and joined together. The interior of the foot is extensively trimmed with a thin blade. Following the typology by Silvi Antonini and Stacul 1972, the form of this cup wavers between VTb7 and VTc8 (Fig. 4, a and c; Pls. VI and VII, specimens from various graves at Loebanr and Katelai). Cf. also *ibid.*, Pl. CXXIIIc, T. 20/6 (LB); Pl. CCXIIb, T. 1/16 (KTL); and in particular Pl. CCXIVa, T. 5/1 and Pl. CCXXa, T. 38/1 and 2 (both from KTL).

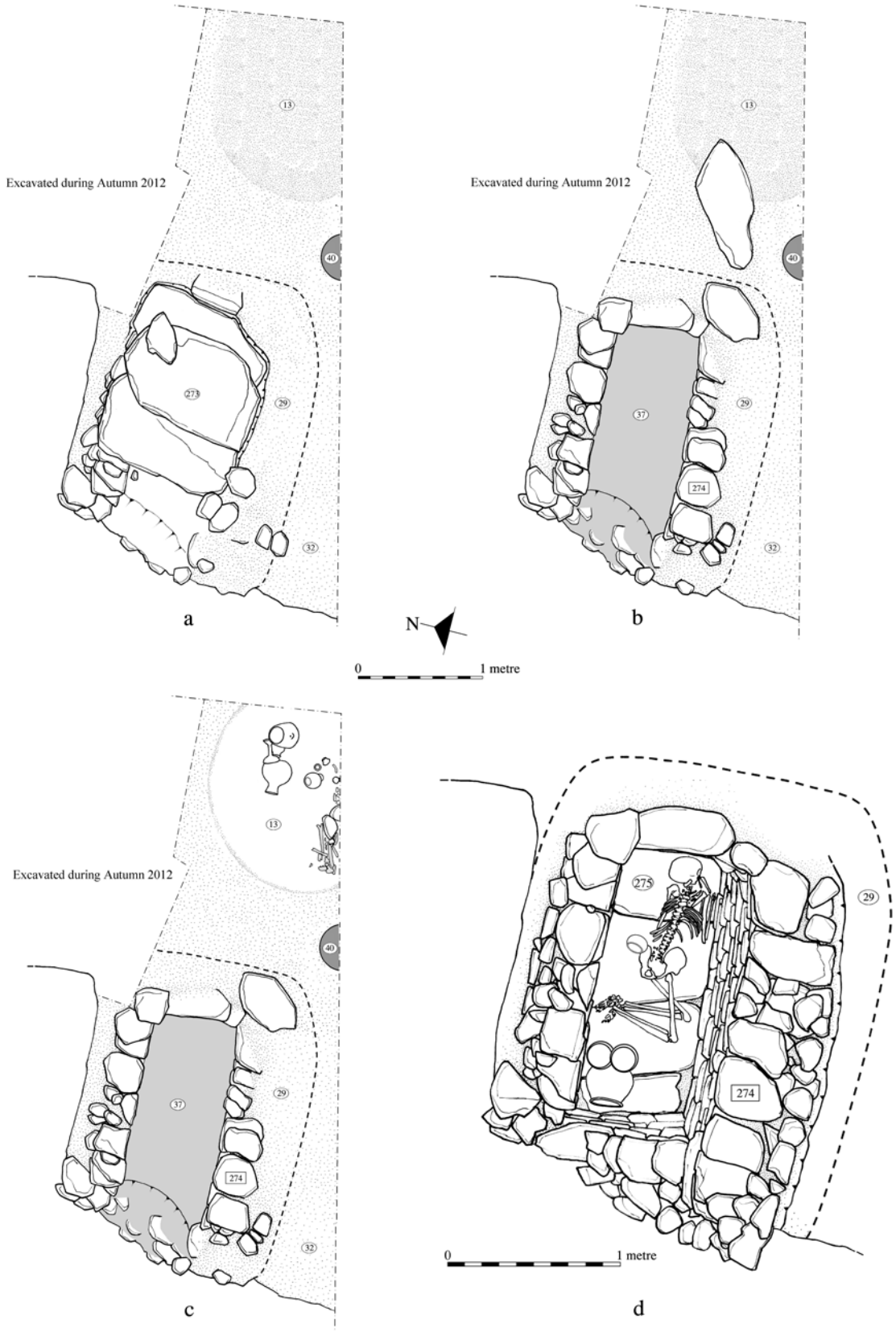


Fig. 64. Udegram, May-June 2012. Graves 7 and 8: a) The schist slabs of the roof and the low earthen barrow; b) The chamber and its filling before excavation; c) Grave 7 with the location of the secondary burial of Grave 8; d) The primary undisturbed burial on the paved floor of the Grave 7 (Drawings by M. Cupitò and R. Micheli).

Fig. 65. Udegram, May-June 2012. Grave 7 while being excavated, with its schist slabs as the roof, before its opening (Photo by M. Vidale).

Fig. 66. Udegram, May-June 2012. Grave 7 after the removal of the covering slabs, before excavation (Photo by M. Vidale).

Vessel 11 (Fig. 63a G. 2/9). High stemmed cup, with a restricted mouth, underlined by three horizontal parallel ridges alternating with shallow grooves. Height 24 cm, max. diam. 15.7 cm. Red slipped ware: foot, stem and cup were separately made on the potter's wheel and later joined. The outer surface of the stem is trimmed with regular, parallel trimming movements. A variant of type VTc5, see the comparisons outlined for Vessel 9.

Vessel 12 (Fig. 63b G. 2/12). Large globular cooking pot with everted rim. Height 29 cm, max. diam. 28 cm. Red-orange coarse ware. Base formed in a mould, wall built with coils and by flattening the wall by paddle and anvil. Silvi Antonini and Stacul's (1972) form Vtf68, for comparisons see Vessel 8.

Grave 7

The construction of Grave 7, the first undisturbed burial we found at Udegram, was partially similar (Fig. 64a-d). The covering, as in the other sealed megalithic chambers, was made of three parallel rectangular schist slabs, with smaller elongated stones set parallel for covering the joins (Fig. 65). The main chamber occupied a space of about 2.60 x 1.80 m, and, inside, a wall of flat schist slabs built with 14-15 courses, set in a silty clay mortar, from 45 to 50 cm wide and 80 cm tall. Like in Grave 2, the upper course was made of large projecting flat slabs, which supported the uppermost slabs with a partially corbelled arrangement. The bottom (partially visible in Fig. 67) was constructed with other four parallel schist slabs joined along their longer sides.

As the interior wall was partially sunk in the basal rubble filling above the bedrock, SU – (36) on SU (45), see Fig. 55, the limit was originally considered a negative interface (i.e. the chamber was dug into this prepared rubble platform), but it is equally possible that both the platform SU (45) and the wall of the chamber of Grave 7 were built in the same moment[6]. As observed in Grave 2, the width of the funerary chamber, 75-80 cm, exactly matched the height of its stone wall.

The stone wall was built against a silty clay enclosure similar to that of Grave 2, which, judging from what we could observe in section – see SU (29) -, should have measured not less than 3.80 x 3 m. In the south-western corner we recorded the trace of a large post-hole, SU (40), always in Fig. 55. Both the silty clay enclosure and this latter feature, were intensively disturbed by the effects of the plowing activities in Early Historic times.

Once removed the slabs of the cover, we found that the filling was formed by laminated silt, whose slow deposition had been interrupted by at least three fine levels made of fine gravel and broken flat flakes of schist. In the thicker lens thus formed there were potsherds, 1 to 3 cm wide, and flat pieces of human bones in sub-horizontal settings.

[6] See on this matter the previous footnote.

Fig. 67. Udegram, May-June 2012. The primary undisturbed burial of Grave 7 (Photo by M. Vidale).

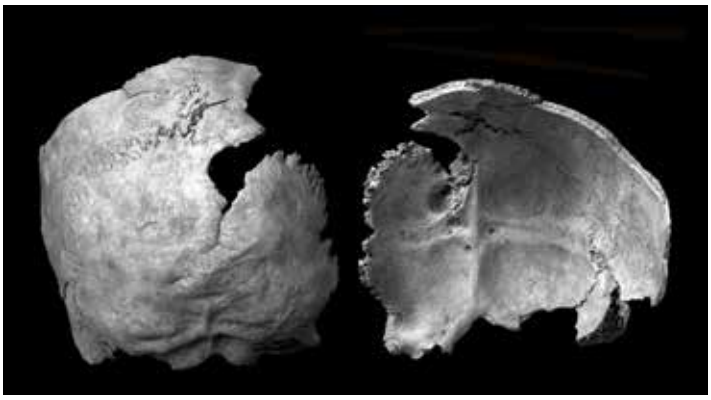


Fig. 68. Udegram, May-June 2012. The cranium of the occupant of Grave 7, a young female. The endocranic side (right) of the occipital bone, on the lambdoidal suture, there is a breast-like bone neo-formation, probably due to an aggressive infection. A round lesion recognizable on the ectocranic surface (left, in centre) might suggest that such pathology was the consequence of a physical trauma (Photo by M. Aurangzaib Khan and M. L. Pulcini).

The laminated silt layers were interpreted as the result of the deposition within the empty chamber of percolating sediments formed by heavy rains. The silt came from plaster and sediments piled on top of the construction, or placed in the earthen construction of the chamber itself, through the fixures among the slabs.

The three lenses of gravel and schist flakes mark as many moments in which the described filling process was interrupted by the fall of particles flaking off the surrounding slabs (belonging to the covering or falling from the inner wall) and/or by the seeping of fine lithic particles from the trampling surface around the mouth of the chambers.

For the thicker lens, where fine gravel and larger schist flakes appeared together with small sherds and pieces of bone, the most likely explanation is a voluntary re-opening of the grave. However, there is no evidence that in the re-opened chamber was laid another body, or any another object; nor that the primary occupant was manipulated or disturbed in any way.

The dead, a young female from 18 to 25 years, was laid in a East-West direction, on her left side and facing South (Fig. 67). The legs were flexed and the arms forcibly bent towards the face; the bones of the wrist and of the left hand, in particular, covered the right side of the skull in a quite innatural position. A complete conservation of every anatomical articulation shows that this is certainly a primary burial; the flattening of the ribs cage and a partial opening of the coxal bones, too, confirm that the body decomposed in an empty space. Yet, the conservation of the joins among the bones of the left shoulder, of the left hand and of the vertebrae demonstrates that when the body's decay started, the chamber already hosted on the floor some sediments; only a progressive substitution of the soft parts with loose, hydromorphic sediments may account for the permanence in place of some unstable parts of the skeleton.

The grave furnishings (Figs. 67 and 69; Pl. VIb), made only of pottery vessels, were clustered near the feet of the young lady, in the north-western corner of the Grave's chamber; a single small jar, Vessel 1, was found in the middle of the chamber, near the coxal bones. While the cluster of pots found near the feet was directly placed on the stones of the floor, probably even before the chamber started to be filled by silt seeping along the walls, Vessel 1 stood ca 10 cm above the same floor. Most probably, it had been placed on top of a decayed object. In fact, the vertical, compressed position of the scapulas suggests that the back of the body was flanked and supported by a large, substantial object in organic material, apparently (judging from the section of the claysh filling) a bundle of cloth or some kind of rolled carpet. Both this large decayed object and the fleshy

parts of the body were gradually substituted by thin layers of water-laid clay slowly percolating from outside, in the first stages of filling of the inner space – and before the chamber was re-openend, as stated above, at least three times.

Grave 7 – The occupant

As stated above she was a female, who died at an age of 18-25 years. Her bones were fairly preserved, although the periostium was partially corroded. The sex was established after the features of the coxal bones (wide ischiatic groove and presence of a preauricolar sulcus, even though light) and after the size of the femur's head: 35.9 mm. The same age range is supported by the degree of eruption and the wear of the teeth, as well as by the degree of soldering of various skeletal regions. This young woman had a olecranic cavity in her right humerus. Both on femurs and humeri, the muscle insertions are very marked. A slight osteoarthrosis was recorded on the head of the left femur, and the signs of a light periostitis appear on the left tibia and fibula, probably after repeated traumas to the muscles of the leg. Light cribra orbitalia affected both the orbits. More important, the

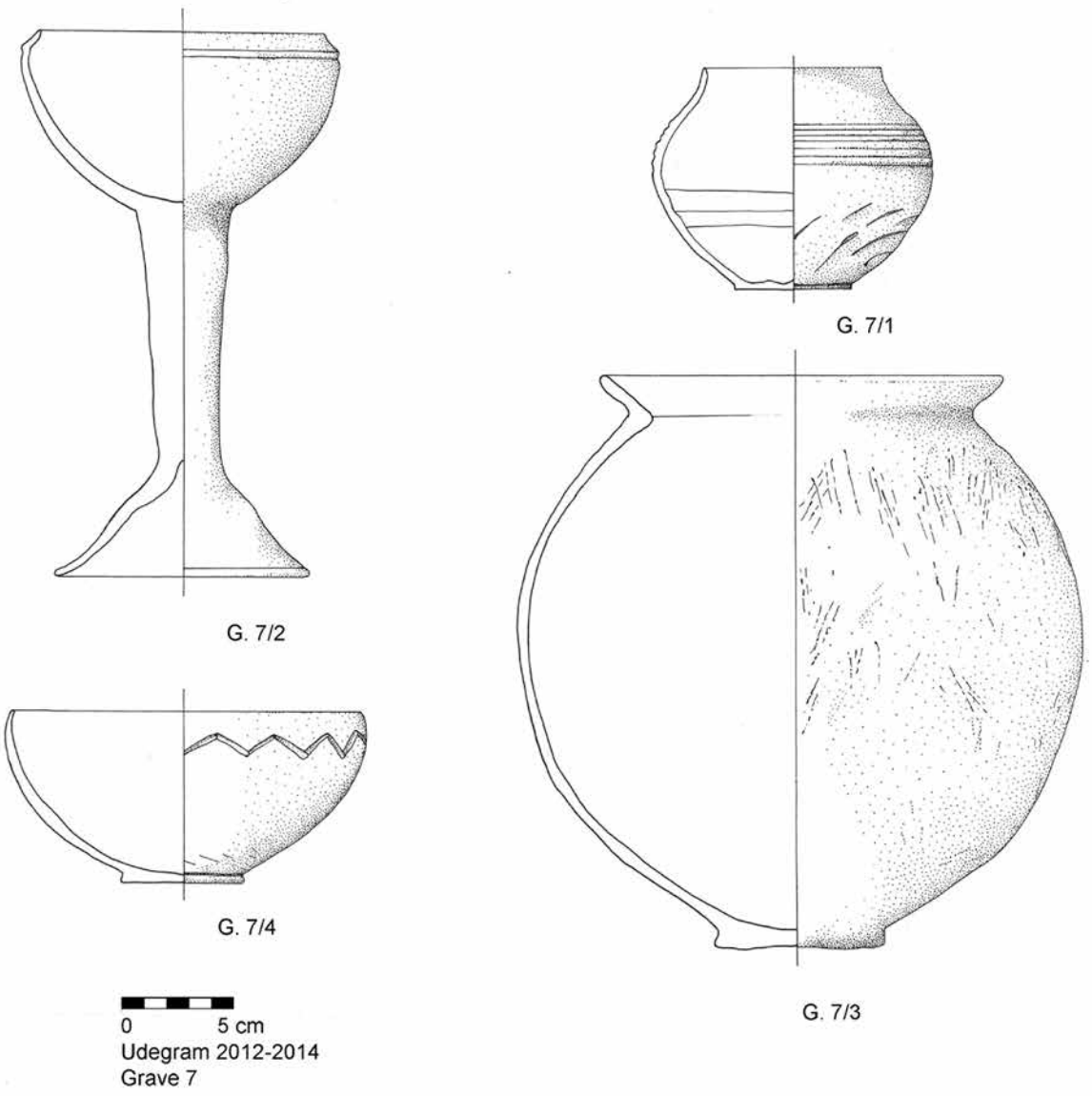


Fig. 69. Udegram, May-June 2012. The furnishings of Grave 7 (Drawings by M. Vidale). See also Pl. VIb.

endocranic surface of the occipital bone show a mamilliform growth of neo-formed bone (Fig. 68) that might be due to a serious infective process in its acute stage possibly induced by what looks like an impact with a round, blunt object.
The maximum preserved length of the right femur is 42.8 cm (not complete). The femur's head diameter is 35.9 mm. The estimated stature of a 43 cm femur is as follows: Sjøvold ±162.39 cm; Trotter and Gleser (African-American females) ±157.8 cm. The same value is hypothesized after the size of the ulna: Sjøvold ±166.3 cm; Trotter and Gleser (African-American females) ±161.10 cm.

Grave 7 – The furnishings

Vessel 1 (Fig. 69 G. 7/1). Small globular pot with a band of six ridges on the shoulder. Height 10 cm, max. diam. 11.5 cm.grey ware, burnished. Made on the potter's wheel in a single step, extensively trimmed with spiral-like movements on the base. The form belongs precisely to Silvi Antonini and Stacul's (1972) type VTbd14 (Loebanr, T. 12/10, Fig. 5d); *ibid.*, similar pots at Pl. X; Pl. CXXVIId, T. 38/2 (LB); Pl. CXXXIIa, T. 47/6 (LB); Pl. CXXXVIIIc, T. T. 137/2 (LB); Pl. CCXVIIb, T. 21/1 and 4; Pl. CCXVIId, T. 25/2 and CCXVIIf, T. 28/1 (both from KTL); Pl. CCXXXa, T. 196/1 (KTL) and CCXXXc, T. 228/4 (KTL).

Vessel 2 (Fig. 69 G. 7/2). High stemmed cup, with restricted mouth and pointed rim, underlined by a deep groove. Height 24.5 cm, max. diam. 14 cm.grey ware, made assembling three pieces (foot, stem and cup) separately made on the potter's wheel. The surface of the stem is plain, without the vertical trimming marks commonly seen on similar containers. The vessel is identical to the high stemmed cups of Grave 2 (see the comparisons listed for Grave 2, Vessels 9 and 11).

Vessel 3 (Fig. 69 G. 7/3). Large globular cooking pot with everted rim. Height 26 cm, max. diam. 25 cm. Coarse red-orange ware. Base formed in a mould, wall built with coils or slabs and later by flattening the wall by paddle and anvil. The exterior is widely scraped and bears an outer film of sooth. This cooking pot contained a terracotta spindle whorl, with a strong wear on the two flat surfaces. The vessel is identical to the high stemmed cups of Grave 2 (see the comparisons listed for Grave 2, Vessels 9 and 11).

Vessel 4 (Fig. 69 G. 7/4). Hemispherical bowl on a ring foot; a zig-zag line is incised in depth below the rim. Height 7.8 cm, diam. max. (below the rim) 16.2 cm.grey ware, slipped brown. Wheel-thrown in a single step; the foot seems to have been attached in a second step. Type VTd10 of Silvi Antonini and Stacul's (1972) classification, T. 53/2 at Loebanr – Fig. 4h. See also Pl. CXXVIIa, T. 35/3 (LB); PL. CXXXd, T. 44/11 (LB); Pl. CXXXIc, T. 46/6; Pl. CXXXIIIb, T. 48/21 (LB); Pl. CCXIIc, T. 1/10 (KTL); Pl. CCXIIIb, T. 3/1 (KTL); Pl. CCXXXa, T. 38/4 (KTL).

Grave 8

Grave 8 was first identified as a group of vessels scattered within the residual layers which originally had been piled on top of Grave 7, after its final closure, to form a low mound. Its map is visible in Fig. 64, c, along the southern wall of the Trench; there is no certainty that its artefacts' inventory is complete. The vessels here were deposited or better scattered, at least in their final setting, as furnishings and the human bones (a secondary burial) were found in a space of 1.5 x 1.5 m, and laid on a horizontal surface, fully exposed by expanding the limits of the Main Trench to South-East (Figs. 70, 71). The long bones of Grave 8 (Fig. 72) had probably been wrapped in a bundle; smaller bones and part of a mandible laid below. Part of the vessels were found above one of the two horizontal schist slabs.

Grave 8 – The occupants

Individual 1, a secondary and partial interment (Fig. 72), was an adult (ca. 30-40 year old at the moment of

Fig. 70. Udegram, May-June 2012. Grave 8: view of part of the Vessels accompanying the secondary burial on top of Grave 7 (Photo by M. Vidale).

Fig. 71. Udegram, May-June 2012. Grave 8: view of the other Vessels accompanying the secondary burial on top of Grave 7. The largest Vessel, a restricted jar in red ware, contained the clavicle of a young child (Photo by M. Vidale).

death) whose sex could not be determined. The recovered bones, in fact, are very few. The muscle insertions suggest a male, but the limited size of what was left conflicts with this inference, hindering a reliable conclusion. Also the size of a femur's head (42.3 mm) falls between the two average distributions for males and females. The age range (30-40 years ca.) is suggested by the degree of teeth damage. Individual 2 is witnessed by the find of a single clavicle of a 1 year old child, found in the bottom of Vessel 1 (see below).

Grave 8 – The furnishings

Vessel 1 (Fig. 73 G. 8/1). Globular necked jar with a concave neck; at the base of the neck, two parallel horizontal ridges,

Fig. 72. Udegram, May-June 2012. Grave 8: detail of the secondary burial on top of Grave 7. Note the long bones, originally wrapped in a bundle (Photo by M. Vidale).

followed on the shoulder by a wide zig-zag line, then by three paralell horizontal lines and finally by a continuous wavy line. Height 28 cm, max. diam. 25 cm. Fine orange ware. Made on the potter's wheel, probably enlarged by paddle and anvil; on the interior, traces of a rotating flat spatula. Like Vessel 2 of Grave 2 (see above), a variant of Silvi Antonini and Stacul's (1972*)* VTa44 (Loebanr, T. 122/2*,* Fig. 11c); Pl. CXLVIc, T. 136/7 (LB).

Vessel 2 (Fig. 73 G. 8/2). Small pear-shaped jar with a truncated-cone shaped neck, and slightly inflected rim. Two ridges on the transition between neck and shoulder; in between, incised wavy lines. Fine grey ware without visible inclusions, wheel-thrown, trimmed on the base. A variant of Silvi Antonini and Stacul's (1972) types VTac20 and VTac20I, "vase with deep body, vertical or flared rim and disk-base, with large mouth and slight concave sides"; Fig. 6d, 6e. See also Pl. XIVb and c (from T. 71 at Loebanr) and Pl. CXXIIa, T. 19/5 (LB); Pl. CXXXIIb, T. 48/13 (LB); Pl. CXLc, T. 121/1 (LB); Pl. CXLIa, T. 174/5; Pl. CXLIVb, T. 111/13 (LB); Pl. CXLVc, T. 92/8 (LB); Pl. CCXVb, T. 9/2 (KTL); Pl. CCXVIIc, T. 23/2 (KTL); Pl. CCXXIc, T. 39/8 (KTL); Pl. CCLVIa, T. 21/6 and 7 (BTK).

Vessel 3 (Fig. 73 G. 8/3). A small "pitcher" with restricted mouth, globular body and a single vertical round handle joining rim and shoulder. The lower surface is uniformly covered by small lenticular ice spalls formed while the small vessel was affected by frost. This would imply that in some step of the events the pitcher had been exposed for a certain period to the direct action of ice or snow, perhaps on the exposure location, or on top of the burial surface. Height 6 cm, max. diam. 6 cm. Coarse black ware, wheel-thrown. Silvi Antonini and Stacul's (1972) rare type VTd61 "globular jug with narrow neck, flaring rim, vertical handle round in section" (in this case, without disk-base): Fig. 14b (Butkara II T. 45/4). See also Pl. XXXIIIb (the same specimen).

Vessel 4 (Fig. 73 G. 8/4). Small cylindrical beaker with everted rim. Five horizontal parallel grooves on the outer wall. Height 5.5 cm, max diam. (mouth) 7.5 cm. Grey ware, wheel-thrown in a single step, turned on the base. This beaker was the first found of Grave 8, outside the chamber of Grave 7, touching the exterior of its stone wall. Silvi Antonini and Stacul's (1972) type VTc32, quite common. For comment and comparisons see Grave 2, Vessel 4.

Vessel 5 (Fig. 73 G. 8/5). High stemmed cup, with a thick rounded rim underlined by two ridges. Between the second and the third ridge there are sequences of three incised joined arches. Height 29.5 cm, max. diam. 16 cm. Black burnished ware, made assembling three pieces (foot, stem and cup) separately made on the potter's wheel. The outer surface of the stem is carefully trimmed with long, regular scraping movements. The open mouth underlined by horizontal incised lines points to Silvi Antonini and Stacul's (1972) types VTc5 and VTd6 (Butkara II, T. 41/5, Fig. 3c). See Pl. V, specimens with wavy patterns below the rim.

Vessel 6 (Fig. 73 G. 8/6). Squat beaker with everted rim, and three parallel horizontal ridges on the shoulder. Between the second and third ridge a sequence of three joined arches. Height 9 cm, max. diam. 10 cm. Grey ware, wheel-thrown, trimmed on the base. The closest comparion is with Silvi Antonini and Stacul's (1972) type VTc33, defined as "vessel with out-turned rim, carination in the lower part of the body and flat-base"(Loebanr, T. 41/4, Fig. 9f) and VTc32I (Pl. XXId, Loebanr, T. 70/9), whose maximum expansion, like in this specimen, is rounded rather than carinated. See also *ibid.*, Pl. CXXIb, T. 17/10 (LB); Pl. CXLc, T. 121/11 (LB); Pl. CXLId, T. 178/10 (LB); Pl. CXLIIIa, T. 132/7 (LB); Pl. CCXVIc, T. 16/12 (KTL); Pl. CCXXIc, T. 38/11 (KTL); Pl. CCXXXIVa, T. 210/15 (KTL).

Vessel 7 (Fig. 73 G. 8/7). Large globular pot with four horizontal handles, and a vertical pointed rim. On the shoulder, above the handles, runs a band formed by a double incised line and underlined by a third wavy line. Height 30 cm, max. diam. 31 cm. Medium-textured coarse ware, red slipped on the shoulder. The base is moulded, the rest of the body seems to be made with coils, peraphs regularized by paddle and anvil. This type (a variant of VTf67) has been discussed above for Vessels B/1, C/2 and C/5 at Gogdara IV and as for Vessel 1 of Grave 2.

Vessel 8 (Fig. 73 G. 8/8). Miniature globular pot with vertical pointed rim; three horizontal lines incised on the maximum expansion. Height 6 cm, max. diam. 8 cm. Fine grey ware without visible inclusions, wheel-thrown. It is a precise miniaturistic replica of Silvi Antonini and Stacul's (1972) type VTbd14, discussed at length as for Vessel 1 of Grave 7 (see above).

Vessel 9 (Fig. 73 G. 8/9). Miniature beaker with everted rim; two deep lines are incised above the maximum expansion. Height 6 cm, max. diam. 6 cm. Burnished grey ware. For the type (VTc33 - VTc32I) and comparisons see Vessel 6 in this same Grave lot.

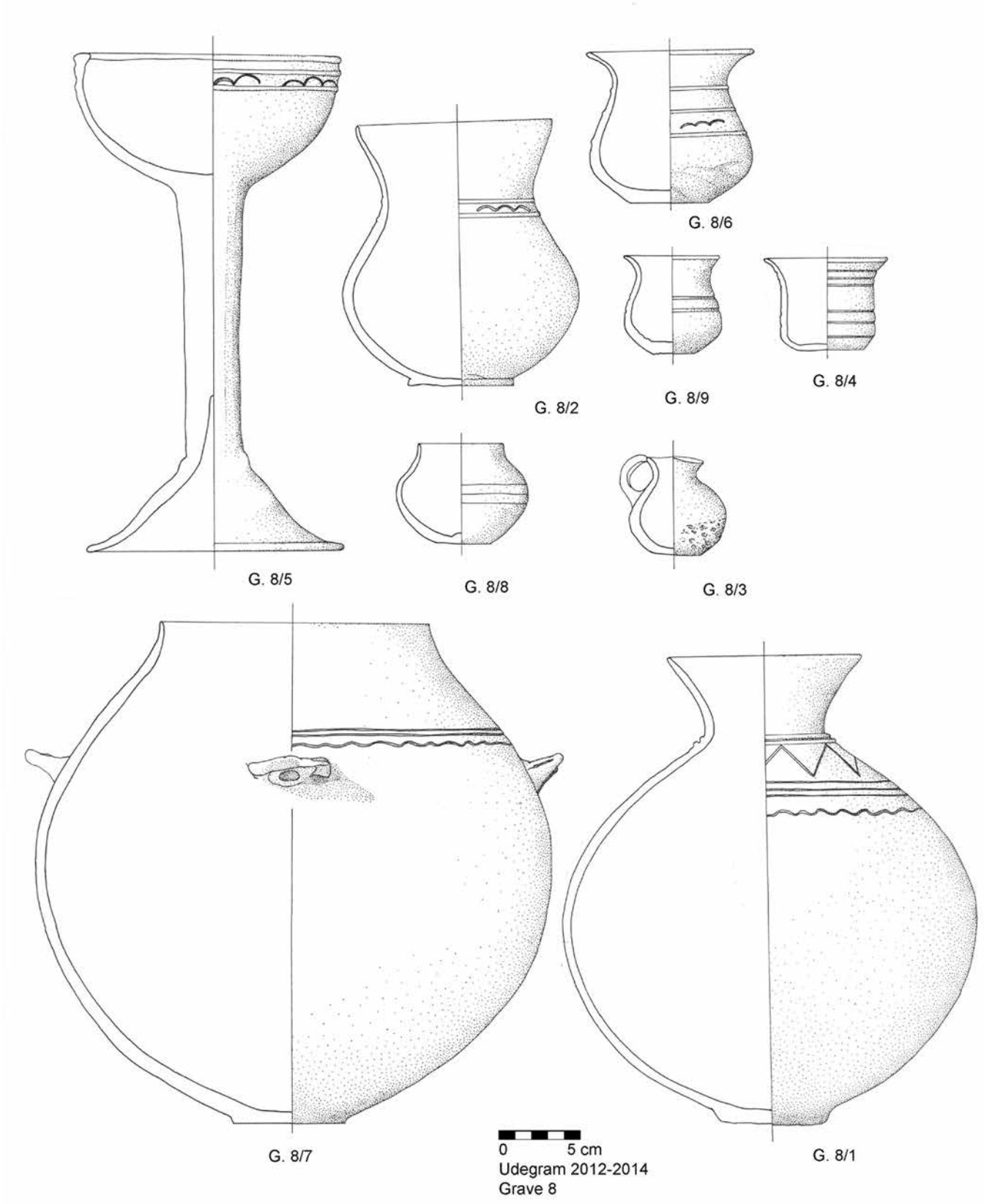


Fig. 73. Udegram, May-June 2012. The furnishings of Grave 8 (Drawings by M. Vidale).

Udegram - Second Campaign, October-November 2012

M. Vidale, A. Iqbal, E. Javed, R. Micheli, L.M. Olivieri,
M.L. Pulcini and M. Zahir
(with contributions by G. Quarta on radiocarbon dating)

Fieldwork

In late October of the same year, after the dig of Graves 7 and 2, M. Vidale and R. Micheli returned to Udegram to complete the excavation of the many graves already partially identified in section in the lot partially investigated in May-June. In the first day of excavation (22.10.2012), we prepared the yard delimiting the area to be excavated. Our purpose was to complete the exploration of the row of graves identified and partially exposed in the previous campaign. The selected area was an irregular trapeze with a a maximum length of ca. 20 m and a maximum width of ca. 5 m.

Just below the surface, we found the shaft of a recent grave belonging to the contemporary burial ground of Udegram, labeled Grave 14 (Pl. XIII, d). The circumstances of its excavation are reported in Appendix 2 (Fig. 234). As this abandoned grave shaft posed no other problems, we were free of proceeding with the dig in this and in the nearby areas. SU (2) was completely removed, uncovering gradually the top of the lower SU (5). In the southern part of the Main Trench a large schist slab, probably coming from a protohistoric grave, was found to cover a lens of sediment containing Kushana potsherds, showing that this slab, most probably, had been removed from the covering of Grave 15 during the excavation of the pit of the upper recent Grave: see, below, SUs (104) and (104a).

About 50 m North of the Main Trench (Fig. 49a), two badly damaged burials (labelled Grave 12 and Grave 13) were observed in section (Figs. 74, 75). Their stratigraphic context was recorded with what we called North Section (Fig. 76).

Recording the North Section, with Graves 12 and 13

The North Section, located, as stated above, about 50 m North of the northern end of the Main Trench, shows a quite common evidence in the piedmont terraces of the Swat valley: the sight of graves artificially cut and carelessly plundered by local farmers, or simply vertically cut by landslides and/or water erosion (Fig. 75). The damages underwent by the graves gave us the opportunity of recording in section their structure, and analyzing in great detail the processes of their construction, filling and subsequent transformation. Moreover, as Grave 12 had two subsequent depositions, while Grave 13 (apparently) had only one, we could compare the filling processes of the chambers in two radically different situations. The following Stratigraphic Units (SU)s were observed and recorded in the section of Fig. 76.

Earthen walls around the two Graves, and their vertical surfaces

SU (201) Artificial fillings or earthen walls made of a pure silty clay, light brown in color (pale brown, 10YR 6/3), including landsnails and fragments of their shells. This material, surrounding the two graves, was abundantly excavated, as usual, by borrowing rodents; the filling of their holes (very pale brown, 10YR 7/3) has a fine silty matrix, and contained tiny fragments of Kushana sherds and gravel.

SU (202) Vertical shaft or pit's inner wall's surface of Grave 13. The vertical limits of the shaft were very well preserved at East, West and in the grave's bottom.

SU (203) The corresponding inner limits of the interior of Grave 12, well preserved only at East, and in the bottom of the pit.

Fig. 74. Udegram, October-November 2012. The site of the Northern Section, location of Graves 12 and 13, before the beginning of the work (Photo by M. Vidale).

Grave 12

SU [204] Perimetral wall of Grave 12, made by 13-14 regular courses of small schist slabs, bound by a silty-sandy mud mortar, very pale brown in color (10YR 7/3).

SU (205) Base of Grave 12, in this case originally made with three parallel schist slabs measuring 55 x 50 x 4 cm.

SU (206) Skeletal remains of Individual 2, deposited as a secondary fractional burial aside SU (209) including a skull resting against the Grave's wall.

SU (207) A layer of pure silty clay covering the bones of Individual 2, = SU (206), distinguished by neat hydromorphic lamination, light yellowish brown (10YR 6/4).

SU <208>, a limit left after re-opening the Grave's chamber (to a large extent still empty) in order to place the remains of Individual 2.

SU (209) Skeletal remains of Individual 1, lying in primary deposition on the the right side, and looking to the North wall of the chamber.

SU (210) A filling layer of fine gravel, whose grains, up to 1 cm wide, have sharp angular contours. The gravel appears sorted by gravity, with the larger grains at the base, and its matrix is silty-sandy, light yellowish brown (10YR 6/4). SU (210) seems to have fallen inside the chamber during a re-opening event.

Fig. 75. Udegram, October-November 2012. The Northern Section, Graves 12 and 13 as found, before the beginning of the work. Similar sights are quite common in the Swat and tributary valleys (Photo by M. Vidale).

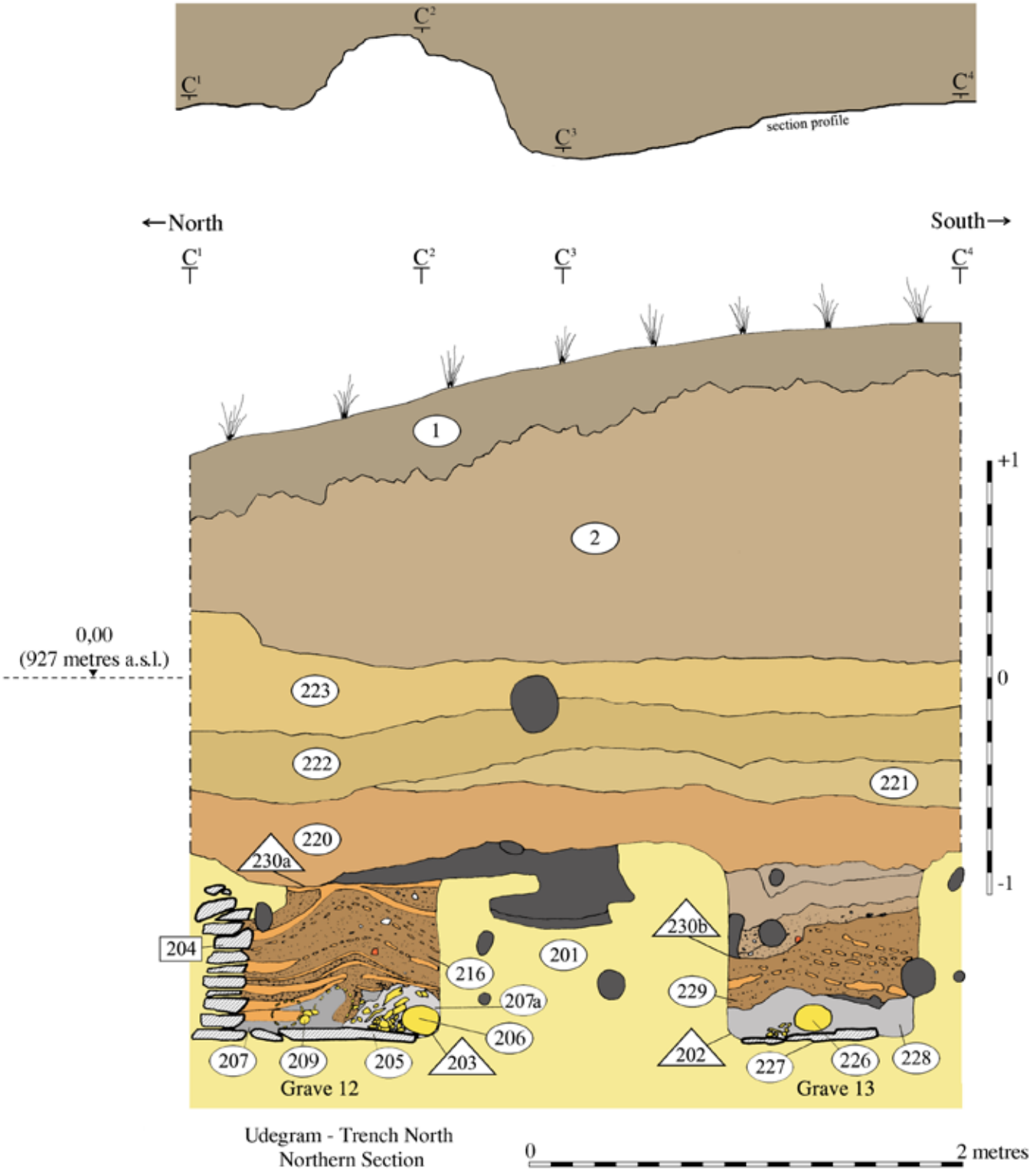


Fig. 76. Udegram, October-November 2012. The Northern Section, showing a cross section through the paired Graves 12 and 13 (Drawings by R. Micheli and M. Vidale).

SU (210a) A layer of fine sandy silt, light yellowish brown (10YR 6/4), at the base of SU (210).

SU (211) Slightly sandy silt, pale yellow (2.5Y 7/4), with evident hydromorphic features, gradually filtered and deposited in a empty space.

SU (212) and SU (213) are very similar to SU (210) and (210a); they are distinguished by the same components and were formed by the same processes (phases of opening and closure of the Grave's chamber).

SU (214) A limit in the central deposit of the Grave's filling, depositing the following

SU (215), a substitution sediment filling the ribs cage of Individual 1, during its decomposition in the empty space of the chamber. The sediment is formed by coarse gravel in a silty clay matrix, light yellowish brown (2.5Y 6/4).

SU (216) Conoid filling the Grave after the breakage of the covering slabs. Four to five micro-layers in which fine gravel alternate with fine hydromorphic sheets. The gravel is associated with a light yellowish brown (2.5Y 6/4) silty clay, while the water-laid sediments are made of very pale brown (10YR 7/4) pure clay. See also below SU (229) in the filling of Grave 13.

SU (217) Sandy silt (light brownish clay, 2.5Y 6/2) including pebbles (3-4 cm in diameter) and fragments of schist slabs. At the base there was gravel and rounded lumps of water-deposited clay.

SU (218) Pure silty clay deposited by water, very pale brown (10YR 8/4).

The uppermost sediments of the general slope

SU (219) Colluvial layer of slightly sandy silt, with carbonatic inclusions. Pale brown (10YR 6/9), including pebbles in chaotic settings.

SU (220) A thick colluvial layer of slightly sandy silt, pale brown (10YR 6/3); it included amounts of a very fine gravel, fragments of schist slabs (up to 5 cm) and fragments of protohistoric sherds.

SU (221) Colluvium of silty clay with abundant fine gravel and fragments of protohistoric sherds. Very homogeneous, light yellowish brown (10YR 6/4).

SU (222) Colluvium layer of fine silty clay with scattered pebbles, Kushana ware sherds and abundant fine gravel at the base, light yellowish brown (10YR 6/4).

SU (223) Colluvial layer of fine silty clay, with fragments of schist slabs (3-4 cm) in chaotic setting, light yellowish brown (2.5Y 6/4).

SU (224) A chaotic colluvial deposits made of coarse silty clay including pebbles, tiny flat schist fragments and few potsherds. Very pale brown (10YR 7/3).

SU (225) The uppermost surface layer, transformed by agricultural activities and by the construction of the recent graveyard. Silty clay deeply cracked by recent roots activity, very pale brown (10YR 7/4).

Grave 13

SU (226) Within Grave 13, skeletal remains of an individual in primary context of deposition on the basal schist slabs of the chamber. The skull, on the eastern side, faces South.

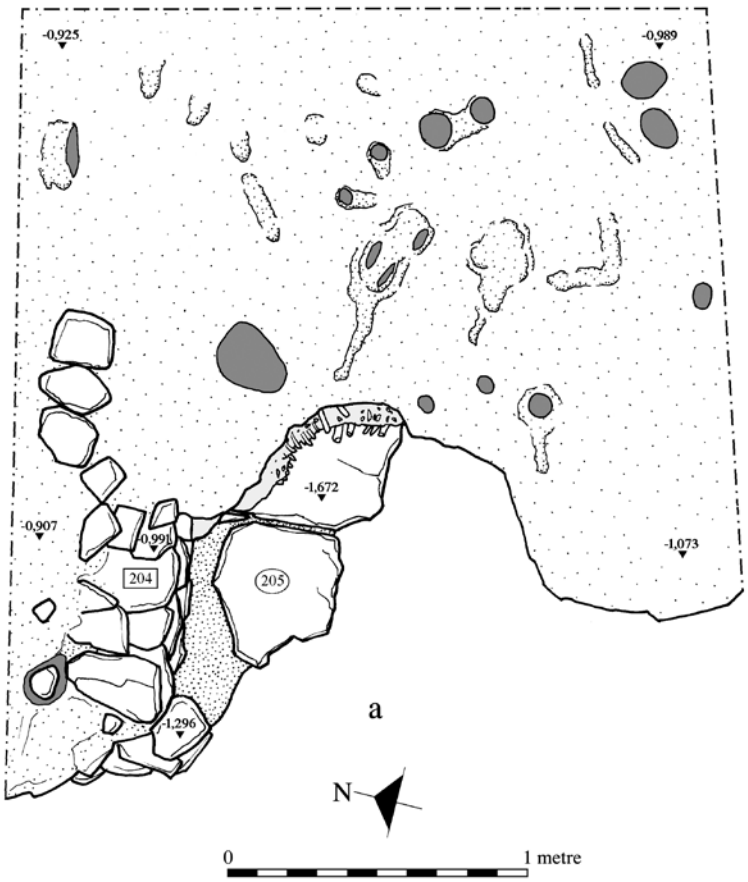
SU (227) Basal schist slabs of Grave 13. The thickness is about 3 cm; the size could not be determined.

SU (228) A layer of pure, porous water-laid clay, very pale brown (10YR 7/4-8/4). Includes horizons of carbonates; slowly filtered in the chamber while the upper covering slabs were sealed.

SU (229) This series of sediments corresponds exactly to SU (216) in Grave 12. A conoid of micro-layers in which lenses of fine gravels alternate with sheets of water-laid clay. This latter is quite compact, light yellowish brown (10YR 6/4). The gravel is embedded in a silty matrix (yellowish brown, 10YR 5/4).

SU (230a) The negative interfaces or pits of Grave 12.

SU (230b) Erosive surface on top of Grave 13



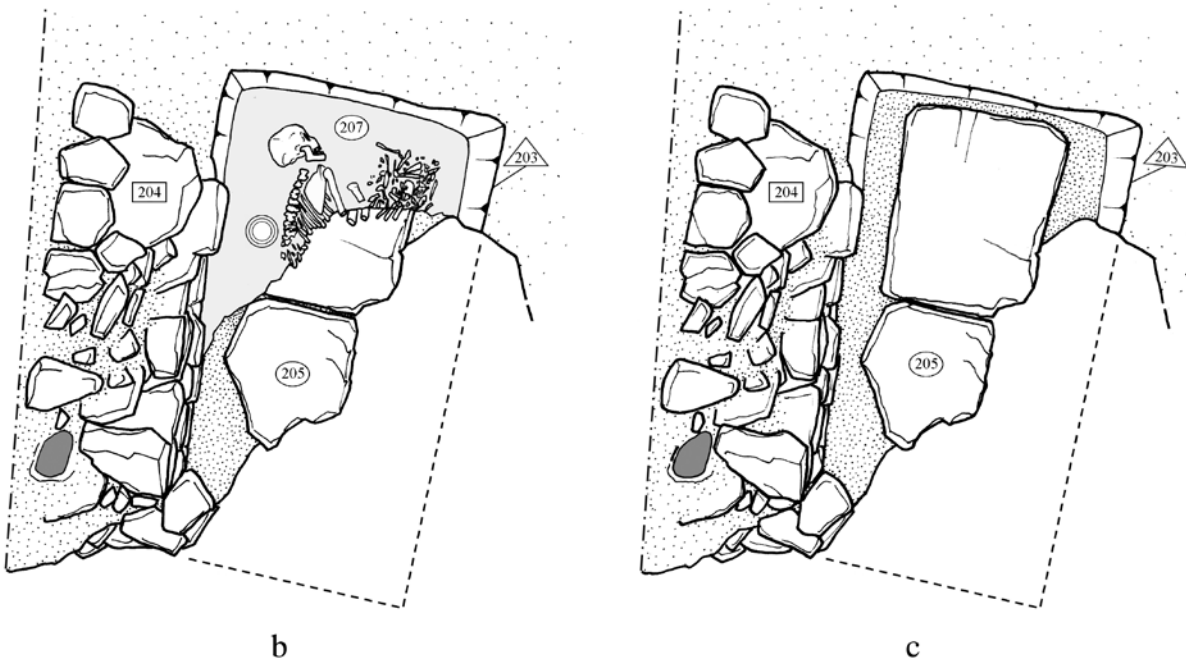


Fig. 77. Udegram, October-November 2012. Grave 12 in various stages of excavation: a) The surface of the Grave with a nearby circle of post-holes, similar to that of Fig. 79: b) The Grave at the end of the dig; c) The basal slabs in the bottom of the Grave (Drawings by R. Micheli).

Fig. 78. Udegram, October-November 2012. Grave 12 at the end of the excavation, showing also the circle of post-holes mapped in Fig. 77a (Photo by M. Vidale).

Fig. 79. Udegram, October-November 2012. Detail of Grave 12 at the end of the excavation (Photo by R. Micheli and M. Vidale).

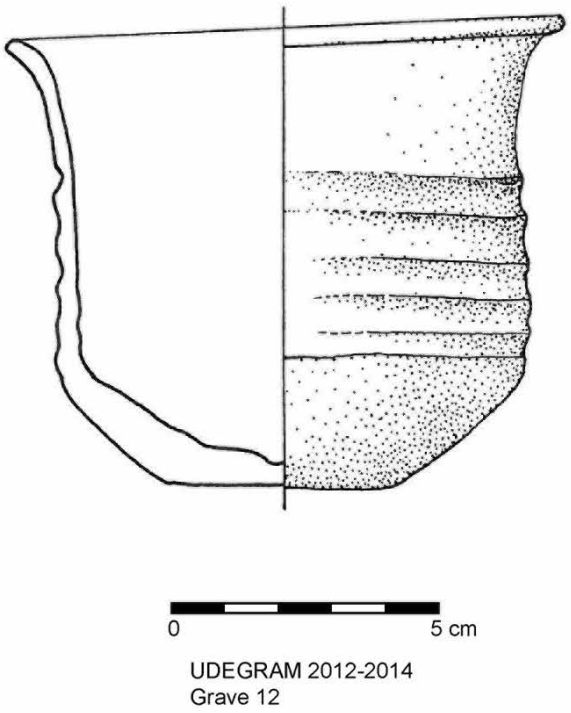


Fig. 80. The beaker found behind the back of Individual 1, Grave 12 (Drawings by M. Vidale).

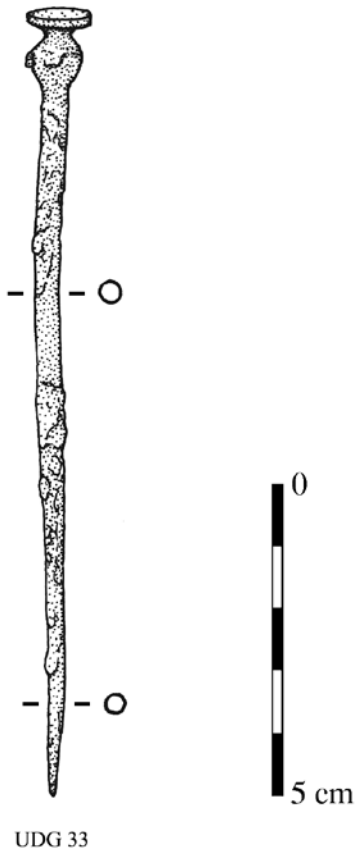


Fig. 81. The pin found attached to the cranium of Individual 1, Grave 12 (Drawings by R. Micheli).

Excavation of Graves 12 and 13

After recording the North Section, the site of the two Graves was regularly excavated from above, by opening a limited trench (ca. 1.80 x 1.50 m) from the top of the local slope.
Grave 12, as made evident by the section of Fig. 76 and by the systematic documentation of Figs. 77a-c, 78 and 79 was a double deposition in which a previous occupant, Individual 1, SU (209) had been left to decompose in an empty chamber, gradually filled with water-laid silty clay lenses, until the grave was re-opened and the post-cranial skeletal remains were disturbed by the deposition of Individual 2, described above as SU (206). Individual 1 was preserved in a undisturbed setting, from the basin upwards (the legs and the rest had been completely removed by cutting and erosion). The skeleton laid on the left side, facing South. The SUs forming the filling and the subsequent sedimentary evolution of the deposit have been analytically described above. While excavating horizontally the two Graves, we realized that it was impossible, acting in such fashion, to obtain the same type of detailed strayigraphic information that we had got observing and documenting the Graves in cross section. We suggest here that the excavation of these and similar contexts should necessarily combine the two approaches: they involve different procedures and scales of observation.

Grave 12 – The occupants

Individual 1, a primary burial, was (probably) an aged female (>50 years at the death). Her bones were very poorly preserved and extensively decayed on surface. The whole lower part of the post-cranial skeleton was removed by recent collapses and excavation. Green stains on the right parietal are due to the contact with the copper/bronze pin UDG 33. The sex was established after the morphology and limited size of the surviving bones; the age, after the state of advanced decay of teeth (in the mandible, all molars and second pre-molars, right and left, were lost before death). Bones were too fragmented to be measured.
Individual 2, the secondary burial, was a young adult who died when he was between 25 and 35 years. The bones were as badly preserved as those of Individual 1. The sex was described as male after the robustness of the mandible and of the other bones; the age, after the conditions of the teeth. The poor preservation of the bones does not allow a detailed observation of possible pathological features, with the exception of some osteophytes of the patellar ligament of the left tibia. In this case, too, no measurement was possible.

Grave 13 – The occupants

All bones of Grave 13 were fragmented, in a poor state of conservation and were recovered in a mixed association. We recognize the remains of two individuals, that seem to belong to a male and female. A fragment of a coxal bone, in fact, shows a wide ischiatic groove and the preauricular sulcus, while the rest – with very developed muscle insertions – is generally of large size, not compatible with the coxal mentioned above, and, in general, with a female skeleton.

Grave 12 – The furnishings

What was left of the ceramic furnishing of Grave 12 was a beaker (Vessel 1, UDG 60, Fig. 80) placed between

the chamber's wall, SU [204], and the back of Individual 1. The same individual also had a copper-bronze pin with a flat disk-shaped head (UDG 33) still resting on the right side of the cranium (Fig. 81).

Vessel 1, UDG 60 (Fig. 80). Subcylindrical beaker with everted rim and multiple parallel horizontal grooves on the outer wall. Height 9 cm. Max. diam. 10.7 (mouth) grey ware (grey, 10YR 6/1). Fashioned on the potter's wheel, trimmed on the base. From a typological viewpoint, it is a rather coarse variant of Silvi Antonini and Stacul's (1972) type VTc32, already discussed for Grave 2, Vessel 4 (see above).

Main Trench, excavating the trampling surface of the graveyard

Since October 24-25th, after the removal of the uppermost SU (2), the thick colluvial layers with Kushana sherds, we started to unearth the top of the eroded surface SU (5), an extensive surface made of yellowish silty clay (Figs. 82, 84-87). On this surface we had detected the remains of a low eroded mound heavily damaged on top by plowing furrows, SU (34) and (35). On the top of SU (5), whose sedimentological composition closely reflects that of the earthen walls surrounding the main Graves' chambers, we recorded dozens of round holes fillled with a slightly darker, loose granular matrix - see also, in this regard, the description of SU (201) in our North Section. Some of these holes, like in the Graves' earthen walls recorded in the North Section, were evidently rodents' holes. Many others, in contrast, were clearly pointed, conical post-holes (vertical or oblique) (Fig. 88), with an average depth of 20-30 cm. Fig. 88 shows the pointed end of two or three post-holes in vertical setting, accompanied, at right, by large and irregular disturbances made by burrowing animals. The matrix of the filling is a slightly sandy loose silt (dark yellowish brown, 10YR 4/4) rich in fine gravel.
This exposure corresponds precisely to the eroded top of the cemetery described at Gogdara IV as SU (5) (see above), where the remains of the original trampling surface of the graves also gathered scatters of protohistoric and Indo-Greek artefacs.

Evidence of wooden constructions standing on surface

On the investigated surface of the Udegram graveyard we did not find the self-evident, regular alignments of wooden post-holes that fenced the top of the funerary spaces at Gogdara IV. However, in some Graves large post-holes evidently insisted at the corners of substantial earthen chambers (as we observed, for example in Graves 2 and 7, Fig. 45, see above). One of the burials we would have later excavated in the southern extension of Main Trench, numbered as Grave 15 (see below) was entirely made of wooden planks and poles, and it is possible that some of the post-holes (particularly those at the corners) at least in some moments were actually emerging on surface.
Many post-holes on the top of SU (5) (Figs. 82, 86, 87) witness the presence of light-framed circular wooden erections that stood above the graves. One was found above Grave 12 in limited exposure of the Northern Section (Figs. 77a, 78); other two, or possibly three, are recognizable in the southern extension of the Main Trench, above Graves 3-5 and 15; a looser but wider arc-shaped feature seems to appear immediately North of the area occupied by Grave 3; another less regular cluster might be recognized East of Grave 1.
On this surface we also recorded the selective presence of fragments of human mandibles, and, here and there, scattered isolated teeth. As mandibles are frequently missing from the secondary skull burials we found in the underlying Graves' chambers, we assume that these remains fell and where lost while the defleshed bones were moved and manipolated before reaching their final destination. Although this will be never ascertained,

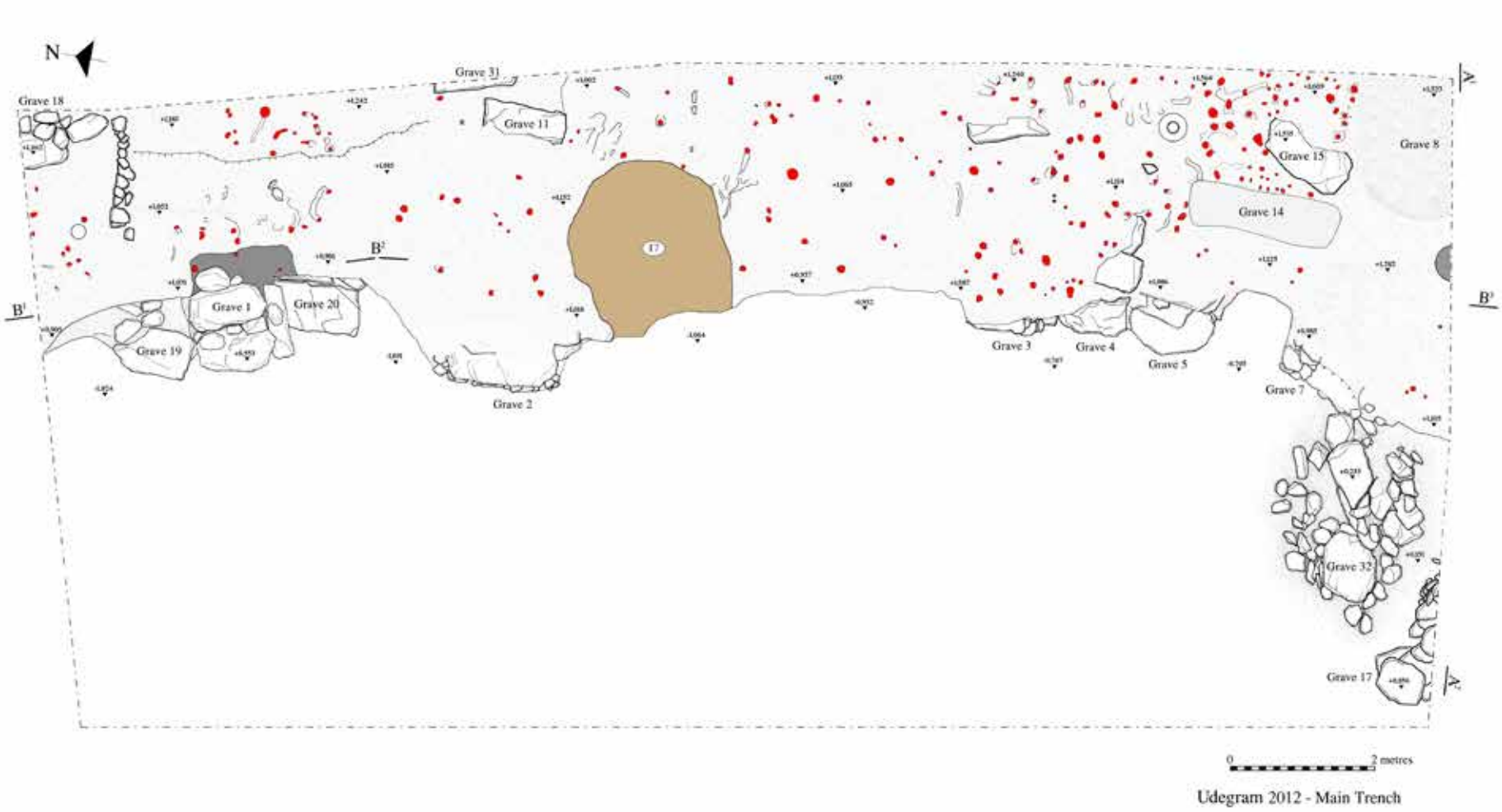


Fig. 82. Udegram, October-November 2012. Map of the residual trampling surfaces of the excavated part of the Udegram cemetery – SU (5) – and associated negative erosive interfaces, showing the distribution of post-holes (apparently, in part, arranged in circles above some of the Graves) and animal burrows discussed in the text (Drawings by R. Micheli).

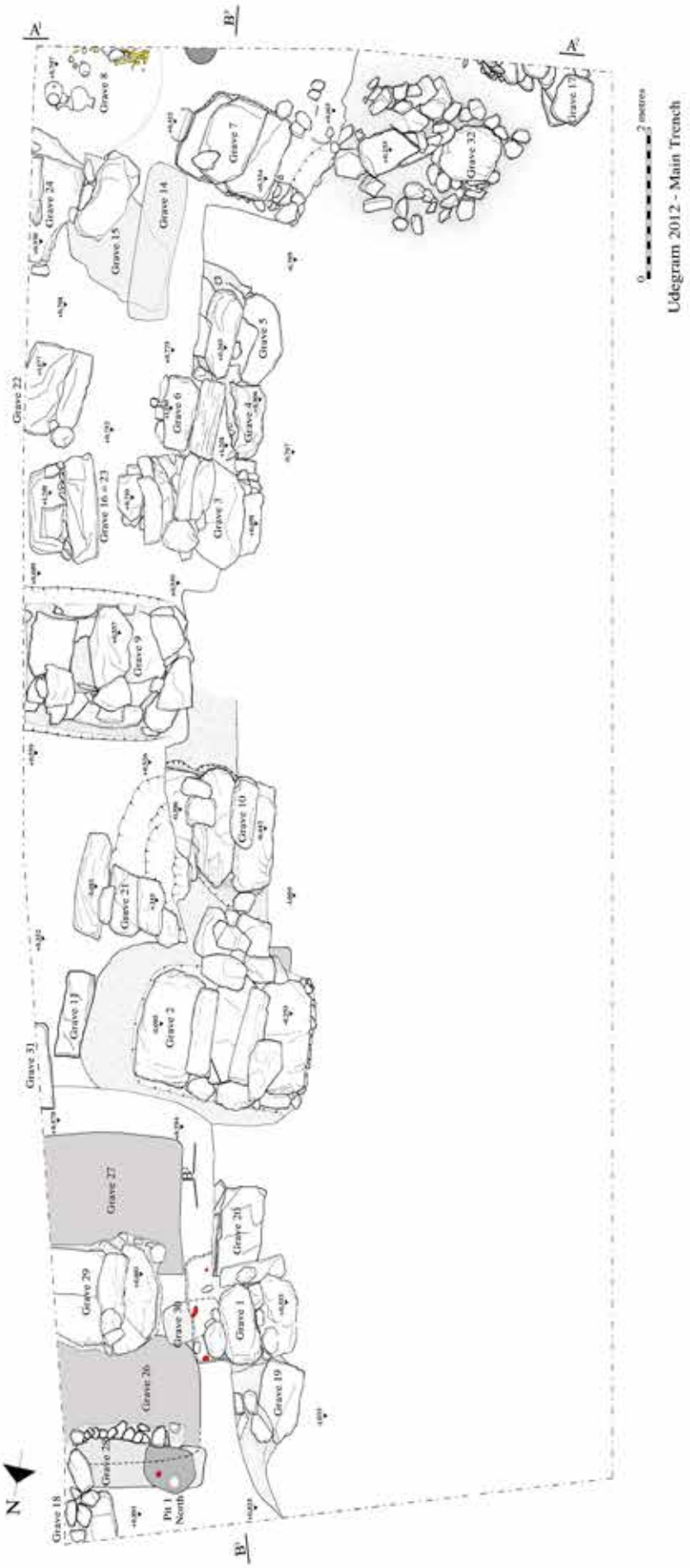


Fig. 83. Udegram, October-November 2012. Map of the Graves and the related constructions after the removal of SU (5) and some other features, before excavation (Drawings by R. Micheli).

Fig. 85. Udegram, October-November 2012. General view of the surface of SU (5) with post-holes and natural disturbances (Photo by M. Vidale).

Fig. 84. Udegram, October-November 2012. A careful cleaning of the surface of SU (5) reveals a dense pattern of post-holes and other disturbances on top of the residual trampling surface of the ancient cemetery (Photo by M. Vidale).

Fig. 86. Udegram, October-November 2012. Part of the surface of SU (5) with post-holes and natural disturbances. Note, in the centre, a possible round feature near the upper slabs of a Grave. As scattered on the surface of SU (5) were discovered some human teeth and two mandibles, we interpret the relative erections as possible platforms for decarnation (Photo by M. Vidale).

Fig. 87. Udegram, October-November 2012. Surface of SU (5) with post-holes and natural disturbances (see Fig. 76). Detail of a possible round feature (a fence or a possible platform for exposure and decarnation?). The diameter is 1-1. 30 metres (Photo by M. Vidale).

Fig. 88. Udegram, October-November 2012. Within SU (5), here sectioned, we could observe the buried traces of pointed post-holes, sometimes set in couples, and the irregular disturbance made by burrowing animals (Photo by M. Vidale).

we suspect that the wooden circles, not necessarily strictly contemporary, were funerary enclosures or even the bases of the actual decarnation platforms where bodily remains were exposed to be gradually defleshed, in some cases, by natural agents and weathering. This would convincigly explain the loss of mandibles and teeth found while digging in the nearby spaces, but human bones from the burials at Udegram are almost completely free from signs of scavengers, and this evidence remains an anomaly.

Graves and other features exposed while digging SU (5)

The dig was resumed on 29-30th October, after a pause for the celebration of the Eid festivity. While SU (2) was gradually removed, the contours of the walls and inner chamber of some large Graves begun to be visible. Other construction came gradually to light with the prosecution of the dig. Fig. 83 is a general map of the contours of each individual grave of the Udegram excavation that assembles the topographic information of the finds of the whole season.

In fact, in the earlier and in the following days, to the North surfaced the outlines of Grave 9, the earthen perimetral wall being SU (16) and its upper filling SU (18). The entire northern sector of the Main Trench appeared occupied by a large, double earthen chamber made of thick walls of beaten earth made of the usual pure yellowish-brown silty clay intensively borrowed by post-holes and animal holes. In the northern corner came to the light a horizontal schist slab covering one of the individual graves.

While cleaning SU (5) in the southern part of the Main Trench we uncovered another feature that probably was partially visible on surface of the cemetery. It was a depression with a oval contour in the southern sector of the Main Trench, near the South edge of Grave 3. It contained two large jars, one of which set vertically into the ground, the other inclined with the mouth downwards: the pit was numbered as SU <116>, its filling as SU (117), while we will refer to the jars as Vessels 1 and 2 (for details see below). This feature was dug into the yellowish-brown silty clay usually used tu build the funerary chambers (see below).

Always in the southern part of the Main Trench, while cleaning SU (5) along its East section we found a large horizontal schist slab covering another Grave, partially entering the section itself. Immediately to the West we found the sub-rectangular outline of Grave 15.

In the centre of the Main Trench, the removal of SU (5) started to clear the area occupied by SU (20), a thick filling on top of the uppermost slabs of Grave 3. This Grave was the uppermost a cluster of four Graves clearly stratified one above the other (respectively, from the earliest and lowermost, Graves 5 and 4, 6 and 3. Always in the centre of the Main Trench, immediately to the North, other large horizontal schist slabs revealed the location of Graves 16=23, 22, and 24 that entered, like others, in the eastern section.

Another vessel resting on the surface of Grave 16=23 (Pot 3) was interpreted as an offering or as the result of the manipulation of other funerary furnishings dumped after the closure of the Grave, as observed in other instances (e.g., on the surface of Grave 2). The serial numbering and description of the Graves that follows is in general organized after their location in the Main Trench, from South to North. It also obeys to criteria of proximity with the other funerary constructions; sometimes the numbers just reflects an order of discovery. Therefore, the Graves' numbers will not be in sequence.

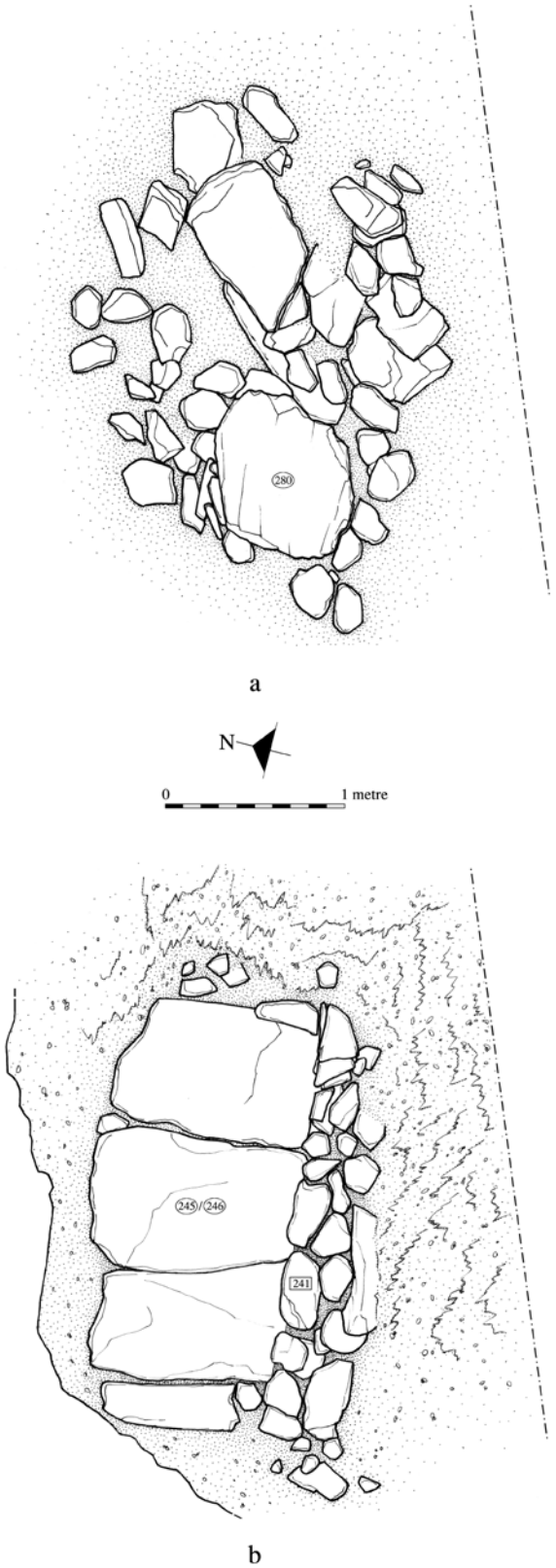


Fig. 89. Udegram, October-November 2012. Grave 32, found in a destroyed state: a) The upper level of collapse of the cist; b) The slabs of the Grave's floor (Drawings by R. Micheli).

Grave 32

Grave 32 (Fig. 89) was found near the south-western limit of the Main Trench (Fig. 83). Its shaft, sunk into the bedrock, was oriented West-South-West to East-North-East. The Grave's chamber was covered by four stone slabs set parallel and transversally to the chamber's main axis. On the southern side, these slabs were covered by a flimsy stones wall built against the local earthen deposits SU [241], and covered by the other wall East SU [242]. This Grave, located immediately West of Grave 7, was destroyed in ancient times and had no evidence of human remains. The excavation brought to light part of the southern wall in dry schist masonry and three parallel slabs of the original Grave's floor.

List of SUs

SU (280) Covering slabs chaotically piled up.

SU (271) The residual filling layer of the Grave's chamber.

SU (245)-(246) The basal stone slabs of the Grave's floor.

SU (241) A dry stone masonry wall forming the South wall of the chamber.

SU (242) A wall built with stones and earth erected as the eastern side.

Grave 17

This Grave was identified in the southern section of the Main Trench (see Fig. 55), in its western corner. Partially destroyed in ancient times, and in the processing of collapsing downslope, it was not excavated.

List of SUs

SU <43> Negative interface for the construction of the cist.

SU (44) Chaotic secondary filling of the Grave including its collapsed walls, fragments of human bones in a silty clay matrix.

SU (272) Parts of the schist slabs originally forming the Grave's roof.

Graves 7 and 8

These features had been excavated in the previous season (see report above).

Grave 14

Grave 14 was a quite recent Grave, belonging to the contemporary burial grounds. It had been emptied before our excavation; only few phalanges were found at the earthen base of the pit that was still partially empty (see Appendix 2, Fig. 234 and Pl. XIII, d).

Excavating Grave 15: evidence of a wooden cist and perishable furnishings

The dig of Grave 15 (Fig. 90a-d, 91, 95-97) started on November 1st, 2012 and given its complexity followed,

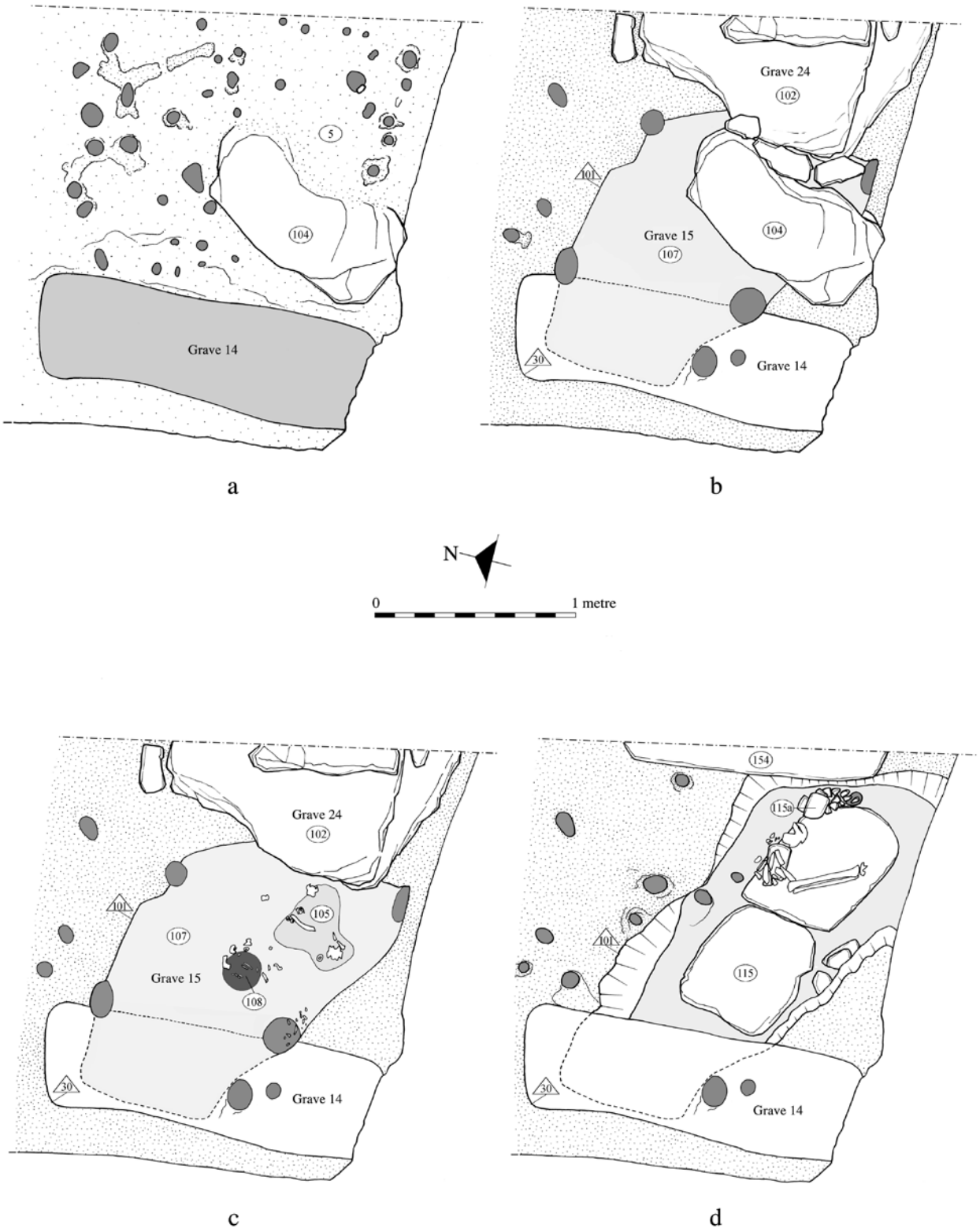


Fig. 90. Udegram, October-November 2012. Grave 15: a) Post-holes and animal disturbances on top of the Grave; b) Main post-holes around the Grave's shaft, possibly meant to support wooden planks making a perishable cist; c) The inner filling with traces of decayed containers in wood and/or wickerwork and scattered human remains; d) The context of the floor of the cist at the end of the dig (Drawings by R. Micheli).

Fig. 91. Udegram, October-November 2012. Left, general view of the surface of Grave 15 showing the position of post-holes. To the right is visible the edge of Grave 22 (unexcavated), with Pot 1 set above the slabs of the roof and part of a possible double circle of post-holes (Photo by M. Vidale).

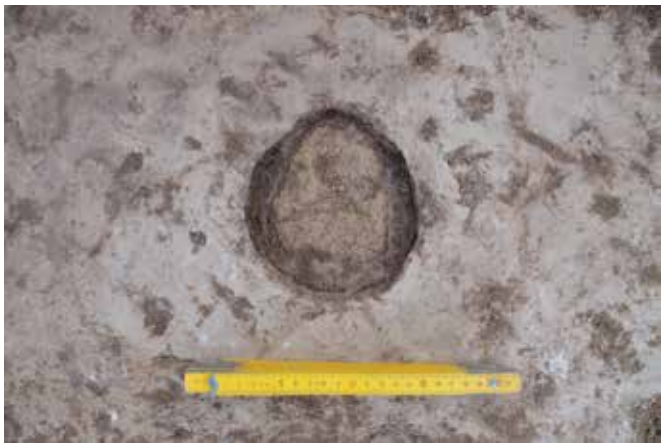


Fig. 92. Udegram, October-November 2012. The wooden vessel SU (108), decayed in situ on the floor of Grave 15, sectioned during excavation (Photo by R. Micheli and M. Vidale).

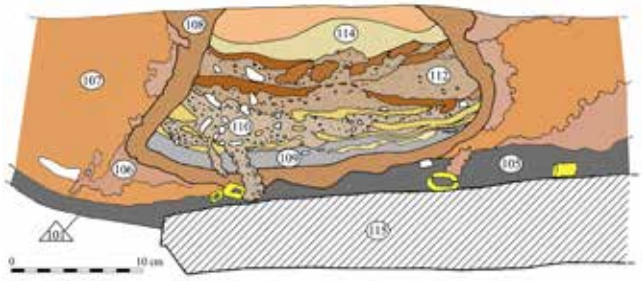


Fig. 94. Udegram, October-November 2012. The micro-stratigraphic cross section of the wooden vessel SU (108), decayed in situ on the floor of Grave 15 (Drawings by R. Micheli).

Fig. 93. Udegram, October-November 2012. SU (108), a wooden vessel probably set with its lid within a basket and decayed in situ on the floor of Grave 15, when found during excavation. The presence of a basket around the wooden vessel is inferred by the lighter color of the fine clay gradually filtered inside during the seeping processes (Photo by R. Micheli and M. Vidale).

with intervals, for not less than two weeks. Grave 15 had been partially damaged in its western margin by the excavation of the deep pit of the recent burial mentioned above (Grave 14). In the spaces surrounding the outline of the wooden chamber we observed hydromorphic clay laminations, suggesting that the local (artificial) trampling ground could not drain the water run-off. The most important and unusual feature of Grave 15 is that, although covered with the usual flat stone slabs (of which only two survived) it had been entirely built, as already mentioned, with wooden planks and poles, SU (103). The floor was made with two substantial schist slabs placed horizontally. The filling was revealed by darker traces left by the decay of this material in the ground and slight chromatic variations between the inner filling, labelled SU (107b) and the outside substratum.

A second inner feature, SU (107a) was included by SU (107b) in the centre of the chamber and showed on surface a quadrangular outline (Figs. 92-94). Perhaps it was left by a large basket placed in the centre of the

chamber above the basal slabs. On the surface of the chambers' s filling, at the contact between SU (107a) (the possible central basket) and (107b) (the outer filling) protruded a human long bone in vertical position (Fig. 95). This suggested that the skeletal remains had been intensively disturbed, manipulated, cut with heavy blows (see below) and scattered in a space not encumbered by sediments, and that at least part of the bones had been abandoned against objects or partitions in perishable materials. Below such vertical bone we found some vertebrae, a fragmentary ilium, phalanges and fragments of long bones. In the north-western corner of the chamber SU (107b) contained the facial bones of the cranium, found about 10-15 cm above the basal slab (Fig. 97). On the eastern slab remained fragments of long bones, perhaps in a residual anatomical setting. Nearby, the head of a femur showed a deep cutting mark left by a strong blow of a chopper-like blade (Fig. 98a, b). In the south-eastern corner of the chamber, beyond the edge of the schist base, an animal hole seems to have been sealed with a pile of thin schist slabs (Fig. 97). Such gesture of respect and care for the depositional space apparently contrasts with the intensity of the transformation processes of the skeletal remains.

In the centre of the chamber, SU (107b), the hypothesized basket, included feature SU (108), a sub-cylindrical decayed object (Figs. 92-94) that initially appeared as a hole or a post-hole filled with loose, darker yellowish sediments SU (114). In order to understand its nature, SU (108) was cut to be observed with a cross-section; the rest was brought home for laboratory micro-excavation.

The sections (Fig. 94) revealed a flat globular shape, larger towards the bottom. The form of the top suggests that the container was originally sealed by a decayed lid. We finally interpreted this feature as what remained of a lidded wooden vessel, originally placed within SU (107a) on the slabs that formed the floor of the Grave's chamber, SU (115) and gradually filled by the nearby sediments as the decay process went on, and the base of the chamber itself was slowly covered by a basal lens of pure silty clay, SU (105).

Many fragments of bones were recovered while excavating this basal layer. Near the base of SU (108), and

Fig. 95. Udegram, October-November 2012. A phase of the excavation of Grave 15. The presence of a wickerwork container (the lighter clay at the centre of the picture, around the sectioned wooden vessel, on top of the picture) is also supported by the human bones that rest in vertical setting against its limit (Photo by R. Micheli and M. Vidale).

at the edge of the slab SU (115) laid a fragment of human mandible. Another fragment of mandible and more fragments of the post-cranial skeleton rested vertically against the bottom of the same feature. The rest of the mandible was discovered at the lab, when the wooden vessel was micro-excavated in laboratory, recording the section of Fig. 94.
Always at the base of the chamber, outside the slab SU (115); the removal of SU (107b) and (105) brought to light a disordered group of phalanges near the northern side of the pit. Broken ribs laid in the centre; another fragment of ilium rested on the southern side.

Grave 15 –The occupant

The few bones scattered in this re-opened and intensively manipulated wooden Grave belonged to a young adult female, from 20 to 25 year old. The sex was established after a preauricular sulcus identified on the right coxal and, in particular, because of the limited diameter of the femur's head (38.5 mm). The age at death is revealed by the features of the dentition. In spite of her young age, she had caries at the left M1 mandibular and maxillary. The head of the right femur shows a deep vertical impact by a large, heavy blade (Figs. 98a, 98b), that suggests an intentional fracturing of the bones rather than defleshing. As this cut and fractured bone was found below arm bones (ulna and radius) still joined by ligatures (Figs. 96 and 97), we may assume that the dismembering and cutting of the skeletal parts had taken place a relatively short time after the primary deposition and/or exposure of the body.

Fig. 96. Udegram, October-November 2012. Grave 15, the context of the Grave's floor with partial and disarticulated human bones (Photo by R. Micheli).

Fig. 97. Udegram, October-November 2012. Grave 15: the context of the Grave's floor with partially joined and disarticulated human bones (nos. 1-3). On the right (no. 4), an animal burrow entering the grave, that had been sealed with flat schist slabs during a re-exhumation stage , SU (115a) (Photo by R. Micheli).

List of SUs

We enclose a complete list of the SUs recorded and excavated in this peculiar grave.

SU (101) Presumed shaft of the Grave's pit within the perimeter of its wooden chamber, SU (103), see below.

SU (102) The schist slabs covering Grave 24.

SU (103) Post-holes and other possible wood remains forming and supporting the chamber of the Grave.

SU (104) One of the covering slabs of Grave 15, removed and displaced during the digging of the uppermost recent Grave, as it was found at the base of SU (2) but it covered a lens with Kushana potsherds (104a).

SU (105) Dark greyish brown clay (2.5YR 5/2), homogeneous and free from inclusions, filtered in the chamber and laid on the stone slabs of the floor while the chamber was still sealed. Along the southern side of the chamber, and immediately outside the edge of the schist slab SU (115), this layer, as specified above, contained several small and larger fragments of human bones.

SU (106) Loose sandy silt, yellowish brown (10YR 5/4), including fine angular gravel, rare tiny potsherds and post-depositional concretions of carbonates. Coarser elements are set at the base, showing that deposition was mainly due to gravitational fall in dry conditions.

SU (107a) Pure clay, brownish yellow (10YR 6/6), free from inclusions, that fills the cavity made of SUs (101)-(103), covers SU (106) and partially SU (105), at least in the north-western sector of the chamber. It includes the possible wooden vessel SU (108). Hypothetically interpreted as a central basket that slowly filtered the fine clay percolating from the walls of the chamber. The limit is vertical and probably marks the location of the walls of such perishable containers.

SU (107b) Outside SU (107b), i.e. outside the hypothesized decayed basked, the filling of the chamber of Grave 15 has the same sedimentary composition, but the clay is slightly coarser and the colour is darker, yellowish brown (10YR 5/4). This sediment hosted a cluster of disordered human bones. Such human remains, including long bones in vertical setting, may perhaps be explained by their scattering and final abandonment against such disappeared physical obstacle (see Fig. 95).

SU (108) Pure, fine very pale brown clay (10YR 7/3-7/4). A feature slowly formed through sedimentary substitution processes after the decay of a wooden vessel (Figs. 92- 94), provided with its lid and placed on the basal slabs of the Grave (as described above). Below or near the base were fragments of a human mandible (see above).

SU (109) Slightly silty clay, yellowish brown (10YR 5/4), pure and free from inclusions; a filling layer of SU (108).

SU (110) Fine sand, dark yellowish brown (10YR 4/4) mixed with fine schist angular gravel (ca. 4 mm), and rather loose at the touch.

SU (111) Micro-stratified lenses of pure hydromorphic clay, light yellowish brown (10YR 6/4); these layers witness deposition processes in a stable and humid micro-environment.

SU (112a) Loose, porous silt, dark yellowish brown (10YR 4/4) rich in coarse sand.

SU (112b) Slightly silty clay, loose and porous, yellowish brown (10YR 5/4), crossed by abundant roots' casts.

SU (113) Pure clay, light yellowish brown (10YR 6/4), laid by percolating water, free from any inclusion.

SU (114) Slightly sandy silt, light olive brown (2.5YR 5/4). Loose and pure, it was free from inclusions.

SU (115) A basal schist slab forming the central and western parts of the floor of the Grave's chamber.

SU (115a) a pile of flat slabs of schist placed on the eastern edge of the chamber to close a rodent's hole (see Fig. 97).

Grave 15, a dynamic reconstruction

Given its limited size, it is unlikely that Grave 15 ever hosted a primary complete burial. On the contrary, the preliminary evidence (gathered on the field) of a heavy chopping impact on the head of a femur (Figs. 98a-b) near two fragmentary long bones leaves open the possibility that in the original burial hosted the bones of a defleshed, fragmented corpse, perhaps purposefully cut in pieces post-mortem. The grave, most probably, was a wooden cist whose sides were supported by wooden logs. The chamber was left empty, but hosted a large

square or rectangular basket or wicker box in which, in turn, was placed a wooden vessel sealed by its lid. The defleshed bones, or part of them, may have been placed inside this light receptacle, aside the wooden vessel. This was probably the case of the skull, because the fragments of the mandible were clearly associated with the base of this latter container, almost certainly within the larger basket or wicker box.
After a certain lapse of time, during which the floor of the chamber was gradually filled with pure clay filtered from the walls, the cist was re-opened, the basket-like receptacle inspected, and great part of the bones removed. In this contingency the animal hole in the corner was blocked with a pile of stone slabs, a gesture of care and respect. Many bones were just further fragmented and casually abandoned on the floor of the chamber, while a long bone was left in vertical setting against the walls of the perishable receptacle. The facial bones were mechanically detached from the cranium (a practice possible only on juvenile individuals) and dumped aside, while the rear part of the cranium was removed and brought to another destination.

14C dating: Sample 12 (LTL14410A), taken from a small bone fragment: 2731±40 BP, or 975-807 BCE at the confidence level of 2 sigma (95.4%) (Table 3; Pl. XV).

Grave 3

A large jar (see below) was found smashed on the western covering slab of Grave 23, near the south-eastern corner of the walled chamber of Grave 3 (Fig. 99a, b). Above this latter, we had initially excavated SU (20a), a substantial filling of silty, yellowish brown clay probably piled on top of the funerary structure. This layer contained many fragments of human bones (up to 5 cm long), fragments of protohistoric pottery and two coarse small lamps in terracotta set in the centre, with clear burning traces (Fig. 107, 9 and 10). It was the rest of a low mound of earth piled on top of the Grave, after its final closure, later heavily affected by erosion.

Fig. 98a

Fig. 98b

Fig. 98. Udegram, October-November 2012. Grave 15: two views (a and b) of the epiphysis of the femur with a deep longitudinal cut mark or better chopped with a deep chopping blow (Photo by M. Aurangzaib Khan and M. L. Pulcini).

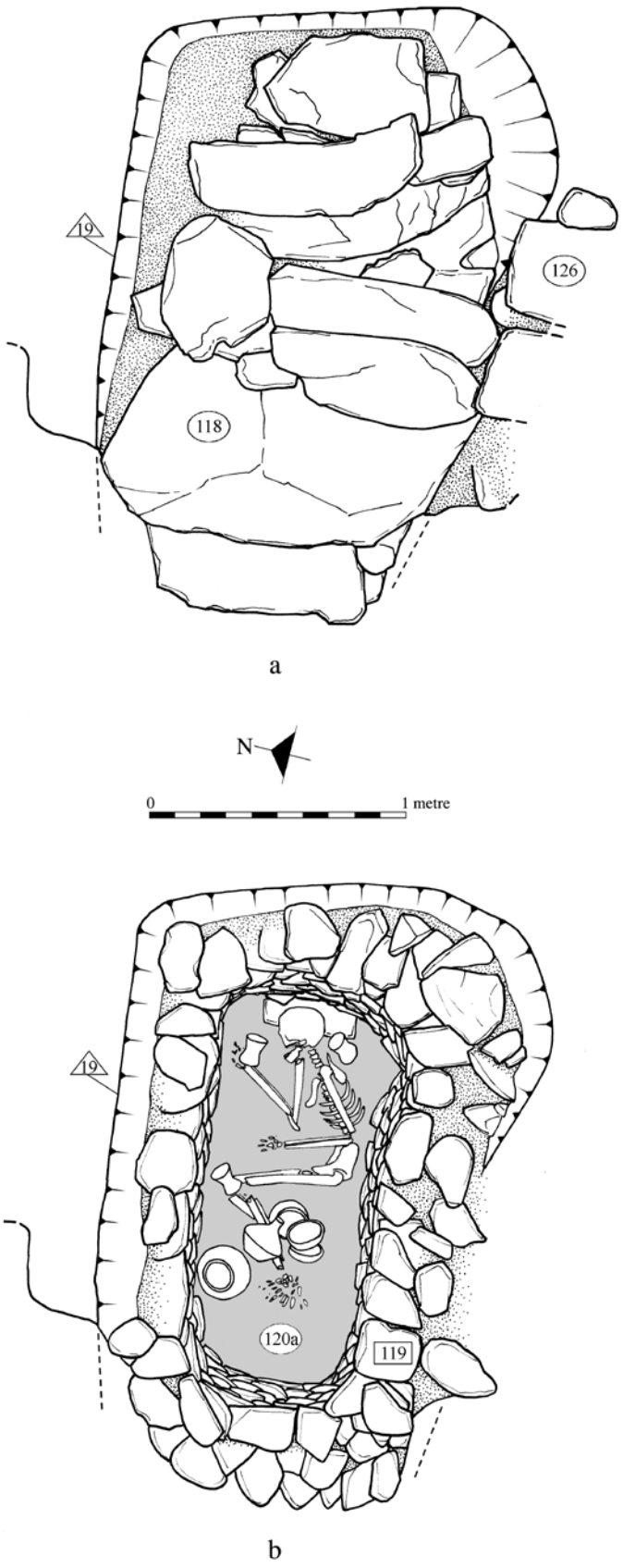


Fig. 99. Udegram, October-November 2012. Grave 3: a) The slabs covering the Grave's roof after the removal of the uppermost earthen deposits; b) the Grave at the end of the dig (Drawings by R. Micheli).

Fig. 100. Udegram, October-November 2012. Grave 3: the megalithic slabs of the roof. Note the post-holes aside the roof (Photo by R. Micheli and M. Vidale).

Fig. 101. Udegram, October-November 2012. Grave 3 after the removal of the slabs of the roof: note the homogeneous artificial filling (Photo by R. Micheli and M. Vidale).

Having removed SU (20a) we unearthed SU (20b), the top of a earthen filling having a similar sedimentological nature; and further below, the usual covering made of parallel schist slabs, the joins being covered with minor elongated pieces of the same material (SU 118) (Fig. 100). The cover was made by a double layer of such slabs, slightly sloping towards the centre due to the sinking of the inner filling. The largest slabs measured 1.20 x 0.50 x 0.20 m and each had to be lifted by six-seven workers at a time. The slabs rested on a perimetral wall, SU [119] whose ground plan looked oval rather than rectangular, slightly expanded to the East (Fig. 101). The wall was made of 13-14 courses of flat schist slabs, apparently embedded and piled with a silty clay mortar.

Once removed the heavy covering slabs, within the perimetral wall appeared the top of SU (120), the uppermost filling of the funerary chamber. Its features (see the following list) suggested a voluntary infilling of the chamber performed in a short time.

About 40 cm below the top of the perimetral wall, below SU (120) a cranium came to light in the south-eastern corner of the chamber, together with three vessels: a beaker (aside the skull), a pot and a bottle in the centre (Fig. 107, 1, 2 and 3). All were made with a highly polished, wheel thrown fine ware. The vessels and the cranium, at the same level, were covered by a different sediment labelled SU (120a).

In the north-western corner of the chamber (Fig. 102) we mapped another feature, a rectangular patch of lighter clay with a darker round area in the centre, very similar to that recorded in the centre of Grave 15 (where it had been interpreted as a basket or wicker box that acted as a filter for the surrounding sediments). It was labelled Feature (A).

Lowering the excavation, in the central and western part of the chamber we gradually unearthed the rest of the ceramic furnishing. Near the bottle, and above the feet, a couple of superimposed bowls was covered by what looked like a lid or another container of decayed wood, or of another organic matter, that could not be preserved (Fig. 103, on top of the piled bowls at right, and another view in Fig. 104). Labelled Feature (B), it

may described as a disk-like item thick no more than 3 or 4 cm thick.

While SU (120a) was removed, the upper part of the skeleton, evidently in primary deposition, was gradually unearthed. The dead had been placed on the right side, facing North, the right arm stretched onward and ending below the object of light-coloured clay mentioned above labelled Feature (A). The excavation followed its contour, finally suggesting that it might have been the sedimentary cast of a perishable container, a bark or wicker box.

At the end, Feature (A) was cut in section and then removed without revealing more on its nature. It contained, at the centre, a biconical beaker that rested in the right hand of the deceased (Figs. 105; 107, 8). In this case, too, a darker area observed in the centre of the "box" may have been a kind of lid in a perishable material

Fig. 102. Udegram, October-November 2012. Grave 3 during excavation. The rectangular feature, a block of fine clay of a lighter colour, was interpreted, as in the case of grave 15, as the sedimentary cast of a perishable box or a wickerwork basket placed above the hand of the deceased. The grave furnishings are partially unearthed. The white objects in the centre is the patella, removed from the knee during the re-opening of the grave and placed aside with some care (Photo by R. Micheli and M. Vidale).

Fig. 103. Udegram, October-November 2012. Grave 3 during excavation. Note the block of fine clay of a lighter colour interpreted as the trace left by perishable box or a wickerwork basket above the hand of the deceased (Photo by R. Micheli and M. Vidale).

Fig. 104. Udegram, October-November 2012. Grave 3: detail of the grave furnishing placed on the lower limbs of the dead. The feet were disturbed by the pots, indicating that the re-opening of the grave took place after the decay of the weak articulations of the falanges (Photo by R. Micheli and M. Vidale).

(wood?) - like that found on top of the bowls piled on the feet.
The ceramic furnishing found within the chamber of Grave 3 finally included three red ware similar beakers (one in the right hand, the other near the skull, another on the knee), a globular jar or pot, a bottle, a large bowl and two bowls of a lesser size piled in the centre (Fig. 107, Pl. VIa). These vessels, as far as we could judge, had been placed on top of SU (120a) and above the corpse after the weakest articulations had decayed (see below). Eventually, after the removal of SU (120a) was concluded, we uncovered not the basal slabs of the Grave, but a third layer, labelled SU (120b) that had entered the Grave's chamber, with a thickness of about 10 cm, during the partial decomposition of the body. Fig. 106 witnesses the form of the excavated chamber and the use of a rectangular schist slab as a head-rest.

Grave 3 - The occupant

The sole occupant of Grave 3 was an individual placed on the right side, in a flexed position. It is a primary burial, as the permanence all articulations shows that decomposition of the body took place with little later disturbance where it had been originally set. The conservation of all articulations - in particular those of the left shoulder, the coxal-femoral one and those among the vertebrae – shows that during decomposition sediments slowly infiltrated in the chamber, filling its bottom and substituting the voids gradually forming after the decay of the soft tissues. This prevented the post-cranial skeleton, well preserved, to fall apart. The fall of the mandible, at any rate, is an eloquent witness of decay in an empty space. After an unknown interval of time (possibly 1 year or something more, judging from the disturbed state of the weakest articulations, Figs. 4 and 5), the grave had been re-opened by removing the heavy slabs of the roof. The corpse, by the time, was partially surrounded by a layer of

Fig. 106. Udegram, October-November 2012. Grave 3 at the end of excavation, showing the use of a rectangular slab as a head-rest (Photo by R. Micheli and M. Vidale).

Fig. 105. Udegram, October-November 2012. Grave 3: detail of the beaker found under the rectangular clay feature visible in Figs. 101-102. The pot was placed on the hand of the partially skeletonized dead. The displacement of the fingers' bones demonstrates that the re-opening of the grave took place soon after the decay of the weak articulations of the falanges (Photo by R. Micheli and M. Vidale).

clay and silt ca. 15 cm thick.

The occupant was a male, as revealed by the main sexual characters (besides the general size of the bones, including the cranium and the mandible, because of the narrow ischiatic groove); his age is estimated about 40-50 years (after the main features of the pelvic girdle), although the very bad state of the teeth would suggest a more advanced age. Muscle insertions are rather developed, in particular in the lower limbs. There is a slight arthrosis in both acetabular cavities of coxals and the femural heads, as well as in the gleinoid cavities of both scapulas. We also observed slight osteophytes[7] on the right patella and a limited periostitis affecting tibias and fibulae.

In spite of the advanced age, the occupant had no arthritic damages to the vertebral column with the exception of slight Schmörl hernias[8] of vertebrae T11-L4. Such damages obviously suggest an intense and prolonged exertion of the upper and lower limbs (quite normal for a mountain population), but no particular pathological state.

The relevant measurements (humerus head diameter: 45.55 mm; femur head diameter: 52.18 mm; length of the right humerus: 32.9 cm) allow to calculate the presumed height: Sjøvold 171 cm; Trotter and Gleser (African-American males) 169.25. The reasons and modes of death of this tall, mature man remain undisclosed.

Reconstructing the funerary process in Grave 3

The body was first placed in an empty stone chamber, in flexed position, resting on the right side to face North. The skull was placed onto a rectangular stone slab centred as a pillow. The body was left to decay in the void for a short time, possibly one year or so, because the weak articulations had already decomposed (the mandible fell, as well as the girdle bone, found inside the thoracic cage) but phalanges were not or very little displaced and scattered by scavenging animals. In the meantime, the chamber was gradually filled, at the base, by lenses of water-laid silty clay filtered from the top and walls. Then, the grave was re-openend and the basal layer of clay was trampled to enter the vessels and place them on the corpse; a beaker was put in the right hand, another on the knee. The patella of the left leg may have been intentionally removed and displaced in the operation. A pile of bowls with a basket or wooden disk on top was placed on the feet; all left clear signs of disturbance. In this case, the deposition of the ceramics and probably baskets (or wooden containers) is ascribed to a single event. After this ceremony, the grave was re-filled to the top, re-sealed with a double layer of massive schist slabs, and finally covered with a low mound of earth. It contained fragments of miniature pots that may have contained perfumes – quite understandably, if the body was unearthed soon after decomposition. Two small lamps abandoned over the grave may suggest that the last phases of the funeral or a final offering took place at night, when the lamps were put on the closed grave as an expression of affection or piety. After such re-opening and this second ritual deposition, Grave 3, with its upper closure, was left undisturbed. The ritual of re-opening the chamber and the deposition of the beakers on the limbs of the dead might hint to some kind of honorific libation.

[7] The formation of such beaks (osteophyites) is the bone reaction to inflammatory pathologies of membranes and synovial liquids, i.e. of the revetments of articular capsules and of the articular part of bones, as well as of the wearing off of the cartilages.

[8] These latter are round or elliptical depressions, in general asymptomatic, that form in advanced age or because of physical stress. In such cases, in fact, intervertebral disks, costantly overworked, may get thinner, favouring the grouth of bony ridges along the edges of vertebrae, or intruding the nearby vertebrae (Schmorl and Junghanns 1971).

Grave 3 – The furnishings

The artefacts found in Grave 3 are described as follows (Fig. 107; Pl. VI, a). Two miniature lamps with black carbon inner traces, from the Grave's upper earthen pile (UDG 71 and 70); a ceramic jar (Vessel 2/UDG 63); a bottle (Vessel 3/UDG 64); a beaker (Vessel 4/ UDG 65), placed on the foot; two bowls (Vessel 5/UDG 66, and Vessel 6/UDG 67) below Feature (B), covered by another perishable item labelled Feature (B), a decayed wooden lid or dish placed on top; a large bowl or basin (Vessel 7/ UDG 68); a beaker placed on the knee; a third beaker (Vessel 8/UDG 69), placed on the right hand and found below Feature (A), originally covered by a lid (?) made of a perishable material (Feature C). Feature (A), sedimentary cast of a basket or wicker box in the north-eastern corner of the chamber, above the beaker on the right hand of the deceased, and covering Vessel 8/UDG 69 and Feature C. No object was found in the lowermost layer; the man had been placed in the Grave without any accompanying furnishing.

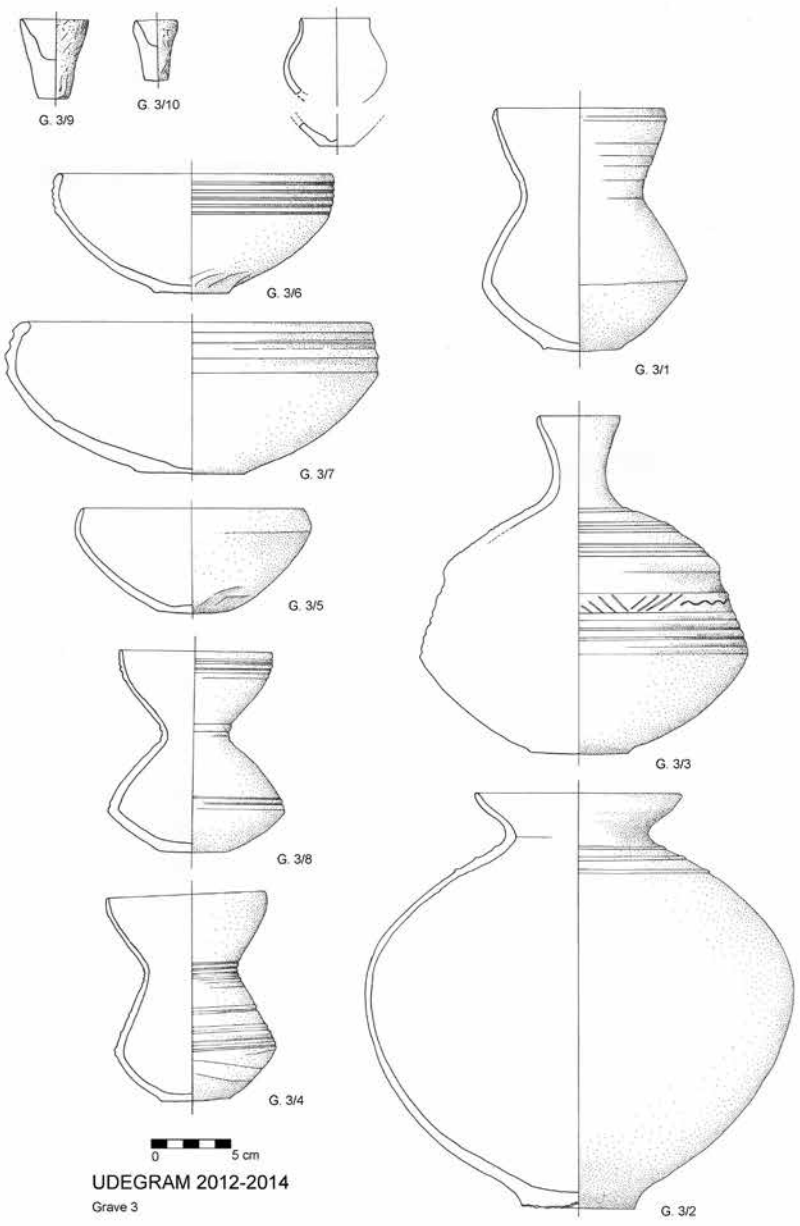


Fig. 107. Udegram, October-November 2012. The furnishings of Grave 3 (Drawings by M. Vidale).

Vessel 1, UDG 62, SU (120a) (Fig. 107 G. 3/1). Carinated pear-shaped beaker with a wide truncated-cone shaped neck. Height 16 cm, max. diam. 13.5 cm. Fine red ware, red slipped (reddish yellow, 5YR 7/8), finely burnished. Wheel-thrown, base turned. The form is described by Silvi Antonini and Stacul's (1972) type VTd28 (Butkara II, T. 17/14, Fig. 8c), as a "biconical vessel with almost vertical rim, slight narrowing in the upper part of the body, and marked carination in the lower one; curved bottom and flat". See Pl. XVIIc and d (both from T. 17 at Butkara II); see also Pl. CCXVIb, T. 16/3 (KTL) – a grave linked to Udegram's Grave 3 also through Vessels 5-7, see below; Pl. CCXXXVc, T. 175/4 and 2 (KTL); Pl. CCLIVb, T. 17/28 (BTK); Pl. CCLIVc, T. 17/1 (BTK); Pl. CCLVb, T. 17/11 and 14 (BTK); Pl. CCLVIb, T. 23/2 (BTK).

Vessel 2, UDG 63, SU (120a) (Fig. 107 G. 3/2). Flat globular jar with a short truncated-cone shaped neck, and a slightly inflected rim. Three parallel horizontal ridges on the shoulder. Height 27 cm, max. diam. 28 cm. Fine red ware, red slipped (reddish yellow, 5YR 6/8). The upper part (mouth, neck and shoulder) appears to have been wheel-thrown, the body enlarged by paddle and anvil; the base was built on an open mould (the lower surface of the base still retains a sand film used for detachment). It corresponds rather precisely to Silvi Antonini and Stacul's (1972) type VTf72 (Loebanr T. 73/11, Fig. 17a). See specimens in Pls. XLI and XLII (in particular XLIIb, T. 97/5, Loebanr); Pl. CCXVIIcT. 23/3 (KTL); Pl. CCXXIb, T. 39/7 (KTL); Pl. CCXXVc, T. 243/4 (KTL); Pl. CCLIIb, T. 14/1 (BTK); Pl. CCLIIIb, T. 27/1 (BTK).

Vessel 3, UDG 64, SU (120a) (Fig. 107 G. 3/3). Carinated bottle with a short conical neck, multiple ridges on the shoulder and above the maximum expansion; two wide grooves in between, one of which decorated with thin oblique alternated lines and a horizontal wavy line. Height 22.3 cm, max. diam. 21.5 cm. Fine red ware, slipped red (reddish yellow, 5YR 7/8), finely burnished. Wheel thrown on a moulded base. Although in terms of form this elegant, well crafted vessel may be considered an *unicum*, it is probably a variant of Silvi Antonini and Stacul's (1972) type VT56 "cylindrical-shaped bottle with narrow neck, out-turned rim and disk-base" (Fig. 13b; Pl. XXXIc, Loebanr, T. 18/3). The similarity, in spite of the different rim, is supported by the double carination and by the redundant incised decoration with ridges in relief arranged in horizontal bands. Other vessels of Grave 18 at Loebanr appear at Pl. CXXIc. For the general form and proportions of the vessel see also other bottles published *ibid.*, at Pl. XXXIIa-c (from Katelai and Butkara II).

Vessel 4, UDG 65, SU (120a) (Fig. 107 G. 3/4). Carinated pear-shaped beaker with a wide truncated-cone shaped neck, with an inflected rim. Multiple fine horizontal grooves and ridges from the base of the neck to the maximum expansion. Height 13.7 cm, max. diam. 10.5 cm. Fine red ware with mica, red slipped (reddish yellow, 5YR 6/6). Wheel-thrown, trimmed on the base. The form is somehow an intermediate variant between Silvi Antonini and Stacul's (1972) type VTd28 (see above, Vessel 1) and their type VTc29 (see below, discussion of Vessel 8).

Vessel 5, UDG 66, SU (120a) (Fig. 107 G. 3/5). Hemispherical bowl with inflected rim. Height 7 cm, max. diam. 15.5 cm. Fine red ware with mica, slipped red (red, 2.5YR 6/6). Wheel-thrown, base trimmed. The form is somehow an intermediate variant between Silvi Antonini and Stacul's (1972) types VTd10 (hemispherical) and VTd11, more clearly carinated and decorated below the mouth by sets of ridges, incised lines and/or grooves (*ibid.*, Fig. 4h and i). Cf. Pl. VIIIb (Loebanr, T. 159/4); see also Pl. CXXXIIb, T. 48/16 (LB); Pl. CCXIIIb, T. 3/1 (KTL); Pl. CCXVIc, T. 16/11 (KTL); Pl. CCLVc, T. 21/5 (BTK); Pl. CCLVIId, T. 26/4 (BTK).

Vessel 6, UDG 67, SU (120a) (Fig. 107 G. 3/6). Hemispherical bowl with inflected rim, and four large ridges running around the mouth. Height 7.8 cm, max. diam. 18 cm. Fine red ware with mica, slipped red (reddish yellow, 5YR 6/6). Wheel-thrown, base trimmed. Vessels 6 and 7 (see below) correspond closely to Silvi Antonini and Stacul's (1972) type VTd11, illustrated in Fig. 4i, then in Pl. VIIIc (from Katelai, T. 144/1). See Pl. CXIXa, T. 4/10 and 9 (LB); Pl. CXLVb, T. 73/9 (LB); Pl. CCXVIb, T. 16/4 (KTL); Pl. CCXXXVIc, T. 189/7 (KTL).

Vessel 7, UDG 68, SU (120a) (Fig. 107 G. 3/7). Large hemispherical bowl with strongly inflected rim. Height 10 cm, max. diam. 24.5 cm. Fine red ware with mica, slipped red (red, 2.5YR 6/6) and finely burnished. Wheel-thrown, base made on a mould. See for discussion Vessel 6 above.

Vessel 8, UDG 69, SU (120a) (Fig. 107 G. 3/8). Carinated pear-shaped beaker with a strongly restricted truncated-cone shaped neck. Fine red ware, slipped red (reddish yellow, 5YR 6/8). Horizontal multiple grooves and ridges on the rim, at the base of the neck, and above the maximum expansion. Height 13.2 cm, max. diam. 11.5 cm. Wheel thrown, base turned. The form is encompassed by Silvi Antonini and Stacul's (1972) type VTc29 "biconical vessel with very marked narrowing in the middle of the body, low carination, curved bottom and flat base"(Fig. 8e, Katelai, T. 187/2). See Pl. CCLVIa, T. 21/4 (BTK). At Butkara II, pots of the same contour are more commonly provided with a raised foot.

Vessel 9, UDG 71, SU (20) (Fig. 107 G. 3/9). Conical lamp. Height 5.2 cm, max. diam. 4 cm (mouth). Coarse chaff-tempered

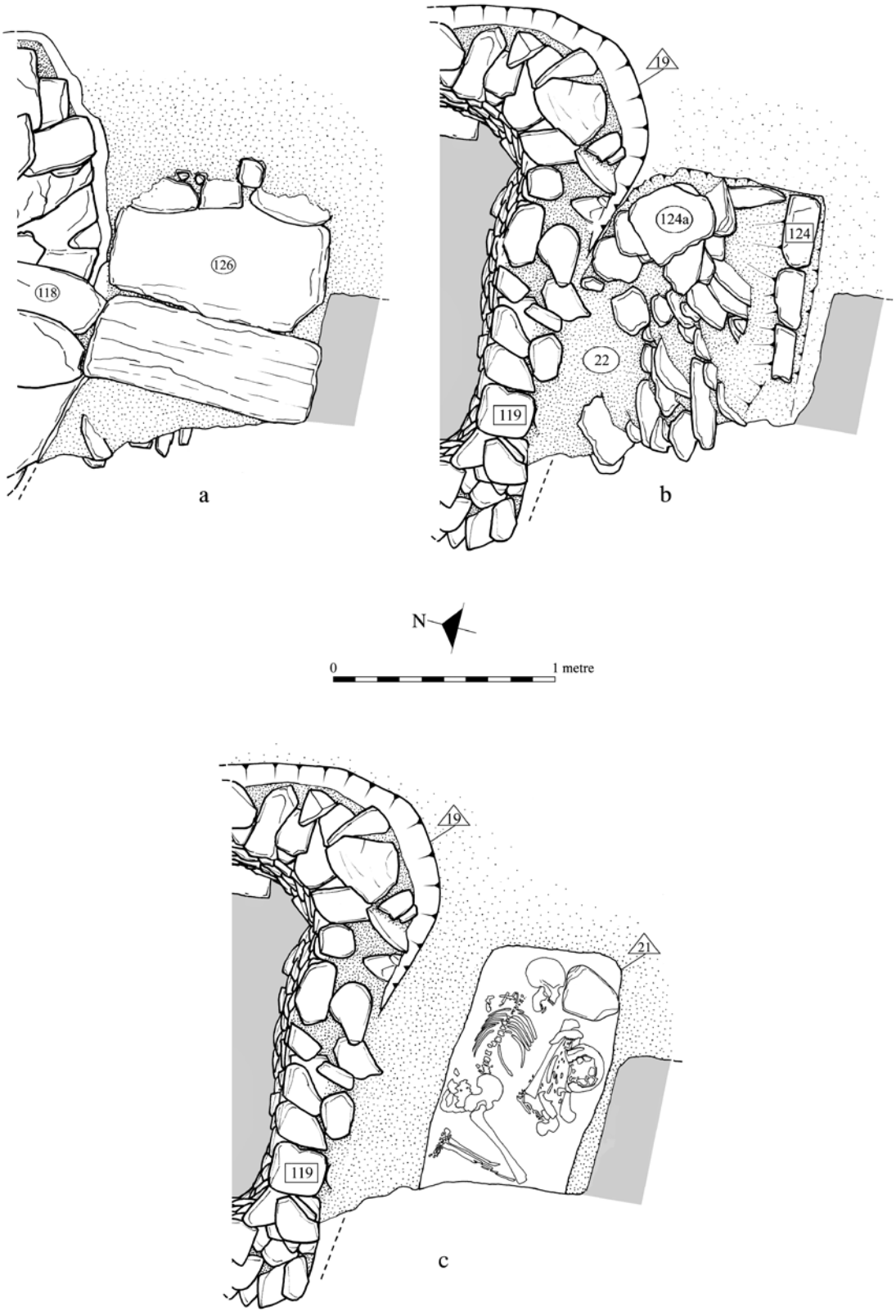


Fig. 108. Udegram, October-November 2012. Grave 6: a) The slabs covering the collapsed Grave's roof; b) The northern wall of the Grave's chamber collapsed on its floor after the erection of the larger Grave 3 (see Fig. 98); c) The Grave and its occupants at the end of the dig (Drawings by R. Micheli).

red ware (reddish yellow, 5YR 7/6), low fired, with traces of carbon inside. Hand-modelled by pinching. Although in the pictures of the Graves' furnishings one sometimes encounters small containers-lamps of this type, for some reason their form was not considered in Silvi Antonini and Stacul's (1972) general typology. These vessels appear at Loebanr (Pl. CXXXIVb, T. 53/6), Katelai (Pl. CCXXIIIb, T. 127/8; Pl. CCXXVIc, T. 195/3; Pl. CCXXXVIIc, T. 163/4;Pl. CCXXXIIIc, T. 234/3) but not at Butkara II.
Vessel 10, UDG 70, SU (20) (Fig. 107 G. 3/10). Conical lamp. Height 4 cm, max. diam. 3 cm (mouth). Coarse chaff-tempered red ware (reddish yellow, 5YR 7/6), low fired, with traces of carbon inside. Hand-modelled by pinching. See comments on the previous Vessel.

Fragments of miniature globular pots with restricted mouth and pointed rim were found in the excavation of the upper platform, together with Vessels (lamps) 9 and 10. They are made on the potter's wheel with a very fine grey ware (greysh brown, 2,5Y 5/2).

List of relevant SUs

SU (19) Negative interface of the main pit of Grave 3, that smashed the perimetral wall SU [124] of Grave 6.

SU (20a) Filling of silty, yellowish brown clay probably piled on top of the funerary structure. It included fragments of human bones (up to 5 cm long), fragments of protohistoric pottery and two coarse small lamps in terracotta set in the centre, with clear burning traces.

SU (20b) Base of SU (20a), on top of the stone slabs covering this Grave.

SU (118) Large schist slabs sealing Grave 3 after the last phase of use.

SU (119) Perimetral wall of flat schist slabs forming an oval funerary chamber.

SU (120) The artificial earthen filling of the funerary chamber. It was a rather soft, homogeneous silty clay, brownish yellow (10YR 6/6), borrowed by some animal holes and including few potsherds and rare bone fragments. It covered the skeleton and the ceramic furnishings, assembled and deposited in a single episode in the re-opened Grave.

SU (120a) A layer of pure, compact water-laid silty clay, having a granular structure, yellowish brown (10YR 5/4).

SU (120b) Hydromorphic silty clay that filtered inside the Grave's chamber, with a thickness of about 10 cm, in the first stages of decomposition of the body.

14C dating: Sample 1 (LTL13327A), taken from a bone of the left foot: 3018±45 BP, or 1400-1126 cal. BCE at the confidence level of 2 sigma (95.4%) (Tables 3; Pl. XIV)[9].

Grave 6: depositional process

The northern wall of Grave 6 (Fig. 108), originary built as a small chamber, was smashed and fell when the upper Grave 3 was constructed immediately to the North, its stones found as a collapse on the skeletal remains of the first occupant (Fig. 109). This demonstrates that the Grave's chamber, at the very moment, was empty. When we excavated the remains of the collapsed wall, we saw that many slab-like fragments were inclined, one above the other, towards South-East, as one would expect after a primary collapse caused by a strong push. This Grave, too, had been re-opened and a bundle of defleshed bones (Individual 2, particularly massive and robust) was placed in the partially filled chamber of the Grave, on the southern side of the chamber (Fig. 110). Here, the sturdy bones of Individual 2 (Fig. 110, upper right) were arranged as follows: on top, cranium and mandible fragments; below, parallel long bones, including femurs and a ulna; at the base, smaller fragments of other long bones with a girdle bone, ribs and vertebrae.

[9] For a chronological and cultural evalutation of this 14C dating see discussion in "Concluding remarks".

Fig. 109. Udegram, October-November 2012. A view of Grave 6 before excavation: detail of the covering slabs fallen in sloping position above the collapsed wall of the northern side of the cist, pushed down by the erection of Grave 3. The skeletal remains of individuals 1 and 2 (see Fig. 106c) were found under the collapse (Photo by R. Micheli and M. Vidale).

Fig. 110. Udegram, October-November 2012. Grave 6 after excavation, with the remains of Individual 1 (primary burial, left) and Individual 2 (later secondary interment) (Photo by R. Micheli and M. Vidale).

Fig. 111. Udegram, October-November 2012. Grave 6: detail of the cranium and mandible of Individual 1 on the basal slab of the Grave; note the position of the copper/bronze pin on the left side of the head (Photo by R. Micheli).

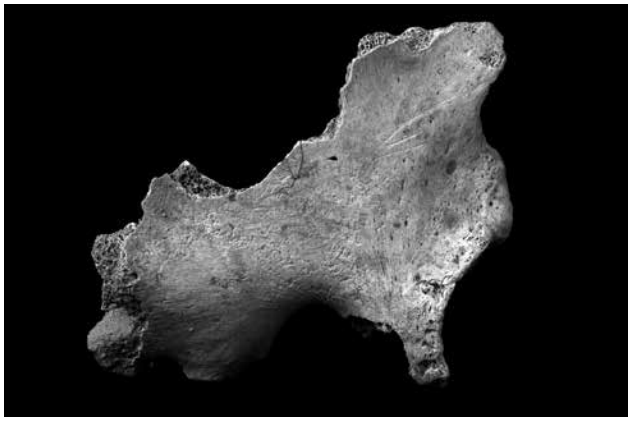


Fig. 112. Udegram, October-November 2012. Grave 6: detail of a fragmentary coxal bone of Individual 2 with ascertained surface cuts made while defleshing the exposed skeletal remains (Photo by M. Aurangzaib Khan and M. L. Pulcini).

In a lower layer, immediately below, the Grave contained, placed in the northern side of the chamber, and directly on the basal, horizontal slabs of schist, the skeleton of Individual 1, the first occupant. It rested in a primary, undisturbed context of deposition. The bones (all - including the falanges- in anatomical connection) were covered by a layer of silty clay, SU (22a) deposited soon after the burial, while the body was decomposing. This individual had been deposited on the left side in a flexed position, facing South.

Grave 6 – The occupants

Individual 1 was placed, like the other primary burials, flexed on the left side; Individual 2 was a later secondary interment. The bones of Individual 2 seem to be deposited according to the usual pattern: on top the cranium placed on a bundle of long bones, and the rest of the skeleton at the bottom. Individual 1 was an adult female, who died at an age of ca. 25-35 years. The bones are reasonably preserved. The sex was identified after the characters of the pelvic girdle, in particular the width of the ischiatic groove and a deep auricolar sulcus on the left coxal (not visible, in contrast, on the opposed one). The age was established after the features of the dentition. The bones show no specific pathology, with the exception of a slight arthrosis on the heads of both femurs (coxo-femural articulation) and on the neck of the left astragalus (articulation of the ankle). In this latter case, the damage is probably due to a minor muscle sprain (quadratus plantae muscle, flexor of the foot's fingers). The maximum preserved length of the right femur is 40 cm (condyles are missing). The diameter of the femur's head is 43.27 mm. The stature of the woman may thus be estimated: Sjøvold ± 162.39 cm; Trotter and Gleser (African-American women) ±157.8 cm.

Individual 2 (later secondary burial aside Individual 1) was a young adult male. His bones are fairly preserved. His sex was established after the characters of the cranium, particularly the mandible, of the general size of the bones and the large diameter of the femur's head (47.4 mm).

When he died he was between 20 and 30 years old (for the degree of eruption and wear of the teeth). The same age range is confirmed by the exent of wear of the pubic symphisis and by the degree of soldering of the clavicles. The bones show no evident pathological status. The muscles insertions are not very marked. There is a light periostitis of the left tibia, probably due to repeated micro-traumas affecting the leg muscles.

The signs of enamel hypoplasia may be seen on I1, I2 and C (right) maxillary. These events occurred at the ages of ±3 and ±4 years. The maximum preserved length of the right femur is 47.1 cm. The femur's head diameter is 47.4 mm. The stature inferred after the femur's size is: Sjøvold ±173.50 cm; Trotter and Gleser (African-American males) ±169.7 cm.

Traces of surface cuts due to defleshing (Fig. 112) are visible both on the iliac wing of the coxal, and on the left femur. The cuts are neat, and on the coxal they run parallel.

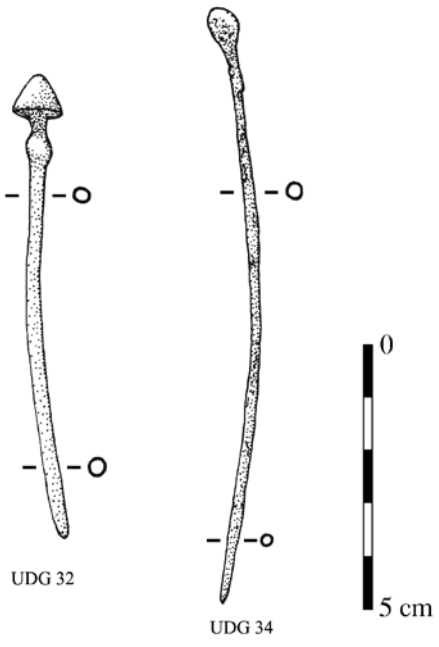


Fig. 113. Udegram, October-November 2012. Grave 6: the two copper pins found in primary context of association on the head of Individual 1 (Drawings by R. Micheli).

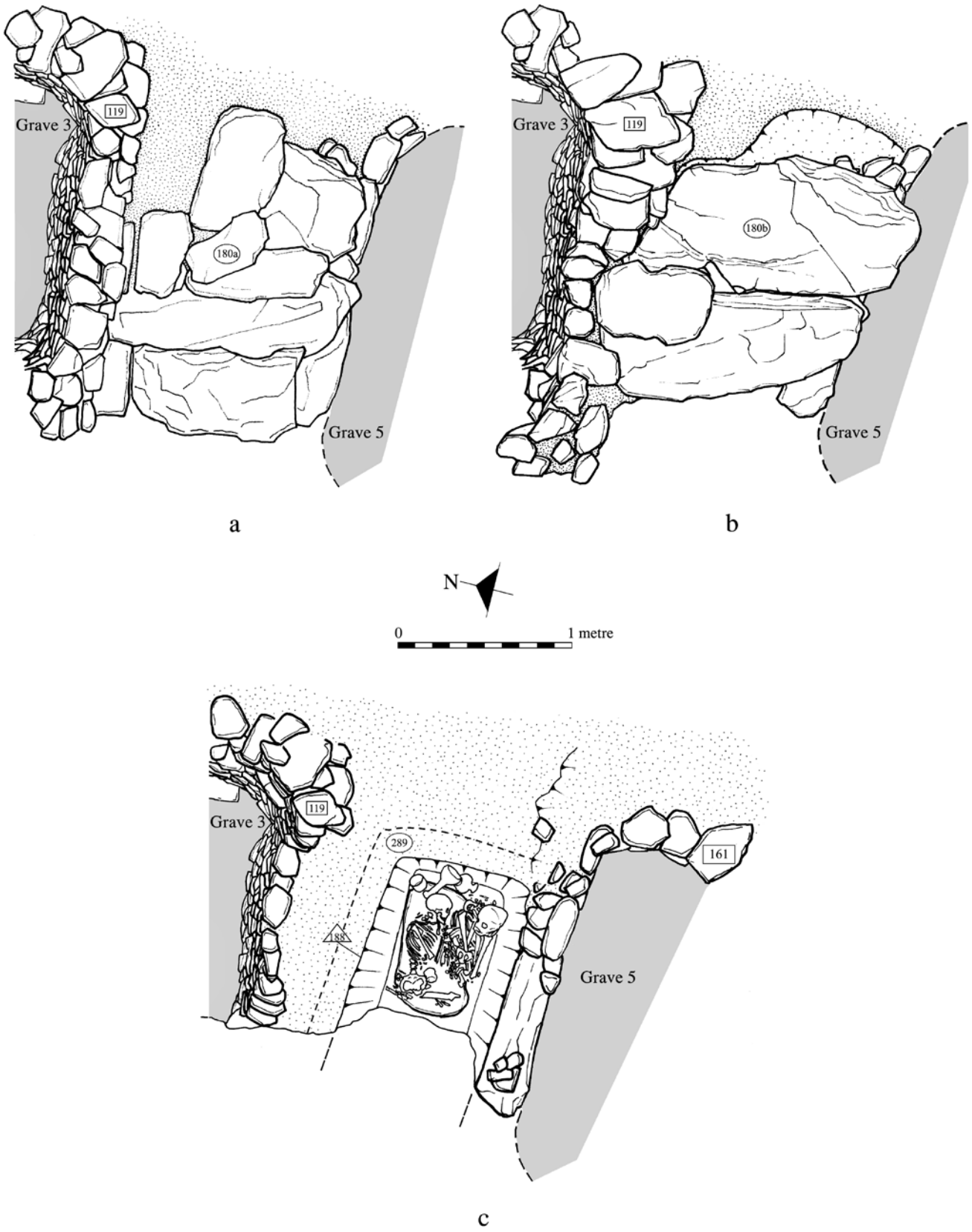


Fig. 114. Udegram, October-November 2012. Grave 4: a) The first level of slabs of the roof, preserved only in part, before excavation; b) The second level of slabs of the roof; c) The Grave at the end of the dig, showing part of the skeletal remains of Individuals 1 and 2 (Drawings by R. Micheli).

The furnishings

As stated above, the furnishings of Individual 1 were two copper/bronze pins, both placed on the head (Fig. 113). One (Fig. 113, UDG 34), slightly curved, had a globular head and had been left in a oblique setting on the right side of the skull, the point set backwards. The other (Fig. 113, UDG 32), distinguished by a flat, disk-and-cone end, was found below the skull, on the left side of the head, oriented in the opposite way - the point to the front side. The position of the pins, presumably fixing hairdo with some kind of scarf, is graphically reconstructed in the sketch of Fig. 233.

List of SUs

SU <21> Negative interface of the Pit of Grave 6.

SU (123) The original covering of the chamber, made, as usual, with horizontal parallel schist slabs.

SU (124) Perimetral wall of the chamber of Grave 6, preserved only on the eastern and southern side.

SU (124a) Wall of the chamber of Grave 6, collapsed on the floor of the Grave, along its northern side.

SU (22) Filling of the cavity of Grave 6 after the collapse of its northern wall and the construction of Grave 3. Sandy silt, very pale brown (10YR 7/3-10YR 6/4). Contains abundant gravel and schist fragments, pieces of bones and particles of calcium carbonate.

SU (22a) A layer of silty clay that filled the base of the chamber while the body of the first original deceased was decomposing.

Grave 4

Grave 4 (Fig. 114), found immediately after the removal of Grave 6, was built immediately North of Grave 5, after the erection of this latter. It was covered by the chamber and walls of Grave 6, and two schist slabs of its roofing were used as the foundation for the perimetral walls of Grave 3. Its stone cover was made with three large parallel schist slabs (Figs. 114a, 115), the central joins among the slabs being covered with the usual elongated schist pieces. It was labeled SU (180). The filling of the chamber, uncovered after the removal of SU (180), was numbered SU (179): a homogeneous, dark brown deposit of silty clay with no inclusions and rare

Fig. 115. Udegram, October-November 2012. Grave 4 before the excavation, still partially covered by its upper slabs (Photo by R. Micheli).

Fig. 116. Udegram, October-November 2012. Grave 4, aside the excavated chamber of Grave 3, after the removal of the upper slabs (see the previous Figure). Part of the rammed earth enclosure is well recognizable (Photo by R. Micheli).

Fig. 118. Udegram, October-November 2012. A view of Grave 4 that emphasizes the peculiar setting of the secondary burial of Individual 2 (Photo by R. Micheli and M. Vidale).

Fig. 117. Udegram, October-November 2012. Grave 4: Individual 1 (the primary lower interment) and Individual 2 (the secondary manipulated burial at right). Note the peculiar setting of the cranium of Individual 2, most probably placed above three long bones as a kind of "tripod". See also Fig. 117. The ceramics are placed near the cranium of 1 (Photo by R. Micheli and M. Vidale).

Fig. 120. Udegram, October-November 2012. Grave 4: the basal slabs after excavation (Photo by R. Micheli).

Fig. 119. Udegram, October-November 2012. Grave 4: detail of the clutched hands during excavation, with a steatite cubical bead – evidently part of a bracelet - as found (Photo by R. Micheli).

tiny potsherds. The walls in rammed earth of this Grave were first located on the northern and eastern sides. While excavating the filling SU (179), at a depth of about 50 cm below the upper schist slabs, SU (180) we found, in the south-eastern portion of the chamber, the cranium of a secondary burial (Individual 2), while the cranium of Individual 1, flexed on the left side and looking South, undisturbed in a primary context of deposition, was brought to light at a lower depth in the north-western corner. Near the head of Individual 1 and along the eastern wall had been deposited several ceramic vessels (see list below and Fig. 125). The sequence of excavation of Grave 4 is illustrated by Figs. 116-120, while the furnishings is presented in Figs. 125 and 126.

Exposed by recent agricultural cuts, the Grave was largely damaged in its western side, and the legs of Individual 1 were missing. The bones of Individual 2 seem to have been deposited in a pile above the undisturbed skeleton of Individual 1, about 20-30 cm above the floor of the chamber. These bones were arranged in a rather customary fashion: first, ribs (still partially connected in fragments of the thoracic cage) and other small bones; then, long bones and coxal bones; above, the cranium. The mandible laid on the stone slab of the floor, but its original location is uncertain. Perhaps the secondary burial was contained in a or basket, the cranium on top, a circumstance that would account for the vertical trend of the bones. As the occipital cavity of the skull of Individual 2 hosted the epiphysis of a femur in sub-vertical position, and other long bones were set nearby and below, another possibility is that the cranium of Individual 2 had been deliberately set on a kind of tripod made of long bones (details in Fig. 118).

The occupants

The remains of Individual 1, the primary burial, show that the dead had been buried in flexed position on the left side (but this could not be verified, because the skeleton was truncated below the femurs). The bones of the second occupant, Individual 2, a secondary burial, had been deposed in the grave after Individual 1, following a recurrent setting: on top the cranium, put above a bundle of long bones, and the rest of the post-cranial skeleton below, on the Grave's floor. In this exceptional case, however, long bones were set vertically, supporting the cranium as a kind of tripod.

Individual 1 (primary female burial in the chamber), whose bones were well preserved, was a female who died at an age between 40 and 50 years. This is established by the main sexual characters of the pelvic girdle, in particular the wide ischiatic groove and the presence of the preauricolar sulcus[10]. The auricular surface of the ilium suggests an age of 40-45 years, potentially extended to 50 by the advanced decay of the teeth. Green traces on the right mastoid process, on phalanges and metacarpals suggest contacts with copper/bronze objects. Of these, only pins (on both sides of the cranium; see Fig. 126) were found during excavation.

We observed two abscesses in correspondence of the maxillary I2 and PM2 (Fig. 121). The gravity of these lesions suggests that the violent infection that produced them might have been a cause, or one of the causes of death of the woman. Moreover a very strong non-masticatory wear was observed both on maxillary and mandibular teeth, certainly explained by the use of teeth as a "third hand" in an unknown craft activity (Fig. 122).

Her skeleton shows developed muscle insertions. There is a slight osteoarthritis on the olecranon (articulation of

[10] A groove of variable depth, near and parallel to the lower surface of the sacro-iliac join – probably due to muscle stress during childbirth (Cox 2000: 135).

Fig. 121. Udegram, October-November 2012. Grave 4, Individual 1: the cranium showing the effects of two strong abscesses in I2 and PM2 right maxillary (Photo by M. Aurangzaib Khan and M. L. Pulcini).

Fig. 122. Udegram, October-November 2012. Grave 4, Individual 1: a strong non masticatory wear on the maxillary teeth, probably due to the use of part of the dentition in an unknown Technical process (Photo by M. Aurangzaib Khan and M. L. Pulcini).

Fig. 123. Udegram, October-November 2012. Grave 4, Individual 2: the iliac spine and the iliac wing of the left coxal show deep cut marks, presumably made during defleshing the exposed remains with a substantial metal blade (Photo by M. Aurangzaib Khan and M. L. Pulcini).

Fig. 124. Udegram, October-November 2012. Grave 4, Individual 2: distal epiphysis of the right tibia, strong parallel cut marks made with a metal blade (Photo by M. Aurangzaib Khan and M. L. Pulcini).

the elbow) and on the lower vertebrae. Osteophyites appear on L3 and L4. The right humerus has a olecranic hole[11]. Relevant measurements include the diameter of the head of the left femur: 42.4 mm; the anatomic length of the femur: 46.6 cm; its maximum length: 47.2 cm; the length of the right humerus: 33.3 cm. Estimated stature after the femur: Sjøvold 173.77; Trotter and Gleser (African-American females) 167.37.

Individual 2, deposited as a secondary burial after Individual 1, aside hear head, was a male, 35-45 year old. His bones were satisfactorily preserved. Green stains left by prolonged contacts of bone with copper/bronze objects were noticed on the maxilla and on the bones of the feet (a copper/bronze pin, UDG 41, was actually

[11] It is the perforation – of variable size – of the olecranic hole of the humerus; a non pathological, and fully asymptomatic condition. The olecranic hole is an epigenetic feature, i.e. a minor skeletal variation, that can be encountered in the cranium as well as in the post-cranial skeleton. The formation of such characters does not depend upon the sex or/and upon the death age, nor upon the environment. Scholars think that such epigenetic features are due to genetic factors and therefore could be inherited (Hauser and De Stefano 1989: 9-12).

found among the long bones, see Fig. 126). The sex is male, as established by the main sexual characters: a narrow ischiatic groove on the coxals, and a robust cranium. The auricular surface of ilium, coherently with the state of consumption of the dentition, places his age between 35 to 45 years. The muscle insertions are rather developed; we observed moreover some damages, due to periostitis, on the distal epiphysis of the right tibia, perhaps due to a traumatic event. A light periostitis appears also on the left fibula and on the left coxal. Osteophyites, due to a light arthrosis, are visible on the olecranon (articulation of the elbow) as well as on the glenoid cavity of the right scapula (articulation of the shoulder) and on the right astragalus (articulation of the ankle). Osteophytes, finally, were also observed on vertebras L4 and L5. The 5th metatarsal was probably fractured in life. The right coxal and the left tibia (Figs. 123 and 124) bear multiple, surface scars and cuts that most probably are defleshing marks.

Relevant measurements (diameter of the left femur head: 44.4 mm; anatomic length of the same femur: 46.6 cm; maximum length: 47.2 cm) suggest for Individual 2 the following stature: Sjøvold 173.77; Trotter and Gleser (African-American males) 169.94.

The funerary ritual revealed by Grave 4 encompasses the primary burial of a mature woman on the floor of the chamber; the exposure and the localized defleshing of the bones of a younger adult male, probably provided with a copper/bronze pin; the re-opening of the chamber and the secondary burial of his bones aside the

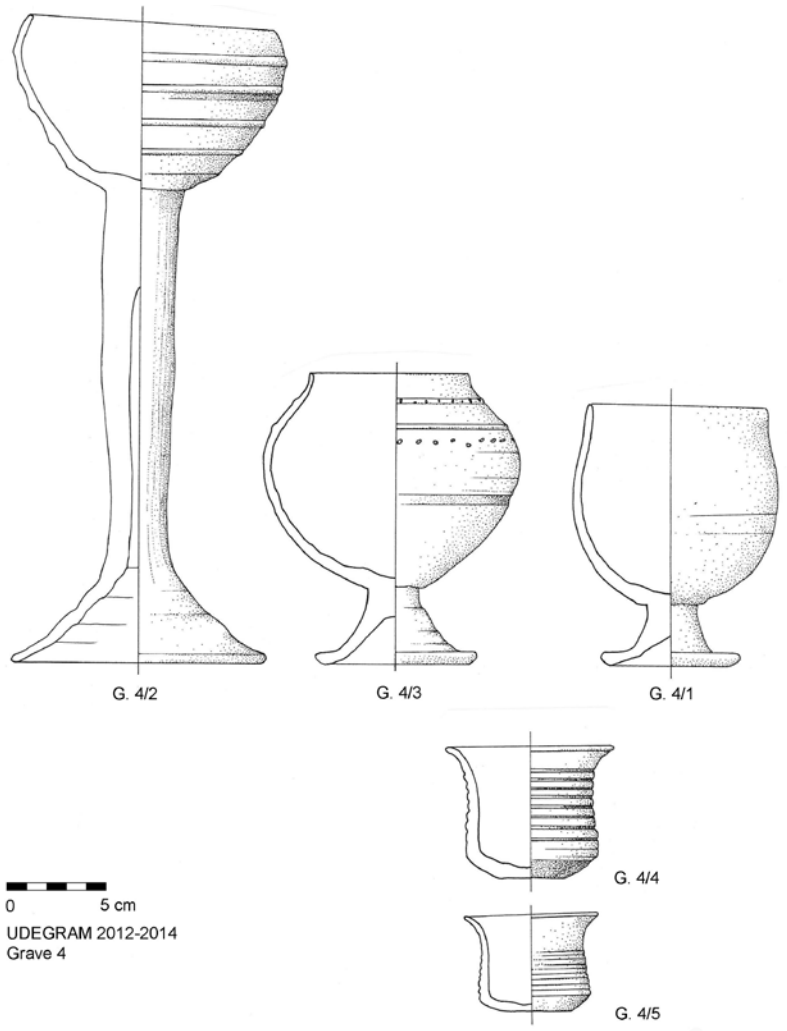


Fig. 125. Udegram, October-November 2012. The furnishings of Grave 4 (Drawings by M. Vidale).

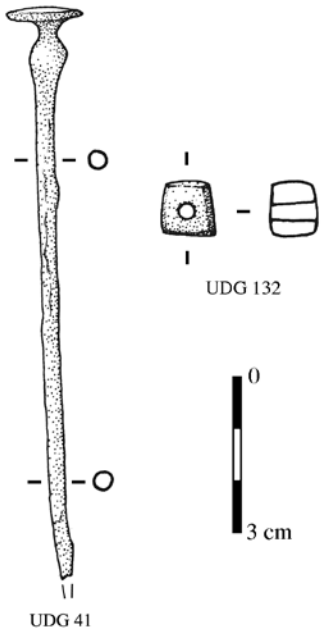


Fig. 126. Udegram, October-November 2012. Grave 4: the steatite bead found near the wrist of Individual 1 (Drawings by R. Micheli).

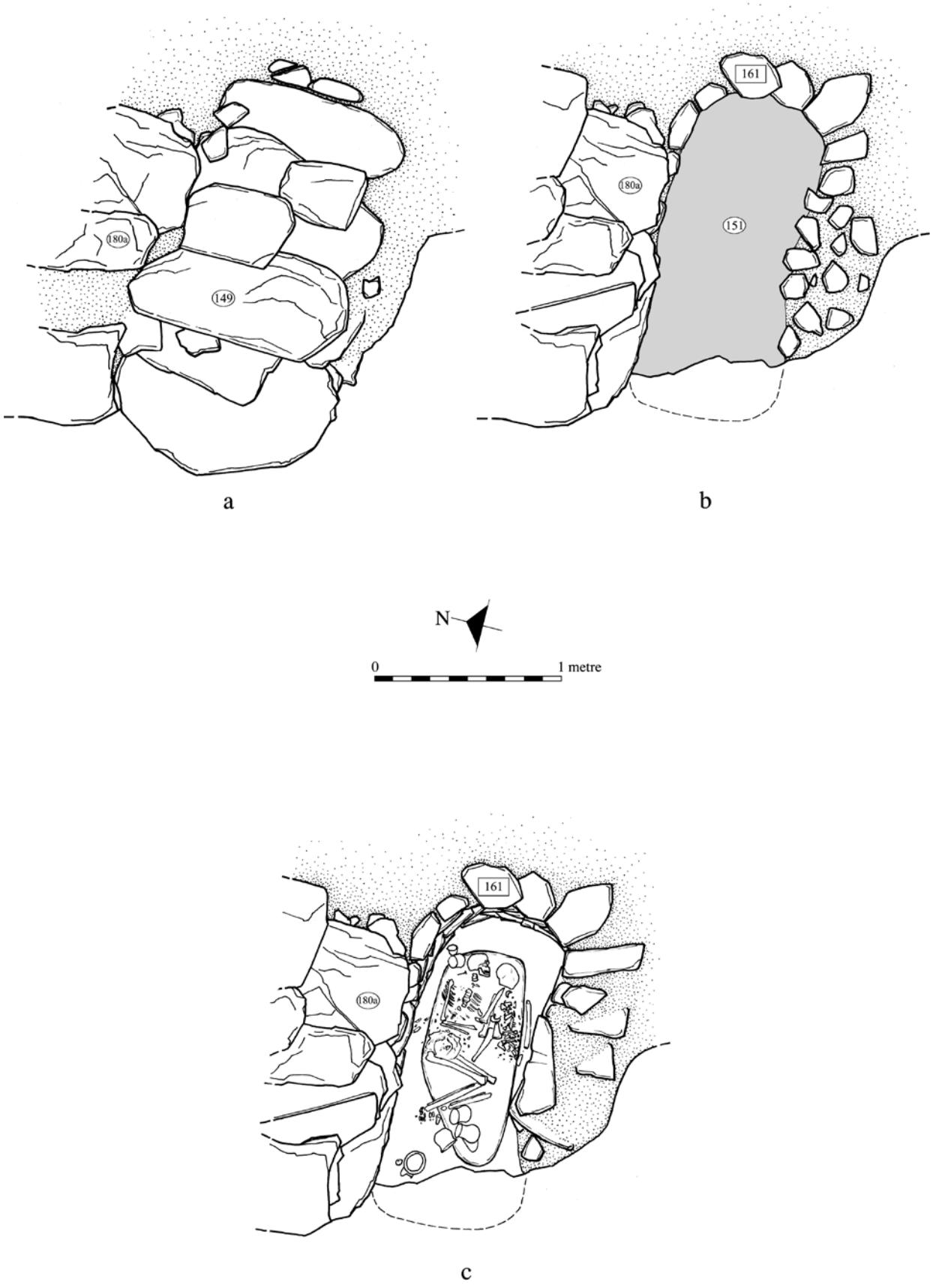


Fig. 127. Udegram, October-November 2012. Grave 5: a) The slabs covering the chamber; b) The filling of the chamber before excavation; c) the Grave at the end of the excavation (Drawings by R. Micheli).

cranium of the woman. The bizarre apparent tripod-like arrangement of this secondary burial (the cranium on top of three long bones set vertically) might have been a symbolic reference to a wooden platform where the body may have been previously exposed.

The furnishings

Around the skull of Individual 1 were deposited (Fig. 125) a beaker on a high foot (Vessel 1, UDG 112), a stemmed cup (Vessel 2, UDG 113), a cup on a high foot (Vessel 3, UDG 114) and another vessel (Vessel 4/ UDG 115). A small beaker, set upside down, was found near the coxal bones of Individual 1 (Vessel 5/UDG 126). Near the wrist of the same individual we found (Fig. 126) a single cubic steatite bead (UDG 132), while a copper/bronze pin (UDG 41) was discovered among the long bones of Individual 2.

Vessel 1, UDG 112. Ovoidal cup on a high conical foot and a disk-like base. Height 14.5, diam. max. 13 cm. Fine grey ware (grey, 2.5YR 6/0). Height 13 cm., diam. max. 10.5 cm. Two parts separately made on the potter's wheel (cup and foot), later joined together. The foot is coarsely trimmed on the interior with a blade. In its open contour, the form is a less common variant of the globular cups on a low raised foot presented by Silvi Antonini and Stacul (1972) in Fig. 4 – the closest match, because of the open profile, is VTc8 (Fig. 4f). See for comparisons *ibid.*, Pl. CXXIa, T. 15/4 (LB); Pl. CXXVc, T. 30/6 and 7 (LB); Pl. CXXXc, T. 43/5 (with parallel ridges, like other specimens) (LB).

Vessel 2, UDG 113. Tall stemmed cup with restricted mouth and four horizontal parallel grooves on the outer wall. Height 32.5 cm, max. diam. 14 cm. Fine grey ware, black slipped (very dark grey, 2.5YR 3/0). Three parts (cup, stem and foot) separately made on the potter's wheel and joined together; stem and join with the foot later trimmed with regular, vertical movements. Note the tapering profile of the long stem. The form is an intermediate variant between Silvi Antonini and Stacul's (1972) type VTbd4 (general form and proportion of high stem to cup) and VTc5 (restricted profile of cup). See above, specific comments to Vessels G. 2/11 and 2/9. The entirely grooved surface of the cup recalls also Vessel B/3 at of Grave B Gogdara IV. Cf. Also Silvi Antonini and Stacul (1972) Pl. CXXVIId, T. 38/1 (LB); Pl. CXLIIa, T. 138/1 (LB); Pl. CCXXXIIId, T. 158/5 (KTL).

Vessel 3, UDG 114. Globular restricted cup on a conical foot; two horizontal grooves and as many sequences of impressed dots on the shoulder. Height 14.5 cm, diam. max. 13 cm. Fine grey ware (dark grey, 5YR 4/1). Two parts separately made on the potter's wheel (cup and foot), later joined together. See, for comparanda, comments on Vessel 6 of Grave 2.

Vessel 4, UDG 115. Small, squat subcylindrical beaker with everted rim and outer wall marked by multiple grooves. Height 6.2 cm, diam. max. 8.5 cm (at the mouth). Fine grey ware (light grey, 7.5YR 7/0). Made on the potter's wheel, base trimmed. For this and the following Vessel see comments to Grave 2, Vessel 4.

Vessel 5, UDG 126. Small subcylindrical beaker with everted rim and outer wall marked by multiple grooves. Height 5 cm, diam. max. 8.5 cm (at the mouth). Fine grey ware with a dark slip (brown, 7.5YR 4/2). Made on the potter's wheel, base trimmed.

Copper/bronze pin, UDG 41, found among the long bones of Individual 2.

List of SUs

SU (180) Schist slabs of the roofing.

SU (179) Clayey silt, upper filling deposit of the Grave's chamber.

SU (289) Wall of rammed earth, well preserved along the norther and eastern sides of the chamber. The southern side exploited the presence of SU [161] of Grave 5, while the western limit was not preserved.

SU <188> Limit of the pit excavated for constructing Grave 4.

SU (189) Basal schist slabs of the Grave's floor.

Grave 5

This Grave (Fig. 127) was unearthed after the removal of Grave 15 and its surrounding sediments (Fig. 128); like usual, the stone slabs of the roofing, SU (149) were covered, on the joins, by additional long schist pieces. A wall of schist slabs (four courses preserved) was built against the inner face of its earthen walls, SU [161]. The contour of the chamber, like that of the later Grave 3, is oval, rather than rectangular (at least on the eastern side). The filling of the chamber, SU (162) is homogeneous, with few fragments of human bones and some potsherds. In the upper part of this filling we found an ivory spindle, UDG 35. The eastern stretch of the chamber contained a double burial (Fig. 129): Individual 1, set with the back against the North wall of the chamber and flexed legs, facing South and what was considered Individual 2, a secondary burial whose defleshed bones, scattered in the south-eastern stretch of the chamber, are stratigraphically superimposed to the remains of the first occupant. Two ceramic vessels and a copper/bronze pin near the cranium in the north-eastern corner seem to belong to Individual 1 (Fig. 130).
A second group of objects, deposited in the opposite corner, above or near the bent legs of the same body (Fig. 131), cannot be ascribed with confidence to the first or to the second deposition, because the western part of the chamber had been deeply eroded and damaged by agricultural works and modern trampling. Fig. 132 shows the skeletal parts of Individual 1 after the removal of Individual 2, this latter a crucial issue because (see below) the bones do not belong to a single individual and are not contemporary with those of the first occupant. Fig. 133 shows the basal slabs of the Grave's chamber at the end of the dig. Figs. 134 and 135 illustrate the finds that accompanied the burials.

Grave 5 – The occupants

Individual 1 (the primary burial on the floor of the Grave's chamber) probably laid on the left side, in a flexed position (but the bad state of conservation of the

Fig. 128. Udegram, October-November 2012. From left to right, Grave 5 (excavated), Grave 4 (unexcavated, with the covering slabs), SU (149), and Grave 3 (excavated) (Photo by R. Micheli and M. Vidale).

Fig. 129. Udegram, October-November 2012. Grave 5 and its occupants at the end of the dig (Photo by R. Micheli).

Fig. 130. Udegram, October-November 2012. Grave 5 at the end of the dig, view of the ceramic furnishings near the crania (Photo by R. Micheli).

Fig. 131. Udegram, October-November 2012. Grave 5 at the end of the excavation; a view of part of the ceramic furnishings. The setting of the pots suggests that they were deposited in a cloth bag or in a sack (Photo by R. Micheli).

Fig. 132. Udegram, October-November 2012. Grave 5 after the removal of the secondary interment (Individual 2). Individual 1, on the basal slab of the chamber, is partially undisturbed (Photo by R. Micheli).

Fig. 133. Udegram, October-November 2012. Grave 5: the basal slabs of the chamber (Photo by R. Micheli).

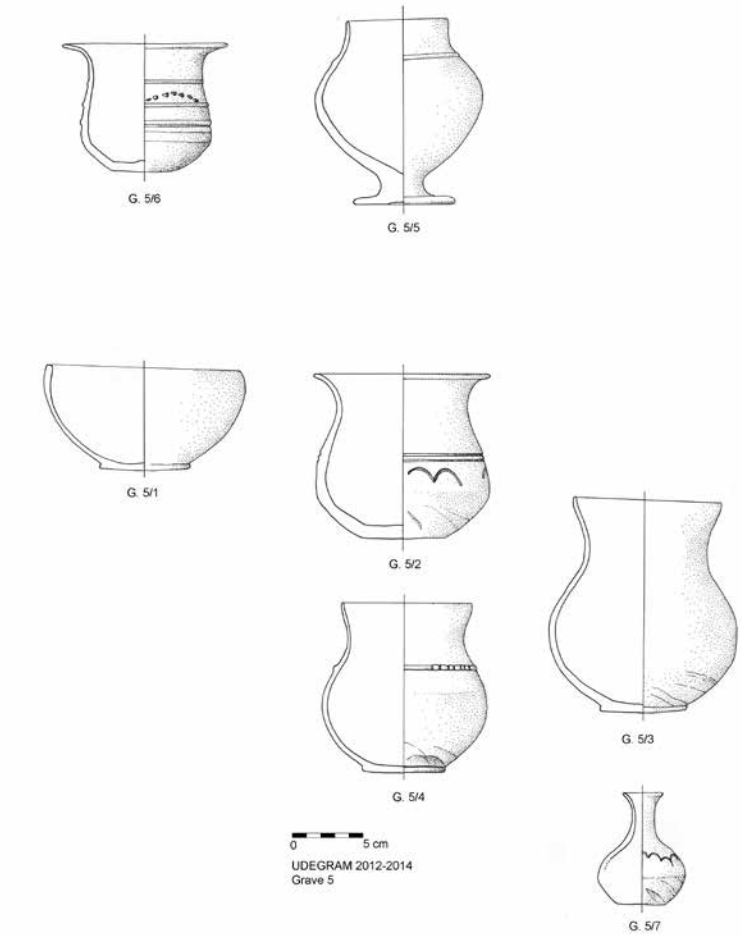


Fig. 134. Udegram, October-November 2012. The ceramic furnishings of Grave 5 (Drawings by M. Vidale).

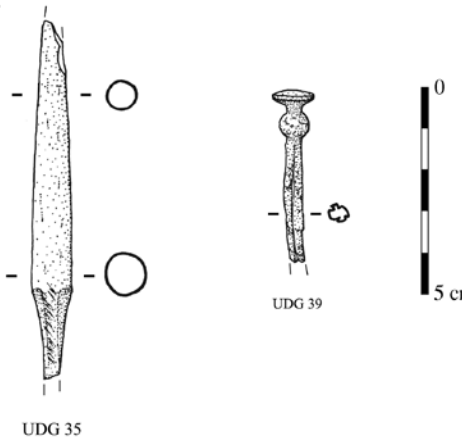


Fig. 135. Udegram, October-November 2012. Other finds of the furnishings of Grave 5 (Drawings by R. Micheli).

post-cranial skeleton prevents further details), and the secondary burial of Individual 2, whose cranium was intentionally placed in front of that of the first occupant.

The bones of Individual 2 are set in a fashion already observed in other cases: the skull on top, facing Individual 1; a row of long bones sharing the same orientation in the centre; other post-cranial bone fragments between the long bones and the chamber's southern wall.

Individual 1 was an aged female, comparatively well preserved. The sex is revealed by the width of the ischiatic groove and by the limited size of the head of the femur (diameter: 41.06 mm). An advanced age is suggested by the auricolar surface of the ilium – coarse and extremely porous -, of the acetabular cavity and of the arthrosis recorded in diverse locations. A break was observed on the left radius; olecranic holes appear on both humeri. Anatomic length of the femur: cm 47.9. Maximum length of the same bone: cm 48.2.

Stature estimation after the femur: Sjøvold 176.5 cm; Trotter and Gleser (African-American females) 169.65.

Individual 2 (subsequent secondary) at the time of death was a much younger male, ca. 20 to 30 year old). The sex was recognized after a narrow ischiatic groove and after the general robustness of the bones, particularly of the mandible, and because of the diameter of the femur's head (43 mm). A young age is suggested by the stage of eruption of the teeth (20-25 years) as well as by a coherent auricolar surface of the ilium (20 to 30 years).

Individual 2 had developed a strong non-masticatory wear on the incisors. We recorded grade 1 tartar on: C,

I2, I1 (right) maxillary; I2 (left) mandibular; and grade 2 tartar on I1 (left) mandibular. Enamel hypoplasia[12] was noticed on all mandibular teeth and on M2, C, I2 (right) maxillary. Hypoplasia developed at the following ages: ± 4 years; ± 4.4 years; ±4.9 years; ±5.5 years. Such characters between 3 and 5 might due to weaning that, in many ancient populations took place in this developmental age, when children, if not well fed, suffer frequently of diarrhea, parasitosis, gastroenterite.[13] There are cribra orbitalia on both orbits, but mainly on the right side. The anatomic length of the left femur (43 cm) and its maximum length (43.5 cm) suggest the following stature: Sjøvold 163.75 cm; Trotter and Gleser (African-American males) 162.13 cm.
From the south-eastern corner of the Grave come other bone remains, some of which non compatible with Individuals 1 and 2: a right astragalus, a fragment of heel (side non determinable), a left patella, a fragment of a humerus (side not determinable), some bones of the hands and feet. Therefore with the term "Individual 2" we define a cluster of more than one individual (i.e. a multiple partial burial).

Grave 5 – The furnishings

A bowl (Vessel 1/ UDG 46); a miniature bottle (Vessel 7/UDG 47) and a spindle whorl (object 8/ UDG 49) on the western side of the chamber, below the foot of Individual 1. Moreover, we found a beaker (Vessel 2/ UDG 43), two vessels (Vessel 3/ UDG 42 and Vessel 4/ UDG 47) and a triangular schist slab fragment, this latter below Vessel 3. This second group of artefacts, at West, was placed above the left leg of Individual 1. In the north eastern corner, near the skull of Individual 1, there were a cup on a low foot (Vessel 5/ UDG 48), another beaker (Vessel 6/ UDG 44) and a spindle-whorl in terracotta (UDG 49). A copper/bronze pin with a thickened head and a flat end was discovered below the skull, behind the area of the neck. From the uppermost part of the chamber's filling, SU (151), as stated above, came an ivory spindle (UDG 35) (see drawings in Figs. 134 and 135).

Vessel 1, UDG 46. Hemispherical bowl with a thick rounded rim and a disk-like base. Height 7.4 cm, diam. max. 14 cm. Fine grey ware (fine olive grey, 5Y 6/2) free from visible inclusions. Fashioned on the potter's wheel. For the class of containers – Silvi Antonini and Stacul's (1972) VTd10 - see comments on Grave 7, Vessel 4.

Vessel 2, UDG 43. Squat pear-shaped pot with everted rim. Height 12 cm, diam. max. 12.5 cm. Fine grey ware with a dark grey slip (dark grey, 5YR 4/1), burnished. Wheel-thrown, trimmed with wide spiral-like movements on the base. Silvi Antonini and Stacul's (1972) VTc33 - VTc32I. See comments on the furnishings of Grave 8, Vessels G. 8/6 and G. 8/9.

Vessel 3, UDG 42. Pear-shaped pot with cone-shaped concave neck and inward-flexed rim. Height 15 cm, diam. max. 13.5 cm. Fine grey ware without visible inclusions, covered with a dark slip (dark grey, 5YR 4/1). Wheel-thrown, trimmed with wide spiral-like movements on the base. For comments and comparanda on this Vessel and the following (Vessel 4, UDG 47) see furnishings of Grave 8, Vessels G. 8/2.

Vessel 4, UDG 47. Squat pear-shaped beaker, with a ridge decorated by sequences of vertical impressions. Height 12 cm, diam. max. 11.8 cm. Fine grey ware (pale brown, 10YR 6/3) without visible inclusions. Made on a potter's wheel in a single step, and widely trimmed with spiral-like movements on the base.

Vessel 5, UDG 48. Cup with restricted mouth on a disk-like foot; on the shoulder a horizontal ridge. Height 13 cm, diam. max. 12 cm. Fine grey ware, with a dark slip (very dark grey, 10YR 3/1) free from visible inclusions. Cup and foot made on the potter's wheel, and later joined; the rear of the foot shows trimming marks. This rather uncommon form is another variant of the globular or sub-globular cups listed in Silvi Antonini and Stacul's (1972) Fig. 4, but distinguished by its low

[12] Parallel lines, traditionally interpreted as due to stops in the formation of enamel after specific stress episodes in infancy (Mays 1998: 156).
[13] Fornaciari and Giuffra 2009: 246.

foot above a disk-like base. Its contour and proportions between foot and body resemble those of type VTbd7 (Katelai, T. 170/14), illustrated by the two authors in Pl. VIa. Cf. Also Pl. CXXXVIb, T. 67/11 (LB); perhaps also Pl. CXLVIc, T. 136/6 (LB); and Pl. CCXXXIIa, T. 193/3 (KTL); Pl. CCLIIc, T. 14/11 (BTK).

Vessel 6, UDG 44. Subcylindrical beaker with a wide everted rim; four horizontal parallel ridges on the outer wall. Below the first ridge, on the shoulder, a sequence of triangular impressions traces an arch. Height 9.3 cm, max. diam. 12 cm. Fine grey ware covered with a dark grey slip (dark grey, 5YR 4/1), and well burnished. Type VTc32, already discussed for Grave 2, Vessel 4.

Vessel 7, UDG 45. Small bottle with elongated neck and everted rim; a unbroken sequence of little arches is incised on the shoulder. Height 8 cm, diam. max. 6.2 cm. Fine grey ware covered with a dark slip (very dark red, 2.5YR 2.5/2) without visible inclusions. Wheel-thrown, trimmed on the base with spiral-like movements. Silvi Antonini and Stacul's (1972) type VTc50, rather common in the Swat graves and described as "small globular pear-shaped bottle with high cylindrical neck, flaring rim and flat or disk-like base": Fig. 12c (Butkara II, T. 38/11). Similar specimes (with necks of variable height) in Pl. XXIXc, a and c (from graves of Loebanr and Butkara II), See also Pl. CXXIIb, T. 19/9 (LB); Pl. CXXIVb, T. 22/3 (LB); Pl. CXXVc, T. 30/9 (LB); Pl. CXXXIXa, T. 71/12 (LB); Pl. CXLa, T. 106/7 (LB); Pl. CXLVc, T. 92/4 (LB); Pl. CCXVIIIa, T. 30/5 (KTL); Pl. CCXXXIVd, T. 210/20 (KTL); Pl. CCLIa, at least four specimens in T. 1 (BTK); Pl. CCLVIIIb, T. 28/19 (BTK); CCLIXa, T. 38/19 (BTK); Pl. CCLXIIb, T. 28/6 and 7 (BTK).

List of SUs

SU (149) The massive schist slabs of the Grave's roofing (100 x 50 x 20-30 cm), set in two superimposed layers, with elongate schist pieces placed on the joins. Within the two layers of slabs, a mixed filling rich in fragments of human bones.

SU [161] Perimetral wall, oval in groundplan, preserved on its South, East and North sides in four superimposed rows of schist slabs.

SU (151) The uppermost filling of the Grave's chamber, unearthed below the roofing.

SU (162) The lower filling of the Grave's chamber. Both layers, (151) and (162) are made with a rather soft, homogeneous brown silt, very similar in texture and colour to the filling of the chamber of Grave 2.

14C datings: Sample 9 (LTL13335A), taken from a calcaneous of the left foot of Individual 1: 3098±45 BP, or 1491-1231 cal. BCE. Sample 11 (LTL14411A) was taken in 2013 from a bone of "Individual 2": 2969±45 BP, or 1376-1041 cal. BCE. Both calibrated dates are presented as 2 sigma (95.4%) confidence level (Table 3; Pl. XIV).

The two reliable 14C dating of the two burials confirm the stratigraphic information that Individual 1 is older than the secondary bones cluster of Individual 2. As stated above, this confirms that Grave 5 was re-opened several decades after the death of Individual 1, to host the secondary interment of two or more skeletal groups. Similar cases of discontinuity in burials have been reported in other Bronze and Iron Age archaeological contexts (see for example, in Estonia, the protohistoric stone cist burials discussed in Laneman 2012) and may have far-ranging implications for the archaeology of protohistoric Swat as well.

Grave 24: unexcavated, but recorded in section

Fig. 136 shows the section of Grave 24, found in the West side of the south-western corner of the trench dug in November 2012, while regularizing the walls on request of the land-owner.
Grave 24 was recorded in section but we had no permission, nor the time to excavate it, and we did nor recover any furnishing, but its section was crucial. The most substantial layers recorded in Fig. 136, to a large extent, are the same that appear and were described in the long section of the Main Trench, and the reader will be

able to correlate visually the main formations of the sequence of Fig. 136 with that of Fig. 54; for avoiding confusion, in this section the layers have not been re-numbered, and the following interpretative remarks are descriptive, rather than analytical.

Proceeding from the bottom upwards, the section through this Grave well shows how the Udegram cemetery rose as a monumental artificial terrace; the local schist bedrock (Fig. 136, 1) was locally cut, and the slope was horizontally filled and consolidated with thick layers of gravel and rubble (Fig. 136, 2: schist flakes of various size in chaotic setting). The surface was then extended by other massive layers of clean silty clay, which supported and surrounded the first grave constructions (Fig. 136, 3).

Grave 24 was erected, rather than dug, in the following way. One or more basal schist slabs were set flat in a shallow depression and fixed with a mud-like mortar (Fig., 136, 4). At the same time, or shortly after, people built a grave chamber in rammed clay. The section shows that the parietal walls were made by pressing 6-7 superimposed rows of thick slabs of plastic clay (Fig. 136, 5) into a shuttering construction made of wooden planks (the only technique that could create such linear vertical limits and the wavy limits between the slabs). The number of the clay slabs is roughly the half of the courses of stone slabs used in other graves for the inner wall.

Like in other graves, the deceased was set flexed on his/her right side: in the section, one sees the epiphysis of the femur, the tibia and the peroneal bone resting on the basal stone slab.

The grave was probably sealed as it appears in the section, with a couple of courses of projecting schist slabs on top of the rammed clay walls, and finally covered with large stone slabs (Fig. 136, 6). The mouth of the grave and the stone slabs of the roofing were finally sealed with the same mud mortar used for the floor, possibly heaping above the chamber a low mound of clay (Fig. 136, 7). The yellowish clay used for constructing the grave, being soft and homogeneous, was intensively burrowed by rodents. The filling of their holes is darker, softer, richer in sand and fine gravel, and sometimes contains tiny fragments of Early Historic ware (holes in section near and across the rammed earth walls of the Grave, see Fig. 136, 5).

As observed in almost all the graves of Udegram, the first stages of filling of the chambers are marked by thin layers of pure clay (light yellowish brown, 10YR 6/4), laid by infiltrating water that continued to erode the surrounding clay walls. In Grave 24, the bones of the deceased (apparently

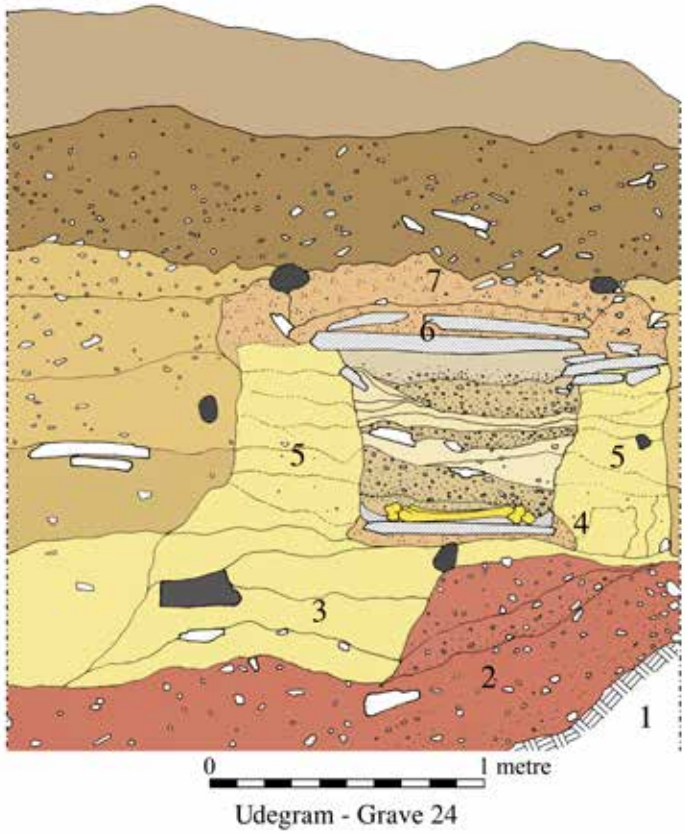


Fig. 136. Udegram, October-November 2012. An interpreted section of Grave 24, unexcavated. This Grave exposed while rectifying the eastern wall of the Main Trench provided a complete model of the construction techniques of the Graves' chambers at Udegram. Key to SUs: 1 = (302), 2 = (301), 3 = (300), 4 = (153), 5 = (298), 6 = (102), 7 = decayed upper mound. (Drawings by R. Micheli and M. Vidale).

undisturbed) are embedded in a horizon of such clay about 4 cm thick. In the chamber's filling, there are three episodes of slow deposition of similar clay lenses, as a rule free from large stone flakes or potsherds, alternating with as many lenses of schist gravel, including few large ceramic fragments. While the water-laid clay lenses formed in the empty chamber, sealed by the stone slabs ceiling, the gravelly deposits (olive brown, 2.5 Y 5/4) and their ceramic content could fall into the chamber only when the grave had been re-opened. In the case of Grave 24, we have evidence of three subsequent re-openings before the final closure of the funerary chamber, that do not seem to have reached the bones of its primary occupant.

The top of the grave, as stated above, was probably sealed by a low mound of gravelly silty clay (better visible in other points of the trench) and finally sealed - exactly like at Gogdara IV - by a thick series of colluvial layers bearing only very worn Kushana ceramics (see above). The limit between the colluvium and the upper deposits of the protohistoric cemetery is marked by the residual evidence of the plowing furrows visible at the base of the second layer from above. The uppermost layer, not characterized, is the surface of the contemporary Islamic cemetery of Udegram.

Thus, the observations made on this section helped us to explain many of the SUs recorded during the dig of other graves, first of all the artificial nature of the yellow silt vertical features around the graves, finally interpreted as rammed earth walls. Fig. 137 by F. Martore visualize in detail an ideal model of the manufacturing sequence of a megalithic grave chamber after the stratigraphic evidence collected at the Udegram cemetery.

Fig. 137, 1 shows the unmodified surface of a natural formation of schist of the type still nowadays used by Swati stonecutters for obtaining the stone slabs used for graves and other constructions. In many points, schist and similar metamorphic rocks are naturally layeres, thus the rock can be cut in convenient slabs that are let sliding downslope. In Fig. 137, 2 we conventionally assumed that the cavity thus obtained was actually used at the locus of the grave construction, but this probably, in many contingencies, was not the case.

Fig. 137, 3 shows the first step of construction of the chamber. A layer of mud is spread above the bedrock in form of a rectangle, hosting three parallel schist slabs as the chamber's floor. This situation, although common in the excavated Graves, was by no means a mandatory rule, because some variations in the form and lay out of the floors were also observed.

Fig. 137, 4 shows the construction, within the trench and above the edge of the grave's stone paving, of a frame made of superimposed planks. This building device was filled with regular courses of large lumps of plastic clay beaten from above, probably with heavy wooden tools, in order to build a clay wall. Another rule observed by the grave builders of Udegram was that the height of the wall matched exactly the width of the floor. In the following step, Fig. 137, 5 the planks were removed clearing the standing main clay enclosure of the grave.

Fig. 137, 6 show how the inner surface of the clay enclosure was accurately faced with an inner construction of smaller schist slabs, superimposed carefully one to another and fixed from the inner surfaces with some mud applied as mortar. In some of the Udegram Graves, we counted 14 courses of superimposed stone slabs. The uppermost 2-3 courses of the inner wall projected inwards thus proving a support for the heavy slabs of the grave ceiling. The relationship between the outer clay wall, and the inner walls made of stones was actually much more variable than here envisaged, as shown by the actual evidence reported in the cross section of the Main Trench (Fig. 54). The space between the trench dug in the bedrock and the clay enclosure was variously filled or fixed according to each individual case and the nearby constructions.

Finally, after the interment of the dead (Fig. 137, 7), the whole chamber was covered with the slabs of the roof, whose setting might have replicated those of the slabs of the floor. On the joins among the upper slabs were

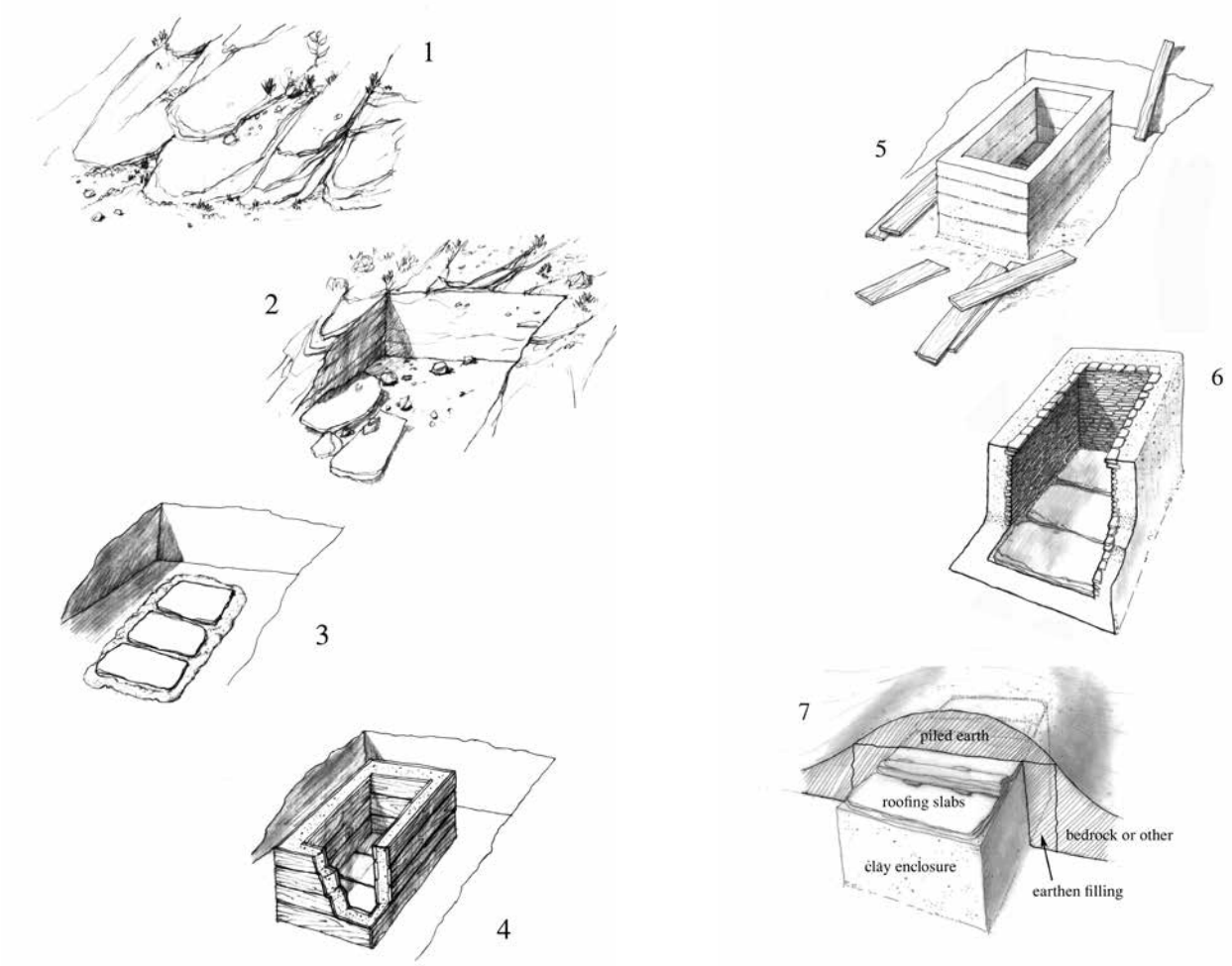


Fig. 137. Simplified and ideal reconstruction of the building sequence of the Graves of Udegram: 1) A sloping surface of layered schist; 2) Removal of the slabs and making of a horizontal surface in the bedrock; 3) Over a basal layer of mud are set three parallel rectangular schist slabs as the floor; 4) Thick lumps or slabs of plastic clay of standard size are pressed within a double shuttering form made of superimposed planks to erect an enclosure of light-coloured clay; 5) The planks are removed; 6) A dry stone masonry revetment is built within the clay enclosure. The upper courses of flat slabs are projecting to better support the roof; 7) The enclosure becomes a closed chamber sealed by a system of large flat schist slabs, with pre-formed elongated elements on the joins. The space between the enclosure and the bedrock is filled and the chamber is covered with a low mound of piled earth. This basic sequence is actually encountered with many important variations from grave to grave (Drawings by F. Martore).

set long, narrow splinters of schist, and everything was plastered and sealed with additional layers and patches of fresh mud. On surface, the sealed and covered chamber was probably marked by a low earthen mound and probably signalled by wooden fences and/or larger posts.

Grave 24 – The occupant

From the section, we could recover only part of the lower limbs. The bones, because of their sturdiness and size, belonged to an adult male, but no details on the age and the pathological conditions are available.

List of SUs

SU (102) massive schist slabs of the chamber's roofing.

SU (154) A deposit of loose, fine gravel in a claysh matrix (2.5YR 5/4) alternating with pure hydromorphic lenses of clay (10YR 6/4).

SU (152) Lenses of loose gravel in a claysh matrix (2.5Y 5/4).

SU (155) A basal level of homogeneous, hydromorphous silty clay, including few lenses of fine gravel, embedding the skeletal remains.

SU (153) The basal schist slabs embedded in mud mortar forming the floor of the funerary chamber.

SU (298) Wall built with layers of silty clay pressed from above within forms made with wooden planks. The yellowish silty clay layers regularly alternate with wavy lines of brownish-grey clay films.

SU (299) Basal layers of clean silty clay (10YR 5/2).

SU (300) Horizontal surfaces made of fillings of broken schist flakes, broken slabs and coarse sandy material.

SU (301) Top of the local damaged schist bedrock.

SU (302) Broken surface of the natural schist bedrock.

Grave 22 (unexcavated) and the jars discarded on its roof

The western edge of Grave 22 (Figs. 138-140) was uncovered in the narrow space between the eastern wall of Grave 3 and the East section of the Main Trench. Grave 22, for the small part that could be observed, was covered by the usual roofing of horizontal schist slabs, SU (140) seemed to be surrounded by a vertical limit that may be described as a oval groundplan, SU (116).

The same limit was marked by small slabs of schist set vertically, SU (141). Inside this limit, there was SU (117), a filling of a dark sediment that contained Vessels 1 and 2 (Figs. 141 and 142), dumped or placed upside-down aside the chamber of Grave 22. Outside the limit SU (116) run two concentric lines of small holes filled with a darker, soft matrix, labeled SU (290). Some of these features are certainly post-holes (Fig. 138).

Vessel 1 (visible in Fig. 138, right, and illustrated in Fig. 141) was found at South-East, while Vessel 2 to the North-East of Pit, SU (116), with the mouth downwards. It had been buried in the pit before Vessel 1. Vessel 1 was filled with a homogeneous silty clay, brown (10YR 5/3) including gravel and tiny scales of schist of variable size. The excavation of vessel showed that it had been buried upside-down, and the base had been broken centuries later, by plowing in the Early Historic period. When buried, the vessel was probably empty, because its section suggested a slow filling in dry conditions from top, i.e. from the lumps of the plowed fields.

Vessel 2 (Figs. 139 and 140, illustrated in Fig. 142) turned out to be a globular restricted vase on a low disk-shaped foot, distinguished by four lugs on the shoulder. Other fragments of a possible third large vase were found onto the south-western corner of the

Fig. 138. Udegram, October-November 2012. A view of the upper context of Grave 22 (unexcavated). Note the double ring of post-holes that appears in the corner, surrounding the Grave. Pot 1, the large globular jar of Fig. 141 (see below) was set vertically on a low mound of piled earth. Pot 2, at right (see Fig. 138), was abandoned upside down on the slabs of the roof (see also Fig. 139) (Photo by R. Micheli and M. Vidale).

Fig. 139. Udegram, October-November 2012. The surface of Grave 22 (unexcavated) after the removal of Pot 1: note the position of Pot 2 (Photo by R. Micheli and M. Vidale).

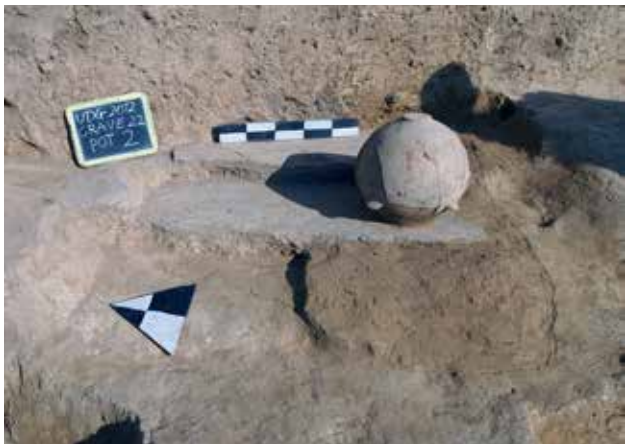


Fig. 140. Udegram, October-November 2012. The surface of Grave 22 (unexcavated) with Pot 2, a four-lugged globular pot abandoned and intentionally buried upside down in the low mound piled on top of the Grave's roof (Photo by R. Micheli and M. Vidale).

Grave's roofing (Vessels 1-2, in this unexcavated Grave, were not inventoried).

On the whole, the evidence suggests that Grave 22, surrounded by SU (117), by the vertical feature SU (116) and a double fence of poles SU (290), was originally covered by a low mound of earth, badly truncated by plowing in the Early Historical period. The two major ceramic containers might have been used in the frame of a ritual activity (quite likely a exhumation), before being abandoned or partially buried as grave markers for the funerary chamber of Grave 22.

Grave 22, furnishings outside the Grave's chamber

Vessel 1. A very large globular restricted jar without neck and short everted mouth. A thick ridge runs on the join between mouth and shoulder; another minor groove runs on the shoulder. Height 58 cm, max. diam. cm 55. Red medium ware, slipped red (yellowish red, 5YR 5/6. Made on the potter's wheel, and later enlarged by paddle and anvil. The largest restricted jars, in Silvi Antonini and Stacul 1972, are classified in Fig. 17. A large jar found in T. 156/1 at Katelai, type VTf73, has a similar body contour and the same rounded bottom, but the rim is completely different. Although the rounded bottom of Grave 22/1 is quite peculiar, see for a better match of the general form Pl. CXXIIIb, T. 20/1 (LB); Pl. CXXVa, T. 27/1 (LB); Pl. CXXVIIa, T. 35/2 (LB); Pl. CXXVIIb, T. 31/1 (LB); Pl. CXXVIIc, T. 34/1 (LB); and Pl. CXXVIIIb, T. 39/3 (LB); and Pl. CXXXIb, T. T. 45/2, that probably are quite smaller. See also the jar at Pl. CXXXIXb, T. 71/2 (LB); Pl. CCXVIIIc, T. 34/1 (KTL); Pl. CCXIXb, T. 36/3 (KTL); Pl. CCXXb, T. 38/1 (KTL); Pl. CCXXIb, T. 39/7 (KTL).

Vessel 2. Large globular pot with four horizontal hemispherical lugs, with a vertical hole, and a vertical pointed rim. On the shoulder, just above the lugs, runs a band formed by a double incised line and a third wavy line below. Height 32 cm, max. diam. 31 cm. Medium-textured coarse ware, with mica, quartz and micaschist particles, red slipped (red, 5YR 5/8). The base is moulded, the rest of the body was made with coils, later rounded and regularized by paddle and anvil. For comments and comparisons of these vessels, interpreted in this volume as possible pottery drums, see Grave B/1 and C/2 and 5 at Gogdara IV.

Vessel 3. Part of another large pot smashed near the southern edge of the schist slab of Grave 23. Not recorded.

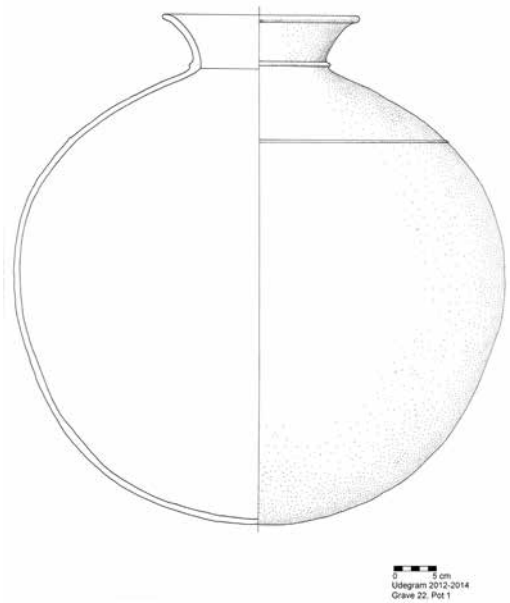


Fig. 141. Udegram, October-November 2012. Grave 22, Pot 1 (Drawings by M. Vidale).

Fig. 142. Udegram, October-November 2012. Grave 22, Pot. 2 (Drawings by M. Vidale).

List of SUs

SU (140) Schist slabs of the Grave's ceiling.

Su (116) Vertical limit that describes the main pit of Grave 22 as oval in groundplan.

SU (290) Double row of concentric holes left by small poles, that seem to have formed a fence around SU (116).

SU (141) Probable perimetral wall made of small horizontal schist slab, following SU (116).

SU (117) The filling between SU (116) and SU (140), described as a darker, slightly silty clay, including lumps of very fine, pale yellow clay /2.5Y 7/4) and with abundant, angular fine gravel and carbonatic concretions. The matrix was yellowish brown (10YR 7/4). The carbonatic material, too was yellowish brown (10YR 5/4).

Grave 16 = 23 (unexcavated)

Almost completely outside the eastern limit of the Main Trench, Grave 16=23, located between the East wall of Grave 3 and the section, was not excavated. On top of the schist slabs of the roofing was smashed and abbandonated Vessel 3 (see Grave 22, above).

Grave 9

Grave 9 (Fig. 143) is a double burial with a different sequence of events: Individual 2, a later occupant of the partially filled chamber, was what we might call a sub-primary deposition: the body was probably removed from a casket-like container and set immediately aside this latter soon after deposition, because the skeletal remains retained also the weakest articulations. In these conditions, the skeleton was slowly filled by water-laid substituting sediments, and finally the bones were damaged to a severe fragmentation by the sudden collapse in the lower void of the upper slabs of the covering, SU (156). Individual 1 was a secondary, disarticulated burial associated to the first water-laid deposit that grew directly above the stone slabs of the floor of the chamber SU

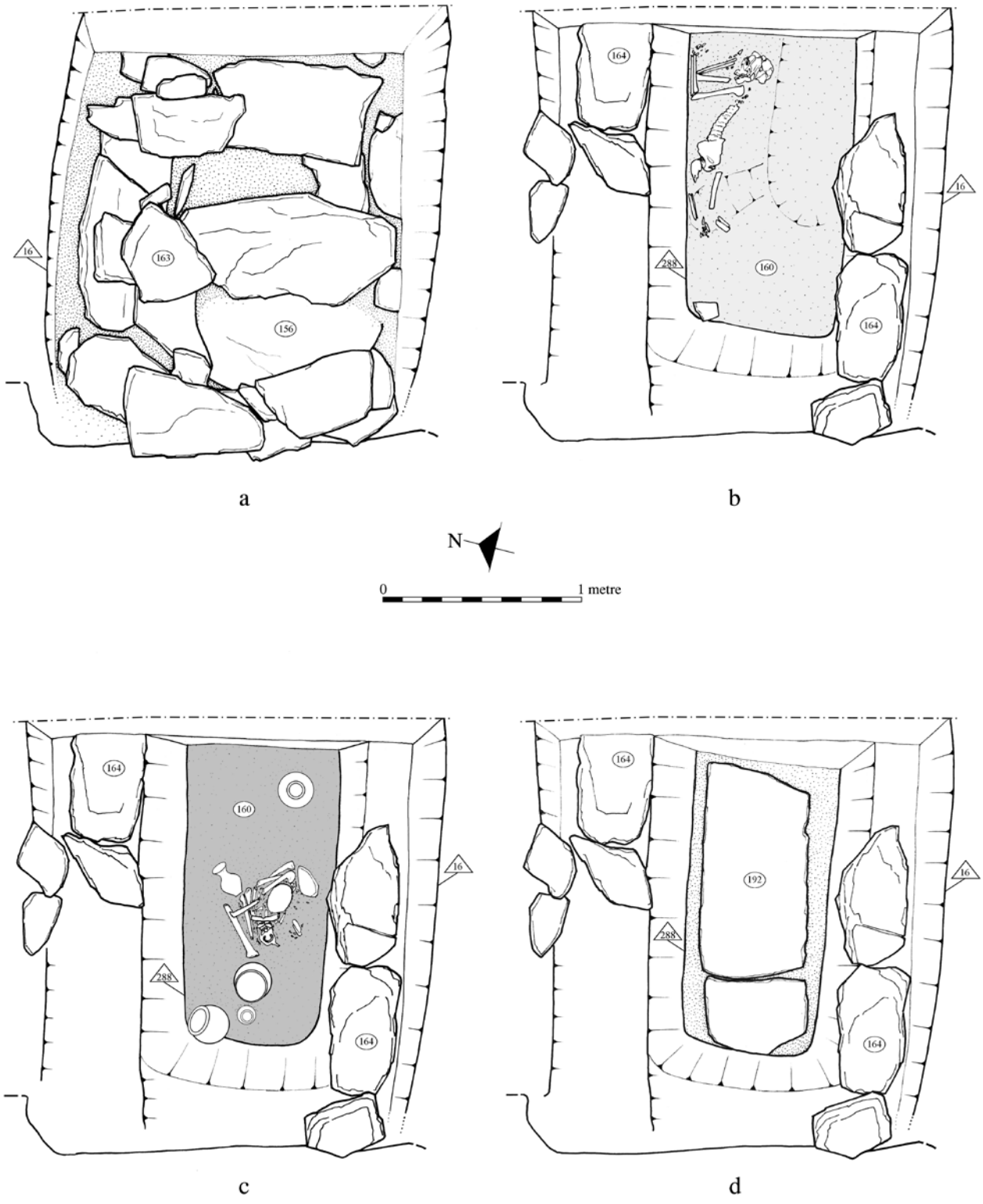


Fig. 143. Udegram, October-November 2012. Grave 9: a) The surface context and the slabs of the roof displaced by one or more collapses; b) The setting of Individual 2; c) The remains of Individual 1 in the lower layers; d) The basal schist slabs (Drawings by R. Micheli).

(160). The depositional sequence of Grave 9 is thus particularly complex. It is illustrated in Figs. 144-151, that present details of the progressive excavation, and reconstructed in detail in the following text section. Fig. 152 is a simplified graphic rendering of the main steps of Grave 9's long depositional process.

Fig. 144. Udegram, October-November 2012. The schist slabs over Grave 9: note their displacement and state of partial collapse (Photo by R. Micheli and M. Vidale).

Fig. 145. Udegram, October-November 2012. Excavating the upper part of the filling of Grave 9, a thick sequence of water-laid clay lenses. See the fall of one of the largest stone slabs of the roof (Photo by R. Micheli and M. Vidale).

Excavating Grave 9: a complex sequence of events

Above Grave 9, but shifted about 80 cm to the South of its northern edge, while cleaning the eastern section of the Main Trench and removing SU (5), we found the neat contour of a large rectangular pit with vertical shafts. Its negative interface was labelled SU <121>, while the filling was recorded as SU (122). The filling was a hard-packed clay with few scattered potsherds and some fragments of human bones. The western limit had been cut by the recentmost agricultural disturbances, while the eastern one ended into the main section. This pit was almost completely empty and its base partially revealed uppermost covering slabs of the Grave found in situ. It may have excavated and disturbed the original mound piled on top; it is impossible to state whether this empty pit was somehow related to Grave 9 below, or not. At any rate, its mouth did not exactly match with the extent and precise location of this latter feature.

If the bones of the first occupant, pushed in a cluster on a point of the floor, actually belonged to a decayed primary burial (Individual 1), we have to assume that after decomposition the Grave was re-opened, part of the bones removed, and the rest re-arranged in a customary fashion – the long bones in a row in close proximity with the skull. In detail (see Fig. 147), the cluster of defleshed bones set against the central-southern side of the chamber seems to have been pushed against a limit formed by three triangular, artificially modified stone slabs set in a row. The cranium, facing East, was flanked on its left side by a group of phalanges and long bones; on the occipital side there were fragments of the coxal and other long bone pieces. We hypothesize that the pots irregularly scattered on the chamber's floor had been deposited with the first occupant, or as an alternative during a specific ritual accompanying the disinterment (Figs. 147-149; see also Fig. 152, steps 1 and 2). In laboratory we discovered that the cooking pot visible in Fig. 148, lower left, contained a set of miniature containers, partially visible in Figs. 150 and 151 (illustrated with the other ceramic furnishings in Fig. 153).

After this intervention, the modified Grave seems to have been sealed and gradually filled with water-laid lenses of clay, SU (160), from the erosion of the surrounding earthen walls (Fig. 152, step 3). At a certain point,

Fig. 146. Udegram, October-November 2012. Grave 9: once removed the thick slab visible in the previous figure, appeared the remains of Individual 2, in primary context of burial but clearly crushed by the weight of the large stone (Photo by R. Micheli and M. Vidale).

Fig. 147. Udegram, October-November 2012. Grave 9: in a lower layer appear the secondary burial of Individual 1. Part of the vessels visible in this picture belong to a lower context of deposition, directly on the stone slabs on the floor (See the following Fig. 148) (Photo by R. Micheli).

Fig. 148. Udegram, October-November 2012. Grave 9: a view of the pots found on the basal slabs of the Grave, with a high stemmed cup in the centre and a cooking pot in the lower left corner (Photo by R. Micheli).

Fig. 149. Udegram, October-November 2012. Grave 9: another view of the pots found on the basal slabs of the Grave (Photo by R. Micheli).

Fig. 150. Udegram, October-November 2012. Grave 9, Vessel 3: small bottles and pots placed within the cooking container, in the course of excavation (Photo by M. Vidale).

after the chamber had been filled (for not less than half 1 m of hydromorphic sediments, pointing to a slow filling of the sealed megalithic chamber), it was re-opened and the cavity for a new burial (Individual 2) was dug on the surface labelled SU (287), the top of SU (160) (Fig. 152, step 4).
Along the southern side of the chamber, at a depth of 20-30 cm above the stone slabs floor, was placed an elongated container made of perishable material (in wicker work or a box or a piece of furniture made with wooden planks): a coffin for Individual 2. The space between this perishable container and the northern wall of the chamber was occupied by the water-laid lenses of clay and silt in which a trench for hosting the coffin had been dug.
After another quite short interval of time, the megalithic chamber was re-openend. The coffin-like container set along the southern wall was re-opened (Fig. 152, step 5), and the body of Individual 1 was extracted, with all the articulations in their place, and unceremoniously deposited aside, along the opposite long inner wall of the chamber, above the newly formed hydromorphic layers immediately outside, about 20 cm thick. In this operation, the skeleton of Individual 2 seems to have been turned on his/her side rather than lifted, and this probably explains its quite peculiar position (Fig. 146).
Then Grave 9 must have been re-closed, and water started to fill again the pit, depositing more lenses of clay, on and around the perishable empty coffin and onto the surface where Individual 2 had been set to rest. The following events were a sudden collapse of the extremity of a heavy schist slab from the North side of the roof, SU (156) onto the legs of the decayed body of Individual 2 (Figs. 145 and 152, step 6). The remains of the wooden or wicker work container/coffin were suddenly smashed by the fall; the northern end of the schist slabs fell down, almost reaching the first level of deposition of Individual 2 at its base. The lower leg bones of Individual 2, laterally hit by SU (156), were broken in two parts, and pushed upwards with the feet phalanges. Then followed another phase of gradual filling by seeping silt and clay. A complete globular restricted pot with four horizontal handles found on the mouth of the chamber (Fig. 153, top left), as visible in the main section, was probably abandoned there after the first or the second episode of exhumation.

Fig. 151. Udegram, October-November 2012. Grave 9, Vessel 3: another view of small bottles and pots placed within the cooking container Vessel 3/UDG 52, in the course of excavation (Photo by M. Vidale).

Grave 9 – The occupants

The bones of Individual 1 (a secondary burial on the Grave's floor) were poorly preserved. They belonged to an aged male, who died between 40 and 50 year old. The sex was determined after the sexual features of the coxals (narrow ischiatic groove) and the cranium (strong mandible), as well as after the very marked muscle insertions. As the femurs were broken and partial, and the diameter of the heads could not be measured, we took in account that of the acetabular cavity, obtaining a value of 50 mm, compatible

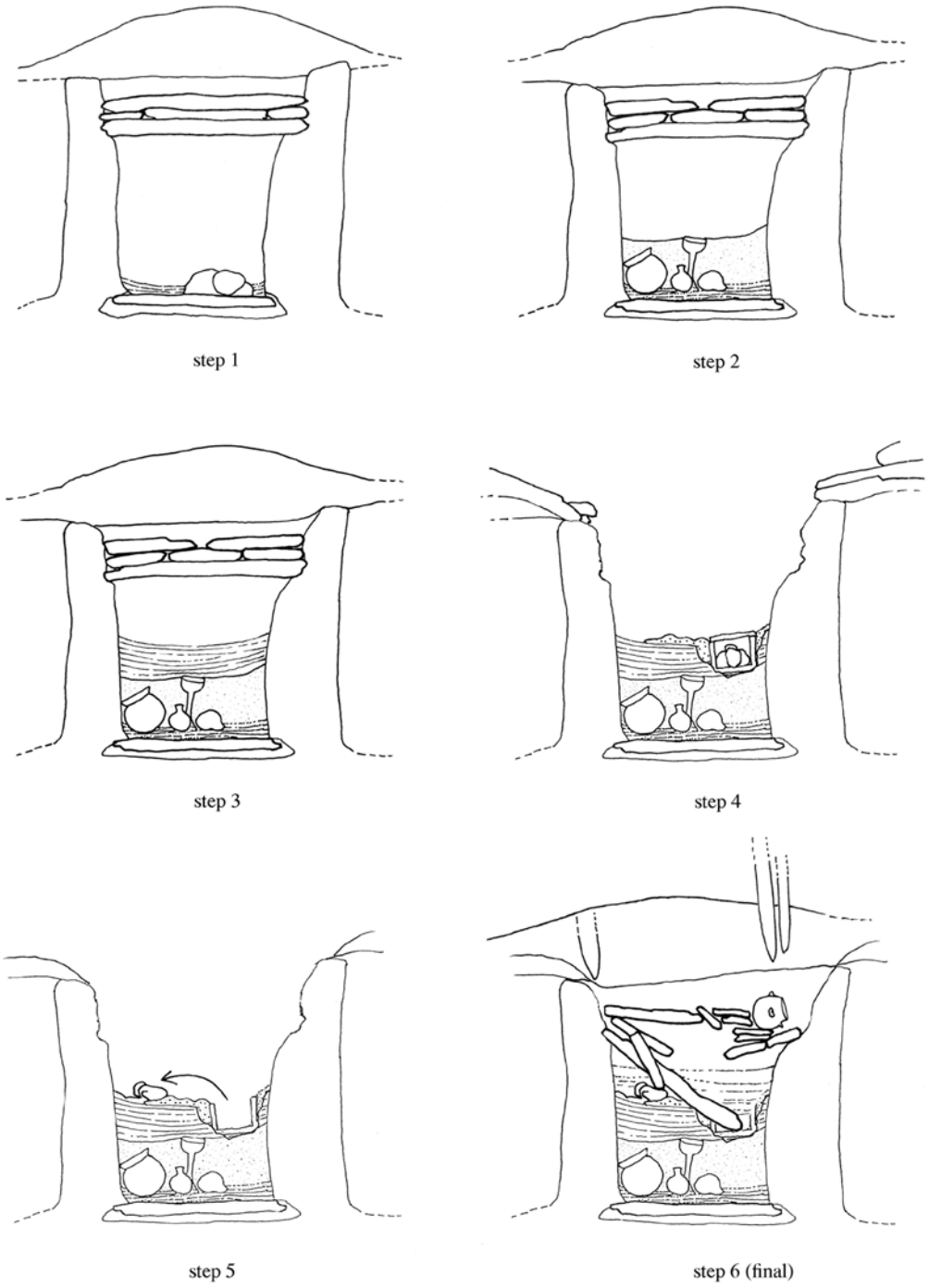


Fig. 152. A simplified summary of the depositional events in Grave 9: 1) A (primary?) burial on the stone slabs of the Grave's floor. The dead decomposes while thin lenses of micro-stratified clay form around; 2) The Grave is re-opened, the skeletal parts of Individual 1, and possibly the Grave's furnishing are manipulated and re-arranged. Possibly, the floor is cleaned; 3) The mortuary deposit is infilled and new lenses of water-laid clay lenses form on top; 4) The Grave is re-opened and this latter deposit excavated for the primary burial of Individual 2, most probably in the empty space of a kind of coffin in a perishable material; 5) Soon after, before decomposition, the body of individual 2 is uncerimoniously extracted and set aside; 6) A heavy slab suddenly collapsed from the unstable roof, meeting the void of the cavity left by the decayed coffin, impacts the body of Individual 2, crushing her against the wall of the mortuary chamber. The rest of the Grave is later slowly filled by further thick lenses of clay seeping from surface. A "drum" (i.e. a four-lugged globular pot) is deposited during one of the re-opening steps on the edge of the stone-lined mouth of the chamber. Posts are planted on the final surface.

with the male sex. The age range was defined after the teeth damage and the auricolar surface of the ileum. Both humeri have an olecranic cavity. Grade 2 tartar was recorded on the incisors and on both canines. There is no evidence of particular pathological processes.
Individual 2, a primary burial with skeletal parts in very damaged conditions, was an aged female (>55-60 year old). The sex was judged female for the preauricular sulcus and for the general size of the bones; in particular, because of the mandible. The age is suggested by the degree of wear of the teeth – almost completely fallen, and confirmed by the general conditions of the remains. A slight arthrosis appears on the articulation of the left elbow.
Individual 1 also has a round depression (diameter = ca. 1.5 cm) on the right parietal of the cranium. The impact, due to a blow inflicted with a blunt object, reproduces, at least partially, the shape and volume of this latter. Given the fragmentary state of the bones we could not take any measurement.

Grave 9 - the furnishings

Individual 2 had no associated offerings. The objects here listed belong to the funerary cycle of the earlier and original occupant of the grave, Individual 1, found as a secondary cluster of displaced bones on the original stone floor of the chamber, and sealed by the usual sequence of water-laid lenses.
The ceramic objects associated with the remains of Individual 1 were a cup with a raised foot (Vessel 1/ UDG 50); a small bottle (Vessel 2/ UDG 51); a large globular cooking pot (Vessel 3/ UDG 52); a pedestalled cup (Vessel 4/ UDG 53); another large jar with a restricted neck (Vessel 5/ UDG 54); and a beaker (Vessel 6/ UDG 55). Within Vessel 3 we found a bottle (Vessel 7/ UDG 56), a miniaturistic jar (Vessel 8/ UDG 57), another bottle (Vessel 9/ UDG 58) and a small pear-shaped vase (Vessel 10/ UDG 59). Around the bones of Individual 2, on the floor, we also found three schist slabs intentionally chipped in rough triangular pieces.
Outside the grave, abandoned on top of the western earthen wall (as visible also in the section of the Main Trench, Fig. 54) there was a four-lugged globular vessel with pointed rim (Fig. 153, upper left). Not inventoried, this pot had on the shoulder, above the lugs, a band with two parallel incised lines underlined by a two wavy lines. Max. diam. 34 cm. Fine red-orange ware, chaff-tempered (red, 2.5YR 4/6). Built with coils or slabs on the potter's wheel and later enlarged by paddle and anvil. The mouth is markedly excentric.

Vessel 1, UDG 50, SU (177), upper level. Globular cup with restricted mouth and pointed rim, on a high cone-like foot. A band of ridges and grooves runs below the mouth. On the maximum expansion, top down, a incised zig-zag line, a row o large impressed dots, and a final horizontal incised line. Height 16.5 cm, max. diam. 14 cm. Fine grey ware without visible inclusions, with a dark slip (dark greyish brown, 10YR 4/2), and later burnished. Made in two parts (cup and foot) separately shaped on the potter's wheel, and later joined. The interior of the foot is strongly trimmed. For comment of the form of this container see Grave 2, Vessel 6.

Vessel 2, UDG 51, SU (177). Small globular bottle with short concave neck. On the shoulder, two parallel horizontal grooves and a wavy incised line traced on the Vessel in plastic conditions. Height 9 cm, max. diam. 8 cm. Fine grey ware, black slipped (black, 2.5Y 2.5/1). Made on the potter's wheel in a single step. Together with G. 9/7, 8, 9, and 10 this small container may be ascribed to Silvi Antonini and Stacul's (1972) type VTc53 "small globular or pear-shaped bottle with flaring rim and flat or disk-base" (Fig. 12f, a specimen from Loebanr, T. 95/12, quite similar because of the grooved shoulder to our Vessels G. 9/7 and 8). VTc53 seems to be a quite generic taxon and there is little doubt that it could be further analytically defined, given the repertory of variation in contour and decoration recognizable only in the set of Grave 9. For G. 9/2 see more specifically Pl. CXXIXc, T. 51/5 (LB); Pl. CXXVb, T. 57/7 (LB); Pl. CCXIIa, T. 1/5 (KTL); Pl. CCLIa, T. 1/12 (BTK).

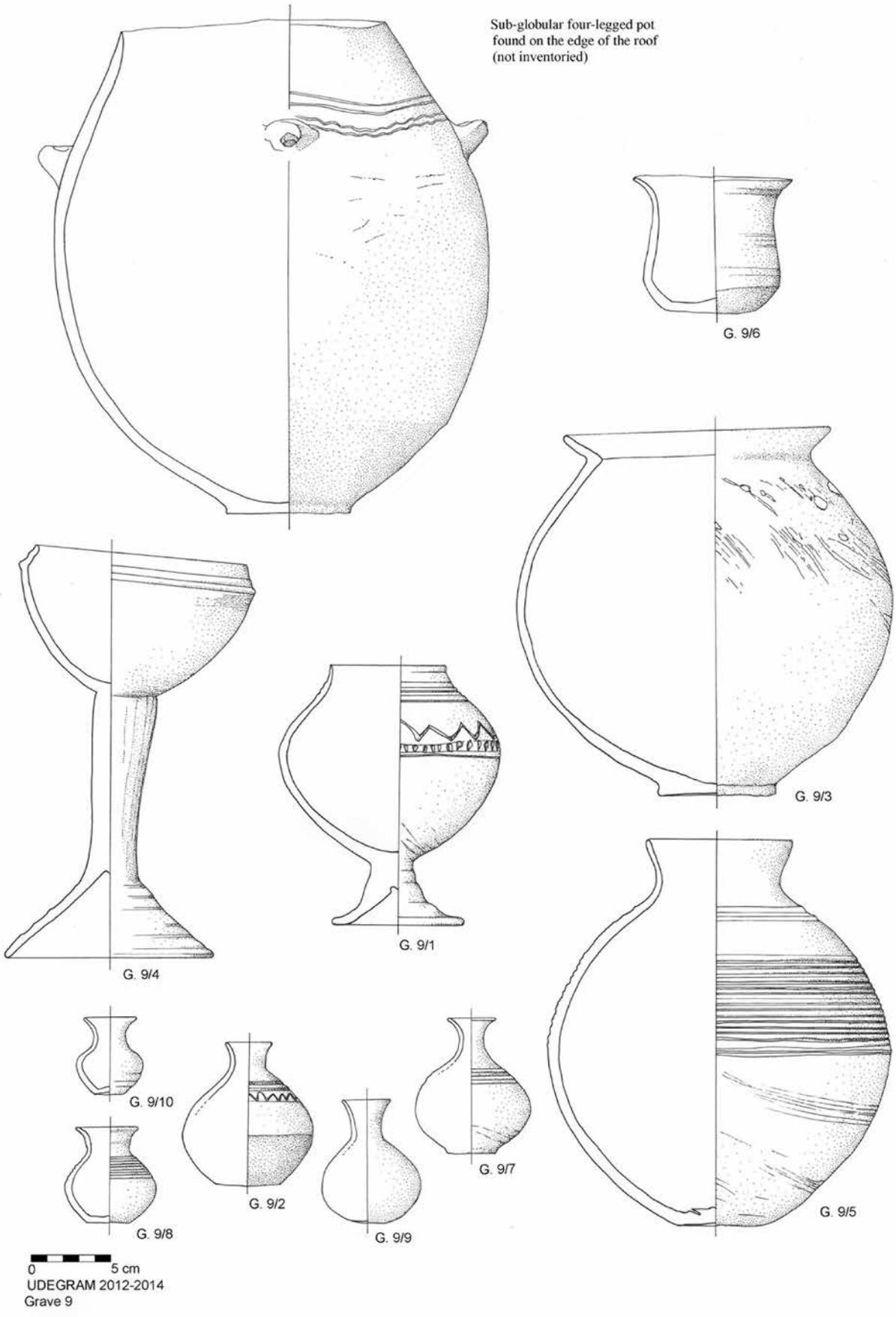


Fig. 153. Udegram, October-November 2012. The ceramic furnishings of Grave 9 (Drawings by M. Vidale).

Vessel 3, UDG 52. Globular cooking pot with everted rim. Height 23 cm, max. diam. 23.5 cm. Coarse red ware (yellowish red, 5YR 5/6), tempered with schist flakes. The lower part and the rim are abundantly covered with a film of carbon sooth (black, 10YR 2/1). The base is moulded (see the corner point at the join), the body made by coils and slabs, and modified by paddle and anvil; the mouth is added as a strip and fashioned on the potter's wheel. Cooking pots of the identical fashion have been discussed in detail for G. C at Gogdara IV, G. C/3 and G. C/8.

Vessel 4, UDG 53. High stemmed cup, with a restricted mouth, underlined by two horizontal parallel ridges that form a corner point. The stem has a distinctive tapering form, slightly bulging at the join with the cup. Height 26 cm, max. diam. 15 cm. Fine grey ware (greyish brown, 2.5Y 5/2): foot and stem were separately made on the potter's wheel and later joined. The rim section and the body of the cup were also made in the same way, in two separate steps. The outer surface of the stem is trimmed with regular, parallel trimming movements. The stemmed cup is almost identical to that of G. 2/9, to be considered for comments and comparisons.

Vessel 5, UDG 54. Ovoidal necked jar, with a short concave neck; it has two horizontal parallel ridges at the base of the neck and a large band of multiple ridges and grooves on the upper part of the body. Height 24.5 cm, max. diam. 21.5 cm. Fine grey ware without visible inclusions (grey, 10YR 5/1). Built with coils fashioned on the potter's wheel; the outer surface is grooved with a comb, the base slightly trimmed and/or carefully smoothed with wide movements. Classified as type VTac54 in Silvi Antonini and Stacul's (1972) typology (Fig. 12e, from Katelai, Tomb 170/12; cf. also the picture Pl. XXXd) this vessel also reminds, because of the grooved surface, a hole-mouthed jar of Udegram Grave 2 (G. 2/3). Another possible comparison is with type Vtf70 in Fig. 16d (from Loebanr, 113/2). See also for the general contour Pl. CXXIIIa, T. 20/4 (LB) and similar specimens from the same graveyard, like – among others – Pl. CXXXIc, T. 46/1. The same forms from Loebanr, however, lack the grooved surface. At Loebanr, like at Katelai and Butkara II, the form merges gradually in other, more common and less distinctive subglobular to ovoid necked jars, see for examples among others Pl. CCXVIIIa, T. 30/1 (KTL); Pl. CCXXXId, T. 143/1 (KTL); Pl. CCLVId, T. 24/4 and 6.

Vessel 6, UDG 55. Cylindrical beaker with an everted pointed rim. Height 8.5 cm, max. diam. (mouth) 10 cm. Fine grey ware, probably slipped (grey, 5Y 6/1) without visible inclusions, slightly burnished with horizontal streaks. Fashioned on the potter's wheel. See for comments and comparisons concerning this common find Grave 2, G. 2/4.

Vessel 7, UDG 56. Small bottle with high concave neck, and with two grooves on the shoulder. Height 8.5 cm, max. diam. 7.3 cm. Fine grey ware with no visible inclusions, black slipped (dark grey, 7.5YR 4/6). Fashioned in a single step on the potter's wheel, and trimmed on the base with spiral movements. Found within Vessel 3. For general comments on this form see Vessel 2 of this same Grave. Comparable to Pl. CXXVc, T. 30/9 (LB); Pl. CXXXVb, T. 57/6 (LB); Pl. CXLa, T. 106/6 (LB); Pl. CCLIa, T. 1/6 (KTL); Pl. CCLVIIIb, T. 28/20 and 21 (BTK); Pl. CCXLIIa, T. 42/8 (BTK).

Vessel 8, UDG 57. Miniature necked jar with a cylindrical neck, everted rim and a band of parallel horizontal grooves on the shoulder. Height 6 cm, max. diam. 5.7 cm. Fine grey ware covered with a black slip (dark grey, 2.5Y 4/6). Wheel-thrown, turned on the base and combed on the shoulder. Found within Vessel 3. For general comment on type VTc53 see Vessel 2 of this same Grave. Very similar to a specimen in Fig. 12f (Loebanr, T. 95/12); see also Pl. CCXVIId, T. 25/1 (KTL); PL. CCXXXIIa, T. 193/4 (KTL); Pl. CXXXII, T. 242/22 (KTL); Pl. CCLIVc, T. 17/8-10 (BTK).

Vessel 9, UDG 58. Small bottle with slightly everted rim. Height 7.7 cm, max. diam. 6.2 cm. Fine grey ware (light grey, 10YR 7/2). Made on the potter's wheel, turned on the base. Found within Vessel 3. Rather similar to Vessel G. 9/7 discussed above (see this latter for comparisons).

Vessel 10, UDG 59. Miniature jar with concave neck and everted rim. Height 5 cm, max. diam. 4.3 cm. Fine grey ware (light grey, 10YR 7/2), without visible inclusions. Wheel-thrown and turned on the base. Found within Vessel 3. A variant of the same VTc53 formal class so far discussed (Vessel G. 9/2 and others), with a narrower body. Cf. type VTd80 in Pl. XLVc, T. 17/8 (from Butkara II).

List of SUs

SU <121> Negative interface of a large, rectangular (?) pit above Grave 9.

SU (122) Filling of the same shaft. Very compact, hard clay, very pale brown (2.5Y 5/4). It contained few flat schist fragments, few sherds and some fragments of human bones. This regular pit, shifted ca. 80 cm South from the mouth of Grave 9, may have nothing to do with its underlying chamber.

SU (16) The ledge hosted by the upper surviving part of the rammed earth perimetral wall of the Grave; built on top of the same wall, it hosted the schist slabs of the roof in collapse that had sealed the chamber.

SU (18) Uppermost deposit of the Grave, a thick layer of silty clay sealing the ledge SU (16). It embedded an unbroken globular pot with four lug-like handles, abandoned on top of the upper schist slabs.

SU (132) A thick layer of compact and homogeneous silty clay (light yellowish brown, 2.5Y 6/4) that filled the gaps among the fallen slabs of the covering, SU (163) and (156).

SU (163) The slabs of schist originally covering the Grave's chamber, still in place on top of the latest filling layer, SU (132); on the North side of the chamber some of them are strongly inclined southwards.

SU (156) refers to the lowermost and earlier collapse episode of the same schist slabs. The slabs of SU (156) fell on the later burial of Grave 9, Individual 2, breaking with the sudden impact his/her lower leg bones.

SU (164) Medium-sized schist slabs superimposed horizontally against the inner ledge of the earthen wall in rammed earth of the Grave, sloping towards the centre of the chamber.

SU (145) A thick deposit formed by a sequence of superimposed lenses of water-laid clay alternating with fine horizons of clay, rich in decomposed organic material (a dozen of layers in all). This sequence included occasional pockets of looser gravel. SU (145) slowly formed on top of the collapsed slabs SU (156).

SU (157) A layer of homogeneous silty clay, lighter and free of inclusions towards the bottom. Individual 2 was sealed by this deposit that filled the upper part of its pit (negative interface) labelled SU <288>.

SU (158) Further lenses of pure water-laid clay, without inclusions, found at the bottom of pit SU <288>; witnessing a phase in which the body of Individual 2 was left to decompose in an open space and soaked with water, before the slabs of SU (156) crashed on the skeleton breaking the legs, and the pit itself was filled, naturally or artificially, by SU (157).

Su (287) Inner surface of the Grave's filling, the top of SU (157), where Individual 2 was laid to rest.

SU (160) Another thick layer formed by water-laid clay lenses. SU (160) above the secondary burial of Individual 2, for a total thickness of ca. 50 cm, witness a long phase of stability of the closed chamber in which this latter remained sealed for a long time. At the base of SU (160), and above the schist slabs of the floor SU (192) were found the grey ware vessels of the furnishing and the displaced bones of Individual 1.

SU (192) The original, basal schist slabs forming the floor of the constructed Grave's chamber.

Grave 10

Grave 10 (Fig. 154) is a double burial, hosting Individual 1, a secondary deposition, apparently buried with a minor group of furnishings in a corner of the empty chamber, and Individual 2, a primary flexed burial, as usual facing South and with a second group of offerings, deposited in the Grave the base of the chamber had been partially filled by laminated clay seeped along the Grave's walls. The whole sequence of the dig of Grave 10 is summarized with details in Figs. 155-162.

After the removal of the stone slabs of the roofing, SU (181) (Fig. 155), we dug the upper deposits of the filling of the Grave's chamber, SU (178). This latter was a homogeneous artificial deposit of silty clay, free from inclusions but a few bone fragments. At a depth of ca. 50 cm from the top of the walls, came to light UDG

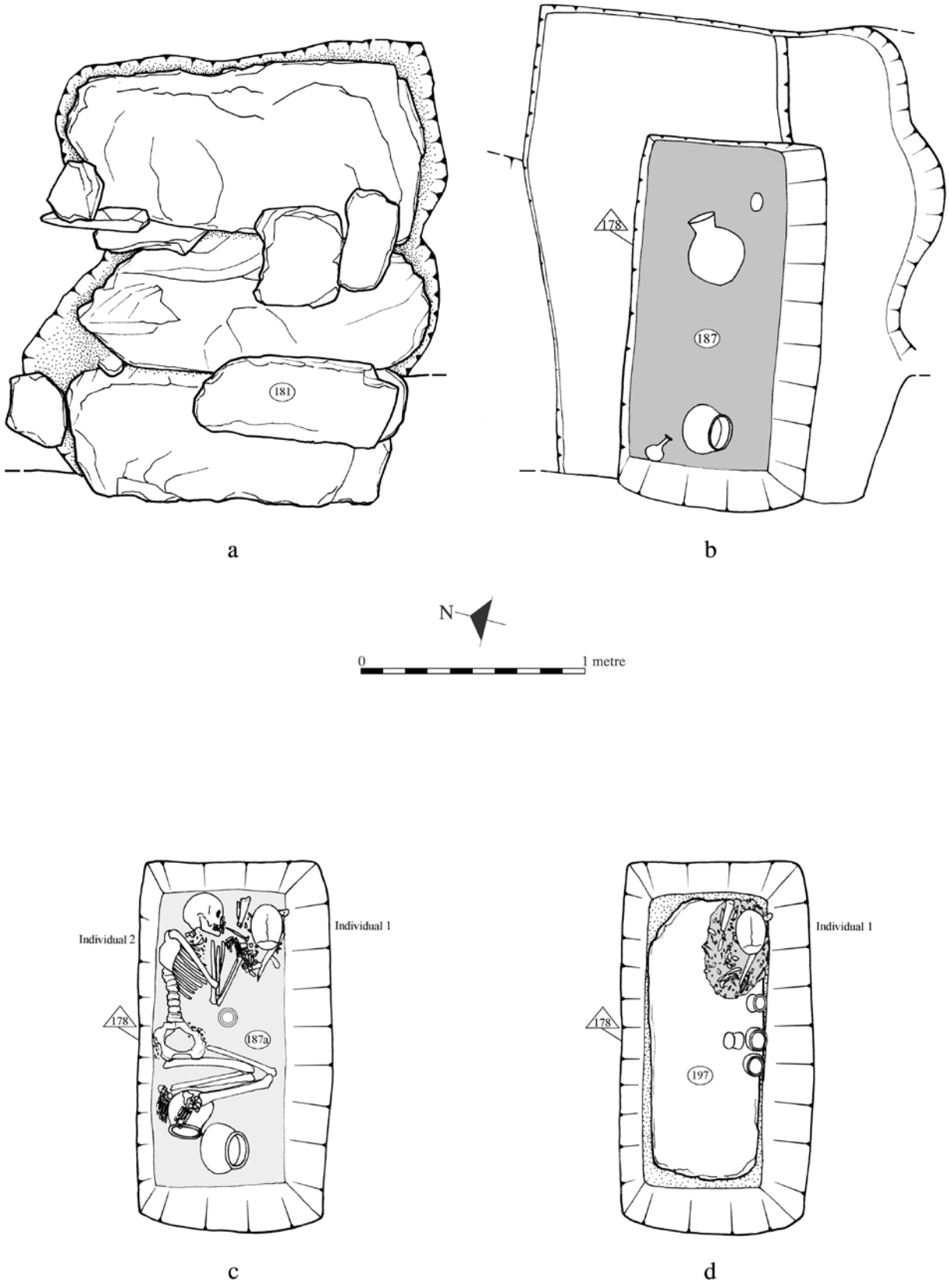


Fig. 154. Udegram, October-November 2012. Grave 10: a) The roof of the chamber; b) The partially excavated filling, with pots belonging to a later deposition; c and d) The context of the floor of the chamber, with Individual 2 (primary burial) and Individual 1 (later secondary interment) and ceramic furnishings (Drawings by R. Micheli).

Fig. 155. Udegram, October-November 2012. Grave 10: the slabs of the roof before exacavation (Photo by R. Micheli and M. Vidale).

Deepening the excavation of the basal SU (187)-(187a), we completely cleared the skeletal remains of Individual 2 and the other furnishings, deposited with the first occupant, below the legs and in front of the coxal area (Fig. 161). The left foot of Individual 2 still rested above the cooking pot UDG 104/Vessel 4 (Fig. 158). The left hand, in front of the mandible, was closed with the fingers clutched, as if keeping an object disappeared because of decomposition (detail in Fig. 159). The lowermost filling horizon, SU (187a), contained other four vessels, apparently deposited before the funeral and the deposition of Individual 1 (see "Furnishings" below) (Fig. 161).

This Grave had, as a floor, a single large schist slab (Fig. 162). After the dismantling of the tombs – required by the agreement with the land owner – L. M. Olivieri realized that this schist slab was carved on rear with a snake-like track and a decayed cross-and wheel design, identical to some carvings previously recorded in the Kandak valley.

100/Vessel 1, whose base was embedded in a different layer, SU (178), made of a darker matrix with sand and fine gravel, with a thickness of ca. 10-15 cm. This intermediate layer also contained another vase (UDG 102/Vessel 2) (Fig. 156).

This horizon was probably linked to the re-opening of the Grave for the later insertion in of Individual 2, and covered Individual 1, whose bones, probably wrapped in cloth or contained in a cloth bag or basket, had been arranged with the long and other bones below, the cranium on top of the pile. Further below, at a depth of ca. 75 cm from the top of the walls, the removal of SU (178) brought to light a third, basal layer, SU (187), a horizon of hydromorphic fine clay, which embedded the bones of Individual 1 (figs. 157-159). The final, lowermost layer above the schist slabs of the floor, SU (197) of the Grave was equally made of finely laminated clay, and was labelled SU (187a) (Fig. 160).

Fig. 156. Udegram, October-November 2012. Grave 10 during excavation; Vessel 1 emerging from the upper filling (Photo by R. Micheli).

This discovery might have great relevance for the dating of the rock art of Middle Swat and its evolution in time (see Appendix 3).

Grave 10 – The occupants

Individual 2, the later primary burial, was found laid on the left side, with flexed legs and the arms forcefully bent towards face; the bones of the wrist and of the right hand, in particular, were below the left side of the cranium, as for imitating a sleeping posture. As observed in all the other primary burials, the permanence of all articulations, even of the weakest ones, like those of the right shoulder, the vertebrae, those between the bones of the left hand and the feet – in first place the bones of the left foot that, being potentially unstable above the vessel, should have fallen – demonstrates that during decomposition the voids of the body were gradually replaced by substitution sediments. In a corner of the chamber is visible a secondary burial (Individual 1), with the cranium set above a bundle of long bones, according to the usual depositional pattern.
The primarily deposed Individual 2 had well preserved skeletal remains, and was a female who died at an age > of 50 years. In spite of the marked muscle insertions and the male-like features of the cranium, the sex was

Fig. 157. Udegram, October-November 2012. Grave 10 during excavation; note the enclosure or rammed earth forming the Grave's chamber (Photo by R. Micheli).

Fig. 158. Udegram, October-November 2012. Grave 10: the main depositional level with Individuals 1 (primary burial) and 2 (secondary interment). Both were found on a layer of clay ca. 10-15 cm thick, and not on the stone slab of the floor (see Figs. 157 and 158 below) (Photo by R. Micheli).

Fig. 159. Udegram, October-November 2012. Grave 10 during excavation: Individual 1 held in his clutched left hand a decayed, unidentifiable perishable object, perhaps of wood (Photo by R. Micheli).

Fig. 160. Udegram, October-November 2012. Grave 10: a layer of percolated clay separated the main depositional level from the stone slab of the floor (Photo by R. Micheli).

Fig. 161. Udegram, October-November 2012. Part of the furnishings of Grave 10 belonged to a previous event, and were found directly on the slab of the Grave's floor (Photo by R. Micheli).

Fig. 162. Udegram, October-November 2012. Grave 10: the slabs of the floor at the end of the dig (Photo by R. Micheli).

judged female for the width of the ischiatic groove and, above all, of the preauricular sulcus. An age > of 50 years is attested by the wear of the teeth, by the auricular surface of the ilium and by that of the pubic symphisis. Like other individuals buried at Udegram, Individual 1 has a olecranic cavity in the humeri and some additional bones. The bones do not show important pathological states, with the exception of a slight arthrosis and osteophytes on great part of the thoracic vertebrae and L1. The teeth are strongly worn; many were lost in life; and there are caries on the right mandibular M1. The diameter of the femur head is 43.7 mm. The stature, according to the measure of the right humerus, may be thus assessed: Sjøvold ±171.46 cm; Trotter and Gleser (African-American females) ±166.31 cm.

The secondary deposition (Individual 1) belonged to an aged individual (>50 years) whose bones were fairly preserved. All the sexual characters of the pelvic girdle and the cranium point to a male. An advanced age at death is suggested by the conditions of the teeth and by the sternum, because of the fusion of the body with the mannerism sterna. The muscle insertions are strongly developed. Individual 2 had "wormian bones" – small extra bones found in the sutures of the cranium, most frequently in the course of the lambdoid one, due to anomalies in the ontogenesis process. Like the oleocranic hole, wormian bones are commonly considered epigenetic characters.

Pathological signs include evidence of cribra cranii, a diffuse porosity on the bone plates due to processes similar to those of cribra orbitalis. Other pathologies are simply due to old age, or to intense physical exertion of the upper and lower limbs, as well as of the vertebral column: a slight arthrosis affecting the articulations between clavicle and sternum and those of the right shoulder, as well as, in particular, of the last three thoracic vertebrae (T10, T11, T12). Osteophyites were also noticed on the insertion of the patellar ligament on the tibia, while minor perostitis damages, due to repeated micro-traumas, appear on the tibias and fibulas. At the insertion of the Achilles tendon, on both heel bones, there are other osteophytes, certainly due to prolonged marches and runs on the rugged slopes and grounds of the Swat region[14].

Individual 2, moreover, was affected by sacroiliitis – an inflammation of one or both the sacro-iliac articulations – on the right sacro-iliac joint. Sacroiliitis is a pathology with a complex aetiology, due in some cases to spondiloarthropathies, and ascribe to the first stages of ankylosing spondylitis[15]. Similar evidence, however, may also be due to traumatic events, isolated or repeated, or to stresses to the vertebral column and of the pelvic girdle[16], coherent with the arthropaties observed in the same Individual. As far as teeth are concerned, they had been broken or lost while Individual 2 was alive; in the mandibular I2, left there is a minor abscess.

The maximum length of the left femur is 44.7 cm; the anatomical length is 44.3 cm. The diameter of the head of the femur is 41 mm. After the mesure of the femur, the stature is the following: Sjøvold ±167 cm; Trotter and Gleser (African-American males) ±164.66 cm.

Grave 10 – The furnishings

Within SU (178) were found the first vessel, a jar with a restricted neck (Vessel 1/ UDG 100); and a bottle (Vessel 2/UDG 102). Sealed by SU (187), the lower layers infilling the chamber, there were a jar (Vessel 4/ UDG 104), evidently used as a cooking vessel, because of the thick, abundant traces of sooth on the bottom; another globular jar (Vessel 3/ UDG 103); fragments of a cup on a high foot (Vessel 5/UDG 106); a beaker

[14] Dutour 1986.
[15] Sieper et al. 2002.
[16] Ortner 2003. Sacroileitic processes are also ascribed to psoriasis, arthropathies and gout (Waldron 2009).

(Vessel 6/ UDG 101) (Fig. 156). In the same statigraphic context there was a copper pin with a flat head (UDG 131), found midway among the crania of Individuals 1 and 2.
Finally, in the lowermost stratigraphic context, SU (187a) were found a biconic vessel (Vessel 7/ UDG 107); a decorated beaker (Vessel 10/ UDG 108); a cup on a high foot (Vessel 8/ UDG 110); and another vase (Vessel 9/ UDG 109). Individual 2 was deposited on top of SU (187a), therefore this latter group of vessels were set in the chamber some time before the first funeral (all finds drafted in Figs. 163a, 163b and 164).

Vessel 1, UDG 100, SU (178). Globular necked jar with a truncated-cone shaped neck. On the shoulder, a pattern made of a wavy line, a sequence of impressed dots, a horizontal ridge, another wavy line. Height 26 cm, max. diam. 24 cm. Fine red ware, red slipped (yellowish red, 5YR 4/6). Wheel-thrown over a moulded base. The vessel's form is generically referable to types VTa44-Vta46 (see for comments and comparisons G. 2/2 and G.2/5+7; and G. 8/1, in the furnishing lists of the relative Graves).

Vessel 2, UDG 102, SU (178). Small bottle with elongated neck and everted rim. Height 9 cm, max. diam. 8.4 cm. Fine grey ware, slipped black (dark grey, 5YR 3/1). Wheel-thrown, base turned. For discussion and comparisons see above, Grave 9, Vessel 2.

Vessel 3, UDG 103, SU (178). Globular cooking pot with short everted rim. Height 21.5 cm, max. diam. 23.5 cm. Abundant residues of sooth on the lower half and the maximum expansion. Coarse red ware with quartz grains and mica, red slipped (yellowish red, 5YR 5/8). Wheel-thrown, enlarged by paddle and anvil; the base was built in a mould. Vessels 3 and 4 of Grave 10 belong to same ubiquitous type of coarse cooking pot we have described in other graves; see for comments and comparisons what written on Vessels 2 and 12 of Grave 2. See Pl. VIIb.

Vessel 4, UDG 104, SU (178). Large globular cooking pot with short everted rim, thicker in the middle. Almost completely covered with a continuous layer of carbon (sooth), particularly at the height of the maximum expansion. Height 26 cm, max. diam. 28 cm. Coarse red ware with quartz grains and mica, red slipped (reddish brown, 5YR 5/4). Wheel-thrown, enlarged by paddle and anvil; base built in a mould. See Pl. VIIb.

Vessel 5, UDG 106, SU (178). Fragmentary cup on a high foot (missing), with a strongly restricted mouth. On the shoulder, a sequence of long arc-shaped lines and, below, a second line of joined arches. Height 11.5 cm, max. diam. 10.7 cm. Fine grey ware, slipped black (very dark grey, 5YR 3/1). Bowl and foot were both thrown on the potter's wheel, and later joined. This common form corresponds to Silvi Antonini and Stacul's (1972) types VTd81 or VTc81 (Katelai, T. 17/1: see Fig. 4,d). See also *ibid.*, Pl. VIc and (from graves of Butkara II and Loebanr). Pl. CCXXVIIa, T. 39/5 (LB); Pl. CXXXIc, T. 46/3 (LB); Pl. CXXXIIb, T. 48/14 (LB); Pl. CXLIVc, T. 157/7 (LB); Pl. CXLVIc, T. 136/6 (LB); Pl. CCXIIIb, T. 3/2 (KTL); Pl. CCXVc, T. 15/8 (KTL); Pl. CCXVIIIc, T. 34/2 (KTL); Pl. CCXXXIVb, T. 210/9 (KTL); Pl. CCLIIa, T. 13/9 (BTK); Pl. CCLVa, T. 17/20 (BTK); Pl. CCLVIIa, T. 25/5 (BTK); Pl. CCLVIIIa, T. 28/8 (BTK); Pl. CCLIXa, T. 38/22 (BTK); Pl. CCLIXb, T. 38/2 (BTK).

Vessel 6, UDG 101, SU (178). Beaker with everted rim, and four parallel horizontal ridges on the shoulder. Below the lowermost ridge, sequences of impressed dots, underlined by a continuous sequence of four arches. Height 10 cm, max. diam. 9.5 cm. Fine grey ware, slipped black (dark grey, 5YR 4/1). Wheel-thrown, trimmed on the base. Comments and comparisons: one of the many variants of Silvi Antonini and Stacul's (1972) type VTc32, see Grave 2, Vessel 4.

Vessel 7, UDG 107, SU (187a). Pear-shaped or biconical beaker with a truncated-cone like neck; four horizontal ridges run from the neck to the lower shoulder; the lowermost bears a sequence of thin oblique impressions. Height 12.5 cm, max. diam. 10.7 cm. Fine grey ware, slipped (very dark grey, 7.5YR 3/0). Wheel-thrown, trimmed on the base. The form has a good match with Silvi Antonini and Stacul's (1972) type VTd26 "biconical vessel with concave sides, very low carination and flat or disk-base" (Fig. 8a, specimen from Katelai, T. 144/5). Similar low-carinated vessels appear in Pl. XVIIc and d (from graves at Katelai and Butkara II). See also Pl. CXLc, T. 121/1 (LB); Pl. CCLVIId, T. 26/5 (BTK); and Pl. CCLXIc, T. 42/16 (BTK).

Vessel 8, UDG 110, SU (187a). Hemispherical cup on a raised foot; a band of multiple grooves and ridges below the rim. Height 11.5 cm, max. diam. 13.5 cm. Medium textured ware, dark brown, slipped black (black, 2.5YR 2.5/0). The cup was

thrown on the potter's wheel, like the foot that underwent a trimming of the lower surface; the two parts were later joined. The form and decoration are exactly those of Silvi Antonini and Stacul's (1972) type VTc51 (from Loebanr, T. 46/5). Compare with vessels at Pl. IV, from Katelai and Loebanr, and with Pl. CXXVc, T. 30/7 (LB); Pl. CXXVIIIa, T. 39/7 (LB); Pl. CXXXd, T. 44/7 (LB); Pl. CXXXIc, T. 46/5 (LB); Pl. CXLIVc, T. 157/2 (LB); Pl. CCXXIc, T. 39/12 (KTL); Pl. CCLVIIIa, T. 28/13 (BTK).

Vessel 9, UDG 109, SU (187a). Pear-shaped beaker with everted rim; three ridges run on the shoulder, underlined by sequences of impressed dots. Height 13 cm, max. diam. 11 cm. Fine grey ware with mica (very dark grey, 2.5YR 3/0). Wheel thrown, trimmed on the base. This form (Silvi Antonini and Stacul's 1972 type VTac20-VTac20I) was discussed and compared with other recorded ceramics when dealing with Grave 8, Vessel 2.

Vessel 10, UDG 108, SU (187a). Beaker with a low carination and everted rim, decorated with two horizontal ridges alternating with two incised wavy lines; a sequence of wavy lines and rows of dots above the carination. Height 9.5 cm, max. diam. 9.5 cm. Fine grey ware (brown, 7.5YR 5/2); wheel-thrown, trimmed on the base. A variant of Silvi Antonini and Stacul's (1972) type VTc32. See Grave 2, Vessel 4.

List of SUs

SU (176) A deposit of silty clay covering the roof of the Grave. Associated to a group of four large schist slabs in horizontal position, located between Grave 9 (at North) and Graves 2-11 to the South. SU (176) also contained a substantial portion of a large lugged vessel (Vessel 11), in a context resembling that of Graves 22 and 23 with Vessels 1, 2 and 3.

SU (181) Three large schist slabs of the roof of the chamber; the joins were sealed with elongated stone pieces.

SU (178) Upper filling of the Grave, covering the top of the rammed earth walls that formed the rectangular chamber. It was an artificial deposit of silty clay, rapidly dumped in a single episode, including a few bone fragments.

SU (303) distinguished by darker matrix with sand and fine gravel, discontinuously present with a maximum thickness of ca. 10-15 cm. Corresponds to the re-opening of the Grave for the burial of Individual 2 and the offering of Vessel 1/ UDG 100 and the vase Vessel 2/ UDG 102.

SU (187) A layer of hydromorphic clay seeped from the walls and deposited around the skull, and around UDG 103/Vessel 3, belonging to the same stratigraphical context.

SU (187a) A basal layer of pure, laminated clay with the same origin, deposited on the floor's schist slabs of the Grave's chamber before the deposition of Individual 2.

SU (197) Basal slab of the floor of the Grave's chamber.

14C samples: Sample 4 (LTL13329A), obtained from four phalanges of Individual 2: 2808±45 BP or 1107-840 cal. BCE. Sample 5 (LTL13330A), carbon sooth layer on the lower surface of the globular cooking pot UDG 104/Vessel 4, on which rested the right foot of Individual 2: 2760±45 BP, or 1007-817 cal. BCE. Sample 6 (LTL13334A), from a phalanx of Individual 1: 2758±40, or 1001-824 cal. BCE. All three calibrated dates are presented as 2 sigma (95.4%) confidence level (Table 3, Pl. XV).

The three radiocarbon datings from this Grave are very coherent, and place the two burials inside Grave 10 ca. between the 11th and the 9th century BCE. Interestingly, the dating of Individual 2 and the carbon soot sample taken from the outer bottom of the cooking pot under the right foot of the deceased show an almost perfect match. Furthermore, it is evident that the vessels in this Grave belong to three different episodes of deposition and are not precisely synchronous.

Grave 25

Grave 25 (Figs. 165 and 166) is an example of a Grave that had been-re-excavated and almost completely dismantled, but, apparently, following precise ritual rules. It was found sealed by SU (176) as a small cluster of schist slabs aligned on the long sides (Fig. 165), but North-South, i.e. contrarily to the normal direction of the

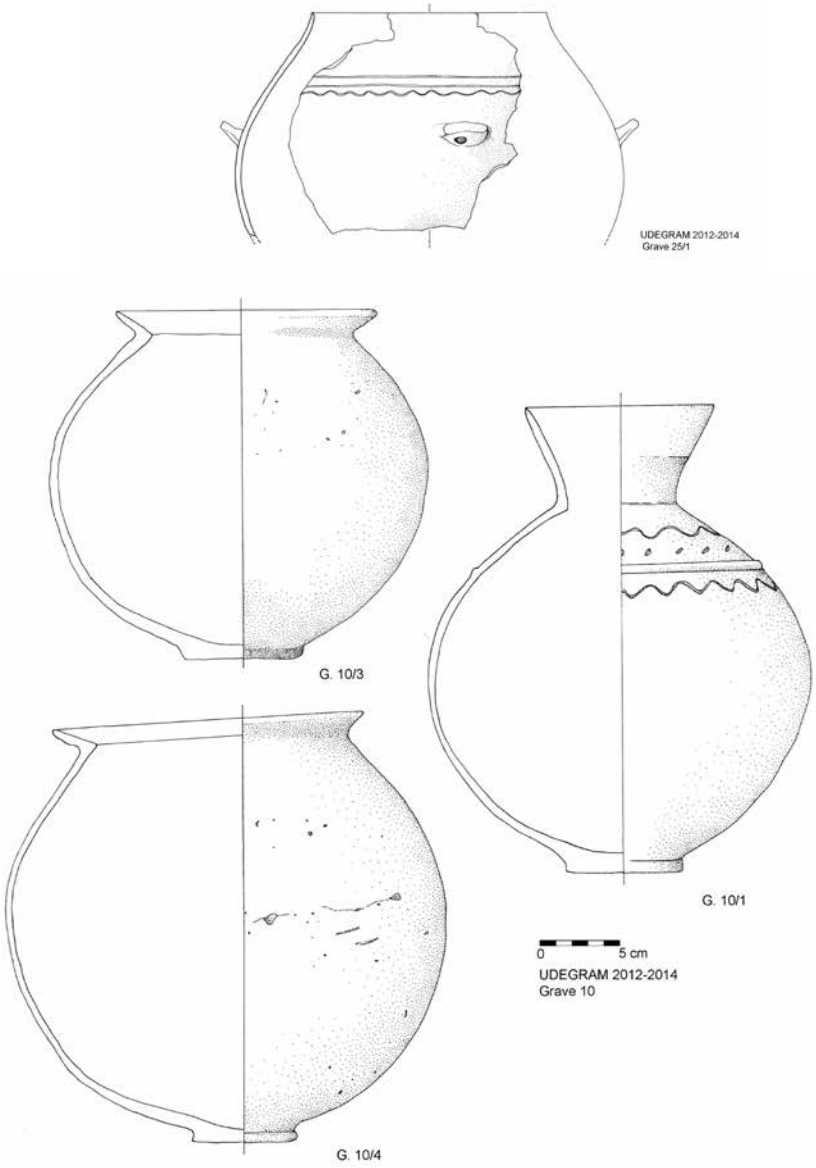


Fig. 163a. Udegram, October-November 2012. The ceramic furnishings of Grave 25: a fragmentary four-lugged globular pot; and Grave 10, ceramic furnishings, Vessels 1, 3 and 4 (Drawings by M. Vidale).

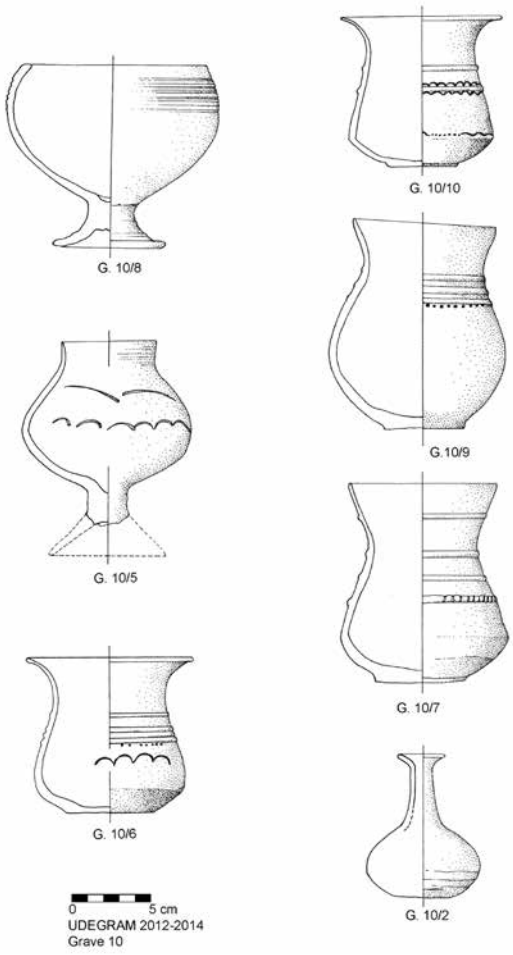


Fig. 163b. Grave 10, ceramic furnishings, Vessels 2, 5, 6, 7, 8, 9 and 10 (Drawings by M. Vidale).

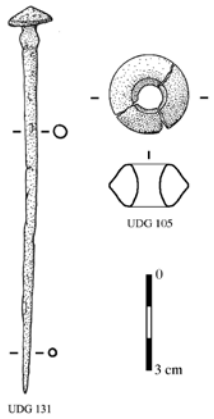


Fig. 164. Udegram, October-November 2012. Other items of furnishing of Grave 10 (Drawings by R. Micheli).

Fig. 165. Udegram, October-November 2012. Grave 25: the slabs covering the bottom of the destroyed cist. Note a large sherd of a four-lugged pot near the edge, lower right. The same sherd is illustrated in Fig. 163a, top (Photo by M. Vidale).

Fig. 166. Udegram, October-November 2012. Grave 25: the residual bottom of the destroyed cist, almost completely dismantled, surrounded by small post-holes (Photo by M. Vidale).

larger slabs in the Main Trench (whose main axis is, as a rule, on the opposite direction). Near the edge, there was a large fragment of a globular four-lugged vessel of the type encountered in other secondary or deeply transformed burials (Fig. 165, lower edge; illustrated also in Fig. 163a, top).

Being sealed by the same wider deposit that covered Grave 10, this funerary feature should be considered roughly contemporary. When we removed the slabs, we uncovered a shallow sub-rectangular cavity, with a curved side, filled with a slightly lighter-coloured silty clay, SU (292) surrounded by an irregular perimeter of post-holes of variable diameter, SU (293) (Fig. 166). This latter deposit contained a few bone flakes. It is not clear if the original cist had been made of wood or, as more commonly observed, with stone slabs. The largest post-hole, uncovered near a corner, might have originally signalled the position of the Grave.

List of SUs

SU (176) A deposit of silty clay covering the roof of the Grave, that synchronize the closure of the Grave with that of Grave 10 (see above).

SU (292) Homogeneous silty clay of a lighter colour filling the base of the destroyed funerary construction; it included a few fragments of human(?) bones.

SU (293) A perimeter of post-holes surrounding the original basement of the Grave's chamber. They might have supported vertical wooden walls or stone slabs.

Grave 25 – The furnishings

Vessel 1, (not inventoried), SU (176) (Fig. 163, top, visible also in Fig. 165).
A large sherd from a four lugged globular vessel with a pointed rim; on the shoulder, above the lugs, there is a band with two parallel incised lines underlined by a single wavy line. Max. diam. 34 cm. Coarse red ware, red slipped (red, 2.5YR 4/6) with quartz grains. Built with coils or slabs and enlarged by paddle and anvil.

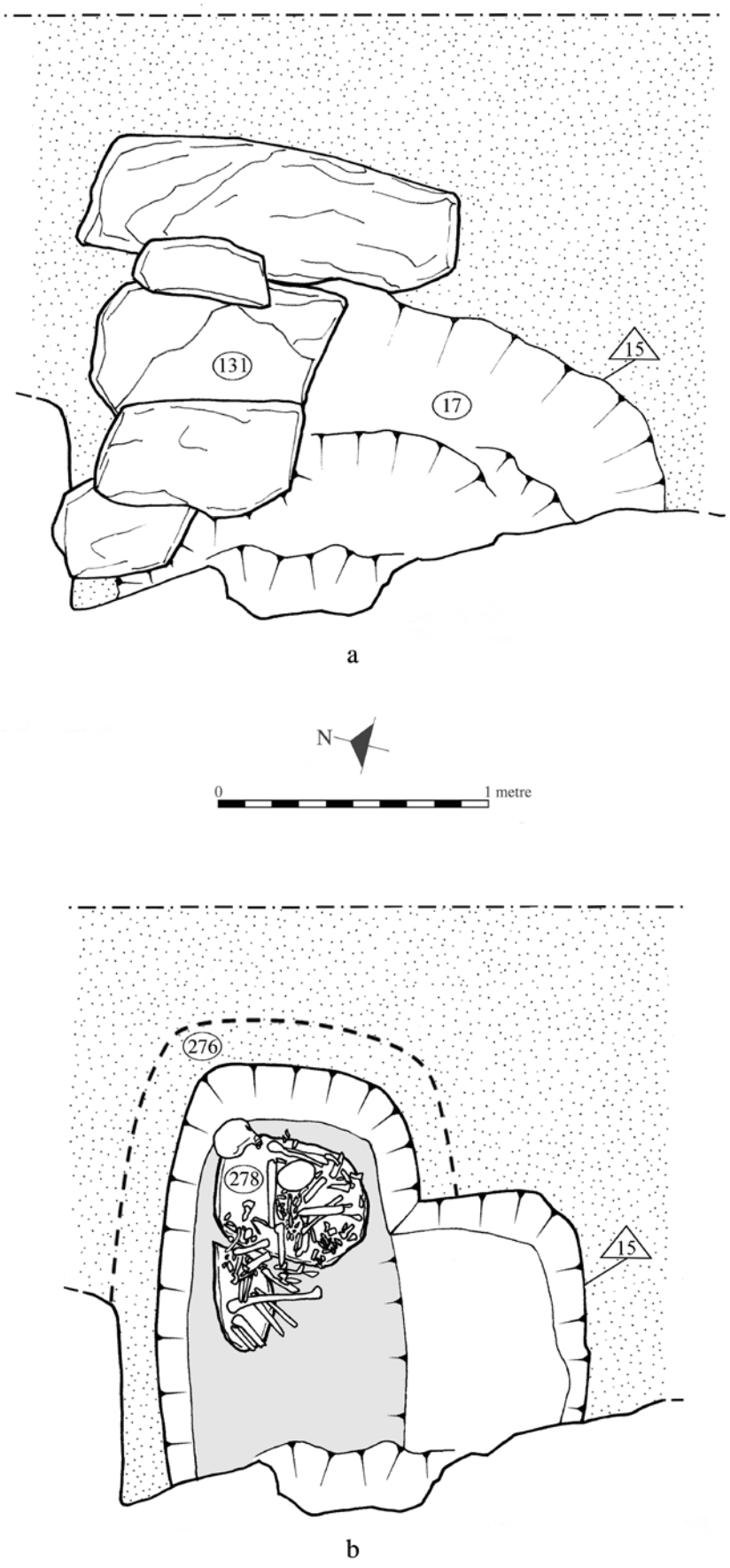


Fig. 167. Udegram, October-November 2012. Grave 21 (Drawings by R. Micheli).

Fig. 168. Udegram, October-November 2012. Grave 21: general view of its context. Note the rammed earth enclosure truncated on the slope (Photo by M. Vidale).

Grave 21

Grave 21 (Fig. 167) came to light immediately South of Grave 11 (see below) in the central sector of the trench. Below SU (6) was found SU (131), what was left of the schist slabs of the upper covering, still retaining two elongated stones set to cover the joins.

Near the West wall of the excavated area, the West part of Grave 21 had been cut by pit SU <15>, filled by SU (17) (see the section of Fig. 54). This large oval pit, with a rounded profile, well visible in the main section, contained both protohistoric and Kushana potsherds, scattered in a series of sandy silt lenses very similar in composition to SU (2). A group of large river pebbles was clustered at the base.

Grave 21 was signalled on surface by its quadrangular rammed earth wall, with rounded corners, damaged on the western side (Fig. 168). It contained at least four secondary burials (Figs. 169, 170), the bones being chaotically scattered in a corner of the damaged chamber. One of the individuals had the flexed long bones of a leg still in primary anatomical connections, in a position compatible with a skull set in the south-eastern corner of the chamber. It is possible that these bones are what was left of an Individual 1, later almost completely disturbed by a subsequent burial, whose cranium was find nearby, to the North-West; on the basal slabs of the floor, the rest of the bones were mixed without any other apparent order. A long bone was found in vertical position in the north-eastern corner of the chamber, suggesting that the final manipulation of human remains had taken place still in an empty space. After burial, the human remains were sealed for good with a homogeneous artificial filling of silty clay. This Grave had no accompanying objects (at least in the part that survived destruction).

Fig. 169. Udegram, October-November 2012. Grave 21: The rammed earth enclosure is emphasized in the ground (Photo by M. Vidale).

Fig. 170. Udegram, October-November 2012. Grave 21 at the end of the excavation (Photo by R. Micheli and M. Vidale).

Grave 21 – The occupants

The minimum number of individuals buried in this feature is four, ascertained after the recovery of four distal epiphyses of left humeri. We recognized the skeletal remains of: Individual 1, an aged male (>50-55 years); Individual 2, an adolescent (ca. 16 year old), whose sex could not be determined; Individual 3, an adult of indeterminate sex (ca. 30 years old); Individual 4, few bones ascribed to a female. On the whole, the skeletal collection from Grave 21 does not reveal serious pathologies. The oldest occupant had three abscesses in correspondence of the maxillary teeth I2, PM1 (right) and PM2 (left).

List of SUs

SU (276) wall of rammed earth forming the perimeter of the surviving part of the Grave's chamber.

SU (277) Homogeneous silty clay filling of the Grave's chamber.

SU (131) Large covering slabs of the Grave's roofing; the joins are sealed by elongated stones.

SU (278) Basal schist slabs of the Grave's chamber.

Grave 2

Like Graves 7 and 8, this feature had been excavated in the previous season, Spring 2012 (see above).

Grave 11

Truncated in its lower half, on the West side of the chamber, this simple Grave had been partially exposed in section while opening from above the mouth of the large Grave 2 (Figs. 171, 172). The negative interface of its destruction, SU (303), corresponds to the cumulative, negative interfaces created by the repeated processes of excavation, construction, closure, re-opening of Grave 2: SU (304).

The grave was a narrow rectangular chamber built with low earthen walls, SU (295); the ceiling, SU (294), and the floor, SU (297), were made of rather unsubstantial horizontal schist slabs. It contained the upper part of the skeleton of an undisturbed, primary burial, in an unusual supine position (Fig. 173).

Besides being a superficial and quite poor Grave (it had no furnishings), it is the only one at Udegram to have been destroyed without much regards during the funerary cycles of the nearby monuments. If its location aside a major megalithic chamber is not casual, it could have belonged to a servant or to a lower rank person attached to a powerful group that did not pay any respect about his/her memory.

Grave 11 – The occupant

Only few parts of the cranium and of the skeleton survived, enough to state that he/she was an adult (the sex was not determinable). In the right orbit we recorded cribra orbitalia.

Fig. 171. Udegram, May-June 2012. The covering slabs of Grave 11 appear at the lower edge of the picture. The Grave was destroyed during the burial cycle of Grave 2 (in central position, before excavation) (Photo by M. Vidale).

Fig. 172. Udegram, May-June 2012. A view from West of the remnants of Grave 11 (Photo by M. Vidale).

Fig. 173. Udegram, May-June 2012. Poorly preserved human remains in the surviving part of Grave 11 (Photo by M. Vidale).

List of SUs

SU (294) Schist slabs of the ceiling, in horizontal setting.

SU (295) The earthen walls supporting the covering slabs.

SU (296) Silty clay, the residual filling of the Grave's chamber.

SU (297) Basal schist slabs of the Grave's floor.

Grave 1

Grave 1 (Fig. 174) was originally covered by the usual ceiling made of three adjacent, heavy schist slabs, the joins sealed by thinner stones of the same length. Only two of the stones were preserved in their original location. On the eastern side of the ceiling, a cluster of probable post-holes might signal the position of a wooden erection (Fig. 175).

At the end of the dig (documented by Fig. 175) This Grave was interpreted as a double secondary burial within

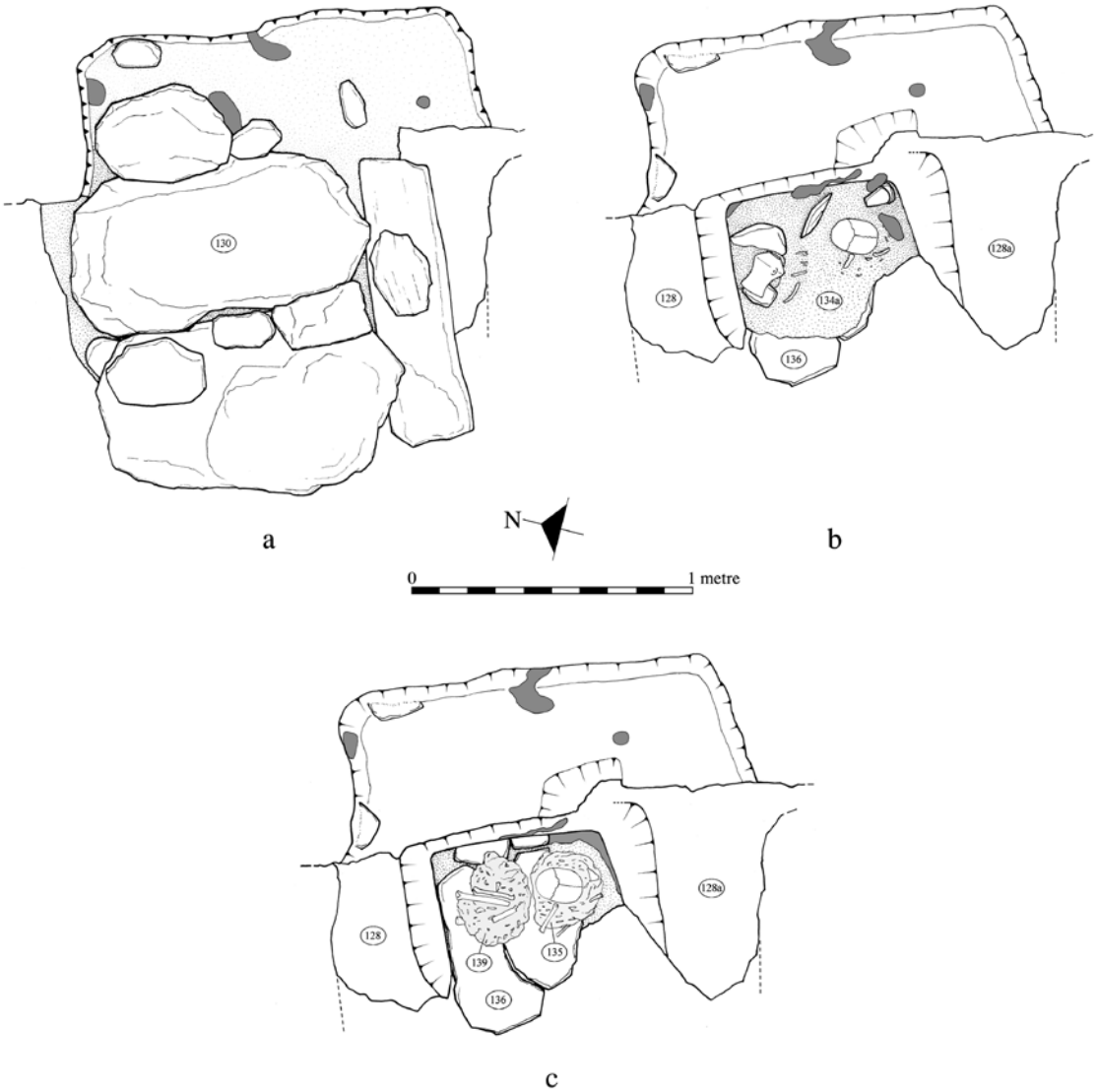


Fig. 174. Udegram, October-November 2012. Grave 1: a) The slabs of the roof: b) The upper surface of the skeletal remains of Individuals 1 and 2, both secondary interments, and the Grave's furnishings; c) The two secondary burials on the floor of the Grave's cist (Drawings by R. Micheli).

Fig. 175. Udegram, October-November 2012. Grave 1: a view of the slabs of the roof (Photo by R. Micheli).

Fig. 176. Udegram, October-November 2012. Grave 1: the secondary interments of Grave 1, upper surface, with a beaker as furnishing (Photo by R. Micheli).

Fig. 177. Udegram, October-November 2012. Grave 1, Individual 1, traces of the cloth or cloth bag that wrapped the secondary burial (Photo by R. Micheli).

Fig. 178. Udegram, October-November 2012. Grave 1, Individual 1: terracotta female figurine at the moment of discovery (Photo by R. Micheli).

a rammed earth cist, Individual 1 being a bundle of bones with a cranium most probably placed on top of it; Individual 2 is a second, separate cluster of bones without skull (Fig. 176). Well-preserved impressions of woven fibres reveal that bones (at least for Individual 1) had been collected within a cloth or inside a cloth bag (Fig. 177). Both bundles or bags were clearly isolated and had been directly placed onto the basal schist slab, in turn built as a floor above a compact layer of silty clay and gravel. It was not possible to ascertain the stratigraphic relationship between the two burials, which might have been placed in their cist approximately at the same time, or one after the other, with little sedimentation in between. UDG 61/Vessel 1, the only ceramic container associated to this Grave, was found sloping from an upper depositional level, and might have been contemporary with one or both the secondary burials.

In the north-western corner of the bundle SU (139) or Individual 2, we found a small or miniaturistic terracotta female or "Mother Goddess" figurine (UDG 29), set sloping, head down, among the bone fragments (Fig. 178). Nearby there was an ear-ring of copper/bronze wire (UDG 30), of a common type in the graveyards of Swat. Another ear-ring found among the bones, a finely crafted crescent-shaped sheet with a row of embossed dots, was made of gold (UDG 28, Pl. X).

After the deposition of the two bundles of bones – keeping in mind that the cranium of Individual 1 might have been contemporary or not, and have reached the bones at a second time before the filling of the cist – this latter was filled first by the slow action of seeping water, then by the sliding of a loose conoid of silty and gravelly material, that witnesses the breakage or the removal of the cist's upper slabs and the final erosion of the funerary structure.

The finds that accompanied the Grave are illustrated in Figs. 180 (a pot) and 181 (the rest of the furnishings). For the ascertained presence of cloth, of a female figurine, of a fine gold ear-ring and of another copper/bronze ear-ring, Grave 1, although incompletely preserved, is the richest found at Udegram, even more considering also the presumably high cost of the performed secondary funerals.

Grave 1 – The occupants

Individual 1 was a 6 to 7 year old child. The age was assessed after the right humerus (18-20 cm, = 5 years) and the state of eruption of the dentition (6-7 years). The bones, well preserved, are mingled, although like in the other secondary burials of Udegram are set with a certain regularity: the skull on top, the long bones below, probably wrapped together in a sort of bundle. This latter was laid flat on the bottom of the cist, with the exception of the humerus, set vertically. The bones of the child do not reveal important pathologies, with the exception of a strong cribra orbitalis in the right orbit (Fig. 179).

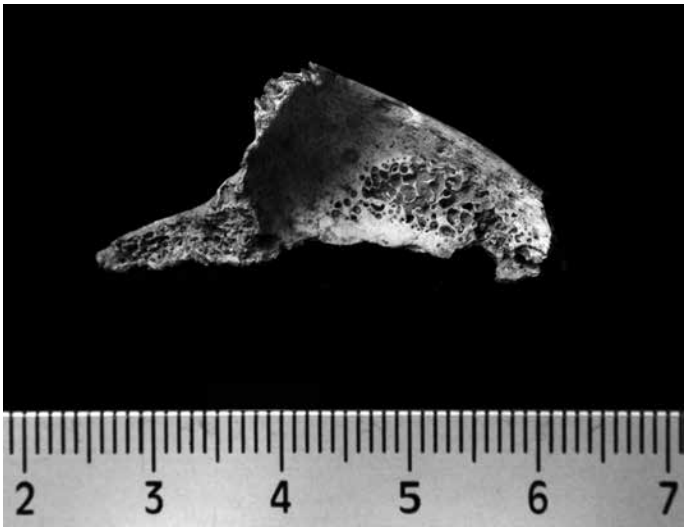


Fig. 179. Udegram, October-November 2012. Grave 1, Individual 2: extensive cribra orbitalia developed in the right orbit (Photo by M. Aurangzaib Khan and M. L. Pulcini).

Individual 2 was another child, who died at an age of 7-8 years, as determined after the eruption stage of the teeth and the maximum length of the femur (25.3 cm). It was placed in Grave 1 as a secondary burial, possibly also wrapped in cloth. The skeletal remains are partial, fragmentary and badly preserved. Like Individual 1, this second child had a strong cribra orbitalis in the upper right orbit.

Cribra orbitalia are porosities on the upper orbit[17], commonly considered a reaction to anaemia[18], in general chronic[19]. However, recent studies would suggest that these damages might be rather due to a massive production of red blood cells[20] after a loss or a defective absorption of iron (due to chronic or acute haemorrhages, or to prolonged diarrhoea from dysentery, to infections[21], or to the presence of hematophagous parasites[22]. In ancient

[17] Fornaciari and Giuffra 2009: 226.

[18] Anaemia is a reduction in blood of hemoglobin and/or of the red blood cells (Wintrobe 1974;Walker et al. 2009: 109). Some anaemias, moreover, may have a genetic origin, for example thalassaemia and falciform anaemia (Angel 1966; Hershkovitz et al. 1991).

[19] Some authors (McAfee 1958; Steinbock 1976) consider cribra orbitalia the first (and sometimes the only one) evidence of an anemic pathological state.

[20] Thus such condition is the result on bone of haematomas and may be linked to a fast loss of haematic cells in a megaloblastic anaemia, due both to a reduced supply of B_{12} vitamin and to scarce hygienic conditions (Walker et al. 2009: 119).

[21] Stuart-Macadam 1992; Roberts and Manchester 1995: 166-167. Møller-Christensen and Sandison (1963), in contrast, think that cribra might have been caused by mumps.

[22] Ortner and Putschar 1981: 258; Aufderheide and Rodríguez Martín 1998: 347.

Sample	Laboratory number	Context	Sample material	Radiocarbon age (BP)	δ13C (‰)	Calibrated date (BCE) 68.2% probability	Calibrated date (BCE) 95.4% probability
9	LTL13335A	G.5 (Individual 1)	Calcaneus	3098±45	-17.7±0.3	1421-1297	1491-1231
8	LTL13332A	G.28 (Double burial mixed together)	Small bone frag.	3056±40	-17.8±0.6	1391-1264	1416-1214
1	LTL13327A	G.3 (Single burial)	Calcaneus	3018±45	-13.7±0.5	1382-1135	1400-1126
11	LTL14411A	G.5 (Individual 2)	Long bone frag.	2969±45	- 16.5±0.5	1260-1120	1376-1041
4	LTL13329A	G.10 (Individual 2)	Phalanx	2808±45	-20.9±0.3	1014-905	1107-840
2	LTL13328A	G.1 (Individual 1)	Long bone frag.	2785±45	-14.2±0.3	1003-859	1044-830
5	LTL13330A	G.10 (Vessel 4)	Carbon soot layer	2760±45	-13.9±0.2	971-839	1007-817
6	LTL13334A	G.10 (Individual 1)	Phalanx	2758±40	-22.2±0.5	968-840	1001-824
12	LTL14410A	G15 (Single burial)	Small bone frag.	2731±40	- 17.1±0.5	908-831	975-807
10	LTL13336A	G.19 (Single burial)	Phalanx	2707±40	-15.5±0.5	895-819	928-802
3	LTL13333A	G.1 (Individual 2)	Long bone frag.	2659±40	-15.3±0.5	888-796	901-792

Table 3. List of radiocarbon and calibrated dates of Udegram graves. AMS dates by Centro di Datazione e Diagnostica (CEDAD) of Lecce University (Italy). Calibration: OxCal version 4.2.3 (Bronk Ramsey 2013); IntCal13 atmospheric curve (Reimer et al. 2013).

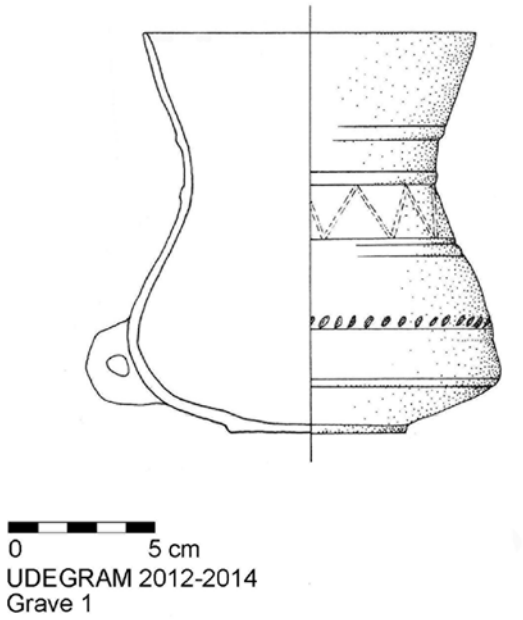


Fig. 180. Udegram, October-November 2012. The ceramic furnishing of Grave 1 (Drawings by M. Vidale).

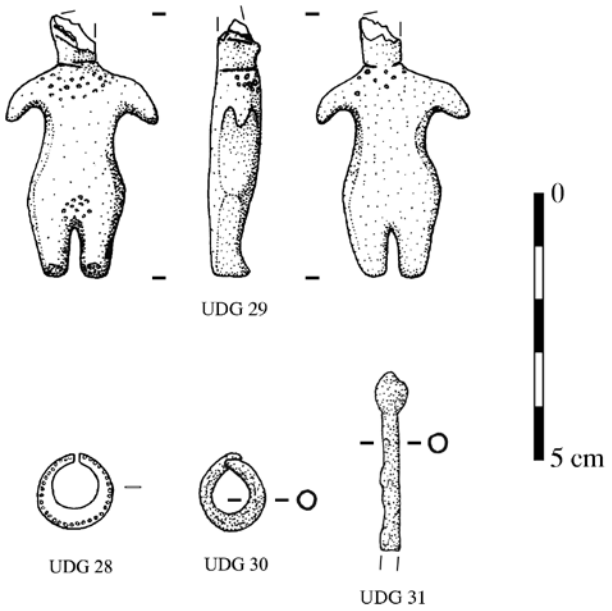


Fig. 181. Udegram, October-November 2012. Other objects found in Grave 1 (See Pl. IX) (Drawings by R. Micheli).

Swat, causal factors might have been bad hygienic conditions and ensuing parasitical infections, as well as diets poor in B12 vitamin - present in food having animal origin[23].

[23] Walker et al. 2009: 118.

Grave 1 – The furnishings

Within SU (134) (a secondary filling): a grey biconical vessel with a perforated lug on the maximum expansion (Vessel 1/ UDG 61); within SU (135), associated with Individual 1: a gold ear-ring with embossed decoration (UDG 28/Or1); nearby, a copper/bronze pin (UDG 31). Within SU (139), belonging to the burial of Individual 2: a strongly stylized terracotta female figurine with incised dots patterns (UDG 29); and a copper/bronze ear-ring (UDG 30).

Vessel 1, UDG 61, SU (135). Large biconical beaker with a vertical lug on the maximum expansion, three horizontal ridges extending from the neck to the shoulder, and an unusual decorative zig-zag pattern made by pattern burnishing on the shoulder. Above the maximum expansion, a continuous row of oblique impressions. Height 13.7, max. diam. 14.3 cm. Very Fine grey ware without visible inclusions (light brownish grey, 10YR 6/2). Wheel-thrown, trimmed along the base. The form is that of type VTd26 discussed for Grave 10, Vessel 7; variations are a zig-zag line gently scratched at the base of the neck, and a single vertical lug below the point of maximum expansion. This latter feature appears on another biconical vessel in Pl. XIXb, T. 85/10 (LB); it is also recorded (although rarely) also in other forms (see for example Pl. VIIIa, a hemispherical bowl in T. 34/3, and Pl. CXXIIIc, T. 20/7, both at Loebanr).

List of SUs

SU (128) The rammed earth wall forming the northern side of the cist or chamber (homogeneous silty clay, light yellowish brown, 10YR 6/4; with landsnails).

SU (128a) The opposite, southern wall of rammed earth of the same cist: while the opposite wall was made with clean clay, this wall was made of silty clay with fragments of protohistoric ceramics and tiny fragments of human bones (brownish yellow, 10YR 6/6). This earthen wall was directly built with sediments taken from other graves on top of the schist slabs covering the older Grave 20.

SU (130) Two of the three schist slabs originally placed on top of the earthen cist when this latter was finally closed. The two slabs were found still undisturbed in situ, with joins sealed by minor elongated stone elements.

SU (129) Loose, uneven filling of sandy silt with abundant gravel, unearthed below the schist slabs just mentioned. Yellowish brown (10YR 6/4) with mottlings of grey clay (2.5Y 7/2).

SU (133) A layer of pure silty clay (10YR 6/4), free from inclusions, but embedding a regular level of sliding sheet-like schist fragments.

SU (134a) A layer of pure, water-laid clay sheets.

SU (135) The main filling episode: the matrix was made of a greyish silty clay, rich in human bones. It refers to the secondary burial of Individual 1 (human bones packed in a cloth bundle, covered by a skull). Besides the remains of Individuals 1 and 2, it embedded the copper/bronze pin UDG 31.

SU (136) The horizontal slab forming the floor of Grave 1.

SU (137) A layer of silty clay with fine gravel, observed below the basal slab of schist; probably an artificial filling made during the preparation of the Grave's chamber.

SU (139) In the same matrix, this Unit refers to the other secondary burial of Grave 1, labeled Individual 2.

14C dating: Sample 2 (LTL13328A), taken from a long bone fragment of Individual 1, SU (135): 2785±45 BP or 1044-830 cal. BCE at the confidence level of 2 sigma (95.4%). Sample 3 (LTL13333A), taken from a long bone fragment of Individual 2, SU (139): 2659±40 BP or 901-792 cal. BCE at the confidence level of 2 sigma (95.4%) (Table 3; Pl. XIV).

Grave 19

The excavation of this Grave (Fig. 182), in the north-western corner of the investigated area, revealed that this feature, at the edge of the recent agricultural terrace, was conserved only for about one third of its original length. It contained a single secondary burial. Although badly damaged, this Grave confirmed the usual dynamics of filling (Figs. 183-185; cross section of the Grave's filling in Fig. 186) – first came horizons of pure hydromorphic clay, perhaps even before the burial, see SU (148); then the chamber hosted the reduced bones, deposited together with three broken iron pins (Figs. 187 and 188). The depositional context of bones and pins is undisturbed and therefore archaeologically fully reliable.

The bones of the burial, together with the iron pins, were buried in an empty space, as they were slowly embedded in the usual lenses of hydromorphic clay, SU (147) and (146), produced by the erosion of the rammed earth walls. The uppermost filling episodes have the same origin – SUs (143) and (144) – but were disturbed on top by a animal burrow, partially filled, in turn, by laminated clay lenses, SU (145).
The implications of the iron pins (drafted in Fig. 189), their context and dating are discussed in some detail in Appendix 1.

Grave 19 – The occupant

An adult, older than 20 years at the moment of death. Because of the limited number of bones abandoned in the Grave, the sex could not be established. Also, the age could not be more precisely singled out, even though the good conditions of the third left maxillary point to a young individual. On every preserved molar there are traces of tartar.

Grave 19 – The furnishings

Grave 19, besides a few potsherds, had no ceramic containers, and is the only Grave at Udegram that was furnished with iron artefacts. The objects include only iron pins: a specimen with a cone-shaped head found aside the skull, worn as an ornament by the deceased and still in situ (UDG 36), undisturbed in SU (147); plus fragments of a second iron pin (UDG 37) and the point of a third object of the same type (UDG 38) in the layers containing the human bones (see Pl. X and Fig. 189).

List of SUs

SU (142) A schist slab, one of the three that originally formed the roof.
SU (143) The uppermost inner filling of the Grave's chamber, made of silty clay.

SU (145) A deposit formed by lenses of hydromorphic clay alternating with levels of loose sand and fine gravel (colour 10YR 6/6).

SU (146) A layer of homogeneous silty clay below SU (145). It contained an iron pin (UDG 36).

SU (147) A layer of silty clay containing the bones of the secondary burial, two other broken iron pins (UDG 37, UDG 38), and potsherds.

SU (148) Basal layer of hydromorphic silty clay sheets (2.5YR 5/6), free from inclusions or archaeological materials.

SU (268) Basal schist slabs of the Grave's floor.

SU (144) The rammed earth wall (?) forming the chamber, North side.

SU (267) The rammed earth wall (?) forming the chamber, South side.

14C dating: Sample 10 (LTL13336A), taken from phalanges of the secondary burial, SU (147): 2707±40 BP, or 928-802 cal. BCE at the confidence level of 2 sigma (95.4%) (Table 3, Pl. XV).

The northern funerary chambers

On the northern stretch of the area excavated with the Main Trench, SU (5), although showing the usual clusters of post and animal holes, was, on the whole, more eroded than the rest of the same horizon. The northern sector

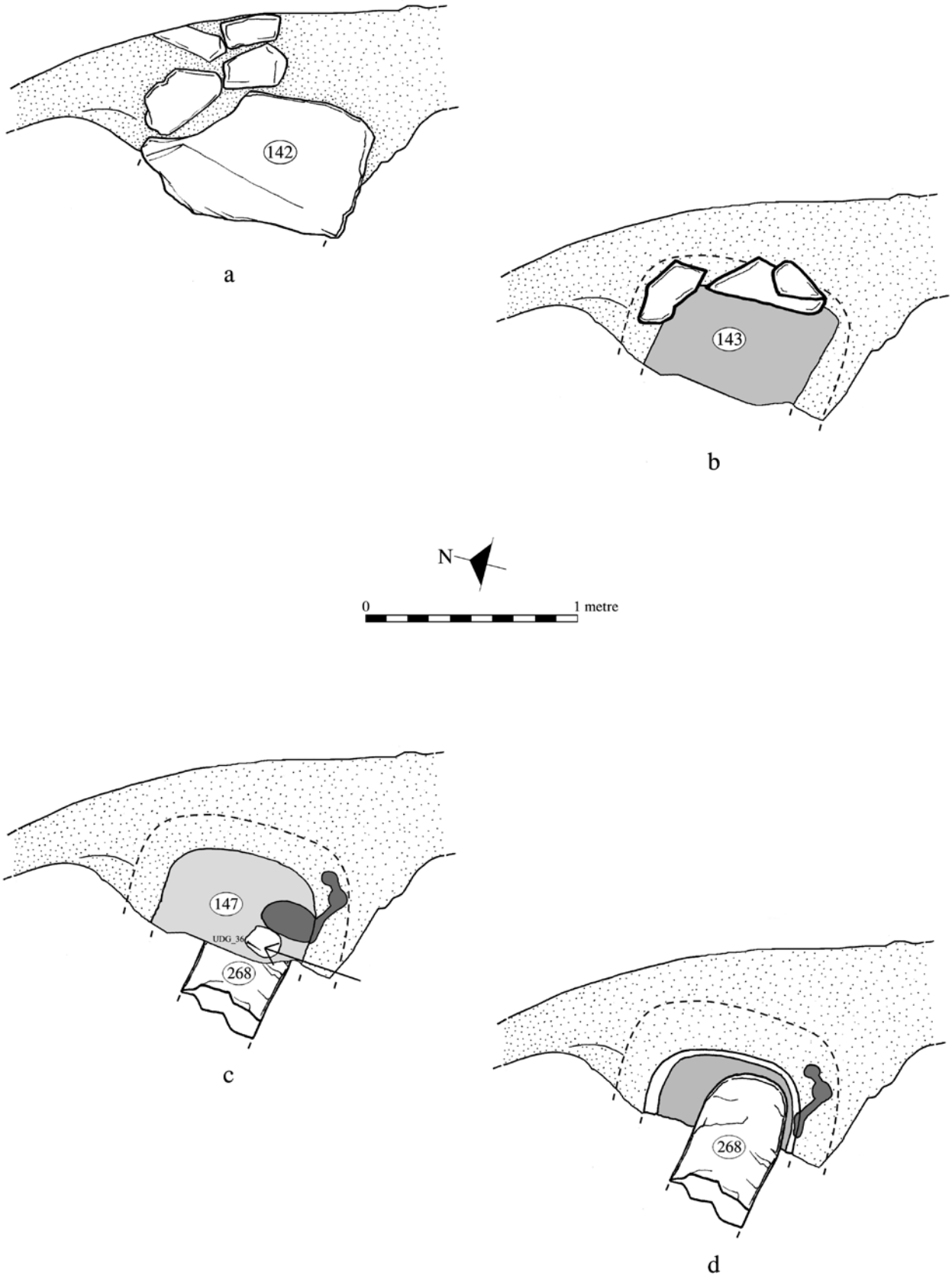


Fig. 182. Udegram, October-November 2012. Grave 19: a) Remnants of the roof of schist slabs; b) The filling of the cist before excavation; c) Location of the cranium of the secondary burial in primary association with an iron pin (marked by the arrow); d) The basal slab of the grave (Drawings by R. Micheli).

of the Main Trench was entirely occupied, for an area of 6-7 sqm, by part of a complex funerary construction, sub-rectangular in the available groundplan, almost entirely surrounded by a thick wall of rammed earth, labelled SU (175). This construction, with the long side oriented South-North, was divided in the North side by a partition wall made with the same material and technique, thus defining a series of Loci, respectively called, from South, Locus A/1 (hosting Grave 27), Locus A/2 (under the outline of which was later reached Grave 29), Locus B (hosting Grave 26), and, in the northernmost stretch, the rectangular space where Grave 28, re-opened by Pit 1 North, was excavated.
Loci A/1 and A/2 respectively correspond to the southern and northern part of a single chamber. Loci A/1 and A/2 were filled with deposits labelled SU (174) and SU (173), while Locus B contained SU (172). These filling layers, on the whole, were considered as formed in the same way and at least roughly contemporary.
The general map of the graveyard (Fig. 83) shows how the three Loci surround Grave 29, built after Grave 27. Both Graves 29 and 27 received after the final closure of their chambers the offering of large vases, conserved where they had been in complete forms or in large parts (respectively, Vessels 5 and 4, see below). Grave 28 was built after Grave 18, that in turn followed the erection of Grave 26. On the whole, as far as we could judge on the base of such partial exposure, this construction may be interpreted as a group of funerary underground buildings, used by the same family or kinship segment for a relatively long period of time, with some architectural change and maintenance works. A massive platform made of rammed earth, SU (167), was built on top of the roofing of Grave 29. It was about 40 cm thick, and it shorter side measured ca. 1-70 m. It had on top the usual post-holes and/or animal burrowing holes, its orientation was North-South (and as it entered in the eastern section, its full extension and architectural context were not fully investigated).
Grave 30, built between the platform SU (167) and the external partition wall SU (175), is one of the latest addition to the complex, as is Grave 28: the southern edge of its chamber, built with some courses of small, flat schist slabs, was built as a kind of re-enforcement of the uppermost trampling surface of the northernmost partition wall.

Grave 18 (unexcavated)

After the removal of the upper layers (colluvial sheets above the ancient plowing furrows) with Kushana potsherds, in the northern sector we exposed the head of SU (5), marked by the usual groups of post-holes and animals' burrows, filled with a darker matrix. This surface, in the northern sector, seems to be more eroded than in the southern extension. On the eastern side, below SU (5) we unearthed, in the eastern section of the Main Trench (in its northern corner) Grave 18, that was not excavated.

List of SUs

SU (125) Upper covering schist slabs of the Grave's roofing.

SU (127) Filling of the Grave's chamber.

Grave 28 and its re-opening (listed with the label Pit 1, North)

Grave 28 (Fig. 190) was surrounded at North and West by the thick rammed earth enclosure described above as SU (175), while its southern and eastern sides were protected by a wall made of ca. 12-13 courses of superimposed

Fig. 183. Udegram, October-November 2012. Grave 19 before excavation (Photo by R. Micheli).

Fig. 184. Udegram, October-November 2012. Recording the cross-section of Grave 19 (Photo by R. Micheli).

Fig. 185. Udegram, October-November 2012. The section of the filling of Grave 19 (Drawings by R. Micheli).

Fig. 187. Udegram, October-November 2012. Grave 19: cranium with an iron pin on the temple (Photo by R. Micheli).

Fig. 188. Udegram, October-November 2012. Grave 19: a fragment of another iron pin found in the filling (Photo by R. Micheli).

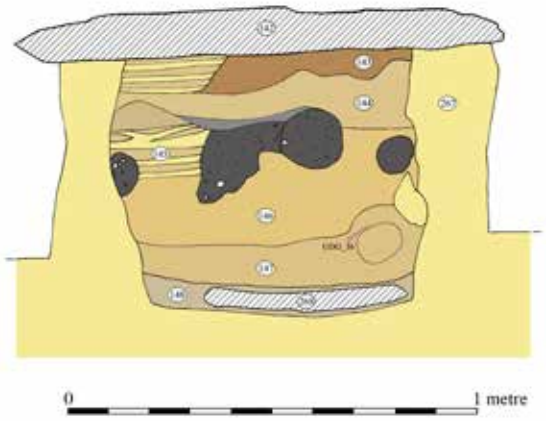


Fig. 186. Udegram, October-November 2012. The cross-section of Grave 19 (Drawings by R. Micheli).

flat slabs of schist, listed as SU [126]. The upper part of the mortuary chamber was filled by a homogeneous layer of compact water-laid silty clay, SU (127), indicating a slow filling process of an empty space. Grave 28, at the end of the dig, turned out to contain the disturbed skeletal parts of two Individuals (1 at left, 2 at right) whose crania were set one in front of the other, in a strongly symmetrical setting, with the mascillary teeth in direct contact (Figs. 191-193). Obviously enough, on the field we constantly referred to them as "the Lovers", and actually, later, they turned out to be a couple (male and female). The secondary arrangement of the crania, mouth to mouth, look like a purposeful representation implying an intimate relationship between the two persons. The long bones of both Individuals were piled at the height of the chest, on the right side, while the minor bones, including the ribs, coxal bones and clavicles were clustered to the left. When we reached the floor of the chamber we found three vessels placed near the crania, in the north-eastern corner (Vessels 5, 6 and 9, Fig. 194a, see below).

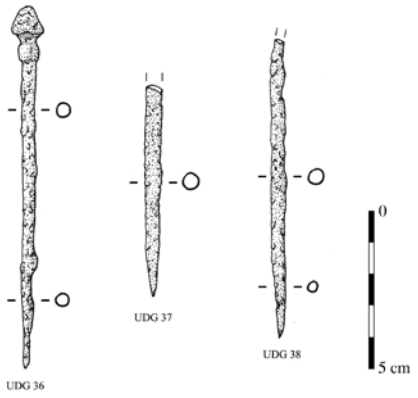


Fig. 189. Udegram, October-November 2012. The iron artefacts found in Grave 19 (Drawings by R. Micheli).

At a certain moment, the western part of the burial, or its edge, was re-opened and Pit 1 North – SU <182> – was excavated. Pit 1 North, a small square trench, was filled by SU (172a). In the new cavity, the available surface was entirely occupied by a group of three globular jars (Vessels 1-3), a vessel with a restricted mouth (Vessel 4), and a beaker (Vessel 7) set below Vessel 4. Within Vessel 3 we found a miniaturistic cup, Vessel 9, and a few fragments of human bones. Vessel 2, in turn, contained a chlorite spindle whorl, intentionally shattered before being deposited, and a single tiny fragment of a human skull (Fig. 194b). Fragments of another spindle whorl, in terracotta, were found in the centre of Pit 1 North, surrounded by the four vases. Pit 1 North was presumably somehow related to the occupants of Grave 28, but we cannot be more precise. One of the possibilities is that in Grave 28 the placing of ceramic containers on the decayed bodily parts had the same symbolic meaning hypothesized for the re-exhumation of Grave 3 – a visit and an offer to the dead (?).

Grave 28 – The occupants

Both Individuals (1 and 2) buried in this Grave are secondary interments. With the noticeable exception of the facing crania, the bones seem to be scattered without a precise order, although long bones, at least in part, appear gathered in one or more bundles and placed above the rest – as observed, at any rate, in many other graves.

Individual 1 was a female who died at an age included between 30 and 40 years. She was recognized as such because of the sexual features of the pelvic girdle (as usual, after the wide ischiatic groove) and because of the general size of the cranium and postcranial skeleton (diameter of the femur's head = 40 mm). The age is inferred by the evidence of the dentition, fully compatible with the stage of soldering of the bones. The fragmentation of the bones prevented any pathological observation.

Individual 2 lived longer than 1. He was possibly a male, at the moment of death older than 40 years (a more detailed estimate was impossible). The sex is suggested by the sexual characters of the cranium (sturdy

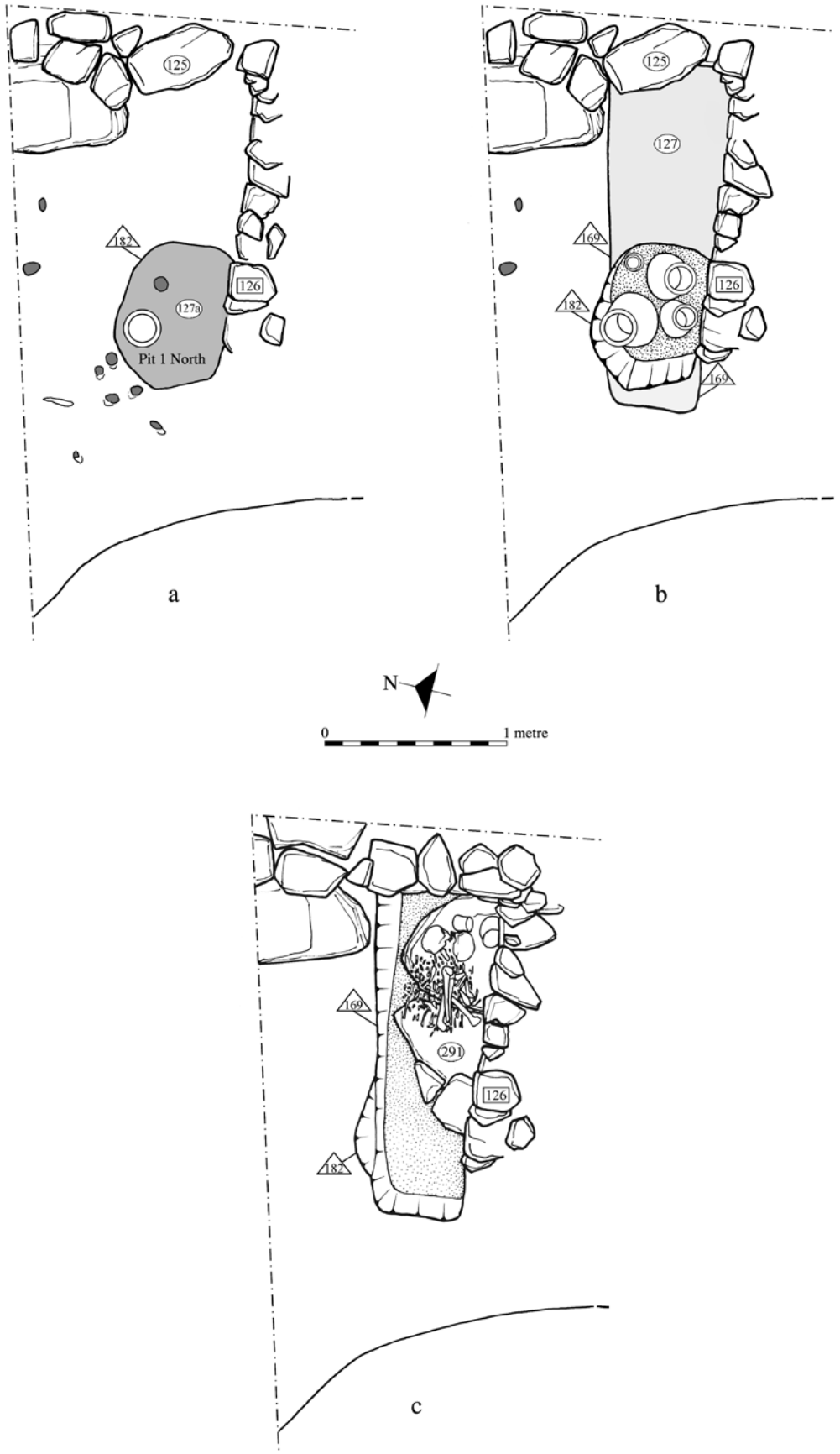


Fig. 190. Udegram, October-November 2012. Grave 28: a) The filling of Pit 1 North; b) The pottery group of Pit 1 North; c) The double secondary interment of the eastern side of Grave 28 (Drawings by R. Micheli).

Fig. 191. Udegram, October-November 2012. The general context of Grave 28 in the north-eastern corner of the Main Trench (Photo by R. Micheli and M. Vidale).

Fig. 192. Udegram, October-November 2012. Grave 28 – Pit 1 North at the end of the excavation (Photo by R. Micheli and M. Vidale).

Fig. 193. Udegram, October-November 2012. Grave 28: the double secondary interment (Photo by R. Micheli).

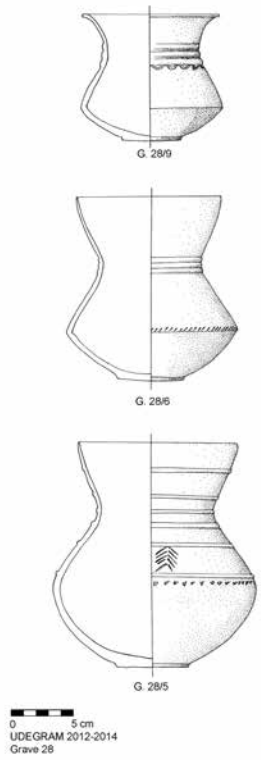


Fig. 194a. Ceramic furnishing of the Grave 28 associated to Individuals 1 and 2 (Drawings by M. Vidale).

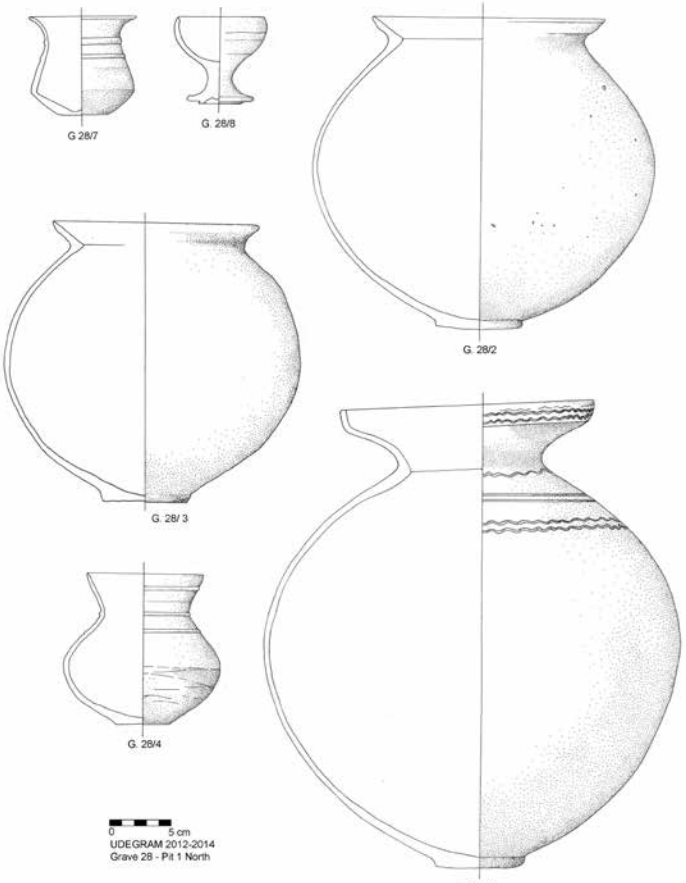


Fig. 194b. Grave 28 – Pit 1 North, The ceramic furnishing of Pit 1 North (Drawings by M. Vidale).

mandible and mastoid, although the rest of the bones have a limited size: the diameter of the femur's head is 42.6 mm). Like for Individual 1, given the poor conditions of the bones, no pathological indicators were on record. Both Individuals have wormian bones on the cranium and olecranic holes on the humeri, a possible hint to a kinship link between the two subjects.

List of SUs

SU (167) The edge of the topmost surface of the multi-roomed funerary feature, probably transformed, at the time of construction of Grave 28, in a kind of platform. SU (167) was a re-enforcement of the North face of one of the partition walls of the construction, made of small, flat schist slabs inserted in mud. SU (167) also formed the southern and eastern wall of the chamber of Grave 28.

SU <169> Negative interface of the pit of Grave 28.

SU (126) The perimetral wall of the Grave's chamber, on the southern and eastern side of the chamber; made with about 12-13 courses of flat schist slabs.

SU (127) The original filling of the chamber of Grave 28: a hard, compact layer of pure silty clay.

SU <182> The negative interface of the excavated Pit 1 North.

SU (127a) An artificial layer of silty clay filling Pit 1 North around the vessels and the other artefacts it contained.

SU (291) Chamber's floor utilizing the covering schist slabs of the Grave 26.

Grave 28 – The furnishings

The Grave, in its less disturbed eastern part, near the two joined crania, contained a vessel (Vessel 5/UDG 79); a bi-conical vessel (Vessel 6/ UDG 80); and a small bi-conical vessel or beaker (Vessel 9/ UDG 78).

Vessel 9, UDG 78, SU (127). Small bi-conical, carinated vessel or beaker with everted rim, two horizontal ridges at the base of the neck, and a discontinuous wavy line below. Height 10.3 cm, max. diam. 11.3 cm. Fine red ware (reddish yellow, 5YR 7/8). Wheel-thrown, base trimmed. The form may be linked to Silvi Antonini and Stacul's (1972) type VTc33, exemplified at Fig. 9f (from Loebanr, T. 41/4). Other examples appear *ibid.*, Pl. XXIIa and b (from graves at Loebanr and Katelai). See also PL. CXXIXb, T. 41/8 (LB); Pl. CCXXIIIb, T. 48/15 (LB); Pl. CXLc, T. 121/11 (LB); Pl. CCXXXVb, T. 144/2 (KTL); Pl. CCXXXVd, T. 185/12 (KTL); Pl. CCLVa, T. 17/16 (BTK); Pl. CCLVIa, T. 21/2 (BTK); Pl. CCLVIb, T. T. 23/1 (BTK); Pl. CCLXIIc, T. 42/8 (BTK).

Vessel 5, UDG 79, SU (127). Small pear-shaped jar with a truncated-cone shaped neck, and five horizontal parallel ridges running from the neck to the maximum expansion point. Height 18 cm, max. diam. 16.3 cm. Very fine black ware, free from visible inclusions. Covered with a dark slip (dark grey, 7.5YR 4/0). Wheel thrown, trimmed on the base. The form and decoration resemble closely that of pot VTd20 in Pl. XIVd (T. 17/17, from Butkara II).

Vessel 6, UDG 80, SU (127). Pear-shaped carinated beaker, with three contiguous ridges on the transition between shoulder and neck; a series of thin oblique traits impressed just above the carination. Height 15 cm, max. diam. 14 cm. Fine red ware without visible inclusions. Wheel thrown, trimmed on the base. For comments and comparisons of this form, Silvi Antonini and Stacul's (1972) VTd28, see what written concerning Grave 3, Vessel 1. See also Pl. CCXVIb, T. 16/6 (LB); and PL. CCLVIa, T. 21/7 (BTK).

14C dating: Sample 8 (LTL13332A), obtained from small bone fragments of the secondary burials: 3056±40 BP or 1416-1214 cal. BCE at the confidence level of 2 sigma (95.4%) (Table 3, Pl. XV)[24].

[24] For a chronological and cultural evalutation of this 14C dating see discussion in "Concluding remarks".

Pit 1 North (re-opening of Grave 28) – The furnishings

The Pit contained three globular vases (UDG 74/Vessel 1; UDG 75/Vessel 2; UDG 73/Vessel 3); a beaker (UDG 81/Vessel 7), found below Vessel UDG 77/Vessel 4. UDG 73/Vessel 3 contained a miniaturistic cup on a high foot (UDG 82/Vessel 8), while inside Vessel 2 was found the chlorite spindle whorl UDG 40 (Fig. 194b, 195).

Vessel 1, UDG 74, SU (127a). Large globular jar with a short concave neck and a subvertical inflected rounded rim. Three wavy grooves on the exterior of the rim, one below the neck, followed by two horizontal grooves and other two wavy lines at the base of the shoulder. Height 38 cm, max. diam. 35 cm. Coarse ware with quartz grain, slipped red (reddish yellow, 5YR 7/8). Base moulded, body assembled with coils and beaten by paddle and anvil, mouth made with coils thrown on the potter's wheel. In the system of Silvi Antonini and Stacul (1972) this large form is easily classified as type VTf72I (Fig. 17b, from Loebanr, T. 169/7). Other similar specimens appears *ibid.*, Pl. XLIIb and c (respectively from Loebanr T. 97/5 and Katelai, T. 189/6). It seems that the inflected rim, on this general class of vessels, is consistently related to decorative patterns on the shoulder: see for example Pl. XLIIIa, from T. 212/5 (KTL). See also Pl. CCXXXVa, T. 189/6 (KTL); Pl. CCLIIb, T. 14/1 (BTK). The form is probably related also to the globular jar Grave 3, Vessel 2 (see for more comments and comparisons).

Vessel 2, UDG 75, SU (127a). Globular pot with short everted rim. This latter is slightly pointed and thickened in the middle. Height 26 cm, max. diam. 28 cm. Coarse red ware, slipped on the exterior (reddish yellow, 5YR 6/8) with quartz grains. Base moulded, body assembled with coils or slabs, and beaten by paddle and anvil, mouth thrown on the potter's wheel. Vessels 2 and the following 2 are cooking pots like those deposited in several Graves of Gogdara IV (Grave C) and Udegram (Graves 2, 7, 9, 10 so far reviewed). See for comments and comparisons, in the section of Gogdara IV, Grave C, Vessels 3 and 8.

Vessel 3, UDG 76, SU (127a). Globular pot with short everted rim, slightly pointed. Height 23 cm, max. diam. 24.5 cm. Coarse red ware with schist flakes, covered with a red slip (red, 2.5YR 5/6). Base moulded, body assembled with coils or slabs, and beaten by paddle and anvil, mouth thrown on the potter's wheel. For comments and comparisons see Gogdara IV, Grave C Vessels 3 and 8.

Vessel 4, UDG 77, SU (127a). Large pear-shaped beaker with flat globular body and three horizontal ridges on the neck and the shoulder. Height 12.5 cm, max. diam. 13 cm. Fine black ware without visible inclusions, slipped on the exterior (black, 7.5R 2.5/0) and burnished. Wheel-thrown, extensively trimmed with spirally movements on the base. Again, Silvi Antonini and Stacul's (1972) type VTd28, see comments on Grave 3, Vessel 1.

Vessel 7, UDG 81, SU (127a). Biconical carinated beaker with everted rim; two horizontal ridges on the shoulder. Height 8 cm, diam. max. 8.5 cm. Fine grey ware (light brown, 7.5YR 6/4) with mica sheets visible on surface. Wheel-thrown, trimmed on the base. Corresponds to Silvi Antonini and Stacul's (1972) type VTc33; similar to Grave 28/9, refer to this latter Vessel for comments and comparisons.

Vessel 8, UDG 82, SU (127a) Miniaturistic hemispherical cup on a solid high foot found inside Vessel 3. Height 7 cm, max. diam. 7.5 cm. Fine red ware (reddish yellow, 5YR 7/8) with mica particles on surface. Wheel-thrown in a single step, base separated from the clay lump with a blade. Silvi

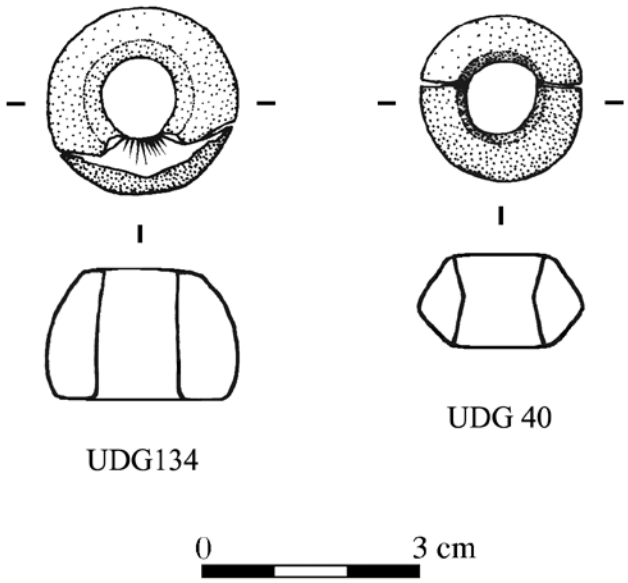


Fig. 195. Udegram, October-November 2012. Grave 28 and Pit 1 North: chlorite and terracotta spindle whorls of the furnishing (Drawings by R. Micheli).

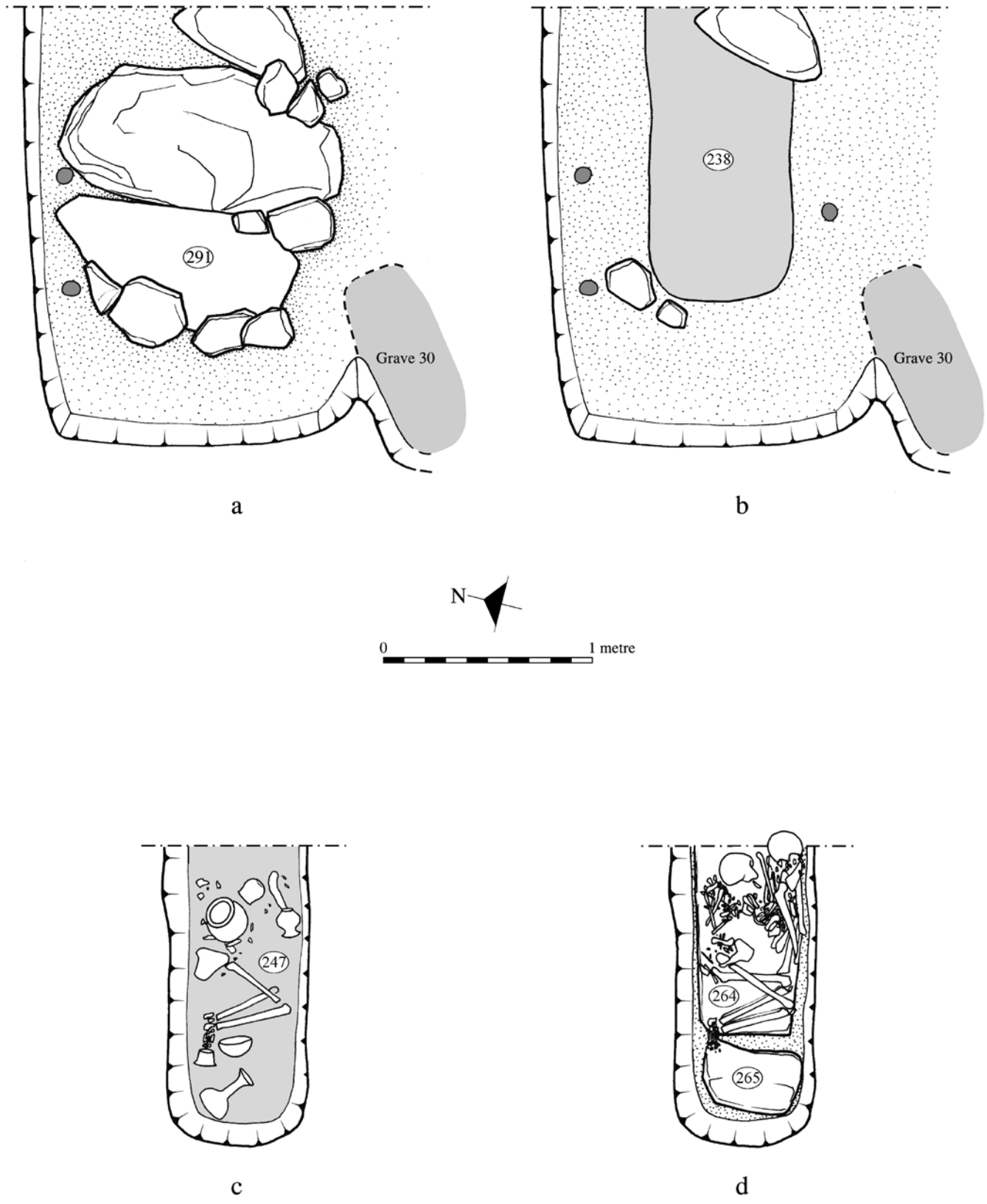


Fig. 196. Udegram, October-November 2012. Grave 26: a) The slabs of the roof; b) The surface of the Grave's filling; c and d) The depositional level of the Grave's floor, with the ceramic furnishings and the skeletal remains of Individuals 1 and 2 (Drawings by R. Micheli).

Antonini and Stacul's (1972) type VTd6I, "bowl with a large mouth and flattened body, almost vertical rim and (variant) without stem and low pedestal full within" (Fig. 3f, T. 30/17, Butkara II). See also Pl. CXXXIIIa, T. 48/8 and 10 (LB); Pl. CXLIVc, T. 157/4 (LB); Pl. CCXIIc, T. 1/4 (KTL).

Grave 26

Grave 26 (Fig. 196), was excavated at the end of the Campaign by L.M. Olivieri who recorded the following details. Found at the northern limit of the Main Trench, it was oriented, like the others, from East to West. It was covered by three parallel slabs, one of which entering into the wall of the section, joined along the longer sides, perpendicular to the main axis of the chamber (Figs. 197 and 198). Post-holes were identified along the edges of the slabs. Another schist slab of lesser size laid at the base of the construction. The funerary chamber, thus covered, was surrounded by an earthen wall, 35-40 cm thick, made with a pure silty clay yellowish-reddish in colour, whose inner edge supported the schist slabs. The perimetral earthen wall was labelled SU (167).
Once removed two of the covering slabs (those falling within the limits of the Main Trench) we uncovered SU (234), a silty clay layer forming the topmost part of the chamber's filling. On top of this formation we recorded SU (236), a compact lens of whitish fine gravel, with schist fragments and potsherds. A few of these latter had been set vertical to seal the joins between the schist slabs of the roof.
The Grave's pit or chamber measured > 1.26 x 0.64 (> 0.56 m) (the northern side of the Grave entered in the section, and the southern one was not properly identified). The upper part of the pit, at North and South, has a stepped profile, with two inner benches whose top appeared ca. 20 cm below the uppermost covering slabs. Below the slabs was uncovered SU (238) distinguished by lenses of gravel; then, 20 cm below the slabs, SU (239), a clayey, compact mud-like sediment matching the head of the two inner benches; at a depth of 0.47 m, appeared SU (240), with gravel lenses identical to those embedded in SU (238); at - 0.56, we found SU (247), a layer of fine hard clay like SU (239).
Thus, the filling of the upper part of the pit of Grave 26 re-proposes the usual succession of gravelly deposits (from re-opening?) and clayey lenses (slow natural filling) observed in many other cases. With the head of SU (247) came to light the mouth of a globular cooking vessel (Vessel 1) (Fig. 199). Su (247) entirely filled the rest of the Grave's chamber down to the floor.
Eventually this feature turned out to be a double Grave, hosting the remains of Individual 2, set on the right side and facing South (a pile of scattered bones, plus the cranium) and Individual 1, a primary partially disturbed burial, laid on the left side and facing North) (Figs. 199, 200). On the floor were found the following ceramics: Vessel 1, near the thoracic cage of Individual 1, Vessel 6 near Vessel 1, Vessels 2, 3 and 4 on the legs of the same Individual 1, Vessel 5 to the South of the cranium of Individual 1, Vessel 7 at left of the cranium of Individual 1. After the removal of the skeletal parts, we uncovered the floor, made with a longitudinal slab [264] and a smaller, orthogonal one [265], that

Fig. 197. Udegram, October-November 2012. The locational context of Grave 26 (at right in the picture), still covered by its upper slabs, at the northern edge of the Main Trench (Photo by R. Micheli).

covered an inner earthen step. The right foot of Individual 1, and Vessels 2, 3, 4 rested on the same step.

Grave 26 – The occupants

Individual 2 (the secondary burial of Grave 26), as usual was inserted after Individual 1, a primary deposition. The skeleton of this latter was disturbed and partially displaced in this ritual re-opening: the cranium and the lower part of the post-cranial skeleton appear in their original setting, while the upper part was manipulated, the bones being chaotically scattered around.

Individual 2, the second occupant, had poorly preserved bones, and was an aged female (>55-60 year old at the moment of death). The sex was established after some features of the cranium (small-sized mandible and mastoid) and of the pelvic girdle (wide ischiatic groove and deep preauricular sulcus). The age at death was certainly greater than 55-60 years, as revealed by the conditions of the teeth and of the auricular surface of the ilium and by the general appearance of the skeleton. She had a slight arthrosis at the articulation of the shoulders, between scapulas and humeri; a stronger arthrosis was visible in the cervical vertebrae.

Individual 2 had developed a strong non-masticatory wear on the left mandibular premolars, which were used as a "third hand" in some working process. The surviving teeth were affected by caries. The diameter of the left femur's head (40.9 mm), its anatomical length (44.8 cm) and its maximum length (45. 2 cm) support the following presumed stature: Sjøvold ±168.35; Trotter and Gleser (African-American males) ±165.72.

The skeleton of Individual 1, the primary disturbed burial, was a 30-40 year old male. His bones were strongly fragmented and heavily decayed on surface. The sex was attributed after the general size of the skeleton and the robustness of the massive cranium (glabella and mandible).

The age at death – between 30 and 40 years – was estimated on the base of the wear of the dentition. Although

Fig. 198. Udegram, October-November 2012. The upper slabs of Grave 26, flanked by some post-holes (Photo by L.M. Olivieri).

Fig. 199. Udegram, October-November 2012. Grave 26: the main depositional level in course of excavation (Photo by L.M. Olivieri).

Fig. 200. Udegram, October-November 2012. The skeletal remains of the occupants of Grave 26 at the end of the dig (Photo by L.M. Olivieri).

he had caries and abscesses, the molars, particularly those of the mandible, are scarcely worn and the right mandibular M3 had erupted shortly before. The only visible pathologies affected the teeth: all the maxillary right molars and the left mandibulary molars were lost in life. The right mandibulary M1 and M2 are damaged by caries, and in correspondence of M1 there is an abscess. A grade 2 formation of tartar appear on all the incisors, on the right canine and on both the mandibulary premolars.

Grave 26 – The furnishings

The ceramics found in Grave 26 (illustrated in Fig. 201) include a globular jar (Vessel 1); a high stemmed cup (Vessel 2); a bowl (Vessel 3); a beaker (Vessel 4); a cup on a raised foot (Vessel 5); a pot (Vessel 6); a pot-beaker (Vessel 7).

Vessel 1, UDG 137, SU (247). Large globular jar with a short concave neck and a everted rim. Height 23 cm, max. diam. 23 cm. Coarse ware with schist, quartz grains and mica. The outer surface is slipped red (reddish brown, 5YR 6/6), spalled by heat and covered by parallel bands of black sooth. Moulded and enlarged by paddle and anvil; the mouth is wheel-thrown. A cooking pot of the usual type: see, as usual, Gogdara IV, Grave C, Vessels C/3 and C/8.

Vessel 2, UDG 138, SU (247). High stemmed cup with restricted mouth and a horizontal ridge running on the exterior below the mouth. Height cm, max. diam. cm. Very fine grey ware, 2.5YR 6/0; made on the potter's wheel in three pieces joined and carefully scraped in a leather-like state of hardness. The form has previously been discussed in reference to Grave 2, Vessel 11.

Vessel 3, UDG 139, SU (247). Hemispherical bowl with inflected rim, rounded and a slight ring-like foot. Height 9 cm, max. diam. 17.8 cm. Fine grey ware, wheel-thrown, trimmed along the base (light grey, 5YR 6/1). The form has previously been discussed in reference to Grave 7, Vessel 4.

Vessel 4, UDG 140, SU (247). Small carinated subcylindrical beaker, with a wide everted rim and two bands of horizontal parallel grooves on the outer wall. Height 7 cm, max. diam. 9 cm. Fine grey ware without visible inclusions, (light brownish grey, 10YR 4/2). Wheel-thrown, trimmed on the base. See for comments and comparisons Grave 2, Vessel 4.

Vessel 5, UDG 141, SU (247). Sub-globular cup on a high foot with a pointed subvertical rim. Height 13 cm, diam. max. 11.4 cm. Fine grey ware (light grey, 5YR 7/1). Wheel-thrown in two pieces later joined together, trimmed on the foot. The form was discussed in reference with Gogdara IV, Grave B, Vessel 2.

Vessel 6, UDG 142, SU (247). Large pear-shaped beaker with two ridges above the maximum expansion. Height 14.5 cm, diam. max. 12 cm. Grey ware (pinkish grey, 7.5YR 6/2). Wheel thrown, trimmed along the lower body and the base. A variant of the pear-like shape already discussed for Grave 8, Vessel 2.

Vessel 7, UDG 143, SU (247). Squat pear-shaped beaker with a ridge above the maximum expansion. Height 11.5 cm, diam. max. 12 cm. Fine grey ware (grey, 2.5YR 6/0). Wheel thrown, trimmed along the lower body and the base; a zig-zag incised line above the ridge. For comments and comparisons about this form see again Grave 8, Vessel 2.

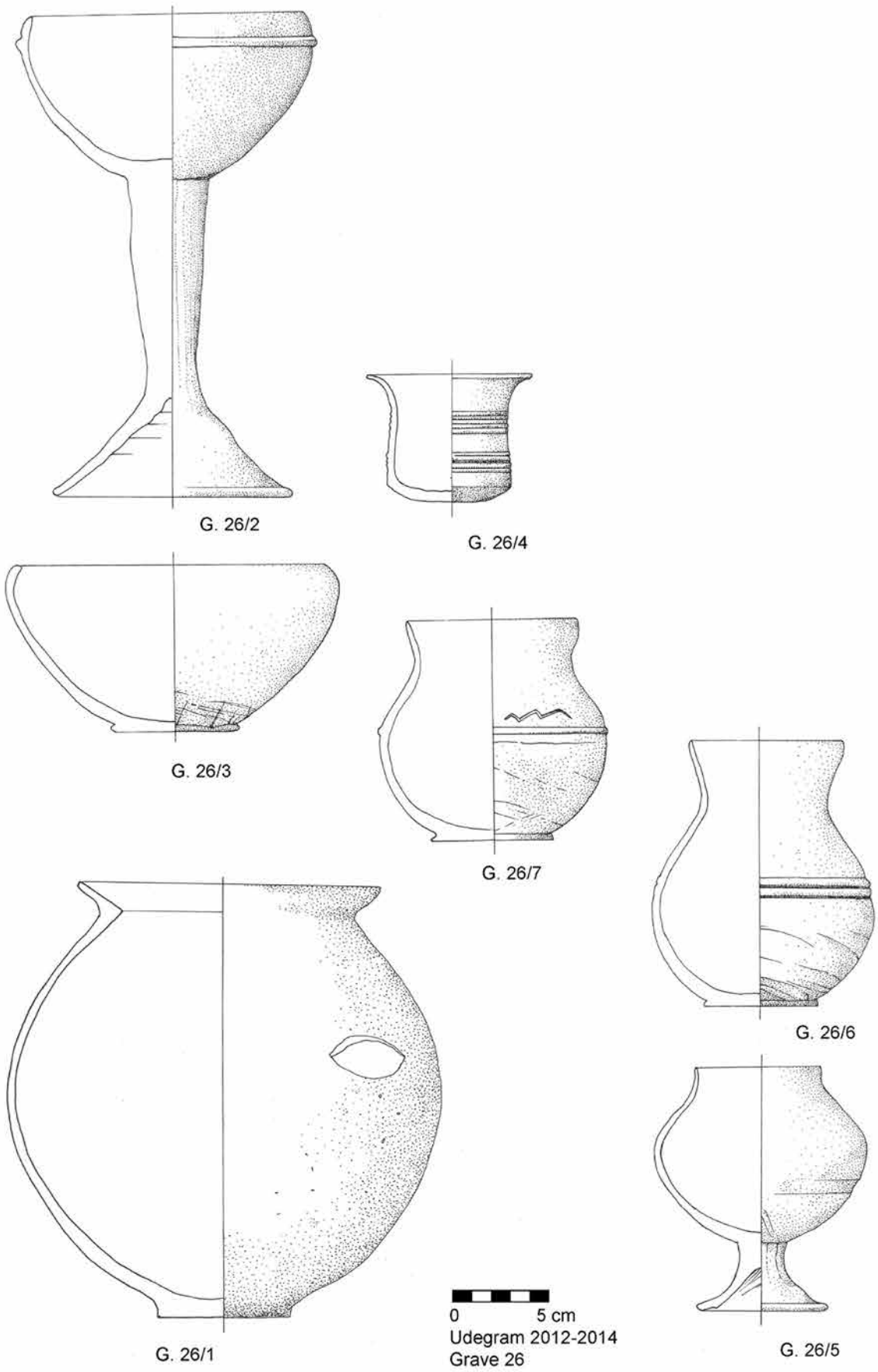


Fig. 201. Udegram, October-November 2012. The ceramic furnishings of Grave 26 (Drawings by M. Vidale).

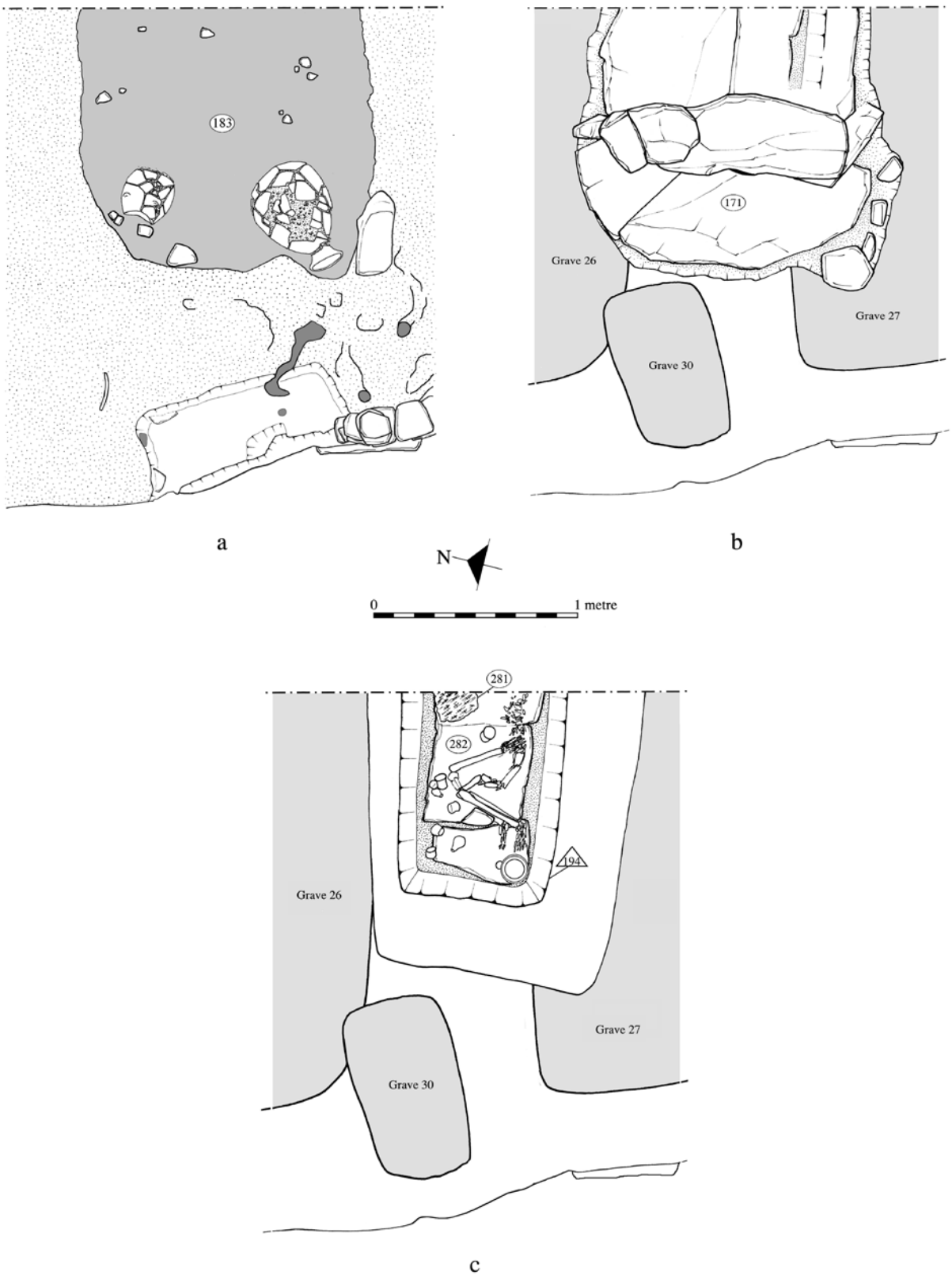


Fig. 202. Udegram, October-November 2012. Grave 29: a) Surface context with a large restricted jar and a four lugged globular pot above the slabs of the Grave's roof; b) The slabs covering the Grave's chamber; c) map of the depositional level of the Grave, with Individual 1 (a primary but disturbed burial) facing Individual 2 (a secondary, highly fragmented secondary interment) and the ceramic furnishings (Drawings by R. Micheli).

List of SUs

SU (253), (252), (260) three schist slabs of the Grave's covering.

SU (234) Residues of the topmost filling of the Grave around and below the schist slabs of the covering, made of light-coloured silty clay with fine gravel.

SU (261), (262) Post-holes found North of the edge of the chamber.

SU (263) A post-hole recorded on the South, opposite side of the chamber, at the edge of the covering slabs.

SU (236) A compact lens of whitish fine gravel, with schist fragments and potsherds, found in the southern side of the chamber below the upper covering slabs.

SU (291) The schist slabs covering the chamber of Grave 26.

SU (234) Layers forming the upper filling of the Grave's chamber, clayey matrix with gravel.

SU (236) A layer of gravel with fragments of schist and potsherds with a vertical setting.

SU (238) A layer very rich in gravel.

SU (239) A layer with a silty clay matrix, compact, with hydromorphic features.

SU (240) A layer with a silty clay matrix, including lenses of loose gravel. It covers the top of Vessel 1, filling its interior.

SU (247) Bottom layers of the Grave's chamber.

SU (264), SU (265) Basal schist slabs of the Grave's chamber floor.

Grave 29 (Grave 33)

While excavating the platform built on top of Grave 29 (Fig. 202), we lowered the surface towards the slabs of the ceiling, SU (171). Above of SU (171) (Fig. 203), there was a large jar with a short restricted conical neck, with a ridge in relief and lugs on the shoulder, preserved for about 2/3 of its body, abandoned on its side, the mouth southwards. Immediately South of the vessel, we found – always on top of SU (171) – a grinding stone oriented East-West, possibly used a grave marker. Near these two objects, between the edge of the platform SU (167) and the southern edge of Grave 28, there was a complete globular jar with a short restricted conical neck and lugs, grooved on the shoulder, lying on its side. The impression was that the three objects (the two globular jars, and the grinding stone) had been set on top of the schist cover, to mark the location of Grave

Fig. 203. Udegram, October-November 2012. The context above the mouth of Grave 29 in the northern group of burials. Note the large jar and the four-lugged globular pot abandoned in the upper filling, an association that closely replicates that observed on top of Grave 22 (Photo by M. Vidale).

Fig. 204. Udegram, October-November 2012. The ceiling slabs on the surface of Grave 29, cleaned after the removal of the upper filling (Photo by R. Micheli).

Fig. 205. Udegram, November 2012. Excavating the main depositional level of Grave 29 (Photo by R. Micheli).

Fig. 206. Udegram, November 2012. Grave 29: the lower limbs of Individual 1, in a sub-primary context of deposition, after the removal of part of the furnishings (Photo by R. Micheli).

29. Then, we cleared the slabs of the ceiling (Fig. 204). One of the slabs was clearly rectangular, with signs of intentional chipping. These slabs had evidently collapsed towards the centre of the chamber, suggesting a fall in an empty space (see below).

Having removed the covering slabs of SU (171), we proceeded to excavate SU (190), the deeper filling of the chamber of Grave 29, for a depth of ca. 50 cm. Its micro- stratigraphy demonstrates a slow filling by re-deposited clayey lenses while the chamber was empty. The first objects to emerge from this filling were an ivory/bone spindle found along the inner edge of the chamber (South wall), a small ceramic bottle (Vessel 2) near the western wall and a globular cooking pot (Vessel 1) in the south-western corner (Fig. 205). At the same time we slowly cleared the badly preserved post-cranial remains of Individual 1 (Fig. 206).

The partially preserved skeleton laid on the right side, undisturbed, in flexed position, facing right; the upper part of the skeleton extended besides the eastern wall of the Main Trench, and had to be cleared in a second moment. As the left femur was shattered below the impact of a slab fallen from above, it is clear that the roofing collapsed before the cavity was substantially filled. Several other small-sized ceramic containers were found around the knees (Vessels 2-10) and in front of the coxal bones of the deceased (Vessel 11). A chipped subtriangular slab of schist laid in front of the lower legs.

Along the northern wall, at the height of the chest, we found SU (198), a patch of weathered and whitish, very

friable human bones, corresponding to Individual 2 (Fig. 207, the bulky object in foreground). The bones had been fragmented almost to powder, and collected within a kind of basket, as demonstrated by a single clay lump from the edge, that retained a wickerwork imprint. A second group of Vessels (12-16, including Vessel 12, a high stemmed cup laid in front of the face) was placed in the north-eastern corner of the chamber.

Grave 29 – The occupants

Individual 1, the primary deposition, was later accompanied by Individual 2, a secondary burial of tiny bone fragments within a basket[25]. Individual 1 was a young adult male, who died at an age of 25-35 years. The skeleton was partial, the bones very fragmented and decayed on surface (this poor conservation prevented any pathological assessment). The sex was inferred after the general size of the skeleton (diameter of the femur's head = 45.82 mm) and the robustness of the mandible; the age, after the stage of eruption of the teeth and the degree of soldering of the bones.

The bones of Individual 2 – SU (198) as stated above, were also poorly preserved and although a few of the bones were in better conditions, the majority were small fragmented, and powdery and fragile at the touch as they had been exposed for a long time and intensively weathered by a long exposure to athmospheric agents. All we can say is that they belonged to a child ±10 year old.

List of SUs

SU (167) The rammed earth wall of another unexcavated enclosure, covering SU (175), the general enclosure of the whole funerary construction.

SU (171) The horizontal schist slabs of the Grave's roofing.

SU (173) = SU (172) = SU (174) The filling of Locus A/2, around the chamber of Grave 29. Together with SU (172), it covered Vessels 4 and 5. The deposit was free from any archaeological inclusion.

SU (190) The inner filling of the chamber of Grave 29, mainly formed by superimposed series of hydromorphic clay lenses.

SU (191) The base of the filling, just above the slabs of the floor, having a similar matrix but richer in organic matter. This basal layer, undisturbed, contained the skeletal remains and all the objects of the Grave furnishing.

SU (281) Remains of a decayed basket containing the crumbling remains of Individual 2.

SU <194> Negative interface, the cut practiced for excavating the Grave's shaft.

SU (198) A thick, round patch of sediment rich in fragments of highly fragmented weathered bones.

SU <199> The hypothetical negative interface or limit of the round pit containing the fragmented and weathered bones SU (198). SU <199> cuts the underlying SU (231), a part of the rammed earth chamber construction.

SU (282) Basal schist slabs of Grave 29.

On the roof of Grave 29

One of the two large jars was well preserved and could be properly documented as follows (see Fig. 208).

[25] Wrongly identified on the field as a cremation, and also labeled Grave 33. We wondered whether also other similar interment of highly fragmented bones, in previous excavations, have been misidentified as cremations. "Grave 33" i.e. Individual 2 of Grave 29, SU (198) was found as a thick rounded patch of highly fragmented, minute bone residues, the content of a wicker basket. Such bone remains, completely different from those found in other funerary contexts at Gogdara IV or Udegram, were produced by a much longer process of exposure and intensive damage. Although the first impression was that such effects were due to cremation, a closer look discarded the possibility of this and similar forms of fire treatment. Both at Gogdara and at Udegram there is no evidence of cremation. Perhaps other lots of human remains from older excavations were similarly misinterpreted.

Fig. 207. Udegram, November 2012. Grave 29: the eastern extension of the mortuary chamber; on foreground, the secondary burial of Individual 2, a densely packed cluster of minutely fragmented bone, certainly contained in a bag or in a basket, that at a superficial inspection could have been misidentified for a cremation. Beneath this feature, under the section, a group of ceramics (Photo by L.M. Olivieri).

Four lugged globular vessel with a pointed rim (not classified). The shoulder, contrarily to the norm, is plain. Height 29 cm; Max. diam. 28 cm. Medium-fine red orange ware (light reddish brown, 5YR 6/4), red slipped (reddish brown, 2.5YR 5/4) with sand and lime-like inclusions. Built with coils or slabs and enlarged by paddle and anvil.

Grave 29 – The furnishings

Besides the uppermost deposition of the two jars set on the roof, and of the grinding stone, Grave 29 contained a rich set of furnishing objects placed in different points of the chamber. The ceramics are illustrated in Fig. 209, the rest of the furnishings in the following Fig. 210. Near the feet, there were a globular cooking pot (UDG 83/Vessel 1); another globular-biconic jar (UDG 85/Vessel 3); two beakers (UDG 86/Vessel 4 and UDG 87/Vessel 5). Around the knees were found a globular beaker (UDG 88/Vessel 6); two bottles (UDG 89/Vessel 7 and UDG 90/Vessel 8); other two beakers (UDG 91/Vessel 9 and UDG 92/Vessel 10). Another bottle (UDG 93/Vessel 11) stood in front of the coxal bones. In front of the face, were placed a high stemmed cup (UDG 95/12); a cup on a raised foot (UDG 96/14); two pots (UDG 98/13 and UDG 99/Vessel 15); a globular jar with projecting rim (UDG 111/Vessel 16); and a last bottle (UDG 97/Vessel 17). Furthermore (fig. 210), the Grave furnishings included an ivory or bone spindle (UDG 127); a copper pin with a flat head (UDG 128);

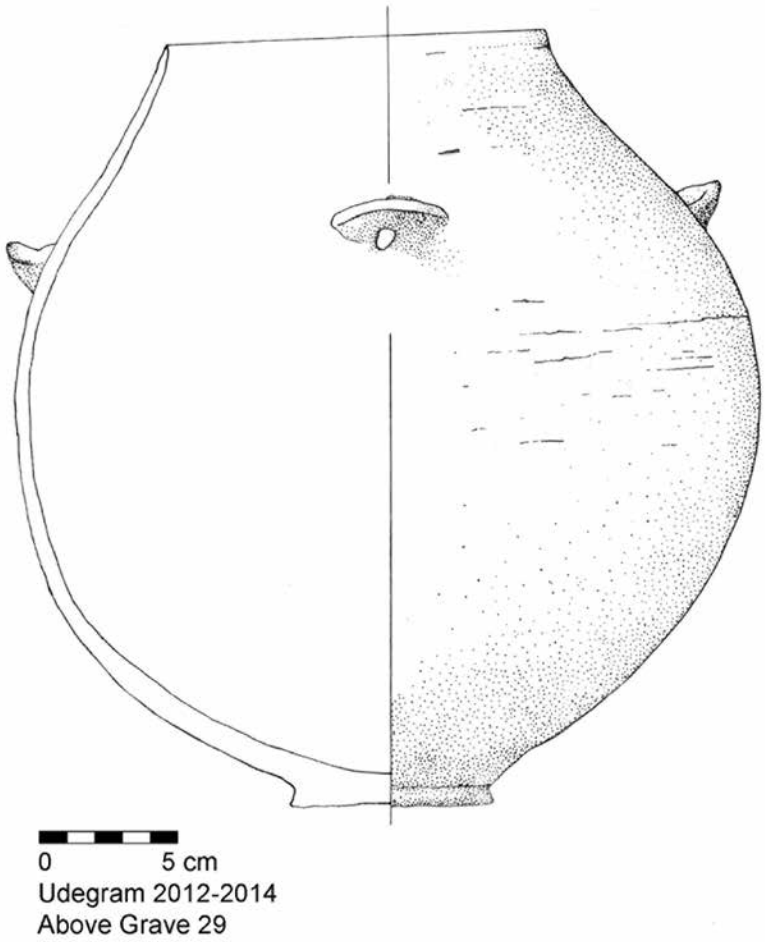


Fig. 208. Udegram, October-November 2012. The four-lugged globular jar abandoned on top of Grave 29 (see also Fig. 202) (Drawings by M. Vidale).

two earrings in copper wire (UDG 129a and 129b); and a fragment of another spindle in bone and ivory (UDG 130).

Vessel 1, UDG 83. Medium-sized globular cooking pot with everted rim and sooth layer on the exterior. Height 19 cm, max. diam. 19.5 cm. Coarse red ware (reddish yellow, 5YR 6/8) with schist flakes. Built on a mould, then by slabs and/or coils flattened by paddle and anvil; eventually, the rim was fashioned on the potter's wheel. The usual cooking pot, already encountered in several Graves and first commented at Gogdara IV, while dealing with Grave C, Vessels 3 and 8.

Vessel 2, UDG 84, SU (191). Miniature globular hole-mouth pot, with pointed rim and grooved shoulder. Height 7 cm, max. diam. 8.3 cm. Fine red ware (reddish yellow, 5YR 6/6). Fashioned on the potter's wheel, the base trimmed or turned. This Vessel forms a dimensional series together with Vessels 13 and 6 (the size decreasing in the order 13, 16, 2). For description, comments and comparisons see Grave 7, Vessel 1.

Vessel 3, UDG 85, SU (191). Small bottle with three irregular zig-zag lines on the shoulder. Height 8.7 cm, max. diam. 6.5 cm. Fine grey ware (grey, 7.5YR 6/0). Fashioned on the potter's wheel, the base extensively trimmed or turned. Together with Vessels 7, 8, 11, 17, Vessel 3 can be related to Silvi Antonini and Stacul's (1972) types VTc50 (small bottles with high neck) and VTc53 (small globular or pear-shaped bottles with flaring rim). See for discussion and comparisons Grave 5, Vessel 7 and compare in particular with Pl. CCXIXc, T. 36/7 (KTL).

Vessel 4, UDG 86, SU (191). Small carinated subcylindrical beaker, with two ridges on the outer wall. Height 5.2 cm, max. diam. 6 cm. Fine grey ware (light grey, 5YR 7/1). Wheel-thrown, trimmed on the base. Vessel 4, together with 9 and

10, are as many variants of type VTc33 (Silvi Antonini and Stacul 1972, Fig. 9f, from Loebanr, T. 41/4). Other beakers of the same form, in this Grave, are Vessels 9 and 10. Comments and comparisons on this form will be found in the discussion of Grave 8, Vessels 6 and 9.

Vessel 5, UDG 87, SU (191). Small subcylindrical beaker with everted rim. Height 4.7 cm, max. diam. 6.5 cm (mouth). Fine grey ware (grey, 2.5YR 6/0). Wheel-thrown, trimmed on the base. For comments and comparisons see Grave 2, Vessel 4.

Vessel 6, UDG 88. Small globular hole-mouth pot, with pointed rim and grooved shoulder. Height 7 cm, max. diam. 8.3 cm. Fine red ware (reddish yellow, 5YR 6/8). Fashioned on the potter's wheel, the base trimmed or turned. See Grave 7, Vessel 1.

Vessel 7, UDG 89, SU (191). Small squat necked jar with concave neck, everted rim and three horizontal ridges on the shoulder. Height 5.8 cm, max. diam. 6 cm. Fine grey ware, slipped (dark grey, 5YR 4/1). Wheel-thrown, trimmed on the base. See for discussion and comparisons Grave 5, Vessel 7.

Vessel 8, UDG 90, SU (191). Small bottle with three parallel ridges on the shoulder (the lowermost marked with vertical impressions). Height 7.5 cm, max. diam. 6.3 cm. Fine grey ware (grey, 7.5YR 6/0). Fashioned on the potter's wheel, the base trimmed or turned. For discussion and comparisons see what written for Grave 5, Vessel 7.

Vessel 9, UDG 91, SU (191). Small subcylindrical beaker with everted rim, two ridges on the outer wall with a incised zig-zag line in between. Height 6.5 cm, max. diam. 6.5 cm (mouth). Fine grey ware, black slipped (dark grey, 5YR 4/1). Wheel-thrown, trimmed on the base. Comments and comparisons on this form will be found in the previous discussion of Grave 8, Vessels 6 and 9.

Vessel 10, UDG 92, SU (191). Small carinated subcylindrical beaker, with two ridges on the outer wall. Wheel-thrown, trimmed on the base. Height 6.7 cm, max diam. 10 cm. Fine grey ware, black slipped (dark grey, 5YR 4/1). For comments and comparisons with this form see two specimens in Grave 8, Vessels 6 and 9.

Vessel 11. UDG 93, SU (191). Small bottle with globular body, and some horizontal lines incised on the maximum expansion. Height 7.5 cm, max. diam. 6.5 cm. Fine grey ware (grey, 7.5YR 5/0). Thrown on the potter's wheel, trimmed on the base. See for discussion and comparisons Grave 5, Vessel 7.

Vessel 12. UDG 95. High stemmed cup with restricted mouth and three horizontal ridges on the exterior. Height 26 cm, max. diam. 14 cm. Fine grey ware, black slipped (very dark grey, 2.5YR 3/0). Cup, stem and foot separately fashioned on the potter's wheel; the cup was trimmed at the base, than the three pieces were joined together. The stem was finally trimmed with long scraping movements. Rather similar to Grave 4, Vessel 2 (see this specimen for further comments and comparisons).

Vessel 13. UDG 98, SU (191). Globular hole-mouth pot, with pointed rim and grooved shoulder. Height 10.5 cm, max. diam. 13 cm. Fine grey ware, slipped (dark grey, 7.5YR 7/0). Wheel-thrown, trimmed on the base with spiral-like tracks. See Grave 7, Vessel 1.

Vessel 14. Globular cup with restricted mouth on a high foot; on the shoulder a sequence of low ridges bears a zig-zag-like line made with cord-like impressions. Height 12.5 cm, max. diam. 11.3 cm. Fine grey ware (light greenish grey, 5G 7/1). Cup and foot separately made on the potter's wheel to be joined (the interior of the foot is coarsely trimmed). This form is discussed and compared with other documented evidence when dealing with Grave 2, Vessel 6.

Vessel 15, UDG 99. Large pear-shaped beaker with two ridges on the transition between neck and shoulder. Height 19 cm, max. diam.15 cm. Fine grey ware (grey, 2.5YR 6/0). Fashioned on the potter's wheel, the base trimmed or turned, as shown by the wide, extensive spiral-like tracks. A variant of the pear-like shape already discussed for Grave 8, Vessel 2.

Vessel 16, UDG 111. Small globular jar with projecting rim. Height 14.3 cm, max. diam. 13 cm. Coarse red ware (reddish yellow, 5YR 6/8). Lower part made on a mould, upper part with coils (modified by paddle and anvil?). The uncommon form is intermediate between Silvi Antonini and Stacul's (1972) type VTb13 "globular, large-mouthed vase with flared rim and disk-base", see Fig. 5b (Loebanr, T. 21/4) and type VTa44 "pear-shaped bottle with flared rim and disk-base" (Loebanr, T. 122/2). Comparable to the vase in *ibid.*, Pl. XXVIIIa, T. 127/6 (LB); see also Pl. CXIXb, T. 8/1 (LB); PL.

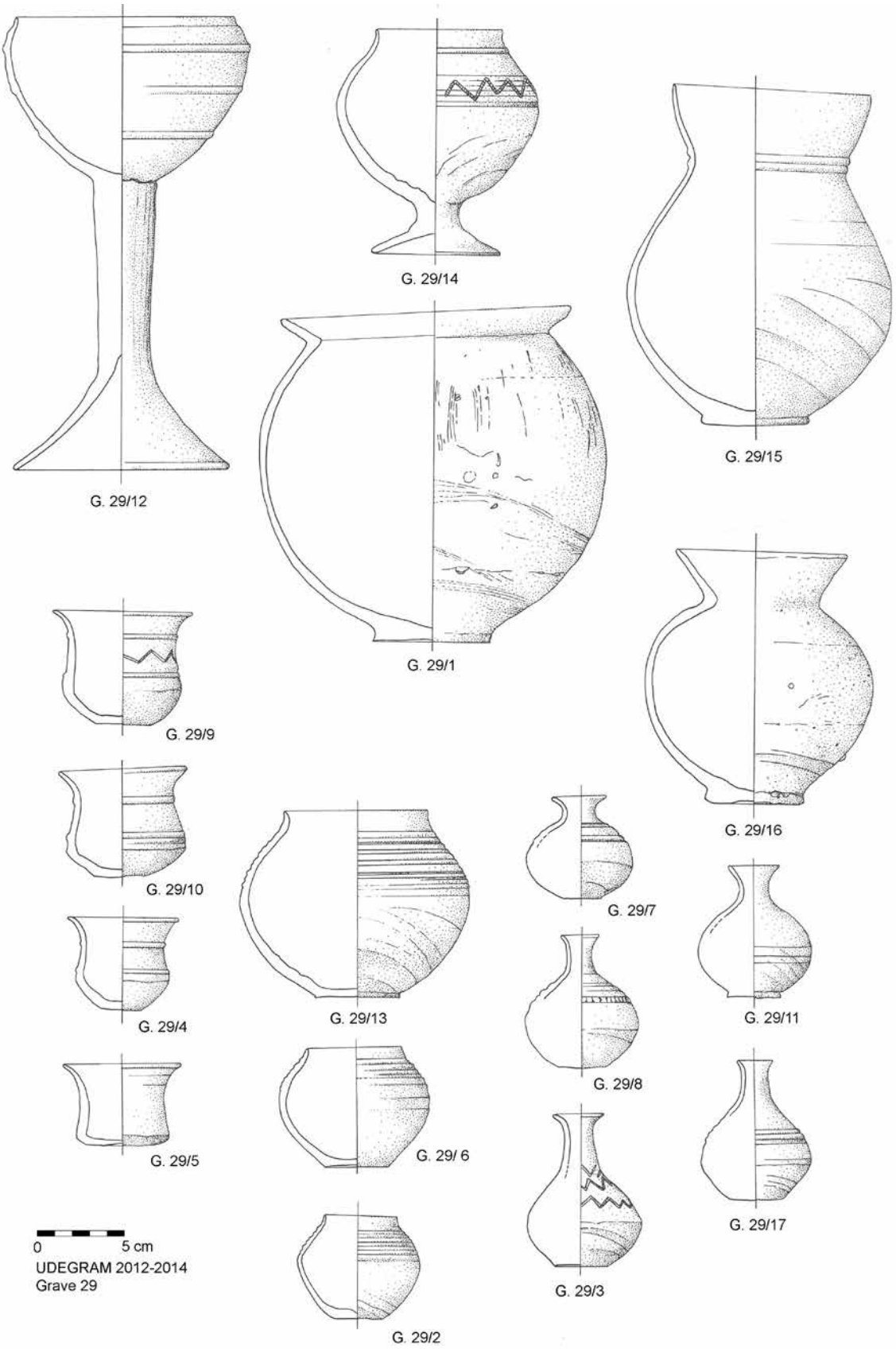


Fig. 209. Udegram, October-November 2012. The ceramic furnishings of Grave 29, (Drawings by M. Vidale).

CXXXVIIIf, T. 180/2 (LB); Pl. CCXIXa, T. 2 (KTL); Pl. CCXXVd, T. 170/19 (KTL).

Vessel 17, UDG 97. Small bottle with two parallel ridges on the shoulder. Height 8 cm, max. diam. 6.2 cm. Fine grey ware with a darker slip (dark grey, 7.5YR 4/0). Fashioned on the potter's wheel, the base trimmed or turned. See for discussion and comparisons Grave 5, Vessel 7.

Grave 27

This Grave (Fig. 211) was covered by large slabs of schist, measuring ca. 1 x 0.50 m, and ca, 10-15 cm thick, very heavy, labelled SU (170) (Fig. 212). The slabs, as usual, were covered at the joins with lines of elongated stones. On a corner of the stone slabs ceiling, we found another four-lugged globular pot set upside down (Fig. 213). After lifting and removal the roof of the Grave, we uncovered the edge of the rectangular chamber and its filling SU (193) (Fig. 214). At this point, the Grave entered in the eastern wall of the Main Trench for about 1/3 of its length. Then started the excavation of the filling, SU (193), that continued until we reached a depth of ca. 1 m from the mouth. Ceramic offerings were encountered at different elevations: Vessel 1 was brought to light at – 80 cm, Vessels 2 and 8 at – 90 cm, Vessels 10 and 9 on the floor, at –100 cm from the top of the chamber. The vessels evidently belonged to two different stratigraphic horizons (Fig. 215).
At the end of the excavation, we had ascertained that the Grave contained two burials: Individual 2, a secondary deposition, was associated to a layer of dark compact clay labeled SU (266) (Fig. 216). This latter burial episode had been the cause of the partial disturbance of Individual 1, a primary deposition at the base of the filling, in SU (193a), whose skeleton was set on the right side and looking North. Thus the excavation allowed us to distinguish two different grave furnishings, an upper one linked to SU (266) and to the secondary burial of Individual 2; and a lower one within SU (193a), linked to the burial of Individual 1.

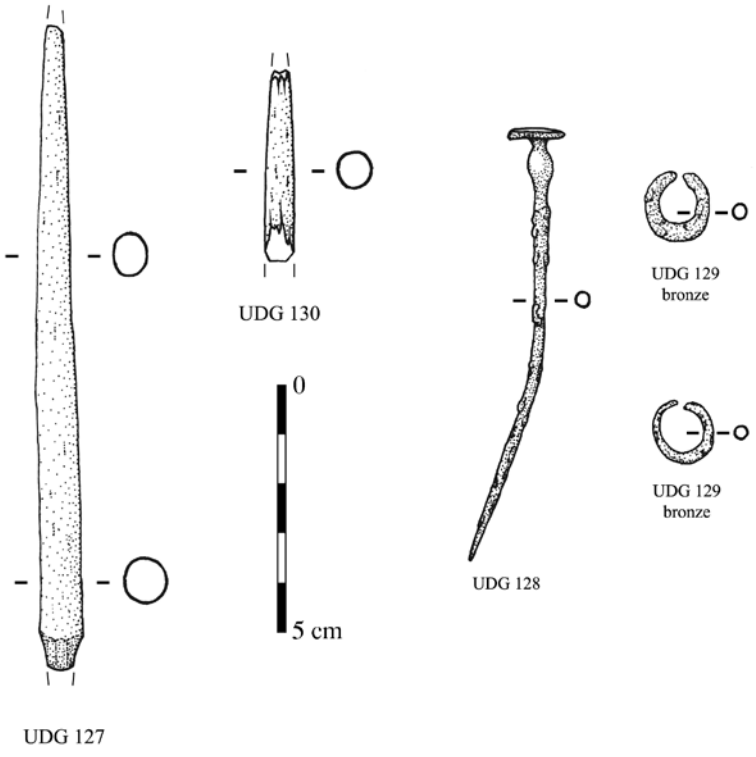


Fig. 210. Udegram, October-November 2012. Other objects of the Grave 29's furnishings (Drawings by R. Micheli).

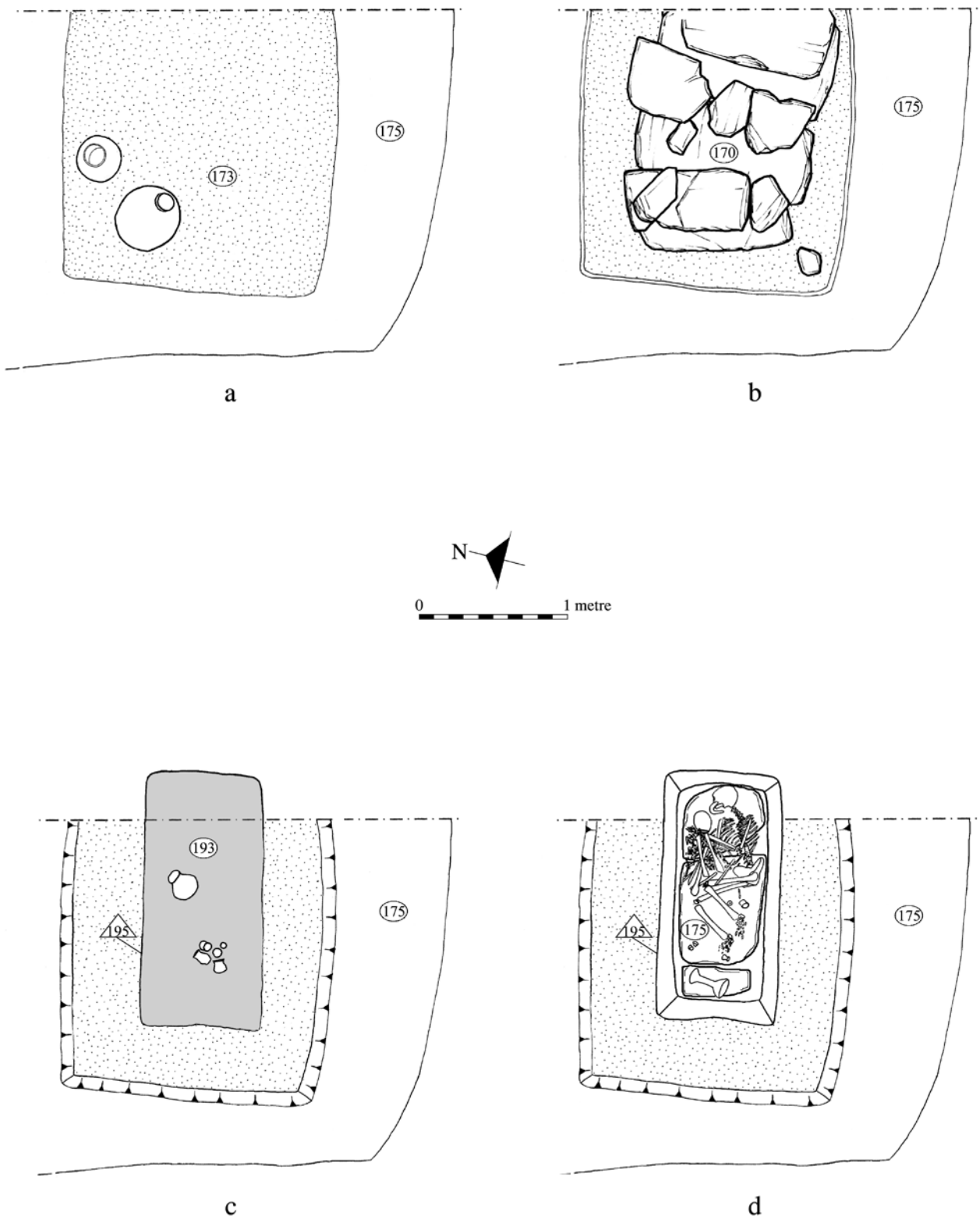


Fig. 211. Udegram, October-November 2012. Grave 27: a) Surface context with a couple of large vessels smashed on top (one of which a four-lugged globular pot); b) The slabs forming the roof; c) A depositional level with ceramics above the basal floor of the Grave; d) The base of the mortuary chamber with Individual 1 (primary burial) and Individual 2 (later secondary interment) (Drawings by R. Micheli).

Grave 27, one of the last found at Udegram, was excavated by L.M. Olivieri, who recorded the following details. The dig was resumed from SU (266) that included secondary burial Individual 2. It was formed a cranium facing East-South-East at right of a pelvic girdle; at West was found a cluster of bones piled one onto the other, which contained a single globular carnelian bead. On the right occipital of the cranium was found a copper/bronze pin with a flat head, broken. The skeletal remains of Individual 1 (cranium, left arm and forearm up to the humerus, right arm, left femur, left tibia and fibula down to the foot, right tibia and fibula down to the foot) were in primary connection; part of the vertebrae and of the thoracic cage were clustered in a heap. A terracotta spindle whorl was found below the articulation of the right leg; a spindle in ivory or bone was unearthed near the right foot. Individual 2 was later placed above 1, and its dental arch touched that of the first occupant.

Fig. 212. Udegram, October-November 2012. Grave 27: the general context of the Grave before excavation (Photo by L.M. Olivieri).

Fig. 213. Udegram, October-November 2012. A detail of the surface of Grave 27, showing part of the slabs of the roof and the four-lugged pot set upside down at a corner (Photo by R. Micheli).

Fig. 214. Udegram, October-November 2012. Grave 27: the top of the mortuary chamber after the removal of the upper stone slabs, showing the substantial enclosure of rammed earth (Photo by R. Micheli).

The furnishings of Grave 27 are illustrated in the drawings of Fig. 217 (linked to Individual 1) and 218 (those belonging to Individual 2).

Grave 27 - The occupants

Individual 2, the secondary burial, laid at left of Individual 1. As previously mentioned, this latter was certainly a primary burial, as revealed by the conservation of the joints among the vertebrae - particularly the cervical ones – of the pelvic girdles and the lower limbs. The cranium, that at a first sight looked like manipulated and intentionally moved aside that of Individual 2, during the micro-excavation in laboratory turned out to be still connected with its cervical vertebrae. As a consequence, the backward shift of the cranium was only due to a taphonomic process (possibly, the decay of an object made of a perishable material, like a headrest or a pillow placed under the head. As some bones of Individual 2 were found above the primarily deposed skeletal part of Individual 1, the following hypotheses can be advanced: 1. Individual 2 might have been deposited after the death of Individual 1, but before a complete decomposition of this latter that, otherwise, would have been at least in part displaced by the re-opening of the Grave's cavity; 2. while Individual 2 was interred, Individual 1, already skeletonized, was laid aside. However, it is impossible to ascertain whether Individual 1 had been previously buried in the same chamber and lateralized for the insertion of Individual 2, or placed in another location and translated in the Grave only after decomposition.

Fig. 215. Udegram, November 2012. Grave 27: a part of the ceramic furnishings set with Individual 2 emerging from an upper filling layer (Photo L.M. Olivieri).

Fig. 216. Udegram, November 2012. Grave 27: the lowermost depositional context, linked to Individual 1, on the basal slabs of the Grave (Photo L.M. Olivieri).

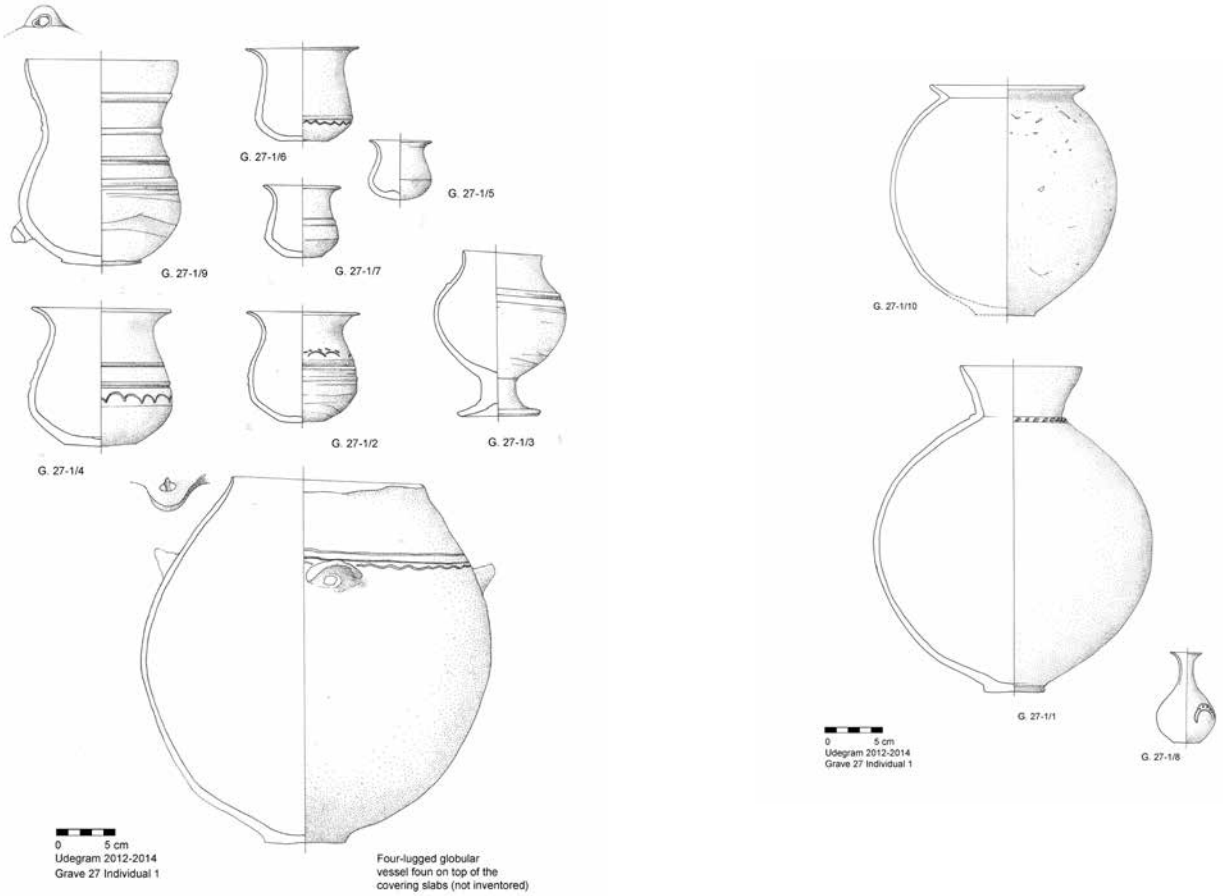


Fig. 217. Udegram, November 2012. The ceramic furnishings of Grave 27, Individual 1 (Drawings by M. Vidale).

Individual 2, the secondary burial, was a female ca. 35-45 year old. In spite of the considerable size of the post-cranial skeleton (diameter of the femur's head = 44 mm) the sex was attributed after the main sexual features of the pelvic girdle - a wide subpubic angle and a preauricular sulcus on both coxal bones. The age is revealed by the state of the pubic symphisis, compatible with the dentition. In fact, although she had caries and a considerable general wear, the right maxillary M3 had erupted shortly before death. Pathological indicators are absent. Enamel hypoplasia, developed at the ages of 2.5 and 3.3 years, was noticed on the right maxillary I1 and C. The bones, because of their high fragmentation, could not be measured. Green stains left by the contact with a copper/bronze pin were observed on the right occipital and on the mandibular right corner.

Individual 1, the primary burial, was a male, 40-50 year old at the moment of death. His bones were in extremely poor conditions. He was recognized as a male because of the coherence of the sexual characters of the cranium – sturdiness of mandible, glabella and occipital part – as well as for the general size of the postcranial skeleton. The age was inferred after the condition of the pubic symphisis, compatible with the state of wear of the dentition.

The subject had extremely developed muscle insertions. Probably, given his age, he had performed in life (presumably, like many other individuals of his group) straining activities, confirmed by the arthrosis on the right hip (acetabulum with the right femur), of the scapula with the right humerus at the shoulder and on the lombar vertebrae. Osteophytes are visible on the right ischium. It is probably an effect of a ischiatic bursitis[26] -

[26] Bursitis is an inflammatory process affecting one or more bursae (small sacs or vesciculae) of synovial fluid in the body, among tendons and bones or among muscles, or beneath the skin. Hit by repeated traumas, such bursae are exposed to inflammation, thus hindering normal articulatory movements. Inflammation may become chronic, thus developing the friction between bony surfaces, that can get deformed and develop osteophytes (Pécina and Bojanic 2004).

an inflammation between the ischium and the glutei. Such inflammation may be due to repeated microtraumas[27]. In literature bursitis is traditionally linked to the habit of sitting and travelling on hard surfaces, in continuous movement, such as driving carts or even riding horses[28], although it might also have different origins.
As far as teeth are concerned, there is a caries on the right maxillary M2 and a 1 degree tartar on the incisors. Wormian bones were observed in the cranium.
The head of the femur measures 51.4 mm. The anatomical measure of the right femur reaches 47 cm, while the maximum length (reconstructed with some approximation) is 47.5 cm. The maximum length of the left humerus is 33.7 cm. The stature after the size of the humerus is as follows: Sjøvold 174.7 cm; Trotter and Gleser (African-American males) 171.9 cm.

Grave 27 – The furnishings

On top of the roof was found, the mouth downward, a four-lugged globular jar (Fig. 213), described as follows.

Grave 27 (not inventoried, Fig. 217a, bottom). Four-lugged globular vessel with a pointed rim; on the shoulder, above the lugs, runs the usual band with two parallel incised lines and a single wavy line below. Height 34 cm; Max. diam. 31 cm. Medium-fine red orange ware (reddish yellow, 5YR 6/8), red slipped (yellowish red, 5YR 5/6) with sand and lime-like inclusions. Built with coils or slabs and enlarged by paddle and anvil. The lugs bear a wear trace left by a vertical string, compatible with the use of the globular pot as a drum.

SU (193a), Individual 1- The furnishings

A large jar with a restricted mouth (Vessel 1/ UDG 116); a beaker (Vessel 2/UDG 117); a cup on a raised foot (Vessel 3/ UDG 118); a pot (Vessel 4/ UDG 119); a beaker (Vessel 5/ UDG 120); two other beakers (Vessel 6/ UDG 121 and UDG 122/Vessel 7); a small bottle (Vessel 8/ UDG 123); a biconical vessel (Vessel 9/UDG 124); a globular jar (Vessel 10/ UDG 125). All ceramics presumably deposited with Individual 1 are drafted in Figs. 217a and 217b. A gold ear-ring made of a thick wire, UDG 154 (Pl. X), was later discovered at our lab, while cleaning the left ear cavity of Individual 1. The surface features of the ring suggest that it had been manufactured with a "drawing" process (i.e. by pulling or hammering a gold wire through a metal pierced tool) rather than by light hammering and forging.

Vessel 1, UDG 116, SU (193a). Globular necked jar with a short truncated-cone shaped neck; at the join with the shoulder, a horizontal ridge with oblique impressions. Height 35 cm, max. diam. 29.5 cm. Medium-coarse red ware with quartz temper, red slipped (yellowish red, 5YR 5/6). Moulded base, wall built with slabs or coils, enlarged by paddle and anvil, neck thrown on the potter's wheel. For this form, the reader will consult Grave 8, Vessel 1.

Vessel 2, UDG 117, SU (193a). Pear-shaped beaker with everted rim; three-four horizontal ridges above the maximum expansion, two joined arches and impressed dots on the shoulder. Height 9.7 cm, max. diam. 9.7 cm. Fine grey ware (grey, 5YR 5/1). Thrown on the potter's wheel, base trimmed. This basic form is described by type VTc33, and is shared by Vessels 4, 5, 6, 7. It was discussed in detail for Grave 8, Vessels 6 and 9.

Vessel 3, UDG 118, SU (193a). Globular cup with restricted mouth on a raised foot; a horizontal ridge and a groove on the shoulder. Height 14.5 cm, max. diam. 11.5 cm. Fine grey ware, light grey (5YR 7/1) free from visible inclusions. Two pieces separately thrown on the potter's wheel, later joint together. Foot trimmed on the interior base. The vessel is quite similar to Grave 5, Vessel 5, to which the reader will refer for further information.

[27] Waldman 2012.
[28] Canci 2006.

Vessel 4, UDG 119, SU (193a). Large pear-shaped beaker with everted rim; two horizontal grooves and a sequence of multiple arches incised above the maximum expansion. Height 12.3 cm, max. diam. 12.7 cm. Fine grey ware, dark grey (2.5YR 4/0) free from visible inclusions. Thrown on the potter's wheel, trimmed on the base. See Grave 8, Vessels 6 and 9.

Vessel 5, UDG 120, SU (193a). Miniature pear-shaped beaker with everted rim. Height 5.3 cm, max. diam. 5.5 cm. Fine grey ware, black (5YR 5/1) free from visible inclusions. Thrown on the potter's wheel, trimmed on the base. See for comments and comparisons Grave 8, Vessels 6 and 9.

Vessel 6, UDG 121, SU (193a). Subcylindrical beaker with pointed everted rim; a horizontal ridge in relief on the maximum expansion and a zig zag line immediately below. Height 8.5 cm, max. diam. 9.0 cm. Fine grey ware, white (7.5YR 8/0) free from visible inclusions. Fashioned on the wheel, trimmed on the base. See Grave 8, Vessels 6 and 9.

Vessel 7, UDG 122, SU (193a). Miniature biconical beaker with everted rim; two horizontal parallel incised lines on the shoulder. Height 6.5 cm, max. diam. 6.5 cm. Fine grey ware, light grey (5YR 7/1) free from visible inclusions. Thrown on the potter's wheel, trimmed on the base. See Grave 8, Vessels 6 and 9.

Vessel 8, UDG 123, SU (193a). Small bottle with elongated concave neck. Height 9.5, max. diam. 6.3 cm. Fine grey ware, light grey (5YR 7/1). On the shoulder, a crescent containing a row of impressed dots. Made on the potter's wheel, scraped by trimming on the outer base. This small container belongs to the same typological group of Grave 29, Vessel 3; see comments and further information Grave 5, Vessel 7.

Vessel 9, UDG 124, SU (193a). Large pear-shaped beaker with pointed rim and four large ridges on the upper part of the body. A single, thick horizontal lug on the lower part of the body. Height 18 cm, max. diam. 14.2 cm (mouth). Fine grey ware, no visible inclusions, grey (5YR 4/1). Made on the potter's wheel, extensively trimmed on the base. The form belongs to Silvi Antonini and Stacul's (1972) type VTd26 (Fig. 8a) discussed in detail for Grave 10, Vessel 7, and is also comparable with the single Vessel found in Grave 1.

Vessel 10, UDG 125, SU (193a). Globular cooking pot with everted rim, with abundant sooth films on the outer wall. Height 24.5 cm, max. diam. 24 cm. Coarse reddish-brown ware (reddish brown, 5YR 5/4) with schist temper. Moulded base, wall built with slabs or coils, enlarged by paddle and anvil, neck thrown on the potter's wheel. This type of cooking pot, too, has been encountered since the first excavated Graves (see Gogdara IV, Grave C, Vessel 3 and 8).

Furnishings of SU (266), Individual 2

The cluster of ceramics associated with this Individual were mostly small or miniaturistic restricted vessels, such as flagons or bottles. The group included a single high stemmed cup (Vessel 1/UDG 144); four small bottles (Vessels 3/UDG 146, 5/UDG 148, 6/UDG 149, 7/UDG 150), two small restricted jars (Vessels 2/UDG 145 and 4/UDG 147), and a peculiar small cylindrical beaker with convex wall decorated with impressed circles (Vessel 8/UDG 150).

Vessel 1, UDG 144. High stemmed cup, with a restricted mouth, underlined by two thick horizontal parallel ridges alternating with shallow grooves. Height 28.5 cm, max. diam. 11.5 cm. Fine grey ware (light grey,7.5 YR 7/0). Foot, stem and cup were separately made on the potter's wheel and later joined. The outer surface of the stem is trimmed with regular, parallel trimming movements. Comparable to Grave 2, Vessels 9 and 11 (see for further comments and comparisons).

Vessel 2, UDG 145. Small pear-shaped jar, with three horizontal grooves running on the shoulder. Height 5 cm, max. diam. 5.5 cm. Fine grey ware (grey, 2.5YR 6/0), made on the potter's wheel and trimmed along the base, in a leather-like state of hardness. It belongs to Silvi Antonini and Stacul's type VTc53 (Loebanr, T. 95/12, see *ibid.*, T. 95/12). The closest match is with Grave 9, Vessel 8, that like the find we are discussing belongs to a group of small or miniaturistic ceramic bottles with variable contour and decoration. See the previous discussion of these Vessels in Grave 9.

Vessel 3, UDG 146. Small high-necked bottle. Decorated on the shoulder with crescent-like rows of impressed dots. Height 8.2 cm, max. diam. 6.1 cm. Fine grey ware (light grey, 7.5YR 6/0). Made on the potter's wheel and trimmed along the base. See the previous discussion of this class of Vessels in Grave 9.

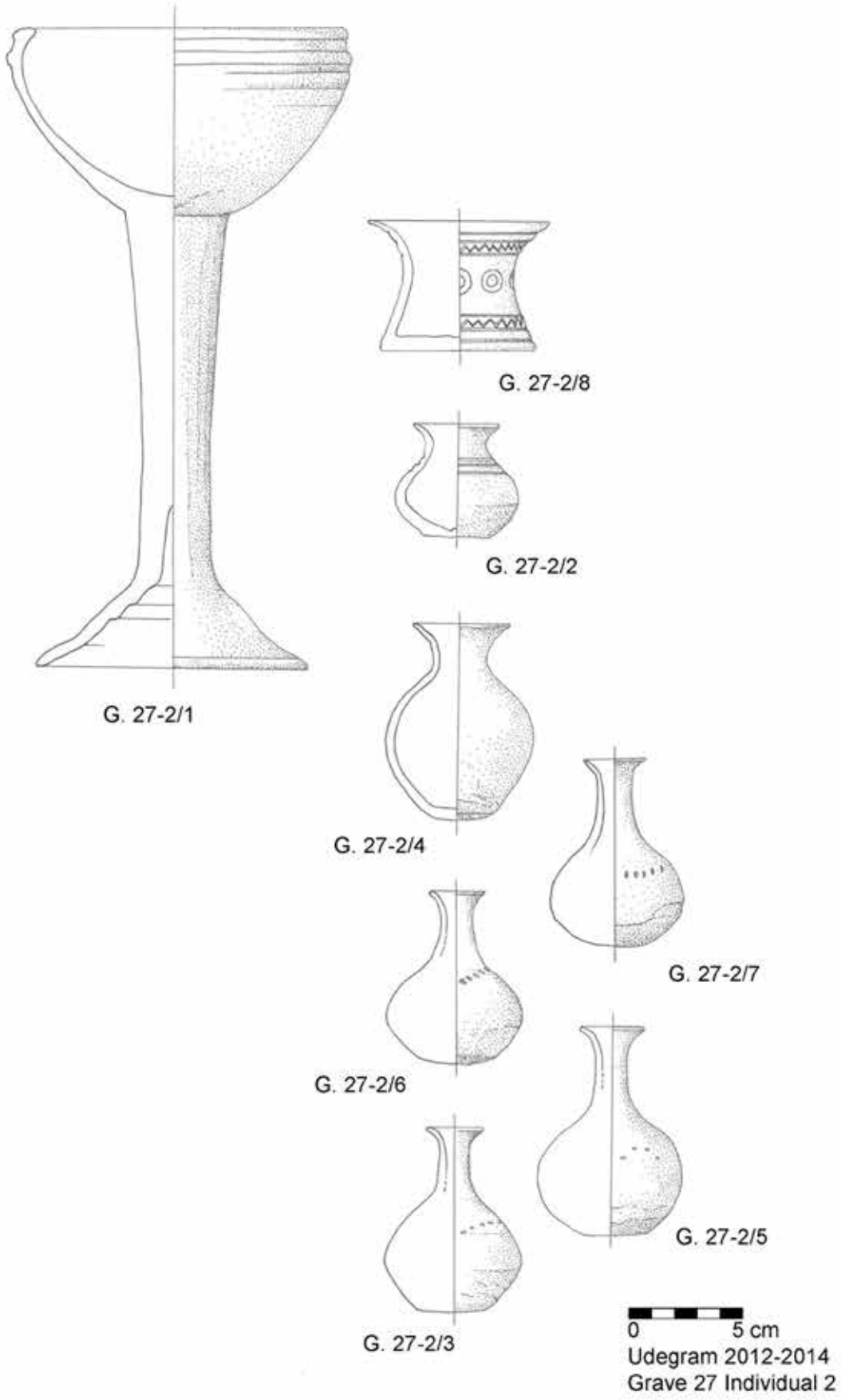


Fig. 218. Udegram, November 2012. The ceramic furnishings of Grave 27, Individual 2 (Drawings by M. Vidale).

Vessel 4, UDG 147. Small necked jar with short cylindrical neck an everted rim. Height 8.7 cm, max. diam. 6.5 cm. Fine grey-brownish ware (brown, 7.5YR 5/2); made on the potter's wheel and subsequently trimmed on the base. See the previous discussion of this class of Vessels in Grave 9.

Vessel 5, UDG 148. Small high-necked bottle. Decorated on the shoulder with rows of impressed dots. Height 9.5 cm, max. diam. 6.5 cm. Medium brown ware (dark brown, 7.5YR 4/2). Made on the potter's wheel and trimmed with spiral tracks along the base. See the previous discussion of this class of Vessels in Grave 9.

Vessel 6, UDG 149. Small high-necked bottle. Decorated on the shoulder with oblique series of impressed dots. Height 7.7 cm, max. diam. 6 cm. Fine grey ware (light grey, 5YR 7/1). Made on the potter's wheel and trimmed with deep cuts along the base. See the previous discussion of this class of Vessels in Grave 9.

Vessel 7, UDG 150. Small high necked bottle. Decorated on the shoulder with rows of impressed dots. Height 8.5 cm, max. diam. 6 cm. Fine grey ware (light grey, 7.5YR 6/0). Made on the potter's wheel and trimmed along the base. For this small bottle, too, see the previous discussion of this class of vessels in Grave 9.

Vessel 8, UDG 151. Subcylindrical beaker with concave wall, decorated with a row of concentric impressed circles; this frieze is delimited by two horizontal parallel incised bands including continuous zig-zag lines. Height 6 cm, max. diam. 8.2 cm. Fine dark brown pottery (reddish brown, 5YR 5/3) with a reduced core. Made on the potter's wheel. This elegant, highly decorated vessel is classified by Silvi Antonini and Stacul (1972) as type VTe30 (Fig. 9a, from Loebanr, T. 89/6). See also Pl. XXa and b (respectively from T. 89/6 at Loebanr, and from T. 15/9 of Katelai).

List of SUs

SU (170) The schist slabs covering the top of Grave 27.

SU (174) The filling around Grave 27, below Grave 29. Silty clay, including rare potsherds of a small size.

SU <195> The negative interface of the cut made for constructing the Grave's chamber.

SU (193) The filling of the chamber of Grave 27, the matrix being a very hard, pure clay.

SU (266) A separate horizon at the base of the filling, equally made of a very hard and compact clay, linked to the deposition of Individual 2 on the skeletal remains of Individual 1.

SU (193a) The lowermost deposits on the Grave's floor, supporting the skeletal remains of Individual 1, in a sub-primary context of deposition.

SU (279) The stone slabs forming the floor of the Grave's chamber.

Grave 30

Grave 30 (Fig. 219) was rather superficial, and as no trace of the usual stone covering was preserved, its filling was to a great extent removed before being sealed by the upper the Early Historic deposits. This Grave was found near the north-western limit of the schist slabs covering the chamber of Grave 29, SU (171) (Fig. 220). It was built between the edge of the upper platform SU (167), above Grave 29, as a partition wall separating Locus A/2 from Locus B. The body of a child, laid on the right side and looking North-West, was placed on two floor schist slabs, ca. 3-4 cm thick, numbered SU (185). On the eastern side of the Grave, the head of the child was protected by a series of vertical stone slabs, labelled SU (185a), forming part of some kind of low cist. Two small, miniaturistic vases were placed directly on the stone slab of the floor, in front of the head of the child (Fig. 221).

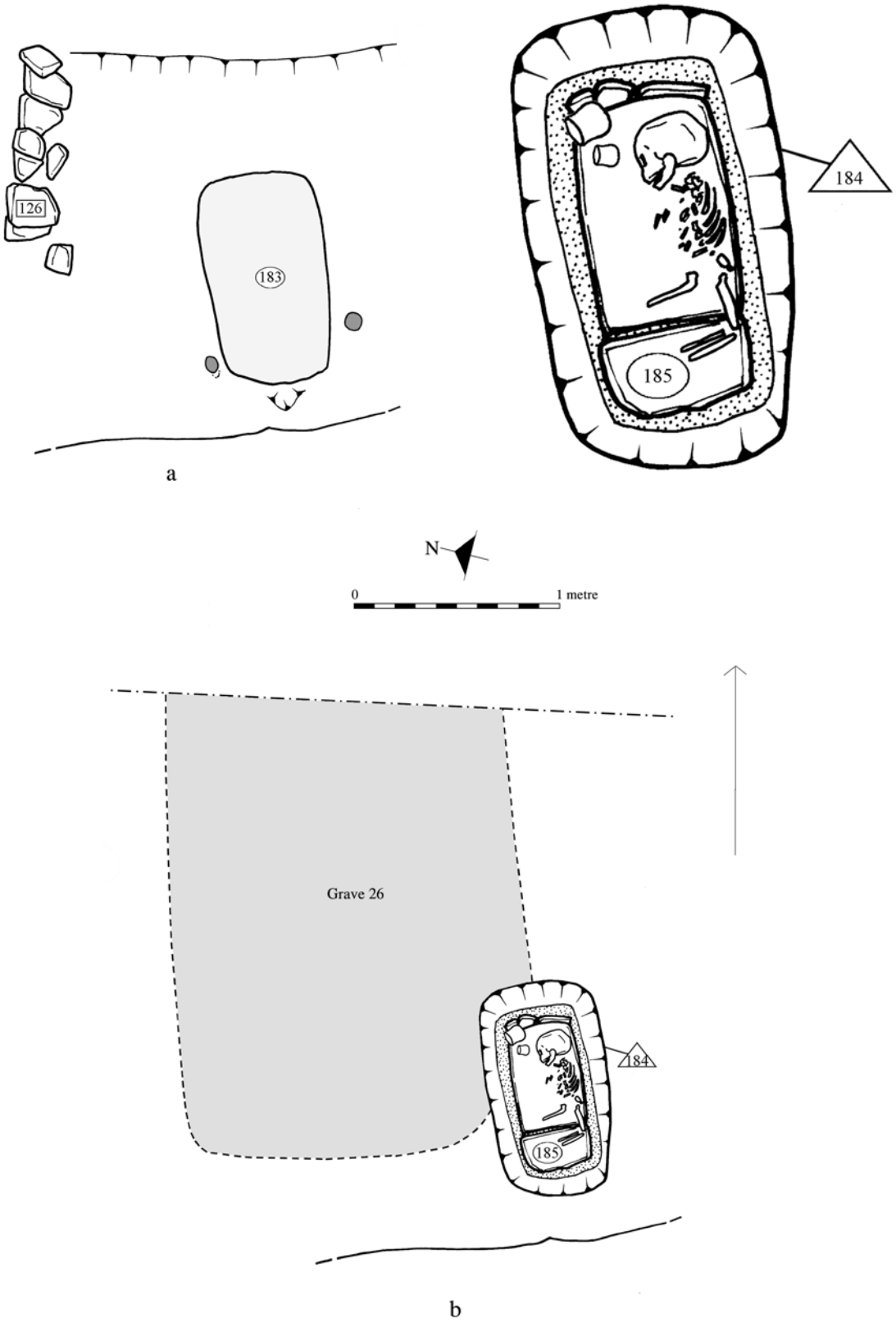


Fig. 219. Udegram, October-November 2012. Grave 30: a) The surface of the burial with the filling of the pit; b) The deposition of a child on the basal stone slab (Drawings by R. Micheli).

Fig. 220. Udegram, October-November 2012. Grave 30: general context in the northern group of tombs (Photo by R. Micheli).

Grave 30 – The occupant

The bones of the child were in very poor conditions. What was left of the skeleton, brought to our laboratory on the slab of the Grave's floor was only partially excavated and recovered, given its extreme fragility. He/she was no more than ± 3 year old at the moment of death.

Grave 30 – The furnishings

The child was buried with the small beaker UDG 72/Vessel 1, and the small pot or globular beaker UDG 73/Vessel 2) (Fig. 223, Pl. VIIIb). On some points of the ribs cage we recognized traces of a funerary dress or shroud, probably red (colored pins in Fig. 221).

Vessel 1, UDG 72, SU (183). Small globular beaker with restricted mouth. Height 6 cm, max. diam. 7 cm grey ware (dark grey, 7.5 YR 4/0) with no visible inclusions. Wheel-thrown, trimmed on the base. In Silvi Antonini and Stacul's (1972) classification, this vessel and its larger replica, Vessel 2 (see below) are described as type VTbd14 (Fig. 5d, from Loebanr, T. 12/10). The form also recalls type VTa18 (Fig. 6c, from Katelai , T. 89/1). See also Pl. Xc, T. 41/22 (BTK); Pl. XIIc, T. 91/1 (KTL); Pl. CXXc, T. 12/10 (LB); Pl. CXXVIId, T. 38/2 (LB);

Fig. 221. Udegram, October-November 2012. Grave 30: general view of the burial, with the skeletal remains of the occupant and two pots as furnishings. The points on the thoracic cage mark the location of fragments of a decayed red cloth (Photo by R. Micheli).

Fig. 222. Udegram, November 2012. The eastern wall of the Main Trench after its rectification, requested by the owner of the lot for purpose of building. The location of some of the Graves appear on the section (Photo by L.M. Olivieri).

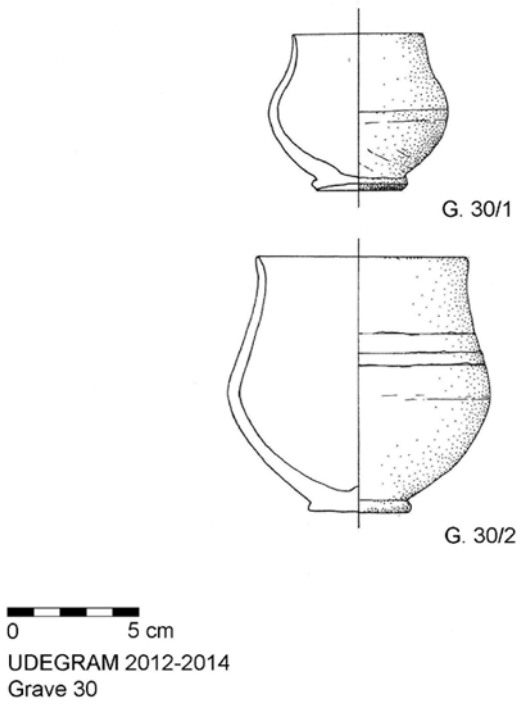


Fig. 223. Udegram, October-November 2012. The ceramic furnishings of Grave 30 (Drawings by M. Vidale).

Fig. 224. Udegram, November 2012. Grave 31, as observed in section, on the eastern wall of the Main Trench. From the chamber (unexcavated) were extracted the two Vessels reproduced in the following Figure (Photo by L. M. Olivieri).

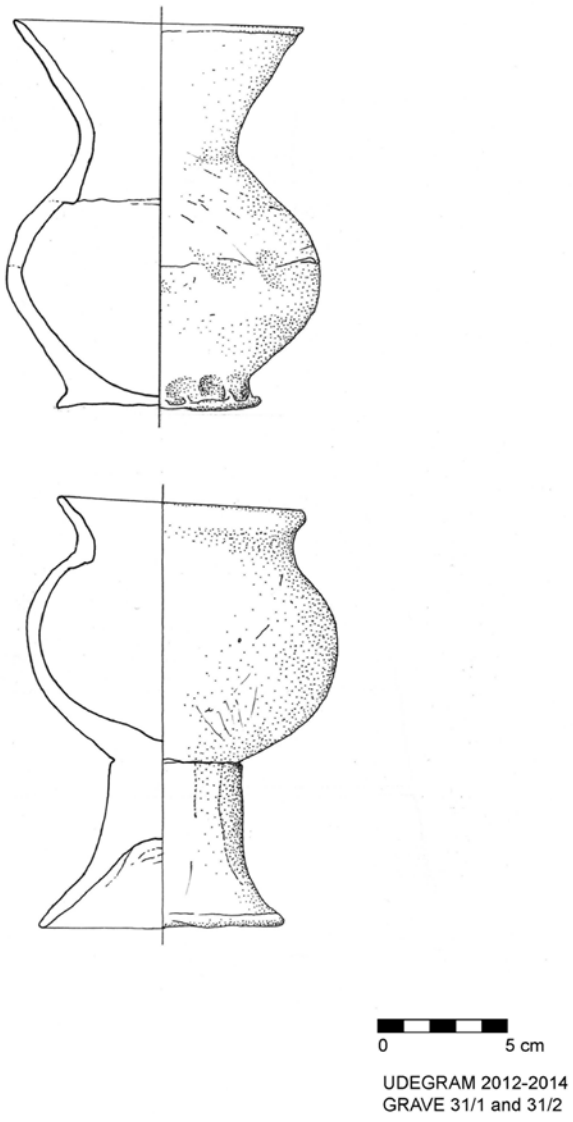


Fig. 225. Udegram, November 2012. Grave 31, Vessels 1 and 2 (Drawings by M. Vidale).

Pl. CCXIIIb, T. 3/5 (KTL); Pl. CCXIIIc, T. 4/2 (KTL); PL. CCXVIIb, T. 21/4 (KTL); Pl. CCXVIId, T. 25/2 (KTL); Pl. CCXVIIf, T. 28/1 (KTL); Pl. CCXXIIa, T. 93/3 (KTL); Pl. CCXXIXb, T. 223/1 and 2 (KTL); Pl. CCXXIXd, T. 221/1 and 3 (KTL); Pl. CCXXXVIIc, T. 107/1 (KTL); Pl. CCXXXVIId, T. 108/1 (KTL); the type does not appear in the published repertory of Butkara II.

Vessel 2, UDG 73, SU (183). Beaker with slight carination and slightly everted rim, with three parallel grooves running on the shoulder. Height 10 cm, max. diam. 10 cm. Grey ware (pinkish grey, 7.5YR 5/4). Wheel-thrown, trimmed on the base. See Vessel 1 above for comparisons and comments.

List of SUs

SU (183) Residues of the filling of the cist.

SU (185) The basal stone slabs of the Grave's floor.

SU (185a) Perimetral schist slabs set vertically along the edge of the floor, as a protecting wall.

SU (184) The interface between the cist and the underlying wall of rammed earth SU (175), at West, and SU (172) and (173) on the eastern side.

Grave 31 (unexcavated)

When we had to finally clear the lot of land that we had excavated, as stated above, the walls of the eastern section were rectified in a straight line and some Graves were further cut vertically (Fig. 222). One of these latter was Grave 31, that partially surfaced in section as shown in Fig. 224. Grave 31 was not excavated, as its pit fell largely beyond the limits of the trench (Pl. XIIb). Two vessels, visible in the main section, were taken from the schist stone slabs of the floor (at West) of the Grave's pit (illustrated in Fig. 225). They were unusual, being manufactured entirely with manual building processes, rather than with the aid of the potter's wheel, and fired to very low temperatures. However, Vessels 1 and 2 were in reasonably good conditions and could be regularly documented. Stylistically, they resemble the vessel in Fig. 20, from previous irregular digs.

Grave 31 – The furnishings

Vessel 1, UDG 135. Sub-globular cup on a high cylindrical tapering foot. Height cm, max. diam. cm. Coarse chaff-tempered reddish ware (reddish yellow, 5YR 6/6), made assembling two parts (cup and foot) separately made, apparently with a hand-building process. This form is well described by Silvi Antonini and Stacul's (1972) type VTb1I "stemmed bowl with globular or bulging body, variant with flaring rim": fig. 1b (from Loebanr, T. 32/7). Illustrated *ibid.*, Pl. Ib, T. 47/3 (LB); Pl. CXXa, T. 10/3 (LB); Pl. CXXd, T. 12/5 (LB); Pl. CXXIVa, T. 21/6 (LB); Pl. CXXXIIa, T. 47/3 (LB); Pl. CXXXIVb, T. 53/2 (LB); Pl. CXXXVIIb, T. 141/2 (LB); Pl. CXXXVIIIa, T. 96/1 (LB); Pl. CCXXIIa, T. 93/2 (KTL); Pl. CCXXIIb, T. 205/1; Pl. CCXXIIIc, T. 230/7 (KTL); Pl. CCXXIVc, T. 219/3 (KTL); Pl. CCXXVIIe, T. 232/1.

Vessel 2, UDG 136. A small-sized pear-shaped jar with a wide everted mouth. Height cm., max. diam. cm. Like UDG 135, it was made with a coarse chaff-tempered reddish ware (reddish yellow, 5YR 6/6), entirely made with superimposed coils fashioned on the potter's wheel, and low-fired. The fashion of both these two vessels, that seem to have been coarse replicas of a form rather common in other Graves, is clearly rough and sub-standard. See Silvi Antonini and Stacul's (1972) type VTb43, Fig. 11a (from Loebanr, T. 12/4). See also Pl. CXXVIb, T. 32/6 (LB); Pl. CCXXIIa, T. 93/1 (KTL); Pl. CCXXIIIb, T. 172/7 (KTL); Pl. CCXXIVc, T. 219/4 (KTL); Pl. CCXXVa, T. 243/5 (KTL).

CONCLUDING REMARKS

M. Vidale, R. Micheli and L.M. Olivieri

In summary, the graveyards of the 2nd-1st millennia BCE in north-western Pakistan were identified as an important archaeological evidence from the early 1960s. Since that time numerous protohistoric burials have been excavated in the Swat valley as well as in Dir (Dani 1969), Buner (Stacul 1967) and Chitral (Stacul 1969; Ali and Zahir 2005; Ali et al. 2002; 2005a-b; 2008; 2010), in the Swabi district (Khan S.N. 1993) and in the Peshawar region (Khan G.M. 1973). However, the Swat valley remains the place where protohistoric evidence has been more relevant due to the number of discoveries.

The data collected by the Italian team after many research campaigns at Loebanr I, Katelai I and Butkara II and in minor sites of the Swat valley revealed that protohistoric funerary practices included single and double burials, multiple and/or collective graves, and the co-occurrence of cremation and inhumation rituals. Regrettably, the anthropological reports on the skeletal remains of the excavated graves were not complete and were confined to specific reports where often they bore no relation to the archaeological data. On the basis of typological and stratigraphical evidence, the cemeteries were attributed to three main phases (Stacul 1966a; 1969; Müller-Karpe 1983; Vinogradova 2001; Zahir 2012): an early phase dated between 1400 and 1100 BCE (late Bronze Age), a middle phase dated between 1100 and 700 BCE (final Bronze Age - early Iron Age) and a late phase dated between 700 and 400 BCE (middle-late Iron Age).

As stated in the Introduction, after the excavation of a major stratigraphic trench at the rock shelter of Ghalegai (Stacul 1987) in the middle Swat valley, the three protohistoric phases of the cemeteries were introduced as Period V (early phase), Period VI (middle phase), and Period VII (late phase). These are part of a longer occupation sequence, established after a limited series of 14C datings, stretching from the Neolithic (Period I), around 3000 BCE, to the Early Historic period (see also Stacul 1969; 1978-1979). A precise chronology of the protohistoric cultural sequence in the Swat valley and surrounding areas is still debatable, since the available 14C dates are few. Some years ago more radiocarbon datings were published for Chitral (Ali et at. 2008), but their chronological range extends well beyond the protohistoric phase and may instead highlight the long persistence of some funerary customs.

Information on the contemporary protohistoric settlements of the Swat valley is minimal, mainly because the results of the excavation of the hill site of Aligrama, in the 1970s, were only partially published (Stacul and Tusa 1975, 1977), while the trenches at the sites of Loebanr III, Barikot/Bir-kot-ghwandai and later at Kalako-dherai were too small (see Vidale et al. 2011).

In general, although the excavators recorded some cases of graves which were superimposed or cutting each other in complex sequences, little attention was paid to the stratigraphic formation processes and the taphonomic evidence revealed by collective burials, or to the post-depositional displacement of human bones and vessels

in the grave fillings. Finally, no information was available on the original surfaces of the graveyards and the possible existence of emerging grave architecture, because the excavators claimed that the original trampling levels of the Swat graveyards had been destroyed and effaced by erosion (see Silvi Antonini and Stacul 1972: 11, 13, 60, 250, 427).

At the Gogdara IV and Udegram sites, the results questioned many of the previous assumptions and revealed unexpected aspects of ancient burials. Below thick colluvial Early Historic layers, we actually uncovered substantial deposits of the original surface of the cemeteries. Although the top of this surface was damaged by ancient deep plowing furrows and other later occupation episodes in the areas, complex funerary superstructures were still recognizable. Substantial traces of wooden architecture above surface suggest that in the past the graves were well marked and visible in order to be easily maintained and re-opened for re-arrangement of human remains, grave furnishings and offerings. The recent discoveries at both sites provide new elements of analysis of the complexity of funerary practices. Possibly, wooden erections for the exposure of the dead stood besides or above the graves. Besides, they offer the opportunity to improve our knowledge about such practices, as well as to start a new dating program to better define the chronometric evidence of the protohistoric phases (Table 3, Plates XIV-XV).

The stratigraphic evidence at Udegram

Time can be a generous deity. Our team was formed by scholars and students from a generation of field archaeologists much different from our predecessors, both Pakistani and Italians. Therefore, we benefitted from the most recent debates on theoretical and methodological approaches employed in field archaeology (from Harris 1989 onwards). It was on that basis that we started our research at Gogdara IV and Udegram graveyards.

At Gogdara IV the stratigraphic data disclosed a complex contest with only three graves but many funerary implications. The excavations at Udegram revealed an articulated stratigraphy with clusters of tombs and a wide spatial distribution of graves along the slope of the hill. Here, our excavation was conducted basically along a previously (mechanically) exposed section (Fig. 54) as a rescue excavation to preserve the greater number of graves from destruction meant to make space for a new building. During the planning stages of the fieldwork we elaborated the pros and cons of the situation - i.e. the risks connected to a fieldwork where the starting surface was the result of a mechanical vertical cutting. Being totally aware that a wall section does not represent the excavation, but rather what we have not yet excavated, our fieldwork managed to defy this bias, as in fact we actually "horizontalized" the original section.

"Modern archaeology, wherever possible, tends to excavate extensively and produces sections reconstructed from the planes of the layers surveyed using the optical level vis-à-vis a datum point. These sections, often called "cumulative", can be reconstructed in any part of the excavation, wherever they can enhance the illustration of the general stratigraphy. Your strategy needs to be opportunistic. For example, in the volume of this series dedicated to the dig of the protohistoric graveyard of Udegram [this Volume] you will find a long vertical (wall) section that summarizes the history of the site, as well as a complex sequence of human actions related to graveyard's life. This section, when we arrived at the site, was partly exposed by agricultural work; we exploited this pre-existing cut to get a maximum information. While recording it, with traditional manual methods, we obtained archaeological information that would have not been obtained excavating horizontally from top." (Olivieri 2014: 57-58).

As noted in previous chapters, such long section (Fig. 54), as other minor ones documented in the Main Trench

and in the Trench North (Figs. 55, 76, 94, 136, 186), were useful to register many data otherwise difficult to identify when excavating horizontally and to shed light on some events relating to the history of the graves and the funerary practices that produced them.

At Udegram we documented three different funerary architectural features:

1) Simple pits dug in the soil;

2) Dry walled chambers;

3) Pressed clay bench chambers with or without inner stone-built walls.

The graves were usually covered by three or more big schist slabs and they had paved floors with one big or many smaller schist slabs. The tombs were mainly oriented along a East-West line corresponding to the major slope profile of the hill with the skulls of the primary burials looking to the South or South-East towards the rocky peaks of Raja Gira mount.

As it happens in other protohistoric graveyards of the Swat valley, at Udegram too there were areas with intense clustering of tombs, and areas where graves were less numerous[29]. Architectural features may depend on the availability of space. The opening of a new grave in an empty space allowed people to choose without restraint the location, and certainly may have had positively affect the size and the depth of the tomb. Instead, a new tomb in a packed graveyard entails an adjustment to the available space left free and the existing tombs[30]. Such differences of location and stratigraphic context seem to reflect peculiar events and actions correlated to the history of the graveyard. In fact, a clustering of tombs in a circumscribed funerary area can be mainly the effect of two occurrences:

a) the existence of kin relationships among individuals of the same family or lineage group within a community that require very close burials to tie the social structure;

b) the result of a long-lasting use of the same funerary space by two or more communities following one another in time in the same territory.

The former event is clearly a social occurrence that affects purposely the stratigraphic context of a cemetery; the latter would depend on various, often unrelated, religious and/or ideological habits that sometimes may produce a complex funerary stratigraphy by chance. The degree of tomb concentration in the graveyards excavated in the 1960s in the Swat valley is variable: at Loebanr I, as well as at Butkara II, the space between one tomb and another was enough to ensure complete and undisturbed graves, although some superimposed tombs were attested; at Katelai I the graves were instead thickly concentrated and several cases of superimposition were documented (Stacul 1966a: 48, 64; Castaldi 1968: 587-588, Fig. 17; Silvi Antonini and Stacul 1972: Figs. 37, 40; Silvi Antonini 1973: 238; Vinogradova 2001: 12-13, notes 6, 7).

Already in the past it was observed that depth cannot be a safe criterion for chronology. The stratigraphic succession of a cluster of tombs shows the relative sequence of events happened during a period of time whose chronological boundaries are often not precisely defined. The time span between the first and the last interment within the cluster could be in fact very short (few years or some decades) or longer (one century or more).

At Udegram, on the basis of the material culture, we recognize two main groups of tombs referring at least to two cultural horizons relating to the use of the graveyard[31]: a larger assemblage characterized mostly by black/

[29] The two tombs found in Trench North (Fig. 76) seem to confirm such spatial arrangement; Graves 12 and 13 are localized in an apparent peripheral area of the graveyards where there was neither a complex protohistoric stratigraphy nor an overlapping of tombs.

[30] In this regard, we recorded: fairly isolated burials (Grave 13); adjacent graves, but without direct relations between them (Grave 9); graves which were stratigraphically associated with other tombs (Graves 2 and 11); grave clusters with tombs partly covering each other (Graves 28, 30, 26, 27 and 29 and Graves 3, 6, 4 and 5).

[31] Only the two vessels (Fig. 225) found in Grave 31, which was not excavated, seem to move away from types pertaining to the two cultural horizons mentioned; they can be attributed in fact to the early phase (Period V) of the protohistoric graveyards (Stacul 1966a:

Laboratory number	Site/context	Sample material	Radiocarbon age (BP)	δ13C (‰)	Calibrated date (BCE) 68.2% probability	Calibrated date (BCE) 95.4% probability	References
H-?	Timargarha - grave 101 (sample 2)	burnt bones frag.	3380±60	–	1752-1566	1877-1526	Dani 1967c: 38
BM-195	Loebanr I - grave 54	burnt bones frag.	2980±150	–	1396-1016	1536-835	Barker et al. 1969: 292
R-476	Katelai I - grave 64	burnt bones frag.	3150±50	-20.0	1497-1323	1520-1283	Alessio et al. 1970: 610
BM-196	Loebanr I - grave 61	burnt bones frag.	2850±150	–	1212-846	1435-775	Barker et al. 1969: 292
R-477	Katelai I - grave 48 (sample 1)	burnt bones frag.	2870±60	-18.7	1125-936	1223-901	Alessio et al. 1970: 609
H-?	Timargarha - grave 101 (sample 1)	burnt bones frag.	2850±60	–	1109-929	1210-853	Dani 1967c: 38
R-477a	Katelai I - grave 48 (sample 2)	burnt bones frag.	2750±50	-19.2	969-831	1005-811	Alessio et al. 1970: 609
R-474	Loebanr I - grave 21	burnt bones frag.	2390±70	-19.6	734-395	767-372	Alessio et al. 1970: 609
R-276	Loebanr I - grave 28	burnt bones frag.	2460±50	–	753-488	763-414	Alessio et al. 1967: 362
R-194	Butkara II - grave ?	burnt bones frag.	2425±40	–	728-410	752-402	Alessio et al. 1966: 408-409
R-278	Loebanr I - grave 87	burnt bones frag.	2380±50	–	537-397	751-377	Alessio et al. 1967: 362
R-479	Katelai I - grave 39 (sample 2)	burnt bones frag.	2250±50	-19.9	389-211	399-201	Alessio et al. 1970: 609
R-279	Katelai I - grave 39 (sample 1)	burnt bones frag.	2120±45	–	201-57	356-4	Alessio et al. 1967: 361-362

Table 4. List of radiocarbon and calibrated dates of protohistoric graves of the Swat valley and Dir excavated in the 1960s. Calibration: OxCal version 4.2.3 (Bronk Ramsey 2013); IntCal13 atmospheric curve (Reimer et al. 2013).

dark grey pottery with a high incidence of stemmed vessels and a less numerous second set characterized by red fine pottery with biconical vessels[32]. On the basis of the stratigraphic position, we documented two clusters of superimposed graves (Fig. 226):

1) Graves 3, 6, 4 and 5;

2) Graves 30, Pit 1 North, 28, 29, 26, 27, 20.

In cluster 1, red fine pottery vessels were associated with the Grave 3, while black/dark grey pottery vessels compared in Graves 4 and 5; Grave 6 revealed only two copper/bronze pins whose employment continued for a long time. In cluster 2, Pit 1 North and Grave 28 had red fine pottery vessels, while Graves 30, 29, 26 and 27 included black/dark grey pottery vessels. Graves 3 and 28 plus Pit 1 North conclude the sequence of the two clusters which, stratigraphically speaking, are believed to be the final events of the protohistoric occupation of the funerary area. On the basis of the cultural affiliation and typological comparisons, the furnishings of these graves can be attributed to the late phase of the protohistoric graves (Period VII). Instead, the furnishings of Graves 4 and 5 and Graves 30, 29, 26 and 27 can be assigned to the middle phase related to Period VI.

Figs. 37, 57; 1969: Fig. 18; Müller-Karpe 1983: Abb. 22-23; Vinogradova 2001: Fig. 4) and they can highlight the starting episode, not yet chronologically dated, of the funerary activity at Udegram.

[32] Copper/bronze, iron and gold artefacts are also attested as personal ornaments (earrings and pins), although they are not so numerous. The presence of iron objects in Grave 19 is an intriguing evidence that will be considered in a following section.

Therefore, the stratigraphic evidence and the cultural differentiation of typologically classified and categorized items seem to coincide, while the radiocarbon datings reveal a discrepancy (see the following section). Both graves with red fine pottery are situated at the end of the stratigraphic order and have 14C datings which are very old for the corresponding sequence, as in the case of Grave 28, and for the earlier available dates of occupation of the site (Table 3; Fig. 227). The interpretation of these data is therefore neither expected nor fully understandable, because it implies that, on the basis of radiocarbon determinations, both ceramic traditions were coeval despite the differences in typology and fabric of vessels[33].

Some considerations on new chronometric data

The previously-published radiocarbon dates for the protohistoric graves of the Swat valley were obtained from samples of burnt human bones collected in cremated burials at Katelai I, Loebanr I, Butkara II and Timargahra graveyards in the 1960s (Table 4). The 13 available dates come from 10 graves or more that represent only 1,4% of about 700 graves excavated in Swat and Dir areas in the last fifty years[34]. The chronometric evidence was therefore too limited to outline a reliable chronology for the protohistoric phases (Fig. 228, a). Furthermore, the samples present other problems: the only available date of the Butkara II site was obtained from a sample counting materials from seven, unspecified cremation graves (Alessio et al 1966: 408); three 14C datings from Katelai I (graves 48 and 64) were collected from tombs without furnishing (Castaldi 1968: 514, 523); two dates from Loebanr I (graves 51 and 64) have a laboratory estimated error (Barker et al. 1969: 292) which is too big to be useful for an accurate chronometric evidence. Such issues consequently reduce the number of graves with reliable 14C datings to only five: graves 21, 28 and 87 from Loebanr I, grave 39 from Katelai I, and grave 101 from Timargahra. In addition, an analysis of the chronometric range of the tombs of Loebanr and Katelai in relation to the cultural attribution of the furnishings found in them reveals a mismatch between the absolute chronology and the material culture defined according to the relative chronology. In fact, they contain archaeological materials related to the early and middle phases of the protohistoric graveyards (Period V or VI), while the samples reveal much more recent dates. The 14C dating of Timargahra (sample 2) has a very old chronology (Table 4; Fig. 228, a) falling in the earlier phase of the late Bronze Age corresponding to Period IV. On the basis of such observations, the available, past chronometric evidence is too limited in sample size for any definitive statistical conclusions and raises problems when it comes to placing the data in a chronological meaningful framework.

In order to obviate these issues and start to build a new chronological framework for the protohistoric Swat, a series of AMS radiocarbon determinations were obtained from two graves at Gogdara IV (Table 1; Plate XIV) and seven graves at Udegram (Table 3; Plates XIV-XV; Fig. 227), for a total of 13 dates. As we have seen in previous chapters, 12 samples were taken from human bones while one was extracted by a thin carbon soot layer covering a pot lying under the left foot of Individual 2 in Grave 10 (Fig. 158). All the AMS dates were performed by Centro di Datazione e Diagnostica (CEDAD) of Lecce University (Italy). We used the program OxCal version 4.2.3 (Bronk Ramsey 2013) and the IntCal13 calibration curve (Reimer et al. 2013) to calibrate the radiocarbon dates.

The unmodelled radiocarbon calibration of 14C datings, presented as 2 sigma (95.4%) confidence level, reveals

[33] The grave furnishings found at Gogdara IV count black/dark grey pottery vessels that can be culturally attributed to a phase fluctuating between the early and the middle phases of the protohistoric graveyards (Periods V and VI).

[34] For an updated assessment of the excavated protohistoric funerary evidence of the Swat valley and surrounding areas of northern Pakistan, see Zahir 2012.

two main groups of graves at Udegram (Fig. 228, b). As mentioned before, we have recognized two cultural horizons on the basis of the ceramic furnishings pertaining to the existence of the cemetery. If we examine in detail the materials, we note what follows:

Earlier chronology

1) Grave 3 preserved red fine pottery vessels (Fig. 107);
2) Grave 5 had a ceramic assemblage counting black/dark grey pottery vessels and a fragmented copper/bronze pin (Figs. 134-135);
3) Grave 28 included red and grey fine pottery vessels (Fig. 194a).

Later chronology

1) Grave 1 had a grey pottery vessel, a gold and a copper/bronze earrings, one fragmented copper/bronze pin and a small terracotta figurine (Figs. 180, 181);
2) Grave 10 counted a rich ceramic assemblage with red and black/dark grey pottery vessels and one copper/bronze pin (Figs. 163, 164);
3) Grave 15 had no furnishings, except for the organic material vessel (Figs. 92-94);
4) Grave 19 preserved only three iron pins (Fig. 189)[35].

If we compare such data with what it is known about the cultural attribution of the protohistoric phases (Stacul 1966a; 1969; Silvi Antonini and Stacul 1972; Müller-Karpe 1983; Vinogradova 2001), we observe that Grave 5, and the associated undated Grave 4, can be assigned to the middle phase (Period VI), while Graves 3 and 28 can be ascribed to the late phase (Period VII) and are both located at the end of a complex stratigraphy of superimposed tombs (Fig. 226). Grave 1 has a low carinated vessel, which finds a comparison with the late phase types, in particular with a pot found at Kalako-dherai in a feature attributed to Period VII (Stacul 1993: Fig. 17, b); the furnishing also includes a small terracotta figurine (Figs. 178, 181; Plate IX) typologically dissimilar to those ascribed to the middle-late Iron Age and affiliated instead with the older ones attributed to the Bronze Age (Silvi Antonini and Stacul 1972: Plates XLVII-LI). Grave 10 has a rich ceramic assemblage coming under the middle phase (Period VI) types. Although the 14C datings obtained recently are coherent, suggesting a more concentrated chronological range of protohistoric graves than it was thought in the past, some discrepancies are observed when comparing chronometric evidence, cultural attribution, and stratigraphic contexts. Moreover, our collection still appears too limited and more data are needed to increase the 14C datings series associated to excavated graves. In 2014 the Department of Genetics of Harvard Medical School at Boston, together with our research team, has launched a project for extracting the ancient DNA of the population of the Udegram and Gogdara graveyards. Therefore, in addition to DNA data, we hope we will shortly have also a new 14C datings series covering all individuals buried in the site. With such series, the discrepancies revealed will ought to be verified and possibly better understood, confirming or questioning the recent 14C datings and their chronology.

In order to evaluate the chronological results in a more accurate manner, we created a modelled radiocarbon calibration curve of the late protohistory of the Swat valley ranging between the 2nd and the 1st millennium BCE (Fig. 230). In fact, a modelled calibration distribution of 14C datings offers the reliability of a statistical approach for refining our understanding of protohistoric chronology and such analysis is made possible by OxCal software (Bronk Ramsey 1995; 2001; 2013). Several studies which have been conducted in the last years combine calibrated radiocarbon data and given archaeological information in order to build chronological

[35] For the importance of the chronometric evidence of Grave 19 and its relevance to establish a first reliable chronology about iron use and working in the Swat valley, see next section.

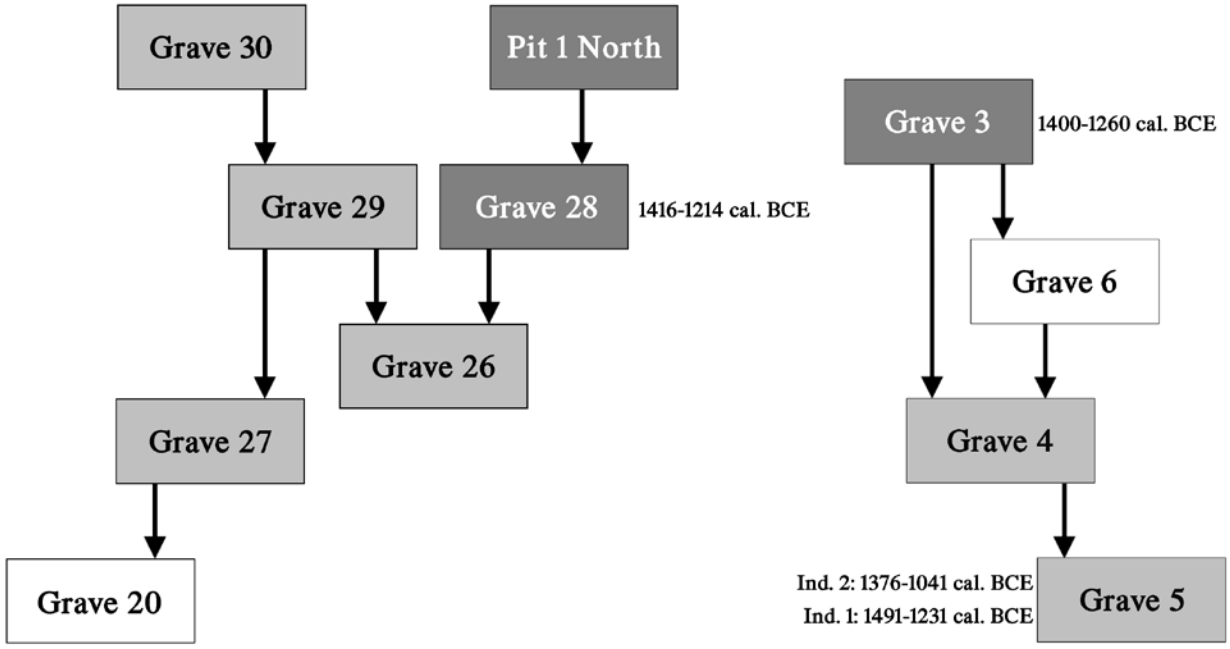


Fig. 226. Udegram, October-November 2012. The stratigraphic sequence of the two main clusters of excavated Graves (Drawings by R. Micheli).

sequences arranged in phases (see Buck et al. 1991; 1992; Bronk Ramsey 2000; Bayliss et al. 2007; Fuller et al. 2007; Higham and Higham 2009). The model allows to correlate three sets of archaeological information pertaining to the Swat valley within a chronometric analysis organized in an sequence with phases: the radiocarbon dates and the associated observations obtained from archaeological contexts can be combined to build a chronological well-ordered framework. The prior cultural information was introduced by separating the available dates of settlement features and graves into three main series in sequence.

Because of the above-mentioned issues regarding the 14C datings of the graves excavated in the 1960s, we have intentionally not considered such dates in the modelled sequence. As older chronological series, we have instead considered the dates[36] of the late Bronze Age sites attributed to Period IV of the Swat valley sequence; such 14C datings are chronologically coherent (Fig. 230) and fit well with other coeval contexts. Period IV is in fact dated to the first half of the 2nd millennium BCE and it is contemporary with the Localization Era of the Indus tradition (see Stacul 1987; Kenoyer 1988; 1991). Therefore, it comes culturally and chronologically before the protohistoric graveyards of Udegram and Gogdara IV[37].

To conclude the modelled distribution, we have used the new radiocarbon determinations for three burials of the Saidu Sharif graveyard (Olivieri forth.) as a reliable chronometric evidence of the Early Historic acculturation phase (Fig. 230). The graveyard was covered by the foundation levels of the Buddhist monastery of Saidu Sharif I (Noci et al. 1997). It is characterized by completely different funerary practices compared with those

[36] The samples of Period IV (see Fig. 230) were obtained from charcoal remains without tree species specification, except for the sample of Kalako-dherai (Ambers and Browman 1999: 193). As it is well known, the dating of wood charcoal whose species is unknown or originated from long-lived trees need to be considered with caution because the relationship between a charcoal sample and the event being dated was unreliable.

[37] For Period IV only one graveyard was found at Kherai in the Gorband valley (Stacul 1966b).

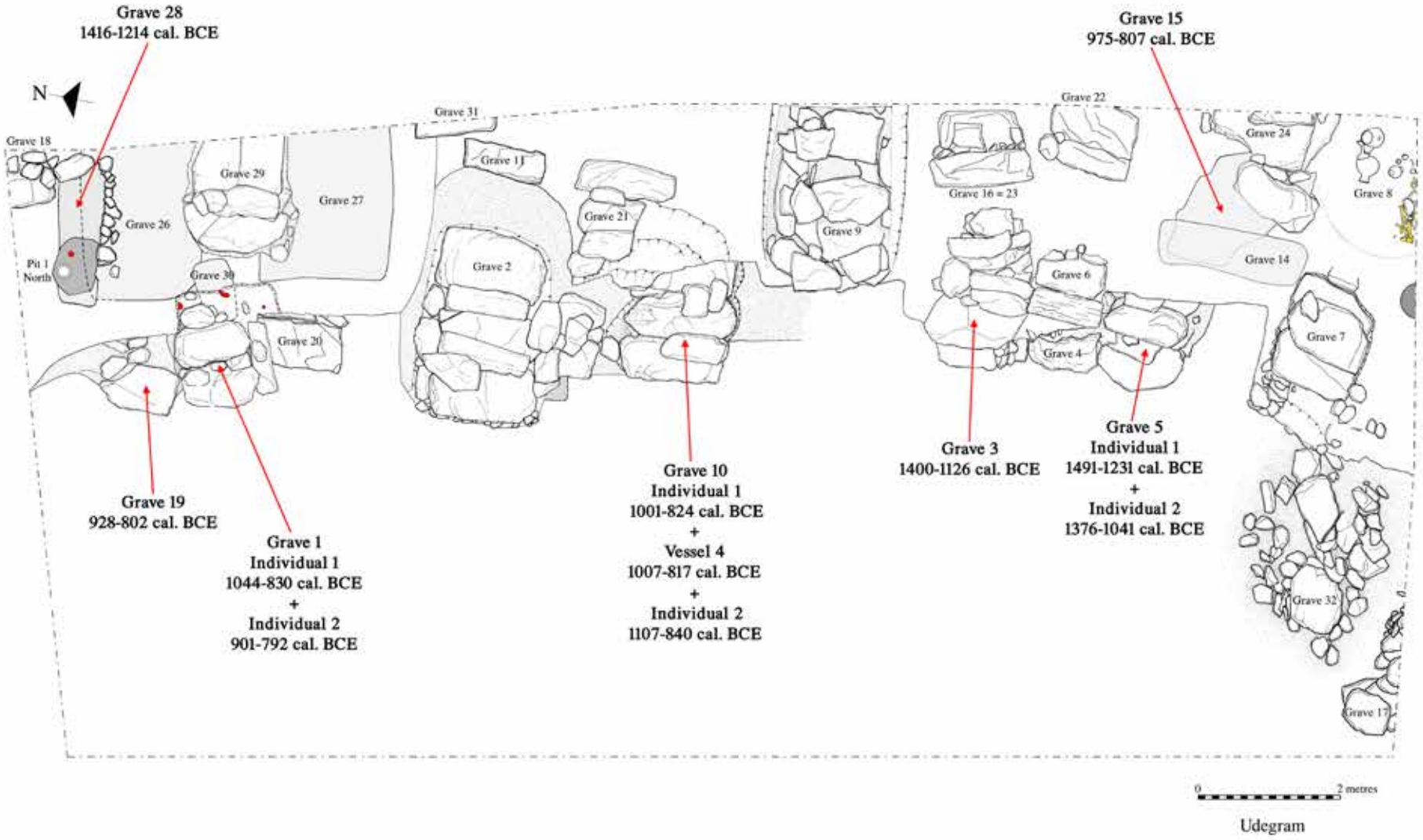
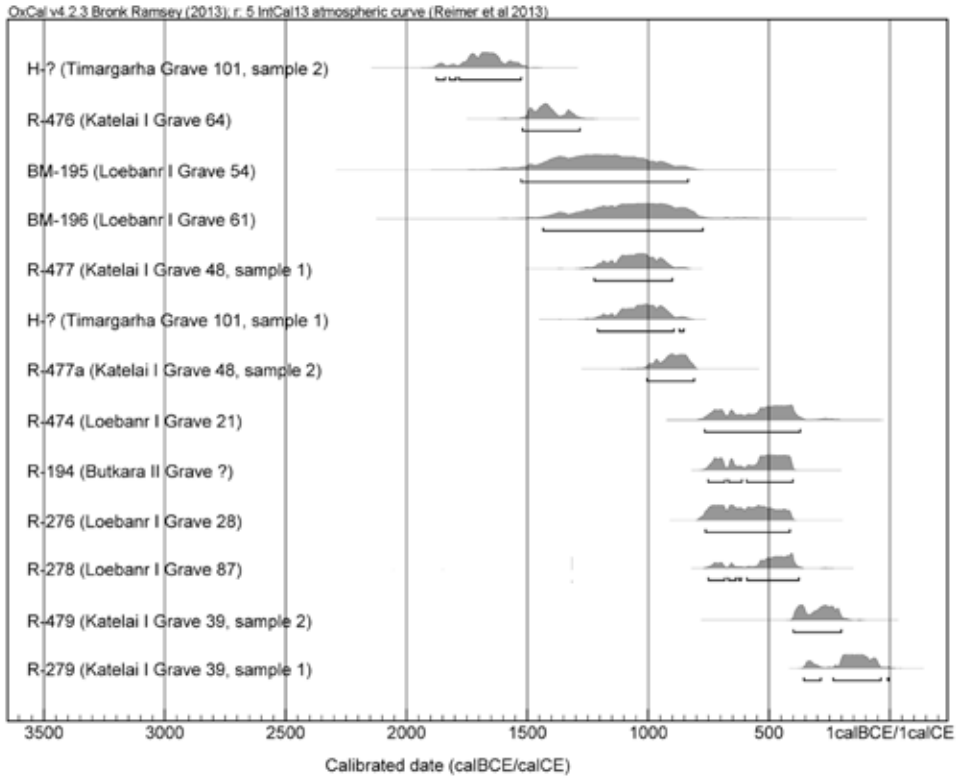
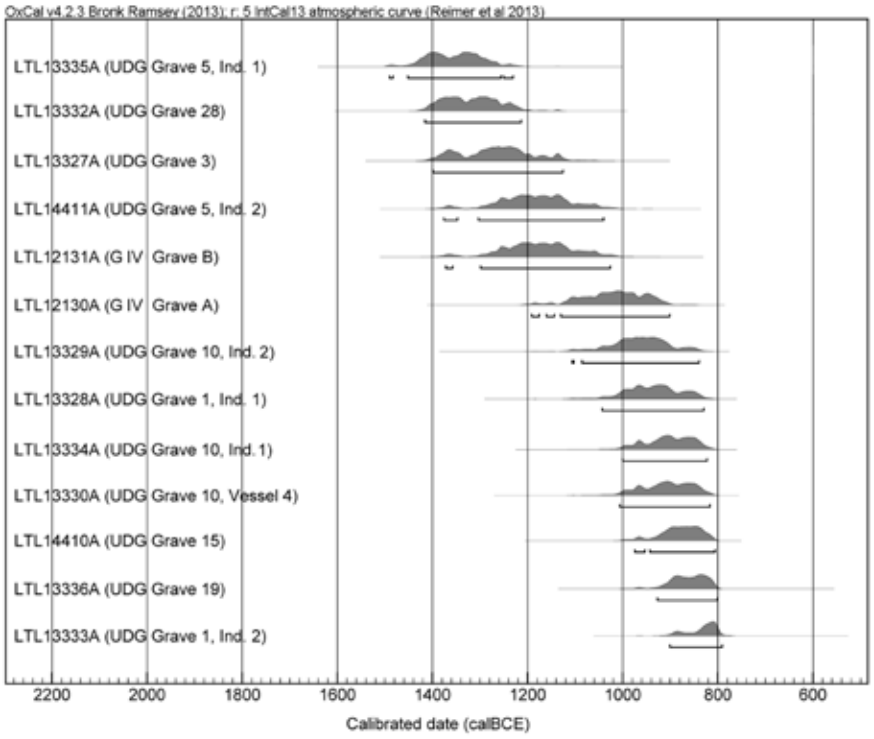


Fig. 227. Udegram, October-November 2012. Location of the sampled graves for radiocarbon determinations with the related 14C datings presented as 2 sigma (95.4%) confidence level (Drawings by R. Micheli).



a



b

Fig. 228. a) Unmodelled calibration distribution of the 14C datings of protohistoric graves of the Swat valley and Dir excavated in the 1960s; b) Unmodelled calibration distribution of the 14C datings of protohistoric graves excavated at Udegram and Gogdara IV graveyards. Calibration at 95.4% confidence level (2 sigma): OxCal version 4.2.3 (Bronk Ramsey 2013); IntCal13 atmospheric curve (Reimer et al. 2013).

of the protohistoric graveyards of the Swat valley marking a clear change in rituals, beliefs and behaviour related to death. This graveyard, instead, bears a close resemblance to the cemetery discovered at Sarai Khola near Taxila (Halim 1970-1971)[38] which was dated between the 5th and the 1st century BCE (Bernhard 1981: 183).

The modelled sequence (Fig. 230) is useful to draft the development of the protohistoric chronology of the middle Swat valley between Bronze Age and late Iron Age and/or Early Historic acculturation phase on the basis of available radiocarbon determinations[39]. The model includes boundaries between the key phases Period IV, Udegram and Gogdara IV graves and Saidu Sharif graves to define chronologically the transitions among them. The transition from the boundary end of Period IV to the boundary start of Udegram graves took place between 1479-1294 cal. BCE for the former and 1406-1246 cal. BCE for the latter (Fig. 231). The two boundaries show a partial overlapping and this can suggest a chronological continuity between them. Regarding the material culture, however, such continuity does not fit well with the general relative chronology of the Swat valley sequence. As it is known, the protohistoric graveyards had an earlier phase (Period V) well attested at Katelai I and Loebanr I and also in other minor sites; materials of such period are only sporadically attested at Udegram and Gogdara IV[40] sites. The 14C datings reveal that the proposal time span of Period V (ca. 1400-1100 BCE) does not find space in the modelled sequence, since the late Period IV and the earlier protohistoric funerary activity at Udegram are partially coeval. In fact, the chronometric evidence shows a continuity - without evident gaps - from Period IV to the documented earlier chronology graves.

The calibration model (Fig. 230), on the other hand, clearly reveals that between the 14C datings of Udegram later graves and those of the Saidu Sharif graves there is a chronological gap (Fig. 231, a) and a missing phase of ca. 300 years. In Stacul's view, the end of the Iron Age in the Swat valley corresponded to the 4th century BCE (Stacul 1990: 609) on the basis of comparisons with some ceramic types found in layers from 36b to 47 at Charsadda (Wheeler 1962) and with materials of the Iron Age I Period found at Hasanlu III A in western Iran (Stacul 1966a: 85). Such chronological boundary for the Iron Age does not match well with the lower limit of the new 14C datings of the Saidu Sharif graves, which document a new funerary tradition and, at the same time, an Early Historic acculturation phase. What does such gap mean for the late protohistory of the Swat valley? It might be the evidence for a conclusion of the Iron Age dated in the 8th century BCE as proposed by Müller-Karpe (1983: 76) or dated some time later during the 6th century BCE as claimed by Dani (1967c: 48; 1992: 397) and Allchin and Allchin (1982: 314)[41], or else it simply reveals that at the Udegram site the graveyard was not used during the later part of the Iron Age. On the basis of the Chitral evidence (Ali et al. 2008), we know in fact that the protohistoric funerary practices continued, at least in that secluded northern valley, till the 800-1000 CE. This might suggest that also in the Swat valley the Iron Age customs persisted after 800 BCE until 500-400 BCE as proposed by G. Stacul, but such assumption has to be confirmed since there are no available 14C datings to substantiate it.

For this reason, the Balambat settlement in Dir (Dani 1967a) can offer a good evidence for the stratigraphic conclusion of the protohistoric phase. In such site, protohistoric features and graves attributed to Period VII were in fact directly covered by remains referred to the Achaemenid Period or, following Dittman (1984:

[38] Both graveyards share in fact some common features, such as the grave morphology, the ritual aspects, the arrangement of the dead, and the lack of furnishings.

[39] The chronological distribution of 14C datings shows a good agreement index (A) since only one date (P-2151: Aligrama, layer 13) is lower than 60%, which is the threshold normally considered acceptable that acts as a measure of the reliability and reproducibility of the model (Bronk Ramsey 1995; 2001).

[40] In this site, ceramic vessels which can be ascribed to Period V were documented in Grave C (in particular, see Fig. 43, C/7 and C/10).

[41] For a discussion on this issue see also Dittman 1984; Vogelsang 1988: 109-110; Zahir 2012: 87-88.

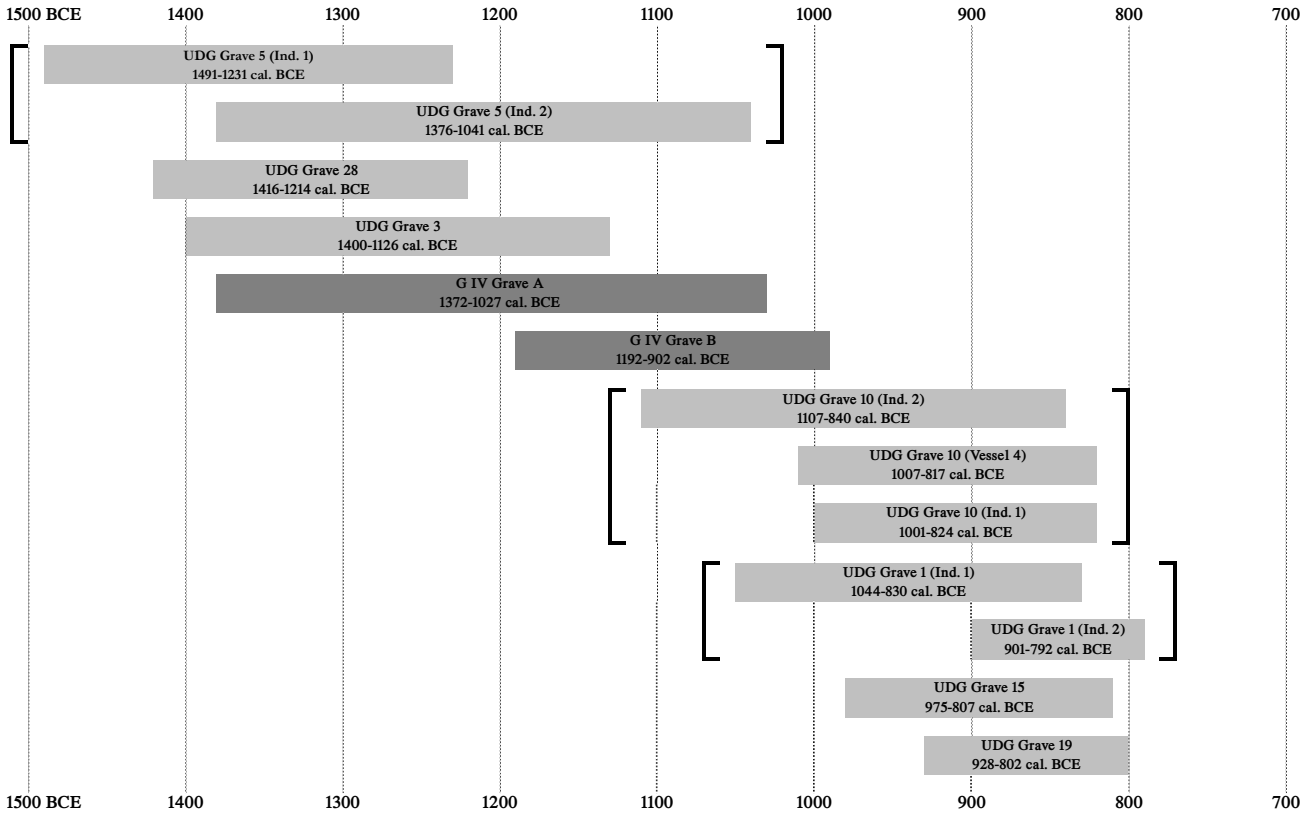


Fig. 229. Chronological seriation of 14C datings presented as 2 sigma (95.4%) confidence level of the Udegram and Gogdara IV graves (for details see Tables 1 and 3; Drawings by R. Micheli).

177), to the pre-Mauryan phase; they were therefore dated to the middle of the 6th century BCE suggesting a persistence of the Iron Age at least until such time. However, a later phase of such protohistoric horizon has been revealed at Barikot/Bir-kot-ghwandai, where the major evidences are those related to the razed surfaces of a settlement demolished to make space for the Indo-Greek fortified town (mid-2nd century BCE) (Olivieri et al. 2014).

To conclude the examination of the chronological evidence, we present a modelled calibrated distribution as 2 sigma (95.4%) confidence level (Fig. 232) of available 14C datings arranged in sequence in three phases: Udegram earlier chronology graves, Gogdara IV graves, and Udegram IV later chronology graves. The model[42] shows that the earlier chronology of Udegram graves ranges from 1460 to 1133 BCE, while the other phase identified at such site as later chronology ranges from 1002 to 783 BCE. The former counts Graves 3, 5 and 28, while the latter includes Graves 1, 10, 15 and 19. The radiocarbon calibration also reveals that the 14C datings of Gogdara IV are chronologically arranged in the middle between the two series of Udegram ranging from 1266 to 901 BCE. What it is corroborated is that the Udegram graveyard was used, maybe with some gaps, from 1500-1400 BCE to around 800 BCE or a little later; by the 8th century BCE the area (or this part of the wider cemetery) appears to have been abandoned. Whether this indicates a more general abandonment of the site as a whole as a consequence of the conclusion of the Iron Age at this time or as an effect of some local event cannot be ascertained without further excavation and chronometric analysis in such site or in other new settlements and graveyards of the Swat valley and surroundings areas.

[42] The agreement index (A) is generally good, since only one date (LTL13333A, Udegram Grave 1, Ind. 2) is lower than 60%.

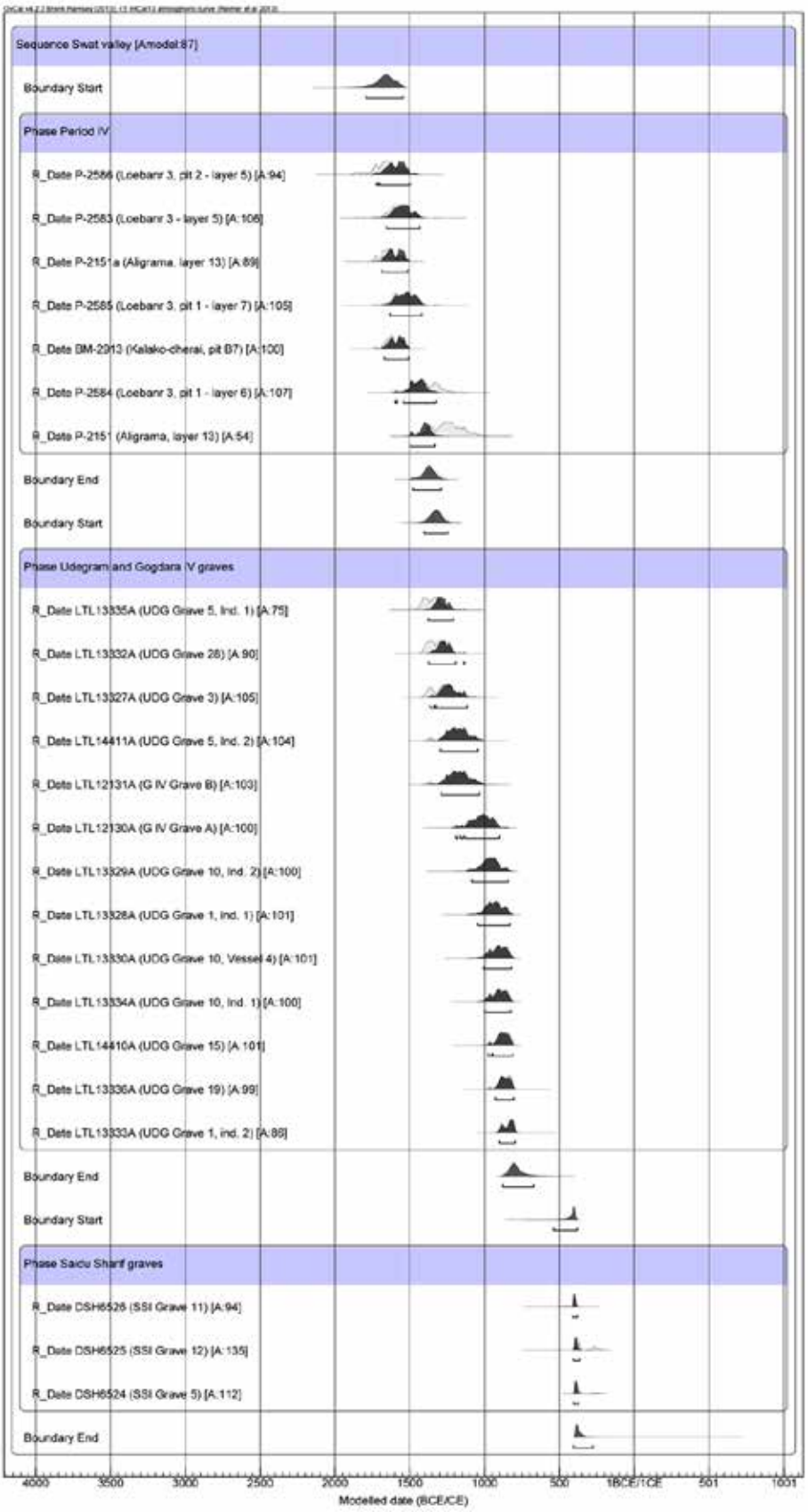


Fig. 230. Modelled calibration distribution of 14C datings relating to the protohistoric sequence of the Swat valley. Calibration at 95.4% confidence level (2 sigma): OxCal version 4.2.3 (Bronk Ramsey 2013); IntCal13 atmospheric curve (Reimer et al. 2013).

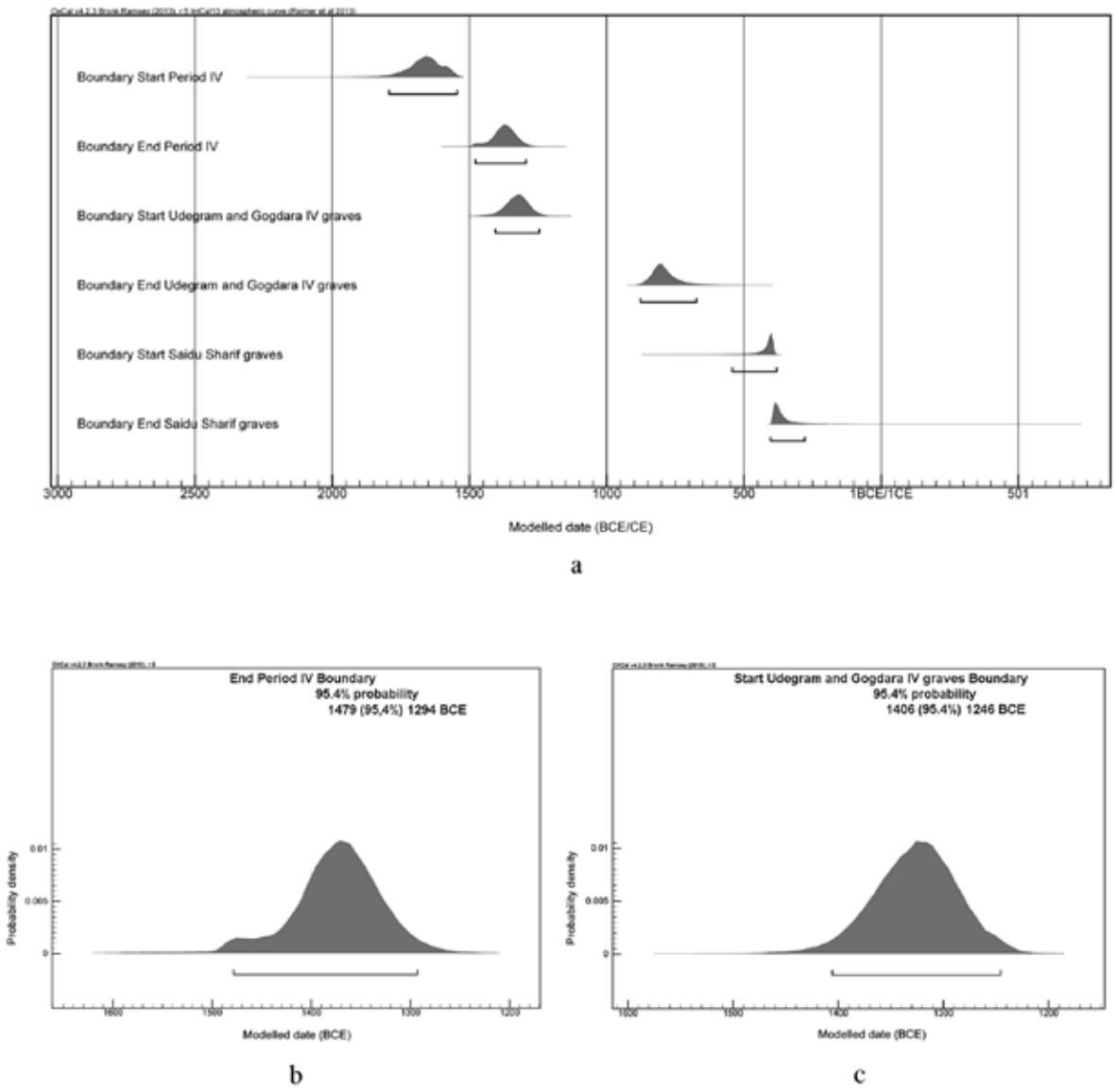


Fig. 231. The boundaries between the successive phases of settlements occupation and funerary activity in the Swat valley.

A comment on the absolute dating of three iron pins found in Grave 19 (In collaboration with M. Zahir)

The discovery in Grave 19 of an iron pin (UDG 36) doubtless in primary context as an ornament worn by the deceased (Fig. 187), and the 14C dating of the occupant between 928 and 802 cal. BCE (2 sigma confidence) (Table 3; Plate XV) requires additional comments on the background of the long-established and controversial debate on the precise date of the rise of iron technologies in the Indo-Pakistani Subcontinent (among others, Gordon 1950; Banerjee 1965; Jettmar 1968; Pleiner 1971; Chakrabarti 1976, 1977, 1992; Singh 1979; Bhardwaj 1979; Lal 1992; Stacul 1979, 1997a; Possehl and Gullapalli 1999; Tripathi 2002; Tewari 2003; Sahu 2006; Yatoo 2015).

Within this old debate we can recognize the influence of two competing archaeological theories; the earliest diffusionist model, promoted by scholars like Marshall, Wheeler, Dani, Durrani, Bhardwaj and Stacul, who saw iron technologies as being imported from West, and the recent indigenous model, mostly promoted by Indian

archaeologist (e.g. Chakrabarti, Tiwari, Agrawal, Kharakwal, and Gullapalli). The diffusionist model argues that iron and its technology was introduced into South Asia from outside around mid-1st millennium BCE, considering Iran and Central Asia as the core area for the diffusion of the technology and the idea of iron. The indigenous model, taking into account the abundance in the Subcontinent of iron ores, archaeometallurgical evidence, finished products and related material culture, has argued, perhaps more convincingly, for its local development during mid-2nd millennium BCE. This second model proposes that the knowledge of iron smelting and manufacturing of iron artefacts was well known around ca. 1000 BCE in the Indo-Pakistani Subcontinent. At present, the earliest reported evidence of iron smelting, iron slag and iron tools comes from the site of Malhar (Period II) in Uttar Pradesh, India, which is dated not better than ca. 1800-1000 BCE (Tewari 2003: 540). It must be stressed that given the still limited value of local archaeological sequences for the 2nd and 1st millennia BCE, and the few, and poorly defined stratigraphical contexts where the iron processing waste and the 14C samples were taken from, the nature of the debate is still more ideological and based on preconceived views than factual.

Recent studies into the Iron Age of South Asia have established six centres of early iron using communities in India and Pakistan. These centres were Baluchistan, Pakistan; the northwestern regions of Pakistan where the so-called "Gandharan Graves" are known; Upper Gangetic Valley, India; Eastern India; Central India; northern and southern areas of India where the Megalithic Cultures spread (Agrawal and Kharakwal 2003: 215; Chakrabarti 1976: 117, 1992: 37; Possehl and Gullapalli 1999: 154-58; Singh 2008: 241).

The presence of iron artefacts, iron manufacturing and iron ores, and iron technologies in general, in the archaeology of Pakistan has largely been poorly understood and the discussions of Iron Age material culture still revolves to a great extent around their presence in the protohistoric graves in the provinces of Khyber Pakhtunkhwa and Baluchistan. However, the earliest well-dated iron artefacts and iron slag have been discovered from some of the lowest levels of Bala Hisar, Charsadda, dated to 1200-900 cal. BCE (McDonnell and Coningham 2007: 155). The best material evidence for the Swat valley for widespread iron smelting, lots of iron slag and abundantly used iron tools still comes from the Early Historic site of Barikot/Bir-kot-ghwandai (Callieri et al. 1993; large scale excavation of the latest Kushana phases in Olivieri et al. 2014).

In the Subcontinent, iron technology is generally understood as heralding a new era: for example, Gopal and Srivastava (1998: 353-356) link it with confidence to the unsatisfactorily defined Painted Grey Ware culture of the Ganga valley, and associate the use of iron to a fast development of agricultural economy. In the Swat valley, this important technological change is commonly relegated to the later phases of the protohistoric cemeteries (Stacul 1979, 1997 and 2001). However, the presence of iron does not corresponds to the archaeologists' emphasis as the start of a new era. This association is largely assumed on preconceived bases and is not proven, reflecting the archaeologists' own perceptions of the past rather than actual evidence (Zahir 2012: 252). In fact, iron was not very widely reported from the protohistoric graves of north-western Pakistan (Stacul 1966a: 60). Only 7% of the graves in Swat and Dir valleys contained iron implements, constituting 2% of the total assemblage of artefacts within the graves' furnishings (Zahir 2012: 172). None of the few radiocarbon dated graves in Swat and Dir valleys contained iron artefacts. The best dated evidence of iron in grave contexts so far comes from protohistoric burials in Chitral and is dated to 255-180 cal. BCE (Ali et al. 2008; Muhammad Zahir, ongoing research); locally, iron artefacts continued to be deposited in funerary furnishings until the 10th century CE. In this light, the evidence of Udegram's Grave 19, where one of the three iron pins on record was certainly worn by the dead in his funeral attire in the 9th century BCE, establishes a firm chronological point

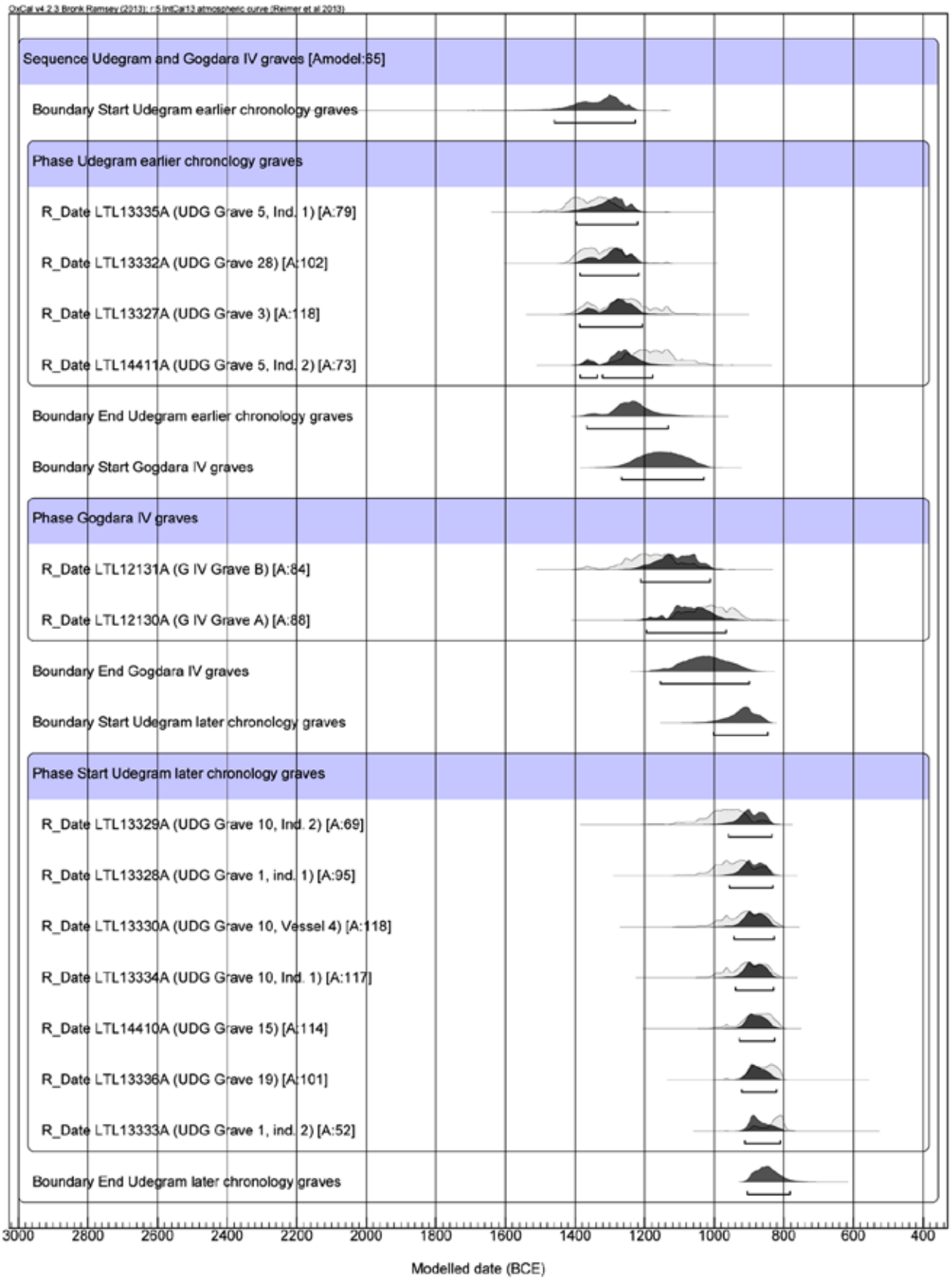


Fig. 232. Modelled calibration distribution of 14C datings relating to the Udegram and Gogdara IV graves. Calibration at 95.4% confidence level (2 sigma): OxCal version 4.2.3 (Bronk Ramsey 2013); IntCal13 atmospheric curve (Reimer et al. 2013).

(even though we cannot exclude that such metallurgical innovation in the region was actually earlier).
We should not overlook the fact that the pin UDG 36 faithfully replicates a common copper/bronze pin type, well attested at Udegram in Graves 6 and 10, this latter securely dated by 14C to the 9th century BCE. The introduction of iron first as an ornamental base material competing with copper/bronze, and only later for functional products such as tools and weapons follows consistently an historical pattern well attested in wide regions of the Eurasian continent - for example at Hasanlu in the Iranian Plateau, where in the 9th century BCE "…certain artifact types occurred both in bronze and iron" (Pigott 1999: 91).

Searching for ritual aspects

The Udegram cemetery was constructed and maintained on a steep slope, as stated above, through the collective efforts of a well organized and probably closely tied community. Graves were certainly signalled on surface by wooden fences and posts; and there is the possibility that graves were flanked or even covered by wooden constructions where bodies were exposed and defleshed prior to enter the megalithic chambers as secondary burials.
Grave markers in stone with rough designs are reported at Loebanr I (Tucci 1977: 22); some of the graves of Timargarha were included in stone circles (Dani 1967), not to mention the megalithic circle of Adina (Khan S.N. 1993: 1-2, tavv. II-III). The use of stone and wood markers in the Swat cemeteries had already been hypothesized by previous excavators (Silvi Antonini 1963: 14; Castaldi 1968: 511). Ethnographers have reported the use of grave markers by the Kalasha in Chitral (Robertson 1987: 641-642) and by the Dardic groups of Indus Kohistan (Barth 1956: 48), as well as in Swat Kohistan (Kalter 1991: fig. 251). It is well known, furthermore, that in the past for every adult Kafir a wooden effigy was erected after a year of his/her death. The size, nature and shape of effigies depended upon the feastings offered to the community (Robertson 1985: 645-646). The Kalasha people of Chitral are still practicing similar death and burial rites (Zahir 2012: 286, figs. 7.25-26). The erection of wooden effigies is considered helpful to the deceased and ensures a good position in the afterlife, granting that the deceased could be raised to the status of a "deified ancestor" (Jettmar 1986: 98).
The post-holes we found on the eroded surfaces at Gogdara IV and Udegram, in this sense, are very eloquent. Most probably, as we have widely reported, the main funerary chambers could be seen on surface as low mounds of piled earth, and as eroding enclosures of yellow packed silty clay, studded with poles and fences. People knew well where the dead of their family were, accessed the construction through permanent paths, and, at least for a certain time, took care of their last "houses" – strongly suggesting that such erections were material symbols of the relevance of the household in the societies of protohistoric Swat. Unknown rules and agreements probably regulated the final removal of graves and human remains from the burial lots.
Both the construction of the graves and the manufacture of the objects left in their spaces required specific skills and were certainly the responsibilities of craft specialists. The building techniques involved the preparation and manipulation of clay, the procurement and dressing of large and smaller stone slabs and most probably the cutting and the erection of wooden poles and planks. Given the fact that on the bones of the investigated Graves there is little or no evidence of traces left by natural scavengers, it is possible that the wooden constructions recognized at Gogdara IV were sealed mortuary houses used for decarnation rather than simple open enclosures.
How were the dead placed in the graves? The child of Grave 30 had been buried in a shroud of red tissue,

and neat imprints of a well-woven cloth were recorded, as we have seen, around a secondary burial of Grave 1. That the dead were fully dressed or protected by shrouds is more than a probability. Some of them wore personal ornaments: women of different ages had copper or bronze pins frequently found at the temples. Pins, in life, might have secured scarfs or hairdos, as we propose in Fig. 233 after the evidence of Individual 1 in Grave 6, and this hairdress might have been reproduced in death; but we cannot exclude that these objects were only a part of the mortuary attire, or even fixed near the head the edges of the shroud. The recurrent setting of secondary burial (small bones on the bottom, long bones tightly wrapped together in cloth, cranium above) strongly suggests that these interments were done in baskets. Vessels, too, at least in some cases, seem to have been placed in the mortuary chambers grouped within baskets or cloth bags.

Containers in perishable materials such as wood, bark and wicker work, in fact, are well attested – although indirectly – in the excavated record, and could have had established ritual roles in funerals.

The manufacture of wooden vessels, in fact, is a traditional craft of the mountainous valleys of north-western Pakistan and of the sub-Himalayan regions in general, and while similar objects had never been identified in previous excavations, the evidence of Grave 15 leaves little doubt on this matter. Moreover, most of the ceramics and the bronze items found in the Graves of Udegram and Gogdara IV are relatively well made and perfectly fired, and look fairly standardized products – another possible hint to mortuary practices performed as specialized activities. It is also possible that operations, such as the collection of the bones of the exposed bodies, the defleshment of part of the remains, and the re-exhumation or re-opening of the Graves (often performed, as far as we could see, shortly after the interments), were performed by specialists. Whether these operators were part of the households, or belonged in separate professional groups working for more households, at present cannot be established.

The skeletal record speaks of a robust, relatively healthy mountain population, affected, as far as one can say, by the expected levels of physical stress, and by a rather common range of diseases. The dentition, in particular, as frequently observed in protohistoric populations, was strongly damaged by abscesses, some caries and frequent teeth loss. Three individuals (two women and one man) seem to have intensively consumed part of their teeth in the course of undefined but intensive specialized technical activity. We found some evidence of violence affecting the bones: a possible case is a single blow on the cranium of an aged man buried in Grave 9, and a less certain round impact on the cranium of the young adult female occupant of Grave 7 (a possible trauma that, however, might have been the cause of a fatal infection).

Small children at death were treated differently from the adult population and, with few exceptions, buried somewhere else. Apparently, burials do not openly express a hyerarchies of wealth or rank, but the co-occurrence of a well-fashioned spindle whorl in chlorite (from Grave 28/Pit 1 North), that compared favourably to those in terracotta found in other Graves, and the two gold earrings discovered in Graves 1 (belonging to a child) and 27 may express a hint of luxury.

Moreover, in the sample we excavated, a single flimsy grave (Grave 11), apparently without furnishings, was carelessly destroyed during ritual re-openings of a major megalithic contruction (Grave 2). The households, in this light, might have included peripheral members or servants belonging to a lower rank. The status of the ephemeral and heavily transformed Grave 15, the latest of our sequence, entirely built in wood, containing a basket and at least a wooden vessel left to decay in situ, is an open question; but it might have been part of the same picture. Finally, the evidence of the unexcavated Grave 31 is also intriguing: from the pit we gathered two pots (Vessels 1 and 2) that had been not only coarsely made with chaff tempered clay and without

the potter's wheel, but also fired at low, clearly defective temperatures. While the forms mirror two types commonly encountered in other excavated graves, the technology is different and apparently sub-standard. A possibility (perhaps the more likely) is that Grave 31 and its content belong to an earlier period of use of the burial ground; another is that the group that buried the occupant of Grave 31 might have been concerned with an emulation process, but in such case we would however ignore if the pretended identity involved kinship, ethnicity or socio-economic status.

The frequency in the skeletal material of distinctive epigenetic characters (such as the olecranic holes on humeri, and wormian or extra sutural bones on the crania) might support the hypothesis of a rather compact kinship group, perhaps practicing a certain level of endogamy (as proposed, for example, for Neolithic populations of Portugal, see Boaventura et al. 2014: 187) but this possibility should be tested on other grounds.

Recently, J. M. Kenoyer (personal communication) noticed that the inflated amounts of beads produced in the centuries of the Integration Era of the Indus tradition can be explained by a very heterogeneous, expanding urban population; beads of various materials and distinguished by different levels of prestige or rank. Beads communicated identity, thus regulating social interaction with the final effect of buffering high levels of social stress that simply could not be avoided. At Udegram, in 23 excavated Graves, we found only two beads. The local society was apparently more compact – or, possibly, personal ornaments were not meant to qualify individual identities in the afterlife.

The two graves excavated at Gogdara IV, as discussed above, hint to the performance of a ritual cycle through acts involving the manipulation and displacement of skeletonised parts, and the offering and/or drinking of a beverage (wine?), as suggested by the placement near the cranium or the facial region of stemmed cups, of beakers and perhaps medium-sized restricted jars. Being limited to a couple of cases, this remains hypothetical, but the placing of stemmed cups near the head of the deceased seems to have been a recurrent practice in other protohistoric burials of Swat.

Although the number of Graves with recognizable human remains excavated at Udegram is limited, the emerging funerary patterns are also far from simple. The following table is an attempt at summarizing the most evident trends within the funerary record under scrutiny.

First of all, discussing the record in terms of gross categories, single primary burials at Udegram are the less represented kind (observed in Graves 3, 7, 11, 24 and 30: ca. 21.7% of the total); they belonged to both male and female adults, and even (single case), to a child. Taphonomic evidence suggests that the formal interment of these persons, at least in some cases, was by no means the final ritual practice.

Grave	First burial	Additional burial(s)	Funerary pattern
1	Child, secondary	Child, secondary	Secondary cranium burials, re-opened?
2	Removed	?	Re-opened, bodily parts partially removed, pots left in chamber
3	Male, primary		Re-opened, pots placed on body
4	Female, primary	+ Male, secondary (ca. same age)	Re-opened for interment of a secondary exposed burial
5	Female, primary	+ Male, secondary (male younger)	Re-opened for interment of a secondary exposed burial
6	Female, primary	+ Male, secondary (ca. same age)	Re-opened for interment of a secondary exposed burial
7	Female, primary		Re-opened, pots placed on body and on furnishings
8	Female, secondary	+ Child, removed?	Secondary burials and pots on top of Grave's 7 chamber
9	Male, secondary	+ Female, sub-primary (slightly older)	Re-opened for interment of a primary burial in a coffin, later re-opened
10	Male, secondary	+ female, primary (ca. same age)	Re-opened for interment of a primary burial
11	?	?	Primary burial, carelessy destroyed by Grave 2
12	Female, primary	+ Male, secondary (Male younger)	Re-opened for interment of a secondary exposed burial
13	?	?	Female and male bones in secondary context, mixed
14	?	?	Few bones found
15	Female, secondary		Re-opened, skeletal parts removed, facial bones detached
19	?		Secondary cranium burial; iron pins attached (in bag?)
21	?	??	Interment of four secondary, partial burials
24	Female, primary		
26	Male, primary	+ Female, secondary (much older)	Re-opened for interment of a secondary exposed burial
27	Male, primary	+ Female, secondary (younger)	Re-opened for interment of a secondary exposed burial
28	Female, secondary (?)	+ Male, secondary (male older)	Re-opened for interment of a secondary exposed burial; pots in a pit
29	Male, primary	+ Child, secondary	Re-opened for interment of a secondary exposed burial, weathered and in chips
30	Child, primary		

Table 5. Summary of the most evident trends within the funerary record at Udegram.

Graves 2, 3, 7 were certainly re-opened and the content was manipulated; the ceramics found within the chambers might have been deposited in the occasion of the first burial, and possibly displaced and/or added during the openings. The placement of beakers (containing beverages?) on the limbs, and even in the hand of the decomposing deceased of Grave 3, in particular, looks like a very formal act. Only in some cases, for example in Grave 7, it was possible to state with certainty which vessels were left undisturbed as a primary deposit and which, resting on later formed layers, were handled and abandoned at a second time.

Another substantial group of graves hosted only secondary burials (Graves 1, 2, 13, 14, 15, 21, 8, 19). One of these latter – Grave 2 – was rather interpreted as the residual evidence of a ritual in the course of which the grave was re-excavated, and the skeletal parts almost totally removed, with the noticeable and unexplained exception of a few post-cranial bones and the entire cranium, carelessly abandoned in a earthen surface on the basal floor of the chamber and even partially trampled to crumbles, apparently without any respect, during the operation. The pots found in the same layer were manipulated, probably displaced and abandoned in the empty chamber rather than formally offered to the dead. Other secondary burials of this group had bones of children (Graves 1, 8), partially present, manipulated and sorted in different ways, bones of different individuals mixed together (Graves 13 – the only collective burial found at Udegram), or of females; or, again, skeletal parts which, because of their partial record, could not be determined. It is not clear whether and how these re-elaborated sets of human bones were processualy linked to the minor group of primary deposition, as well as to the main group, double depositions (primary plus secondary).

In fact, double burials with a primary undisturbed (or partially disturbed) skeletal remains, followed by a later secondary interment are the most common category (Graves 4, 5, 6, 9, 12, probably 28, 26, 27 and 29, amounting together to ca. 45% of the cases). In Grave 10, the double burial still reflects the gender split, but first came a male secondary fractional burial, while a primary female deposition entered the chamber after a partial sedimentation. Within this group, the half – five graves out of ten – turned out to have hosted exactly the same ritual: the primary burial of an adult woman, almost regularly advanced in age, followed after a certain time by the burial of the bones – exposed, defleshed and wrapped in cloth – of a male of variable age, but in general younger (hereafter Primary Female + Secondary Male or PF+SM pattern). This peculiar burial ritual, that, needless to say, has nothing to do with the tradional and quite naive idea of the performance of *sati*-like practices, involves the enhancement of a close personal and/or institutional relationship between the two individuals, stressed in some cases by the intentional placement of the crania face to face, to eternity. But which kind of relationship was in play?

The primary interment of an aged female in the mortuary megalithic chamber – if indeed the primary occupant found in five cases at Udegram was the original one – might involve a strong link between females and the idea of the household, and perhaps even a matrilinear descent and residential pattern. Considering the five cases following the double burial rule, in a rough, approximate estimate the average of the age at death of the primary female burials is ca. 46 years, while that of male is about 35 years (even if in a case the two buried individuals had the same age). So the exposed males (in the same very rough approximation), in general, are certainly younger, but not enough to support a mother-and-son relationship as suggested, for example, by the study of double burials from south-eastern Spain of the early Bronze Age (Lul et al. 2013). Rather, males might have been brothers, or elder sons of a brothers or sisters; and it is also possible that the peculiar relationship that linked the two individuals was not simply determined by originary nuclear kinship ties, but was rather

acquired in life through specific, formal ritual-institutional practices, and at least in some cases independently on the age and gender.
This is suggested by the four cases (Graves 10, 26, 27 and 29) in which the PF+SM ritual is inverted or changed (male primary burials, followed by exposed females and, in a single case, by a child). Grave 9 is another kind of exception: a secondary disturbed mature male burial in the bottom, followed after an unknown lapse of time by a slightly older woman set for a while in a kind of coffin, to be extracted before decomposition and put aside the funerary container without much care. The skeletonised body was here let to decompose in the open space of a chamber partially filled by seeped clay, until it was suddenly crushed by the collapse of a massive slab fallen from the ceiling.
Whatever the meaning of similar variations, such prolonged multi-stages funerals require explanation. G. Stacul (1975: 323), who paid to this evidence considerable attention, remarked that

"[…] in the graveyards of Loebanr, Katelai and Butkara II in the Swat Valley […] cases of secondary or fractional burial where the detached bones are found piled up, often with the skull on top of the pile, are relatively common. There are about eighty where the disarticulation of the bones can certainly not be attributed to accidental causes. In most cases the detached bones are found lying in the grave alongside another corpse in its natural anatomic form. In other cases the grave contains only a secondary, fractional burial where the bones are usually piled up.".

E. Castaldi (1968: 591, 592, 608) proposed to link factional burials to the semi-nomadic life style of transhumant people who had to carry the bodies of their dead back to the burial grounds their homeland. Stacul rather explained (correctly, in view of our results) the evidence with ritual cycles involving the exposure of part of the deceased, defleshing, repeated use of the same mortuary pits, and double burial. He proposed a meaningful comparison with the burial practices of the Kohistan Kafir or Dardic tribes, quoting sources such as Robertson (1986), Snoy (1962), Jettmar (1967) and Afzal Khan (1975). However, Stacul thought that secondary interments usually belonged to an earlier occupant, whose bones had been piled up laterally when the chamber was used for a later burial (1975: 324), while our data to a great extent revert this depositional order; and he tried to explain the diffusion of double fractional burials with an ethnic-religious diffusion model moving from Central Asia and later from the Iranian Plateau between the 2nd and the 1st millennia BCE.
Other scholars, in other contexts, have linked secondary disposal practices particular to a variety of factors, among which gender, age and agency, ritual statuses and membership in the society, sodality, circumstances of death, and economic constraints (the need of accumulating resources or wealth for preparing a competitive funeral) or even, like Castaldi, to particular, long-distance patterns of movement or land exploitation across a territory (models reviewed, among others, in Parker Pearson 1982; Carr 1995; Schroeder 2001).

While the constraint of similar factors (and their interplay) are in theory reasonable and cannot be excluded in the Swat cases, on another (postprocessualist?) level, repeated manipulation and interments of skeletal parts involved, most probably, a careful consideration of a cyclical conception of time and a "narrative" ideological background in which gender, age and kinship roles were actively performed by members of the household (as living actors, but also as dead bodies). As posited by Mizoguchi (1993: 233) such cyclical conception could have been formed and redundantly enacted by codified sequences of ritual acts; and, in an apparent paradox, similar highly dynamic mortuary practices might have been crucial in supporting the reproduction and permanence of static and organic institutional models in the living society.
Some aspects of the funerary furnishings might also reveal encoded behaviour and social templates, but these

rules are not easy to reconstruct. For example, in some Graves of Gogdara IV and Udegram (but not always) terracotta spindle whorls had been intentionally broken before being deposited within cooking pots that could also contain small baskets and miniature pots. These latter vessels, within the Graves, were certainly conceived as a kind of female-related secluded space, in apparent opposition to high-stemmed cups that (intuitively) might hint to male public representations (see below).

Copper/bronze pins (whose heads come in only four types: globular, cone, flat disk and flat disk-cum-final cone) were mostly worn by women (six cases out of eight, and one was given to a child) and another to a young male adult. Spindle whorls, in contrast, do not appear to have been exclusively deposited in female burials. These spinning tools (if such was actually their function) accompanied women in Udegram Graves 5 and 7, but males in Graves Gogdara C and Udegram 27, while in Grave Udegram 28/Pit 1 North spindle whorls appear among the vessels of the second deposition, that might have belonged to a male (but they might have been manipulated and displaced in this last funerary operation). However, as in a few male burial contexts (Gogdara IV Grave C, and possibly in Udegram Grave 28) spindle whorls were intentionally shattered in two or three piece before deposition, it is possible that their formal breakage, like that of the bangles by Hindu women at their husbands' funerals, signalled a change in female socio-ritual status, rather than alluding to or mirroring a daily activity performed in life.

Both at Gogdara IV and Udegram the ceramics abandoned in the Graves may have included as an artefactual core a kit formed by globular cooking pot, apparently used only once for preparing a funerary meal and covered with abundant sooth, a high stemmed cup, a globular cup on a high, reverted cone-like foot, a globular or ovoid necked jar and one or more beakers of variable size. Bowls appear less regularly. If participants consumed only the food or beverages prepared in the globular cooking pots found in the graves, their number could have been rather limited, as these vessels are not very large, but obviously enough it is impossible to state whether more food was prepared in other pots, or if it was administered in purely symbolic amounts.

A niche in the enclosure of Grave 2, containing only a globular cooking pot and a high stemmed cup, circumstantially but strongly suggest that these two vessels represented a female role (cooking) accompanying a male one (representing formal and ritual drinking?). This association if repeated in double series, allows to detect easily (as in the mentioned cases of Graves C at Gogdara IV, and Grave 2 at Udegram) grave contexts that hosted two different formal burials, even though, like in Grave 2, human remains had been damaged and largely removed.

An important consequence of this viewpoint would be that, always speaking in quite general terms, the vessels found in the Graves of Gogdara IV and Udegram should not be considered "offers to the dead" in a strict sense, or – at least – not always and not simplistically as such. Pots, or a part of them, might have been abandoned in the graves' shafts because they had been made on purpose for the funerals and after use by the community were affected by ritual pollution. At a remote symbolic level, they may have represented the projection of the last activities of the survivors, rather than a permanent furnishing of the dead for the afterlife (as we more commonly assume while dealing with ancient cemeteries).

This possibility is well illustrated by the modes of discard of two other ceramic types found with a certain frequency in the excavated Graves. The largest containers (big restricted jars and globular pots with four perforated horizontal lugs) were frequently abandoned (complete or in large fragments, frequently upside down) after burial ceremonies, on the roofs or near the edges of the funerary chambers. While big restricted and necked jars might have been used for distributing beverages during the funeral feast and after the closure

of the chambers, four-lugged jars may have had a different, quite peculiar use. Although the manufacturing process and the general form of these vessels closely resemble that of cooking pots, all four-lugged pots we found have no evidence of exposure to fire, sooth or of wear along the mouth, on the outer base or on the interior: in short, contrarily to other vessels found in the Graves, they seem to have been produced for the funeral, and not used in a conventional way.

Vessels with pierced lugs and/or handles are present, but are quite rare in the ceramic repertory of protohistoric Swat. In 1966 such vessel, provided with four tongue-shaped lugs on the shoulder, was identified as a variant (Cf/IV-a) of the globular large mouthed jar with incurved rim and disk-base (Stacul 1966a: Figs. 30, 33). In the typology presented in 1972 by Silvi Antonini and Stacul the type Cf/IV became VTf67, but the variant (Cf/IV-a) with four tongue-shaped lugs is no more present in the pottery list. The latter appeared in two protohistoric graves excavated by Giuseppe Tucci near the Barikot/Bir-kot-ghwandai site (Tusa 1981: 112, 114, Figs. 3 j, 4 d, 33, 43): Grave 1 (a single burial) and Grave 2 (a multiple burial with three individuals). Both tombs were attributed to the Periods VI-VII of the Swat valley sequence. A large-mouthed globular jar with lugs on the shoulder was found in 1965 approximately 300 metres above the Katelai I graveyard in the settlement correlated to the funerary area. The materials were attributed to the Period V of the Swat valley sequence (Stacul 1974: 369-370, Fig. 5). Although not very common, such vessel had a long life during protohistory - as its cultural attributions and the variety of employs suggest - as offerings at Udegram and Gogdara IV, as grave furnishings at Barikot/Bir-kot-ghwandai, and as daily pots at Katelai I.

On this kind of container, horizontal tongue-shaped lugs are relatively unsubstantial, and it seems unlikely that if the pot with a heavy content was meant to be hung, the cords would have supported its weight. But the lugs actually had hosted strings: this is revealed by two or perhaps three cases (in the repertory of the Udegram Graves furnishings) in which wear traces left by the vertical friction of a cord were clearly identified in the hole of a lug. Given the fact that four-lugged pots have fresh surfaces and no signs of use-wear, how can we explain the strings running and cutting the pottery surface through the pierced lugs? Strings might have been used to fix a skin membrane to the mouth of the pots. We therefore suggest that these peculiar vessels, so far found only as offerings at Gogdara IV, Udegram and Thana (see Dani and Durrani 1967), were used as drums during ceremonies of re-exhumation of the dead, which allows us to imagine, for the involved rituals, the dramatic soundscapes described by early witnesses of funerals in the societies of Kafiristan and surrounding areas[43]. Also the care used in finishing and decorating the upper shoulder, immediately below the space that would have been occupied by the strings pulling the skin, would fit with the hypothesis, because the shoulder was the prominent and mostly visible part of the object, if the pot was played in public as a drum at the funeral. As it is well known, pottery vessels are still widely used as drums in many areas of the Subcontinent, and the globular forms of these vessels perfectly fits with such hypothesized function; the sound should have been deep and dull.

After playing at the ceremony, funerary "drums" were abandoned in the empty or transformed burial spaces (as at Udegram in Grave 2, or at Gogdara IV in Grave C) or, more frequently, above re-opened Graves (as in Graves 27, 29 and 9) or in highly re-elaborated burials such as that of Grave 8. Such vessels, in fact, never appear in the context of the (admittedly limited) record of primary burials excavated at Udegram; and while soothed cooking pots, as stated above, often contain terracotta spindle whorls and small vessels, four-lugged "drums" invariably were found empty.

[43] Drums and flutes were traditionally used in the performance of funerals in the Kohistan areas of northern Pakistan (see, for example, Robertson 1896: 630-631).

Another ceramic container that could have been used with a similar logic (used at the funeral and in the following ceremonies, not offered as an afterlife provision for the dead) is the small high-necked bottle. This ceramic type, actually, is absent in the few observed primary burials, very rare in the PF+SM series, but comes in great numbers in the Graves that underwent the most radical alterations (for example, in Grave 28, or even more explicitly in the secondary burial of Individual 2 of Grave 27). A function as flagons for perfumes (almost obviously suggested by its form) should be confirmed in future by dedicated analytical tests; but it would might acquire meaning if strong scents were used by the participants to mitigate (symbolically but also perhaps practically) the smell of decomposition – even considering that tolerance to smell has always been a culturally-determined habit, and not a biological constraint.

Mortuary practices and society

Similar preliminary hypotheses may account for only some aspects of what was a rich, complex and variable death rituality. Many other practices and values could be discovered in further explorations of these and other ancient cemeteries of the region. Also, it is clear that the sample of the Graves excavated at Udegram is too limited to account for every variation, also considering that the Graves we have excavated and presented in this report belong to a span of five or six centuries, and that different types of burials might have been as many steps of one or more funerary cycle.

However, it is clear that the Swat cemeteries were constructed, maintained in efficiency and well organized on surface, and most probably there were precise rules that dictated the opportunities, times and the rituals of exposure, deposition and re-exhumation of the burials, as well as the final removal and transport of these latter to other places. Many of these practices might have been performed in public. Following Schoeder (2001: 89-90) and other authors quoted in his paper, we may also hypothetically assume that such bounded, in absolute costly, architecturally elaborated and highly regulated burial spaces used exclusively for the dead suggest a society with a corporate group structure endowed with lineal descent system; and that such system was aimed at controlling the inheritance of limited economical base resources. Megalithic burial chambers, where male and female roles were represented with strongly polarized rituals, might have been powerful representations of the household and its management. The relatively high incidence of the PF+SM burials in formalizing death may have ritually expressed with the redundancy a relationship relevant in the lineal descent system, following in detail a complicated, multi-step process clearly distinguished for females and males, and involving and representing the actual synergic participation of various components of the living group.

Cross-cultural ethnographic surveys of mortuary practices demonstrate that multiple-stage ritual cycles involving the secondary disposal of skeletal parts serve as a cultural buffer or limitation of the grief period or "a public marker of a return to normal behaviours patterns for the relatives of the deceased as well as for the larger social unit affected by the individual's demise" (Schroeder 2001: 79). In the protohistoric cemeteries of the middle Swat valley, recurrent patterns in the composition and transformation of the grave furnishings hints to the existence of funerary feasts with rhythmic music, meals and drinking, following encoded rituals that, at present, given the limited record available, we may only partially perceive by intuition. In fact, as well stated by Larsson (2003: 163 and 124) in several pre-modern societies

"…Mortuary rituals in general are potentially very powerful occasions, since the basic questions of life and death take centre stage. Among people practising secondary burial rites, the initial ceremony which follows the death of an individual is often very emotional. The grief is new and immediate, and the persona of the dead still fresh in the minds of the living. But the secondary ritual gives the

Fig. 233. Reconstructive proposal of pins employed by an adult female (Individual 1) as found in Grave 6 (Pencil sketch by F. Martore).

living a feeling of control, as well as a possibility to organize the whole affair to an extent not otherwise feasible by letting it take place after a certain amount of time or in a specific season. In contrast to the first, the second ceremony is often portrayed as a joyous occasion, a time for celebration not grief… The second ceremony means the community can plan for the event, invite kin and allies, and prepare themselves. It is also a joyous occasion for the most part, a celebration of the victory of the community who lives on and has received another ancestor."

Larsson thinks that in protohistoric Scandinavia corrupted flesh represented one's transient living personhood, but that imperishable bones revealed a permanent, superior social identity (supporting remarks also in Schroeder 2001: 90). Perhaps also in ancient Swat, by bringing bones to light, survivors physically associated individuals that were linked, or had to be supernaturally linked, in bonds crucial for the household and the community. Individual deaths thus dynamically provided templates that were essential for the society as a whole: associating bodily parts of different individuals in graves might have contributed to the symbolic re-creation of important links within the involved social units.

Similar interpretations might be simplistic, and quite far from the historical reality. Perhaps we will never have the certainty that the secondary burial stages of the funerals in protohistoric Swat followed similar logics and were events of similar descriptions; but (at least in actualistic terms) music and drinking are often linked to exciting and even joyous celebrations. This possibility should be at least taken into account and might contribute in future to different reconstructions of human emotional background and agencies in the lost world of protohistoric Swat.

At present, the heritage of its protohistoric graves – a crucial record for the diffusion of the Indo-Iranian languages and the genesis of the cultural background of the whole Subcontinent – are disappearing by the hundreds, if not by thousands, every year, for lack of a proper protection and fast urban development. Previous excavations, although commendable for the recovery and the fast publication of hundreds of contexts and thousands of artefacts, paid little attention to post-depositional and taphonomic processes that now appear as complex as crucial, in their interplay with the life history and the biological identity of the dead. Only by subtracting the phenomenological realm of taphonomy from the archaeological record we can construct a more complete and reliable cultural theatre.

It is clear that while so far in Swat graves have been simplistically considered as boxes for bones and artifacts,

synchronic contexts suddenly and permanently frozen in time. We believe that they should be rather conceived, excavated and documented as microsites distinguished not only by an intensive, prolonged and interactive human activity, but also, at the same time, deeply transformed by natural agents. Also, in the light of the evidence of graves re-opened and modified after decades (e.g. Grave 5) the chrono-typology of Silvi Antonini and Stacul appears questionable and urgently needs a general revision, because the ceramic associations of the hundreds of published graves are not always necessarily synchronous. It is hoped that what here published will stimulate a new attention, and better excavation recordings, by a new phase of field activity; but the time left is definitely quite short.[44]

[44] In March 2016, when the editing process of this book was nearly accomplished, appeared a paper entitled "The 'Gandhara Grave Culture': New Perspectives on Protohistoric Cemeteries in Northern and Northwestern Pakistan", written by one of our co-Authors, Muhammad Zahir. The article in question was published in 2016 in the volume *A Companion to South Asia in the Past* (Gwen Robbins Schug and Subash R. Walimbe, eds. for John Wiley & Sons, Inc.). Just a note on the 14C dating R-380 (4200±140 BP) used in that paper as a reference point for a new chronological boundary of earliest occupation at Ghalegai. In my view, this dating - as many others - has a laboratory estimated error range which is too wide to be useful for a reliable chronology. As we have highlighted in the chapter "The chronometric evidence at Udegram and Gogdara IV" of this Volume, in the case of the graveyards excavated in the 1960s in the Swat and Dir valleys, radiocarbon dates present several problems, and were too scanty in number to outline any reliable chronological framework; for this reason, we have not considered them in our analysis (L.M. Olivieri).

APPENDICES

M. Vidale, R. Micheli and L.M. Olivieri

Appendix 1: List of Inventoried Objects deposited in the Swat Archaeological Museum (Saidu Sharif, Swat)

Inventory no.	Stratigraphic context	Description	Description	Conditions
1	Grave 1 -5	Globular vase	No rim	Intact
2	Grave 1 - 8	Globular vase	Rim everted	Recomposed from several fragments
3	Grave 1 - 3	Globular vase	Rim everted	Recomposed from several fragments
4	Grave 1 - 6	Globular vase	Long neck	Rim brocken
5	Grave 1 - 2	Globular vase	No rim	Intact
6	Grave 1 - 7	Bowl on stand		Stand recomposed
7	Grave 1 - 9	Biconical vessel		Intact
8	Grave 1 - 15 in 3	Vessel	Rim out-turned	Intact
9	Grave 1 - 10	Vessel		Intact

Table 6. Gogdara IV (2011): Inventoried objects found during Seasons 2 (Autumn 2011).

Inventory no.	Stratigraphic context	Description	Description	Conditions	Dimensions
1	Grave 2/1	Globular pot with handles		Broken, complete	h. 33 cm
2	Grave 2/2	Globular bottle	With ridges	Mouth brokenh. 19 cm	
3	Grave 2/3	Globular pot	With ridges	Complete	h. 20,5 cm
4	Grave 2/4	Cylindrical beaker	With ridges and zig zag line	Broken	h. 10 cm
5	Grave 2/5	Necked jar	With dotted pattern	Complete, broken neck	h. 20 cm
6	Grave 2/6	Footed goblet With ridges		Foot missing	h. 13 cm
7	Grave 2/7	Neck of 5	Refitted with 5		
8	Grave 2/8	Globular coarse pot	Plain	Complete	27,5 cm
9	Grave 2/9	Stemmed bowl with ridge		Complete	h. 26 cm
10	Grave 2/10	Footed goblet	With ridges	Complete	h. 12 cm
11	Grave 2/11	Stemmed bowl with ridges		Broken and missing at the mouth	h. 24, 5 cm
12	Grave 2/12	Globular coarse pot	Plain	Broken, half missing	h. 31 cm
13	Grave7/1	Small cylindrical beaker	With grooves	Broken, half missing	h. 5,5 cm
14	Grave 7/2	Globular pot	With grooves	Complete	h. 10 cm
15	Grave7/3	Stemmed bowl	With ridge	Complete	h. 24,6 cm
16	Grave7/4	Globular coarse pot	Plain	Complete	h. 26 cm
17	Grave 7/5	Hemispherical bowl	With zig-zag incised line	Complete	h. 7,7 cm
18	Grave 7/6	Biconical spindle whorl	Plain	Complete	Diam. 3 cm
19	Grave 8/1	Globular necked jar	Ridges, zig zag and wavy lines on shoulder		h. 28 cm
20	Grave 8/2	Bell beaker	Ridges, zig zag	Complete	h. 15,6 cm

Inventory no.	Stratigraphic context	Description	Description	Conditions	Dimensions
21	Grave 8/3	Miniature pitcher	Plain	Complete	h. 5,5 cm
22	Grave 8/5	Stemmed bowl with ridges		Broken at the mouth	h. 30 cm
23	Grave 8/6	Cylindrical restricted beaker	With ridges and wavy pattern	Complete	h. 9 cm
24	Grave 8/7	Globular pot with handles	Lines on shoulder	Handles missing	h. 30 cm
25	Grave 8/8	Small beaker	Lines on shoulder	Complete	h. 6 cm
26	Grave 8/9	Small pot	Plain	Complete	h. 6 cm.
27	Sporadic, surface	Spouted vessel	With ridges	Complete	h. 16 cm

Table 7. Udegram (UDG 2012): Inventoried objects found during Seasons 3 (Spring 2012).

Inventory no.	Stratigraphic context	Description	Conditions	Dimensions
28	Grave 1	Crescent shaped gold ear-ring	Fair	1,3 x 0.8 cm
29	Grave 1	Small female terracotta figurine	Fair, one arm restored	4.8 x 3 cm
30	Grave 1	Æ circular ear-ring	Very fragile	1.4 x 1.2 cm
31	Grave 1	Uncomplete Æ pin, globular head	Very fargile	3.5 x 0.3 cm
32	Grave 6	Æ pin with cone-shaped head	Very fragile	8.7 x 0.3 cm
33	Grave 12	Æ pin with disk-like head	Very fragile	12.5 x o.3 cm
34	Grave 6	Æ pin with globular head	Fragile	11.1 x 0.6 cm
35	Grave 5	Ivory spindle	Broken	8.6 x 0.9 cm
36	Grave 19	Iron pin with cone-shaped head	Very fragile	11.5 x 1.2 cm
37	Grave 19	Iron pin	Very fragile, broken, head missing	6.5 x 0.5 cm
38	Grave 19	Iron pin	Very fragile, head missing	9.5 x 0.4 cm
39	Grave 5	Æ pin with disk-like head	Very fragile, broken	4.1 x 1 cm
40	Grave 28	Small biconical terracotta spindle whorl	Broken	2.2 x 1.3 cm
41	Grave 4	Æ pin with disk-like head	Broken	11.3 x 1.2 cm
42	Grave 5	Pot	Fair	15 x 13.5 cm
43	Grave 5	Cylindrical vessel	Fair	12 x 12.5 cm
44	Grave 5	Cylindrical beaker, decorated with dots	Fair	9.3 x 12 cm
45	Grave 5	Bottle	Fair	8 x 6.2 cm
46	Grave 5	Bowl	Fair	7.4 x 14 cm
47	Grave 5	Pot	Fair	12 x 11.8 cm
48	Grave 5	Bowl on stand	Fair	13 x 12 cm
49	Grave 5	Terracotta spindle whorl	Fair	1.8 x 2.8 cm
50	Grave 9	Bowl on stand, with zig zag line and dots	Fair	16.5 x 14 cm
51	Grave 9	Bottle	Fair	9 x 8 cm
52	Grave 9	Cooking pot	Fair	23 x 23.5 cm
53	Grave 9	Stemmed cup	Fair	26 x 15 cm
54	Grave 9	Ovoidal jar, grooved	Broken, restored	24.5 x 21.5 cm
55	Grave 9	Cylindrical vessel	Fair	8.5 x 10 cm
56	Grave 9	Bottle	Fair	8.5 x 7.3 cm
57	Grave 9	Miniature jar	Fair	6 x 5.7 cm
58	Grave 9	Bottle	Fair	7.7 x 6.2 cm
59	Grave 9	Miniature jar	Fair	5 x 4.3 cm
60	Grave 12	Cylindrical vessel	Fair	9 x 10.7 cm
61	Grave 1	Biconical decorated vessel	Broken, restored	13.7 x 14.3 cm
62	Grave 3	Biconical vessel	Fair	16 x 13.5 cm
63	Grave 3	Globular jar	Fair	27 x 28 cm
64	Grave 3	Grooved bottle	Fair	22.3 x 21.5 cm
65	Grave 3	Biconical vessel	Fair	13.7 x 10.5 cm

Inventory no.	Stratigraphic context	Description	Conditions	Dimensions
66	Grave 3	Bowl	Fair	7 x 15.5 cm
67	Grave 3	Bowl	Fair	7.8 x 18.5 cm
68	Grave 3	Bowl	Fair	10 x 24.5 cm
69	Grave 3	Biconical vessel	Fair	13.2 x 11.5 cm
70	Grave 3	Small lamp	Broken	5.2 x 4 cm
71	Grave 3	Small lamp	Broken	4 x 3 cm
72	Grave 30	Small pot	Fair	6 x 7 cm
73	Grave 30	Small pot	Fair	10 x 10 cm
74	Pit 1 North	Large Globular necked jar, with curved lines	Fair	38 x 35 cm
75	Pit 1 North	Cooking pot	Fair	26 x 28 cm
76	Pit 1 North	Cooking pot	Fair	23 x 24.5 cm
77	Pit 1 Norh	Biconical vessel	Fair	12.5 x 13 cm
78	Grave 28	Biconical vessel	Broken	10.3 x 11.3 cm
79	Grave 28	Biconical vessel	Fair	18 x 16.3 cm
80	Grave 28	Biconical vessel	Broken	15 x 14 cm
81	Pit 1 North	Cylindrical vessel	Fair	8 x 8.5 cm
82	Pit 1 North, inside pot 3	Small stemmed cup	Fair	7 x 7.5 cm
83	Grave 29	Cooking pot	Fair	19 x 19.5 cm
84	Grave 29	Globular grooved pot	Fair	6 x 7 cm
85	Grave 29	Bottle, with zig zag lines	Fair	8.7 x 6.5 cm
86	Grave 29	Cylindrical vessel	Fair	5.2 x 6 cm
87	Grave 29	Cylindrical vessel	Fair	4.7 x 6.5 cm
88	Grave 29	Grooved pot	Broken, restored	7 x 8.3 cm
89	Grave 29	Miniature jar	Fair	5.8 x 6 cm
90	Grave 29	Bottle	Fair	7.5 x 6.3 cm
91	Grave 29	Cylindrical vessel with zig zag line	Fair	6.5 x 6.5 cm
92	Grave 29	Cylindrical vessel	Fair	6 x 6.5 cm
93	Grave 29	Bottle	Fair	7.5 x 6.5 cm
94	Grave 29	Cylindrical vessel	Fair	5.3 x 6.7 cm
95	Grave 29	Stemmed cup	Fair	26 x 14 cm
96	Grave 29	Bowl on stand, cord-marked	Fair	12.5 x 11.9 cm
97	Grave 29	Bottle	Fair	8 x 6.2 cm
98	Grave 29	Globular pot, grooved	Fair	10.5 x 13 cm
99	Grave 29	Pot	Fair	19 x 15 cm
100	Grave 10	Necked jar	Fair	26 x 24 cm
101	Grave 10	Cylindrical vessel, with curves and dots	Fair	10 x 9.5 cm
102	Grave 10	Bottle	Fair	9 x 8.4 cm
103	Grave 10	Cooking pot	Fair	21.5 x 23.5 cm
104	Grave 10	Cooking pot	Fair	26 x 28 cm
105	Grave 10. inside pot 4	Terracotta spindle whorl	Broken in 3 pieces	2.5 cm
106	Grave 10	Bowl on stand, decorated with lines	Foot missing	11.5 x 10.7 cm
107	Grave 10	Biconical vessel	Fair	12.5 x 10.7 cm
108	Grave 10	Cylindrical vessel with dots and curved lines	Damaged	9.5 x 9.5 cm
109	Grave 10	Pot	Fair	12.5 x 12 cm
110	Grave 10	Bowl on stand, grooved	Broken, restored	11.5 x 13.5 cm
111	Grave 29	Globular pot	Fair	14.3 x 13 cm
112	Grave 29	Bowl on stand	Fair	13 x 10.5 cm
113	Grave 4	Stemmed cup	Fair	32.5 x 14 cm
114	Grave 4	Bowl on stand, decorated with dots	Fair	14.5 x 13.5 cm
115	Grave 4	Cylindrical vessel	Fair	6.2 x 8.5 cm
116	Grave 27	Globular necked jar	Fair	35 x 29.5 cm
117	Grave 27	Subcylindrical vessel, decorated with curves and dots	Fair	9.7 x 9.7 cm

Inventory no.	Stratigraphic context	Description	Conditions	Dimensions
118	Grave 27	Bowl on stand	Fair	14.5 x 11.5 cm
119	Grave 27	Subcylindrical vessel, decorated with curved patter	Fair	12.3 x 12.7 cm
120	Grave 27	Cylindrical vessel	Fair	5.3 x 5.5 cm
121	Grave 27	Cylindrical vessel, with zig zag lines	Fair	8.5 x 9 cm
122	Grave 27	Cylindrical vessel	Fair	6.5 x 6.5 cm
123	Grave 27	Bottle, decorated with crescent	Fair	9.5 x 6.3 cm
124	Grave 27	Biconical vessel with handle	Fair	18 x 14.2 cm
125	Grave 27	Cooking pot	Fair	24.5 x 24 cm
126	Grave 4	Cylindrical vessel	Fair	5 x 6.5 cm
127	Grave 29	Ivory spindle	Broken, restored	13.5 x 0.9 cm
128	Grave 29	Æ pin with disk-like head	Very fragile, complete	8.5 x 1.2 cm
129	Grave 29	Two ring-like Æ ear-rings	One complete, one broken; fragile	1.3 x 1.3 cm
130	Grave 29	Ivory spindle	A fragment	3.9 x 0.6 cm
131	Grave 10	Æ pin with disk-shaped head	Fair	11.9 x 1.3 cm
132	Grave 4	Steatite cubic bead	Fair	1 x 1 cm
133	Grave 4	Æ sheet	Few fragments, very fragile	-
134	Pit 1 North	Chlorite spindle whorl	Broken in 2 parts	1.9 x 2.6 cm

Table 8. Udegram (UDG 2012): Inventoried objects found during Seasons 4 (Autumn 2012).

Inventory no.	Stratigraphic context	Description	Conditions	Dimensions
135	Grave 31	Cup on high cone-shaped foot.	Fragmentary, partial	16.5 x 12 cm
136	Grave 31	Small restricted jar	Fragmentary	14.5 x 12 cm
137	Grave 26	Globular cooking pot	Complete, damaged	24 x 24 cm
138	Grave 26	Stemmed cup	Complete	25 x 15.5 cm
139	Grave 26	Bowl	Complete, unbroken	9 x 18 cm
140	Grave 26	Beaker	Damaged at the rim	7 x 9 cm
141	Grave 26	Cup on high foot	Complete, damage on foot	13 x 11.5 cm
142	Grave 26	Pear-shaped pot	Complete, unbroken	14.3 x 12 cm
143	Grave 26	Pear-shaped pot	Damaged at the rim	12 x 12.2 cm
144	Grave 27	Stemmed cup	Complete, restored	30 x 16 cm
145	Grave 27	Small pot	Damaged at the rim	5.2 x 5.6 cm
146	Grave 27	Small bottle	Complete, rim damaged	8.2 x 6 cm
147	Grave 27	Small jar	Complete, rim damaged	8.7 x 6.6 cm
148	Grave 27	Small bottle	Damaged at the wall	9.3 x 6.4 cm
149	Grave 27	Small bottle	Complete, unbroken	7.7 x 6.1 cm
150	Grave 27	Small bottle	Damaged at the rim	8.2 x 6 cm
151	Grave 27	Decorated beaker	Fragmentary	5.8 x 8 cm
152	Surface	Stone mace-head	Complete chipped	14.9 x 7.5 cm
153	Surface	Weight?	Complete, one side largely chipped	20 x 14 cm 7000 gr.
154	Grave 27. Left side of the skull.	Ring-like gold ear-rings	Complete	D. 0.9 cm t. 0.15
155	Grave 10 Bottom Slab	On the reverse side incised designs: a dot-marked crossed-wheel, a groove.	Brocken	l. 65 max. x 63.5 x 3.5 cm

Table 9. Udegram (UDG 2012): List of objects found during
Season 4 (2012), but inventoried in 2014 during Season 7 (no. 155 was inventoried in 2016, Season 11).

Appendix 2: Grave 14

In the second day of horizontal dig in the southern stretch of Udegram's Main Trench, we found, just 30-40 cm below the present surface, a pile of loose stones based upon what we previously defined in section as SU (3) (the trampling surface of the contemporary local graveyard). The stones were part of a ruined heap that might have covered an underlying recent shaft, or being abandoned on the spot after the construction nearby of a dry masonry wall. In any case, as they have no relationship with the underlying ancient stratigraphy, are not documented in this report.

After removal of this feature, we cleared the outline of three parallel schist stone slabs oriented North-West/South-East, and of a fourth smaller vertical slab or *khas* that, according to the contemporary practices, originally signals the position of the head of the deceased – see in the map our SU (270). Thin slabs of schist and pebbles were inserted to seal the joins among the flat slabs (Pl. XIIId).

This feature (Grave 14) was evidently a recent one (Fig. 234). Its negative interface was labelled SU <30>, SU (31) gathers recent layer piled on top of the Grave, and SU (33) its filling. The slabs of the roof are defined in our records as SU (269). SU (270) was a vertical slab of schist put as a grave marker, fixed near the upperslabs with a thick lump of compact mud. Grave 14 was dug from the top of SU (2) and cut the local sequence down to the layers piled on top of Graves 3 and 8, as well as the underlying SU (5). When we lifted the stones, the grave shaft, was almost completely empty. The earthen walls were vertical, slightly tapering towards the flat base.

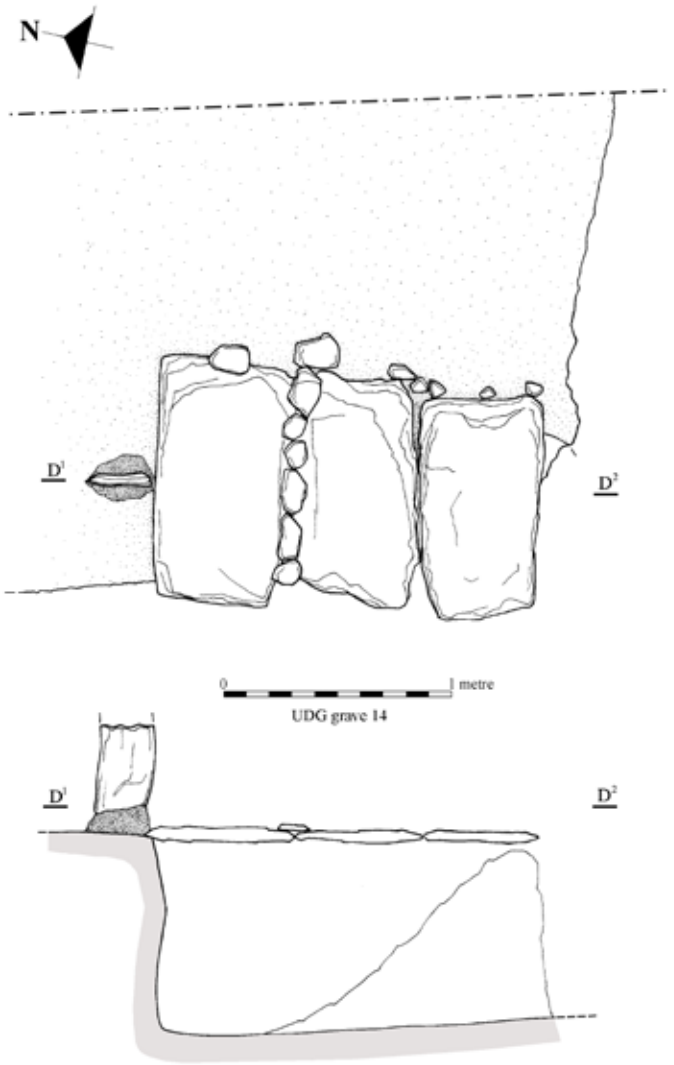


Fig. 234. Udegram, October-November 2012. Grave 14: construction details of a contemporary grave (Drawings by R. Micheli).

Grave 14 thus turned out to be a quite recent funerary structure. When we opened the slabs, the pit was still partially empty, in the course of being filled by a slow fall of dry granular clay particles. The body, for some reason (and to our relief) had been previously shifted elsewhere, and the funerary construction had been carefully rebuilt. Nobody, in the neighbourhood, had memory of what happened. Only some phalanges were found where they should have been, in the centre of the pit. We enclose in this Appendix the graphic recording of the construction of the Grave, that bears some similarity to that of the protohistoric Graves.

Appendix 3: The carvings on the bottom slab of Grave 10 (UDG 155): chronological and semantic evidence regarding a much debated aspect of ancient Swat culture

At the end of the excavations at Udegram in November 2012, stones and slabs of the tombs, as per agreement with the land owner, were removed and largely re-employed for building basic infrastructures, etc., in another excavation and conservation campsite (Saidu Sharif I). By chance, we noticed that a schist slab was carved on one side with a snake-like track and a decayed cross (-and-wheel?) design. The discovery was made when the slab was already in the course of being broken up for recycling. Immediately, we stopped the stonecutting, to check whether other slabs, among those brought there, were similarly carved. The search was unfruitful, all the other slabs being plain and undecorated.

After an ex-post analysis of the photographic documentation, we concluded that the only matching shape was the one of the basal slab of Grave 10 (Fig. 162). It was also inferred that the decorated slab had been laid upside down. It is worth noting that, while the provenance of the slab from Udegram graveyard site is certain, the attribution of the slab precisely to Grave 10 is a secondary inference.

A side of the slab is carved. On the upper left side of the slab there is a permutation of dot-marks featuring a cross (actually, a cross surrounded by faint traces that look like a circle); to the right of the latter, there is an oblique linear pattern of dot-marks culminating with another, diverging, shorter one. Below the two designs, is a deeply incised wave-like, meandering or snake-like, groove (Figs. 235-236). These features patterns are identical to some carvings previously recorded in the Kandak Valley (Middle Swat) (Olivieri and Vidale 2004; see also Vidale and Olivieri 2002: Olivieri 2005, Id. 2010, 2015): "(a) wheel-designs, sometimes having an inner cross, and other linear patterns carved by a dot-mark technique […]; (b) […] carved grooves" (Olivieri and Vidale 2004: 123). The majority of previously documented carvings were executed in open-air sites, rock-walls and boulders. Occasionally, carvings were found on displaced slabs from protohistoric graves. At Jaur-bandai (Kandak valley), where traces of a protohistoric graveyard were documented, on the centre of a displaced stone slab of one grave a single cup-mark was recorded (*ibid.*: 136, fig. 5). Another cup-marked slab was found in the ruins of a dismantled graveyard at Kamal-china (Kotah valley) (Olivieri and Vidale 2006: 79, fig. 3). A third slab with crossed-wheel - which now we understand was quite certainly from a grave - was found at Nakhtar-patai, or Nashtar-patai, in Kandak (*ibid.*: 84, fig. 13).

Interestingly, the designs of the slab are badly weathered (a fact that cannot be directly associated with the underground position of the slab itself). That may also be the reason why the slab was laid upside down (either the designs were not visible, or too badly preserved, and therefore, neglectable). The evidence from Kandak (see above) might even suggest the possibility that the slab was previously used as top slab of an earlier grave, exposed to natural agents, weathered, and then re-used.

In any case, it is certain that the carvings are earlier than the archaeological context associated to its discovery (whether or not its association to Grave 10 is confirmed).

However, the discovery of this slab in one grave of the Udegram protohistoric cemetery has a great significance for the dating of the rock art of Middle Swat and its evolution in time. The last phase of the Udegram graveyard is dated to the first quarter of the 1st millennium BCE (being 901-792 cal. BCE the most recent 14C date). The slab was certainly more ancient, whether or not the slab was associated to Grave 10 (see Tables 3, Fig. 229). In any case, the discovery may be taken as evidence that these dot-mark permutations not only belong to a protohistoric horizon, but are even older than was previously supposed (mid-1st millennium BCE; Olivieri and Vidale 2004: 164).

Fig. 235. Udegram, Grave 10, bottom slab UDG 155 (Photo by F. Colombo).

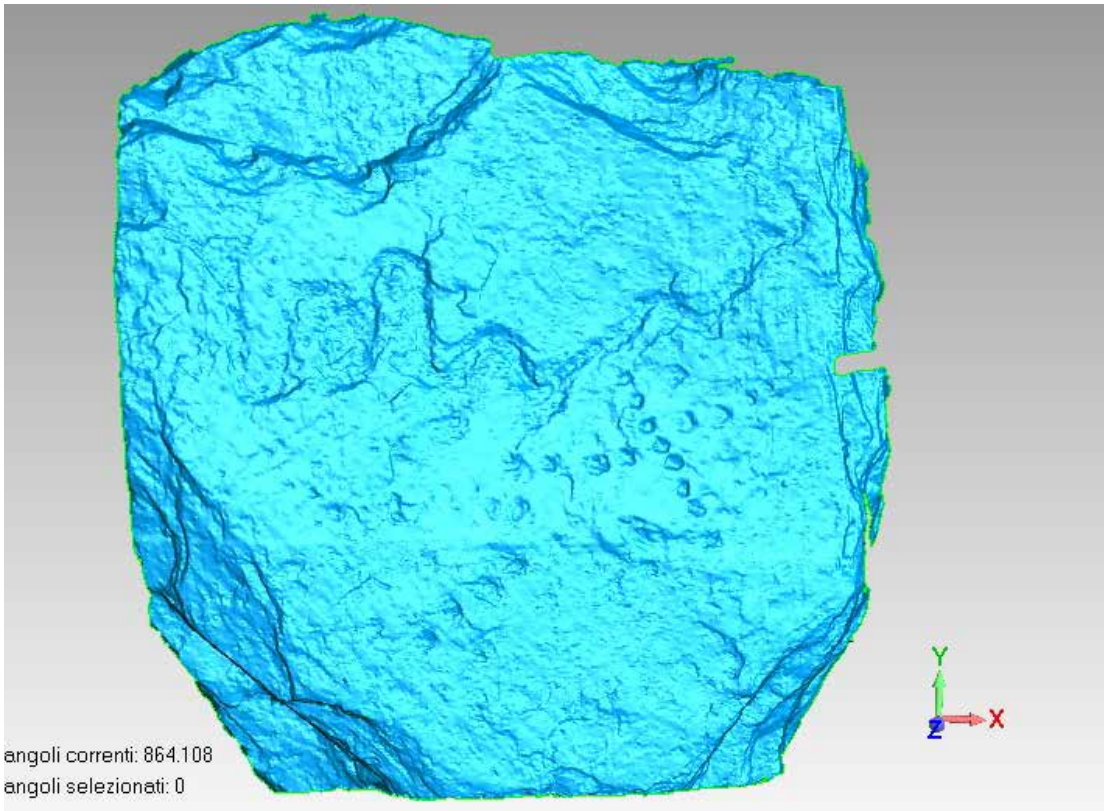


Fig. 236. Udegram, Grave 10, bottom slab: 3-D scan UDG 155 (Acquisition and data processing by G. Salemi)

POSTSCRIPT

M. Vidale, R. Micheli and L.M. Olivieri, with the contribution of D. Reich

Additional radiocarbon datings and final notes

In January-February 2016, when this volume was already in press, our team received four new 14C datings from the team of genetists lead by David Reich (Department of Genetics, Harvard Medical School). The four samples are from Grave 10: Individuals 1 and 2, Grave 28: Individual 1, and Grave 29: Individual 1. These samples are part of a set of 67 samples from Gogdara IV and Udegram, which were provided to the Department of Genetics for its DNA studies, in the framework of a collaboration established between the two research teams.

Grave 10 - Individual 1: the new radiocarbon date (Beta-428667, Dna_34) is consistent with the stratigraphic evidence, while the previous ones (LTL-13334A, Sample 6) does not match well, as shown in Fig. 237, by its low agreement index lower than 60%; Individual 2: matching results (see Table 10). On the whole, two datings from Individual 1 (on the floor of the Grave) are slightly older than the two datings available for Individual 2, buried on a later surface.
Grave 28 - It is highly possible that the old date (Sample 8) referred to Individual 2. The distinction of the mixed burial remains in two different individuals, was made by M.L. Pulcini after Sample 8 had been sent to 14C analysis. Individual 1 was buried in a second phase, and its chronology is consistent with the late features of the pottery assemblage. It is probable that the Grave was manipulated through Pit 1 North.
Grave 29 - Chronology is perfectly consistent with the pottery assemblage.

Sample	Laboratory number	Context	Sample material	Radiocarbon age (BP)	δ13C (‰)	Calibrated date (BCE) 68.2% probability	Calibrated date (BCE) 95.4% probability
2	LTL13328A	G.1 (Individual 1)	Long bone frag.	2785±45	-14.2±0.3	1003-859	1044-830
3	LTL13333A	G.1 (Individual 2)	Long bone frag.	2659±40	-15.3±0.5	888-796	901-792
1	LTL13327A	G. 3 (Single burial)	Calcaneus	3018±45	-13.7±0.5	1382-1135	1400-1126
9	LTL13335A	G.5 (Individual 1)	Calcaneus	3098±45	-17.7±0.3	1421-1297	1491-1231
11	LTL14411A	G.5 (Individual 2)	Long bone frag.	2969±45	-16.5±0.5	1260-1120	1376-1041

(Continuing on the following page)

Sample	Laboratory number	Context	Sample material	Radiocarbon age (BP)	δ13C (‰)	Calibrated date (BCE) 68.2% probability	Calibrated date (BCE) 95.4% probability
Dna_34	Beta-428667	G.10 (Individual 1)	Bone collagen	2880±30	-20.4	1155-975 (1111-1012)	1110-1010 (1192-939)
6	LTL13334A	G.10 (Individual 1)	Phalanx	2758±40	-22.2±0.5	968-840	1001-824
5	LTL13330A	G.10 (Vessel 4)	Carbon soot layer	2760±45	-13.9±0.2	971-839	1007-817
4	LTL13329A	G.10 (Individual 2)	Phalanx	2808±45	-20.9±0.3	1014-905	1107-840
Dna_38	Beta-428666	G.10 (Individual 2)	Tooth	2800±30	-19.1	1000-915 (996-915)	1015-895 (1027-848)
12	LTL14410A	G15 (Single burial)	Small bone frag.	2731±40	- 17.1±0.5	908-831	975-807
10	LTL13336A	G.19 (Single burial)	Phalanx	2707±40	-15.5±0.5	895-819	928-802
8	LTL13332A	G.28 (Double burial mixed together)	Small bone frag.	3056±40	-17.8±0.6	1391-1264	1416-1214
Dna_31	Beta-428664	G.28 (Double burial mixed together - Individual 1)	Tooth	2760±30	-18.3	925-845 (929-844)	975-830 (992-830)
Dna_12	Beta-428665	G.29 (Individual 1)	Tooth	2890±30	-17.2	1115-1015 (1114-1019)	1190-1000 (1195-978)

Table 10. Updated list of radiocarbon and calibrated dates of Udegram graves with the four 14C datings of the individuals sampled for a mitochondrial DNA test received after the closing of the editing process of the book. AMS dates of samples Dna_12, Dna_31, Dna_34 and Dna_38 underlined in light grey have been processed by Beta Analytic Inc., Miami (Florida, USA). Calibration: Beta Analytic's calibration program; IntCal13 atmospheric curve (Reimer et al. 2013). In last two columns on the right, between parentheses are the 14C dates at 65,8 and 95,4% confidence level calibrated with the OxCal version 4.2.4 (Bronk Ramsey 2013).

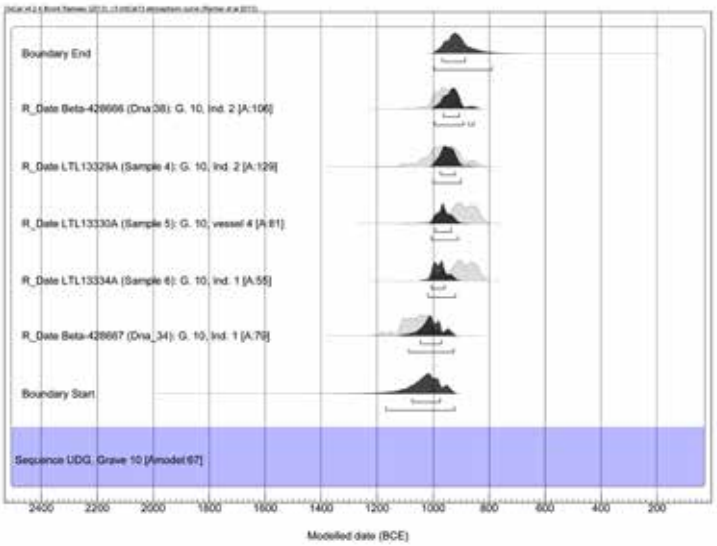


Fig. 237. Modelled calibration distribution of 14C datings of Udegram, Grave 10 on the basis of the stratigraphic evidence. Brackets under the distributions represent the 68.2% and 95.4% confidence level: OxCal version 4.2.4 (Bronk Ramsey 2013); IntCal13 atmospheric curve (Reimer et al. 2013).

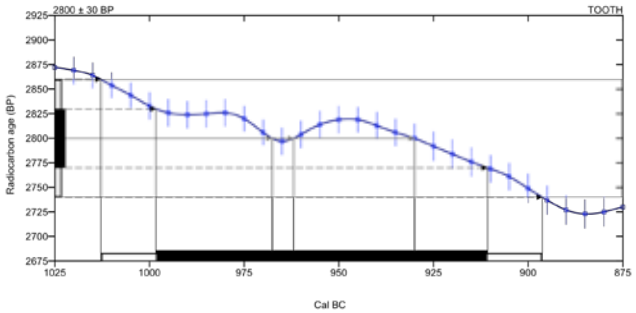


Fig. 238. Sample DNA_38, Grave 10, Individual 2. Beta Analytic Inc., Miami (Florida, USA).

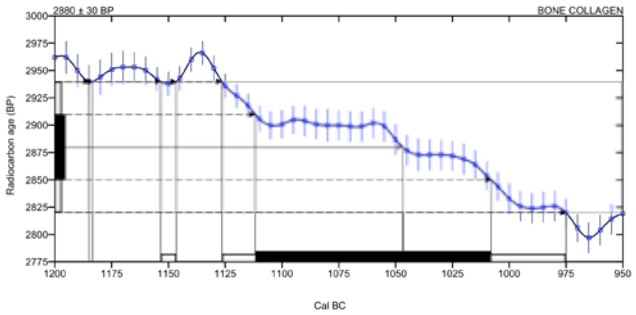


Fig. 239. Sample DNA_34, Grave 10, Individual 1. Beta Analytic Inc., Miami (Florida, USA).

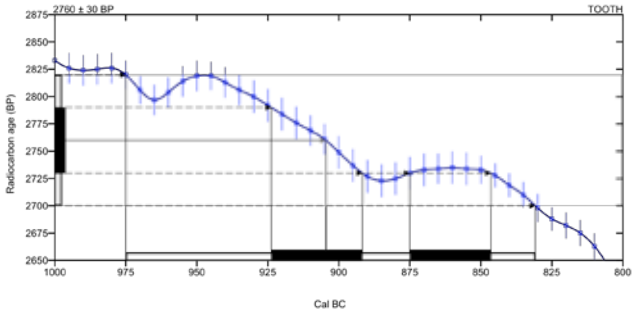


Fig. 240. Sample DNA_31, Grave 28, Individual 1. Beta Analytic Inc., Miami (Florida, USA).

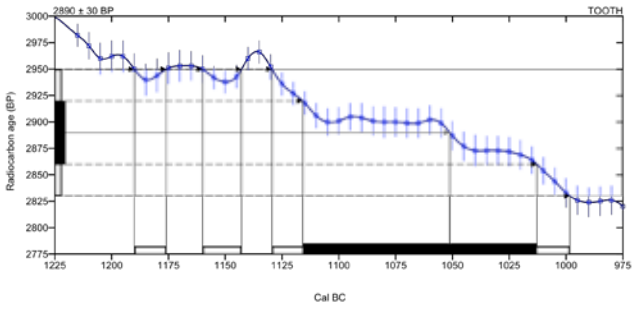


Fig. 241. Sample DNA_12, Grave 29, Individual 1. Beta Analytic Inc., Miami (Florida, USA).

REFERENCES

Afzal Khan, M. (1975), *Chitral and Kafiristan*. Ferozsons Ltd, Peshawar.

Agrawal, D.P. and J.S. Kharakwal (2003) *Bronze and Iron Ages in South Asia*. Aryan Books International, New Delhi.

Alessio, M., F. Bella, F. Bachechi and C. Cortesi (1966) University of Rome Carbon-14 Dates IV. *Radiocarbon* 8: 401-412.

Alessio, M., F. Bella, F. Bachechi and C. Cortesi (1967) University of Rome Carbon-14 Dates V. *Radiocarbon* 9: 346-367.

Alessio, M., F. Bella, S. Improta, G. Belluomini, C. Cortesi and B. Turi (1970) University of Rome Carbon-14 Dates VIII. *Radiocarbon* 12, 2: 599-616.

Ali, I., C. M. Batt, R.A.E. Coningham and R.L. Young (2002) New exploration in the Chitral Valley, Pakistan: an extension of the Gandharan Grave culture. *Antiquity* 76, 293: 647-653.

Ali, I. and Zahir M. (2005) Excavations of Gandharan Graves at Parwak, Chitral 2003-04. *Frontier Archaeology* 3: 135-182.

Ali, I., M. Zahir and M. Qasim (2005a) Archaeological Survey of District Chitral 2004, *Frontier Archaeology* 3: 91-106.

Ali, I., B. Hemphill and M. Zahir (2005b) Skeletal Analysis of Gandharan Graves at Parwak, Chitral (2003-04). *Frontier Archaeology* 3: 183-226.

Ali, I., D. Hamilton, P. Newson, M. Qasim, R. Young and M. Zahir (2008) New radiocarbon dates from Chitral, NWFP, Pakistan, and their implications for the Gandharan Grave Culture of Northern Pakistan. *Antiquity* 82, 318: [online] URL=http://www.antiquity.ac.uk/ProjGall/youngr/index.html

Ali, I., I. Shah, A. Hameed and A. Ahmad (2010) Gankorineotek (Chitral) Excavations, Second Field Season (2008). *Pakistan Heritage* 2: 209-237.

Allchin, B. and F.R. Allchin (1982) *The rise of civilization in India and Pakistan*. Cambridge University Press, Cambdrige.

Allchin, F. R. (1980) Archaeological and Language Historical Evidence for the Movement of Indo-Aryan Speaking Peoples into India and Pakistan. *Journal of the K. R. Cama Oriental Institute* 48: 68-102.

Ambers, J. and S. Browman (1999) Radiocarbon measurements from the British Museum: Datelist XXV. *Archaeometry* 41, 1: 185-195.

Angel, J.L. (1966) Porotic hyperostosis, anaemias, malarias and marshes in the prehistoric estearn Mediterranean, *Science* 153, 3737: 760-763.

Arnold, P.J. and B.S. Wilkens (2001) On the Vanpools' "Scientific" Postprocessualism. *American Antiquity* 66, 2: 361-366.

Aufderheide, A.C. and C. Rodríguez-Martín (1998) *The Cambridge Encyclopedia of Human Paleopathology*. Cambridge University Press, Cambridge.

Bagnera, A. (2015) *The Ghaznavid Mosque and the Islamic Settlement at Mt. Rāja Gīrā, Udegram*. ACT Reports and memoirs, V. Sang-e-Meel Publications, Lahore.

Banerjee, N.R. (1965) *The Iron Age in India.* Munshiram Manoharlal, New Delhi.

Barger, E. and Ph. Wright (1941) *Excavations in Swat and Exploration in the Oxus Territories of Afghanistan*. Memoirs of the Archaeological Survey of India 64, Calcutta.

Barker, H., R. Burleigh and N. Meeks (1969) British Museum Natural Radiocarbon Measurements VI. *Radiocarbon* 11, 2: 278-294.

Barton, C.M. and G.A. Clark (1997) Evolutionary Theory in Archaeological Explanation. *Archeological Papers of the American Anthropological Association* 7, 1: 3-15.

Barton, H. (2007) Starch residues on museum artefacts: implications for determining tool use. *Journal of Archaeological Science* 34, 10: 1752-1762.

Bayliss, A., C. Bronk Ramsey, J. van der Plicht and A. Whittle (2007) Bradshaw and Bayes: Towards a Timetable for the Neolithic. *Cambridge Archaeological Journal* 17, 1 (suppl.): 1-28. doi:10.1017/S0959774307000145

Bentley, R.A. and H. D.G. Maschner (2001) Stylistic Change as a Self-Organized Critical Phenomenon: An Archaeological Study in Complexity. *Journal of Archaeological Method and Theory* 8, 1: 35-66.

Bentley, R.A., N. Tayles, C. Higham, C. Macpherson and T.C. Atkinson (2007) Shifting Gender Relations at Khok Phanom Di, Thailand. Isotopic Evidence from the Skeletons. *Current Anthropology* 48, 2: 301-314.

Bernhard, W. (1981) Ethnic and Morphological Affinities of the People of the Iron Age Cemetery of Sarai Khola near Taxila (Pakistan). *Journal of Mediterranean Anthropology and Archaeology* 1, 2: 180-210.

Bhardwaj, H.C. (1979) *Aspects of Indian Technology. A Research Based on Scientific Methods*. Motilal Banarsidass, New Delhi-Varnasi-Patna.

Boaventura, R., M.T. Ferreira, M.J. Neves and A.M. Silva (2014) Funerary Practices and Anthropology During Middle-Late Neolithic (4th and 3rd Millennia BCE) in Portugal: Old Bones, New Insights. *L'Anthropologie* LII, 2: 183-2015.

Bourdieu, P. (1977) *Outline of a Theory of Practice*. Cambridge University Press, Cambridge.

Bronk Ramsey, C. (1995) Radiocarbon Calibration and Analysis of Stratigraphy: The OxCal Program. *Radiocarbon* 37, 2: 425-430.

Bronk Ramsey, C. (2000) Comment on 'The Use of Bayesian Statistics for 14C dates of chronologically ordered samples: a critical analysis'. *Radiocarbon* 42, 2: 199-202.

Bronk Ramsey, C. (2001) Development of the radiocarbon calibration program OxCal. *Radiocarbon* 43, 2A: 355-63.

Bronk Ramsey, C. (2013) Oxcal Calibration Programm version 4.2.3. url=https://c14.arch.ox.ac.uk/oxcal.html.

Buck, C.E., J.B. Kenworthy, C.D. Litton and A.F.M. Smith (1991) Combining archaeological and radiocarbon information: a Bayesian approach to calibration. *Antiquity* 65, 249: 808-821.

Buck, C.E., C.D. Litton and A.G.M. Smith (1992) Calibration of radiocarbon results pertaining to related archaeological events. *Journal of Archaeological Science* 19: 497-512.

Callieri, P., P. Brocato, A. Filigenzi, L.M. Olivieri and M. Nascari (1992) Bir-kot-ghwandai 1990-1992. A Preliminary Report on the Excavations of the Italian Archaeological Mission, IsMEO. *Annali dell'Istituto Orientale di Napoli* 52, 4, Suppl. 73.

Canci, A. (2006) Indicatori scheletrici connessi a pratiche equestri in resti umani antichi. In *Atti del XVI Congresso degli Antropologi Italiani* (Genova, 29-31 ottobre 2005). Edicolors Publishing, Milano: 271-280.

Carr, C. (1995) Mortuary Practices: Their Social, Philosophical-Religious, Circumstantial and Physical determinants. *Journal of Archaeological Method and Theory* 2: 105-200.

Castaldi, E. (1968) La necropoli di Katelai I nello Swat (Pakistan). Rapporto sullo scavo delle tombe 46-80 (1963). *Atti dell'Accademia dei Lincei*, Anno CCCLXV, Serie VIII, XIII, 7: 483-639.

Chakrabarti, D.K. (1976) The beginning of iron in India. *Antiquity* 1: 114-124.

Chakrabarti, D.K. (1977) Distribution of Iron Ores and the Archaeological Evidence of Early Iron in India *Journal of the Economic and Social History of the Orient*, 20, 2: 166-184.

Chakrabarti, D.K. (1992) *The Early Use of Iron in India*. Oxford University Press, New Delhi.

Coningham, R. and C. Batt (2007) Dating the sequence. In R. Coningham, and I. Ali (eds.) *Charsadda: the British-Pakistani excavations at the Bala Hisar of Charsadda*, BAR International Series 1709, Society for South Asian Studies Monographs 5. Archaeopress, Oxford: 93-98.

Cox, M. (2000) *Assessment of parturition*. In M. Cox M. and S. Mays (eds.) *Human Osteology: Archeology and Forensic Science*. Greenwich Medical Media Ltd (GMM), London.

Coward, F. and M. Grove (2011) Beyond the Tools: Social Innovation and Hominin Evolution. *PaleoAnthropology* 201: 111-129.

Dani, A.H. (1967a) (ed.) Timargarha and Gandhara Grave Culture. *Ancient Pakistan* 3, Special Issue.

Dani, A.H. (1967b) Pottery from the Graves. In A.H. Dani (ed.) Timargarha and Gandhara Grave Culture. *Ancient Pakistan* 3, Special Issue: 121-182.

Dani, A.H. (1967c) Introduction. In A.H. Dani (ed.) Timargarha and Gandhara Grave Culture. *Ancient Pakistan* 3, Special Issue: 3-55.

Dani, A.H. (1968) Gandhara Grave Complex in West Pakistan. *Asian Perspectives* 11: 99-110.

Dani, A.H. (1978) Gandhara Grave Culture and the Aryan problem. *Journal of Central Asia* 1, 1: 42-56.

Dani, A.H. (1992) Pastoral-Agricultural Tribes of Pakistan in the Post-Indus Period. In A.H. Dani and V.M. Masson (eds.) *History of Civilizations of Central Asia* 1 *(The Dawn of Civilization: earliest times to 700 B.C.)*. UNESCO, Paris: 395-419

Dani, A.H. and F.A. Durrani (1967) Extent of the Grave Culture and Report on the Thana Grave Excavation. In A.H. Dani (ed.) Timargarha and Gandhara Grave Culture. *Ancient Pakistan* 3, Special Issue: 213-228.

Dani, A.H. and A. Rahmani (1967) Report on the Excavation of the Balambat Settlement Site. In A.H. Dani (ed.) Timargarha and Gandhara Grave Culture. *Ancient Pakistan* 3, Special Issue: 237-288.

Der Sarkissian, C., O. Balanovsky, G. Brandt, V. Khartanovich, A. Buzhilova, S. Koshel, V. Zaporozhchenko, D. Gronenborg, D. Moisyev, E. Kolpakov, V. Shumkin, K. W. Alt, E. Balanovska, A. Cooper, W. Haak (2013) Ancient DNA Reveals Prehistoric Gene-Flow from Siberia in the Complex Human Population History of North East Europe. *PLoS Genetics* 9, 2: e1003296. doi: 10.1371/journal.pgen.1003296

Di Florio, M.R., S. Lorenzoni, E. Zanettin Lorenzoni and L.M. Olivieri (1993) Evidence of Ancient Stone Quarrying in Lower Swat, NWFP, Pakistan. A Geo-archaeological Study. *Science and Technology for Cultural Heritage* 2: 63-74.

Dittman, R. (1984) Problems in the Identification of an Achemenian and Mauryan Horizon in North-Pakistan. *Archäologische Mitteilungen aus Iran,* N. S., 17: 155-193.

Dornan, J.L. (2002) Agency and Archaeology: Past, Present, and Future Directions. *Journal of Archaeological Method and Theory* 9, 4: 303-329.

Duday, H. (2005) *Lezioni di Archeotanatologia*. Soprintendenza Archeologica di Roma e École Française de Rome, Roma.

Dunbar, R.I.M. (1998) The Social Brain Hypothesis. *Evolutionary Anthropology* 6, 5: 178-190.

Durham, W.H. (1992) Applications of Evolutionary Culture Theory. *Annual Review of Anthropology* 21: 331-355.

Eerkens, J.W. and C. P. Lipo (2005) Cultural transmission, copying errors, and the generation of variation in material culture and the archaeological record. Journal *of Anthropological Archaeology* 24: 316-334.

Eerkens, J.W. and C.P. Lipo (2007) Cultural Transmission Theory and the Archaeological Record: Providing Context to Understanding Variation and Temporal Changes in Material Culture. *Journal of Archaeological Research* 15: 239-274.

Evans, T.S. and A.D.K. Plato (2007) Exact Solutions for Models of Cultural Transmission and Network Rewiring. *Physical Review E* 75, 5: [online] URL=http://link.aps.org/doi/10.1103/PhysRevE.75.056101

Faccenna, D. (1964) *A Guide to the Excavations in Swat (Pakistan) 1956-1962*. IsMEO, Roma.

Filigenzi, A. (2015) *Art and Landscape. Buddhist Rock Art of Late Antique Swat/Uḍḍiyāna*. Denkschriften del philosophisch-historischen Klasse, Band 462. Verlag der Österreichischen Akademie der Wissenschaften, Wien.

Fishman, B., H. Forbes and B. Lawn (1977) University of Pennsylvania Radiocarbon Dates XIX. *Radiocarbon* 19, 2: 188-228.

Fishman, B. and B. Lawn (1978). University of Pennsylvania Radiocarbon Dates XX. *Radiocarbon* 20, 2: 210-233.

Fornaciari, G. and V. Giuffra (2009) *Lezioni di Paleopatologia*. ECIG, Genova.

Fuller, D., N. Boivin and R. Korisettar (2007) Dating the Neolithic of South India: new radiometric evidence for key economic, social and ritual transformations. *Antiquity* 81, 313: 755–778

Ghani-ur-Rahman and L.M. Olivieri (2011) (eds.) Italian Archaeology and Anthropology in Northern Pakistan. *Journal of Asian Civilizations*, Special Issue 34, 1, July 2011.

Gopal, L. and V.C. Srivastava (2008) *History of Agriculture in India, up to 1200 AD*. Centre for Studies in Civilizations, New Delhi.

Gong, Y., Y. Yang, D.K. Ferguson, D. Tao, W. Li, C. Wang, E. Lü, and H. Jiang (2011) Investigation of ancient noodles, cakes, and millet at the Subeixi Site, Xinjiang, China. *Journal of Archaeological Science* 38: 470-479.

González-Ruiz, M., C. Santos, X. Jordana, M. Simón, C. Lalueza-Fox, E. Gigli, M.P. Aluja and A. Malgosa (2012) Tracing the Origin of the East-West Population Admixture in the Altai Region (Central Asia). *PLoS ONE* 7, 11: e48904. doi:10.1371/journal.pone.0048904.

Gordon, D.H. (1950) The Early Use of Metals in India and Pakistan. *The Journal of the Royal Anthropological Institute of Great Britain and Ireland* 80, 1/2: 55-78.

Gupta, S.P. (1972) *Disposal of the Dead and Physical Types in Ancient India*. Oriental Publishers, New Delhi.

Gupta, S.P. (1979) *Archaeology of Soviet Central Asia and The Indian Borderlands*, vol. I-II. BR Publishing Corporation, Delhi.

Haber, M., Platt, D.E., Ashrafian Bonab, M., Youhanna, S.C., Soria-Hernanz, D.F., et al. 2012. Afghanistan's Ethnic Groups Share a Y-Chromosomal Heritage Structured by Historical Events. *PlosOne* 7, 3: e34288. doi:10.1371/journal.pone.0034288

Halim, M.A. (1970-71) Excavations at Sarai Khola. Part I. *Pakistan Archaeology* 7: 23-89.

Halim, M.A. (1972) Excavations at Sarai Khola. Part II. *Pakistan Archaeology* 8: 1-112.

Hardy, K. (2007) Survival, Excavation and Identification of Starch Granules at Kaman-Kalehöyük, Turkey. *Anatolian Archaeological Studies* 16: 189-194.

Harris, E. (1989) *Principles of archaeological stratigraphy*. 2nd edition. Academic Press, London.

Harvey, E. and D.Q. Fuller (2005) Investigating crop processing using phytolith analysis: the example of rice and millets. *Journal of Archaeological Science* 32: 739-752.

Hauser, G. and G.F. De Stefano (1989), *Epigenetic Variants of the Human Skull*. Schweizerbart, Stuttgart.

Henry, A.G. and D.R. Piperno (2008) Using plant microfossils from dental calculus to recover human diet: a case study from Tell al-Raqā'i, Syria. *Journal of Archaeological Science* 35: 1943-1950.

Hershkovitz, I., B. Ring, M. Speirs, E. Galili, M. Kislev, G. Edelson, and A. Hershkovitz (1991) Possible congenital hemolitic anaemia in Prehistoric coastal inhabitans of Israel. *American Journal of Physical Anthropology* 85: 7-13.

Hiebert, F.T. (1995) South Asia from a Central Asian Perspective. Language, material culture and ethnicity. In G. Erdosy (ed.) *The Indo-Aryans of ancient South Asia*. Walter de Gruyter, Berlin: 192-205.

Higham, C. and T. Higham (2009) A new chronological framework for prehistoric Southeast Asia, based on a Bayesian model from Ban Non Wat. *Antiquity* 83, 319: 125-144.

Iacumin, P., H. Bocherens, L. Chaix and A. Marioth (1998) Stable Carbon and Nitrogen Isotopes as Dietary Indicators of Ancient Nubian Populations (Northern Sudan). *Journal of Archaeological Science* 25: 293-301.

Janssen, M.A., Ö. Bodin, J. M. Anderies, T. Elmqvist, H. Ernstson, R. R. J. McAllister, P. Olsson and P. Ryan (2006) Toward a network perspective on the resilience of social-ecological systems. *Ecology and Society* 11, 1: 15. [online] URL=http://www.ecologyandsociety.org/vol11/iss1/art15/

Jettmar, K. (1967) The Middle Asiatic Heritage of Dardistan. (Islamic Collective Tombs in Punyal and Their Background). *East and West* 17: 59-82.

Jettmar, K. (1968) An Iron Cheek-piece of a Snaffle Found at Timargarha. *Ancient Pakistan* 3: 203-209.

Kendal, J.R., J.J. Tehrani and J. Odling-Smee (2011) Human niche construction in interdisciplinary focus. *Philosophical Transactions of the Royal Society B: Biological Sciences* 366: 785-792.

Kennedy, K.A.R. (2000) *God-Apes and Fossil Men. Paleoanthropology in South Asia*. The University of Michigan Press, Ann Arbor.

Kenoyer, J.M. (1988) *Ancient Cities of the Indus Valley Civilization*. American Institute of Pakistan Studies, Oxford University Press, Karachi.

Kenoyer, J.M. (1991) The Indus Valley Tradition of Pakistan and Western India. *Journal of World Prehistory* 5, 4: 331-385.

Keyser-Tracqui, C., E. Crubézy and B. Ludes (2003) Nuclear and Mitochondrial DNA Analysis of a 2,000-Year-Old Necropolis in the Egyin Gol Valley of Mongolia. *The American Journal of Human Genetics* 73: 247-260.

Khan, M.N. (2000) Archaeological Discoveries in the Darel, Valley Muzot: An Iron Age Grave Culture Site. *Ancient Pakistan* 13: 109-119.

Kivisild, T., S. Rootsi, M. Metspalu, E. Metspalu, J. Parik, K. Kaldma, E. Usanga, S. Mastana, S.S. Papiha and R. Villems (2003) The Genetics of Language and Farming Spread in India. In P. Bellwood and C. Renfrew (eds) *Examining the farming/language dispersal hypothesis*. Cambridge University Press, Cambridge: 215-222.

Knapp, A.B. and P. van Dommelen (2008) Past Practices: Rethinking Individuals and Agents in Archaeology. *Cambridge Archaeological Journal* 18, 1: 15-34.

Kohler, T.A. 2012. Complex Systems and Archaeology. In I. Hodder (ed.) *Archaeological Theory Today*. Cambridge University Press, Cambridge: 93-123.

Kuhn, T.S. (1962) *The Structure of Scientific Revolutions*. Chicago University Press, Chicago.

Lal, B.B. (1992) The Painted Grey Ware Culture of the Iron Age. In A.H. Dani and V. M. Masson (eds.), *History of Civilizations of Central Asia* 1 *(The Dawn of Civilization: earliest times to 700 B.C.)*. UNESCO, Paris: 421-440.

Lalueza-Fox, C., M. L. Sampietro, M. T. P. Gilbert, L. Castri, F. Facchini, D. Pettener, J. Bertranpetit (2004)

Unravelling migrations in the steppe: mitochondrial DNA sequences from ancient Central Asian. *Proceedings of the Royal Society of London B, Biological sciences* 271: 941-947.

Lamberg-Karlovsky, C.C. (2002) Archaeology and Language. *Current Anthropology* 43, 1: 63-88.

Laneman, M. (2012) Stone-Cist Grave at Kaseküla, Western Estonia, in the Light of AMS Dates of the Human Bones. *Estonian Journal of Archaeology* 16, 2: 91-117.

Larsson, A.M. (2012) Organized Chaos. Defleshing, Cremations and Dispersal of the Dead in Pitted Ware Culture. In I.-M. Back Danielsson, I. Gustin, A. Larsson, N. Myrberg, and S. Thedéen (eds.) *Döda personers sällskap: gravmaterialens identiteter och kulturella uttryck* [*On the Threshold: Burial Archaeology in the Twenty-first Century*], Stockholm Studies in Archaeology 47. Stockholm University, Department of Archaeology, Stockholm: 109-130.

Leslie, P. and J.T. McCabe (2013) Response Diversity and Resilience in Social-Ecological Systems. *Current Anthropology* 54, 2: 114-143.

Lul, V., R. Micó, R. Rihuete-Herrada, R. Risch (2013) Funerary practices and kinship in an Early Bronze Age society: a Bayesian approach applied to the radiocarbon dating of Argaric double tombs. *Journal of Archaeological Science* 40: 4626-4634.

Magee, P., C. Petrie, R. Knox, F. Khan and K. Thomas (2005) The Achaemenid Empire in South Asia and Recent Excavations in Akra in Northwest Pakistan. *American Journal of Archaeology* 109: 711-741.

Mallory, J.P. (1989) *In Search of the Indo-Europeans. Language, Archaeology and Myth*. Thames and Hudson, London.

Martin, A. (2005) Agents in Inter-Action: Bruno Latour and Agency. *Journal of Archaeological Method and Theory* 12, 4: 283-311.

Mays, S. (1998) *The Archaeology of Human Bones*. Routledge, London.

McAfee, J. (1958) The roentgen signs of systemic disease in the skull. *American Journal of Medical Science* 236: 634-660.

McDonnell, G. and R. Coningham (2007) The metal objects and metal-working residues. In R. Coningham, and I. Ali (eds.) *Charsadda: the British-Pakistani excavations at the Bala Hisar of Charsadda*, BAR International Series 1709, Society for South Asian Studies Monographs 5. Archaeopress, Oxford: 151-159.

Micheli, R. (2006) Early Lithic Tools from Lower Kandak. *East and West* 56, 1-3: 43-61.

Mizoguchi, K. (1993) Time in the reproduction of mortuary practices. *World Archaeology* 25, 2: 223-235.

Møller-Christensen, V. and A.T. Sandison (1963) Usura Orbitae (Cribra Orbitalia) in the Collection of Crania in the Anatomy Department of the University of Glasgow. *Pathologia et Microbiologia 26:* 175-183.

Morigi, E. and P. Bianchetti (2005) New Evidence on the Pottery Sequence of Ghalegai (Swat, Pakistan). In U. Franke-Vogt and H. J. Weisshaar (eds.) *South Asian Archaeology 2003.* Proceedings of the 17th Conference of the European Association of South Asian Archaeologists (Bonn, 7-11 July 2003). Linden Soft, Aachen: 223-230.

Müller-Karpe, H. (1983) *Jungbronzezeitlich-früheisenzeitliche Gräberfelder der Swat-Kultur in Nord-Pakistan*

(Unter Zugrundelegung der Fundvorlagen von A. H. Dani, G. M. Khan, C. Silvi Antonini and G. Stacul). Verlag C. H. Beck. München.

Noci, F., R. Macchiarelli and D. Faccenna (1997) *Saidu Sharif I (Swat, Pakistan)*, 3. *The Graveyard*. IsIAO, Reports and Memoirs XXIII, 3. IsIAO, Rome.

O'Brien, M. J. and K.N. Laland (2012) Genes, Culture, and Agriculture: An Example of Human Niche Construction. *Current Anthropology* 53, 4: 434-470.

O'Brien, M.J. and S.J. Shennan (2010) (eds.) *Innovation in Cultural Systems Contributions from Evolutionary Anthropology*. MIT Press, London.

Olivieri, L.M. (1998) The Rock-Carvings of Gogdara I. Documentation and Preliminary Analysis. *East and West* 48, 1-2: 57-91.

Olivieri, L.M. (2005) Gogdara I and Beyond. The Cultural Sequence of the non-Buddhist Rock Art in Swat. Preliminary Conclusions. In U. Franke-Vogt and H.-J. Weisshaar (eds.) *South Asian Archaeology 2003*. 17th Conference of the European Association of South Asian Archaeologists (Bonn, 7-11 July 2003). Linden Soft, Aachen: 215-222.

Olivieri, L.M. (2006a) Outline History of the IsIAO Italian Archaeological Mission in Pakistan (1956-2006). *East and West* 56, 1-3: 23-41.

Olivieri, L.M. (2006b) The IsIAO Italian Archaeological Mission in Pakistan. A Selected Bibliography (1956-2006). *East and West* 56, 1-3: 301-318.

Olivieri, L.M. (2010) *Painted Rock Shelters of the Swat-Malakand Area From Bronze Age to Buddhism. Materials for a Tentative Reconstruction of the Religious and Cultural Stratigraphy of Ancient Swat*. PhD Thesis, Freien Universität Berlin.

Olivieri L.M. (2011a) Bibliography (1940-2011) IsMEO/IsIAO activities and research in Northern Pakistan. In Ghani-ur-Rahman and L.M. Olivieri (eds.) Italian Archaeology and Anthropology in Northern Pakistan. *Journal of Asian Civilizations*, Special Issue 34, 1: 323-365.

Olivieri, L.M. (2011b) Behind the Buddhist Communities: Subalternity and Dominancy in Ancient Swat. In Ghani-ur-Rahman and L.M. Olivieri (eds.) Italian Archaeology and Anthropology in Northern Pakistan. *Journal of Asian Civilizations*, Special Issue 34, 1: 127-156.

Olivieri, L.M. (2014) *Digging up. Fieldwork Guidelines for Archaeology Students*. ACT Reports and Memoirs, Series Minor 1. Sang-e-Meel Publications, Lahore.

Olivieri, L.M. (2015) *Talking Stones. Painted Rock Shelters of the Swat Valley*. ACT Reports and Memoirs, Series Minor 2. Sang-e-Meel Publications, Lahore.

Olivieri, L.M. (forthcoming) The graveyard and the Buddhist shrine at Saidu Sharif (Swat, Pakistan). Fresh chronological and stratigraphic evidence. *Vestnik Drevnej Istorii*.

Olivieri, L.M. et al. (2014) *The Last Phases of The Urban Site of Bir-kot-ghwandai (Barikot). The Buddhist Sites of Gumbat and Amluk-Dara (Barikot).* ACT Reports and Memoirs II. Sang-e-Meel Publications, Lahore.

Olivieri, L.M. and M. Vidale (2004) Beyond Godara I. New Evidences of Rock-Carvings and Rock-Artefacts from the Kandak Valley and Adjacent Areas (Swat). *East and West* 54, 1-4: 121-180.

Olivieri, L. M. and M. Vidale (2006) Archaeology and Settlement History in a Test Area of the Swat valley. Preliminary Report on the AMSV Project (1st Phase). *East and West* 56, 1-3: 73-150.

Ortner, D.J. and W.G.J. Putschar (1981), *Identification of Pathological Conditions in Human Skeletal Remains*. Smithsonian Institution Press, Washington D.C.

Parker Pearson, M. (1982) Mortuary practices, society and ideology: An ethnoarchaeological study. In I. Hodder (ed.) *Symbolic and Structural Archaeology.* Cambridge University Press, Cambridge: 99-113.

Parpola, A. (1988) The Coming of the Aryans to Iran and India and the Cultural and Ethnic identity of the Dāsas. *Studia Orientalia* 64: 195-302.

Pearson, J., M. Grove, M. Özbek and H. Hongo (2013) Food and social complexity at Çayönü Tepesi, southeastern Anatolia: Stable isotope evidence of differentiation in diet according to burial practice and sex in the early Neolithic. *Journal of Anthropological Archaeology* 32: 180-189.

Pécina, M.M. and I. Bojanic (2004), Bursitis. In M.M. Pécina and I. Bojanic (eds.) *Overuse injuries of the muscoloskeletal system*. CRC Press, Boca Raton, Fl.-London-New York, Washington D.C.: 455-458.

Pigott, V.C. (1999) The Development of Metal Production on the Iranian Plateau. An Archaeometallurgical Prespective. In In V. C. Pigott (ed.) *The Archaeometallurgy of the Asian Old World*. University Museum Monograph 89, University Museum Symposium Series, Vol. VII. Philadelphia: 74-106.

Piperno, D.R. (2009) Identifying crop plants with phytoliths (and starch grains) in Central and South America: A review and an update of the evidence. *Quaternary International* 193: 146-159.

Pleiner, R. (1971) The Problem of the Beginning Iron Age in India. *Acta Praehistorica et Archaeologica* 2: 5–36.

Possehl, G.L. (1994) *Radiometric Dates for South Asian Archaeology. An Occasional Publication of the Asia Section*. University of Pennsylvania Museum, Philadelphia.

Possehl, G.L. and P. Gullapalli (1999) The Early Iron Age in South Asia. In V.C. Pigott (ed.) *The Archaeometallurgy of the Asian Old World*. University Museum Monograph 89, University Museum Symposium Series, Vol. VII. Philadelphia: 153-175.

Possehl, G.L. and M. Witzel (2002) Vedic. In P.N. Peregrine and M. Embers (eds.) *Encyclopedia of Prehistory*, Volume 8; South and Southwest Asia: 391-397. Kluwer Academic/Plenum Publishers, New York.

Prentiss, A.M., I. Kuijt and J.C. Chatters (2009) (eds.) *Macroevolution in Human Prehistory. Evolutionary Theory and Processual Archaeology*. Springer-Verlag, New York.

Quintana-Murci, L., C. Krausz, T. Zerjal, S.H. Sayar, M. F. Hammer, S.Q. Mehdi, Q. Ayub, R. Qamar, A. Mohyuddin, U. Radhakrishna, M. A. Jobling, C. Tyler-Smith and K. McElreavey (2001) Y-Chromosome Lineages Trace Diffusion of People and Languages in Southwestern Asia. *The American Journal of Human Genetics* 68: 537-542.

Quintana-Murci, L., R. Chaix, R. S. Wells, D. M. Behar, H. Sayar, R. Scozzari, C. Rengo, N. Al-Zahery, O. Semino, A.S. Santachiara-Benerecetti, A. Coppa, Q. Ayub, A. Mohyuddin, C. Tyler-Smith, S.Q. Mehdi, A.

Torroni and K. McElreavey (2004) Where West Meets East: The Complex mtDNA Landscape of the Southwest and Central Asian Corridor. *The American Journal of Human Genetics* 74: 827-845.

Redman, C.L. and A. P. Kinzig (2003) Resilience of past landscapes: resilience theory, society, and the *longue durée*. *Conservation Ecology* 7, 1: 14. [online] url=http://www.consecol.org/vol7/iss1/art14/

Reimer, P. J., E. Bard, A. Bayliss, J.W. Beck, P. G Blackwell, C. Bronk Ramsey, C.E. Buck, Hai Cheng, R. L. Edwards, M. Friedrich, P. M. Grootes, T.P. Guilderson, H. Haflidason, I. Hajdas, C. Hatté, T.J. Heaton, D. L. Hoffmann, A.G. Hogg, K.A. Hughen, K.F. Kaiser, B. Kromer, S.W. Manning, Mu Niu, R. W. Reimer, D.A. Richards, E. M. Scott, J.R. Southon, R.A. Staff, C. S. M. Turney and J. van der Plicht (2013) IntCal13 and Marine13 Radiocarbon Age Calibration Curves 0–50,000 Years cal BP. *Radiocarbon* 55, 4: 1869-1887.

Renfrew, C. (1978) Trajectory Discontinuity and Morphogenesis: The Implications of Catastrophe Theory for Archaeology. *American Antiquity* 43, 2: 203-222.

Roberts, C.A. and K. Manchester (1995) *The Archaeology of Disease*. Cornell University Press, New York (2nd edition).

Robertson, G. S. (1896) *The Kafirs of the Hindu-Kush*. Lawrence & Bullen, London.

Ryan, P., W.A. Out, J. J. García-Granero, M. Madella and D. Usai (forthcoming) Plant microremains from the white deposits and dental calculus from Ghaba and R12 cemeteries. Identification and implications. In: S. Salvatori, D. Usai and Y. Lecointe (eds). *Ghaba: An Early Neolithic Cemetery in Central Sudan*. Africa Magna Verlag, Frankfurt a. M.: 107-118.

Sahoo, S., A. Singh, G. Himabindu, J. Banarjee, T. Sitalaximi, S. Gaikwad, R. Trivedi, P. Endicott, T. Kivisild, M. Metspalu, R. Villems and V.K. Kashyap (2006) A prehistory of Indian Y chromosomes: Evaluating demic diffusion scenarios. *Proceedings of the National Academy of Sciences* 103, 4: 843-848.

Sahu, B. P. (2006) *Iron and social change in early India.* Oxford University Press.

Salvatori, S. (1975) Analysis of the Association of Types in the Protohistoric Graveyards of the Swat Valley (Loebanr, Katelai, Butkara II). *East and West* 25, 3-4: 333-352.

Schiffer, M.B. (1976) *Behavioral Archaeology*. Academic Press, New York.

Schiffer, M.B. (2010) *Behavioral Archaeology. Principles and Practice*. Equinox, London.

Schiffer, M.B., J. M. Skibo, J.L. Griffitts, K. L. Hollenback and W.A. Longacre (2001) Behavioral Archaeology and the Study of Technology. *American Antiquity* 66, 4: 729-737.

Schmorl, G. and H. Junghanns (1971) *The human spine in health and disease*. Grune & Stratton, New York.

Schroeder, S. (2001) Secondary Disposal of the Dead: Cross-Cultural Codes. *World Cultures* 12, 1: 77-93.

Sengupta, S., L.A. Zhivotovsky, R. King, S.Q. Mehdi, C.A. Edmonds, Ch.-E. T. Chow, A. A. Lin, M. Mitra, S.K. Sil, A. Ramesh, M.V.U. Rani, C. M. Thakur, L.L. Cavalli-Sforza, P.P. Majumder, and P.A. Underhill (2006) Polarity and Temporality of High-Resolution Y-Chromosome Distributions in India Identify Both Indigenous and Exogenous Expansions and Reveal Minor Genetic Influence of Central Asian Pastoralists. *The American Journal of Human Genetics* 78: 202-221.

Shanks, M. (2007) Symmetrical Archaeology. *World Archaeology* 39, 4: 589-596.

Shanks, M. (2009) Post-Processual Archaeology and After. In R.A Bentley, H.D.G. Maschner, Ch. Chippindale (eds.) *Handbook of Archaeological Theories*. Altamira Press, Lanham: 133-146.

Shapiro, B., M. A. Hofreiter (2014) Paleogenomic Perspective on Evolution and Gene Function: New Insights from Ancient DNA. *Science* 343 (24 January 2014).
doi: 10.1126/science.1236573.

Sharma, A. K. (1992) Early Iron Users of Gufkral. In B.U. Nayak and N.C. Ghosh (ed.), *New Trends in Indian Art and Archaeology*, 1. Aditya Prakashan, New Delhi: 63-68.

Sharma, A. K. (1998) *Prehistoric Burials of Kashmir*. Agam Kala Prakashan, New Delhi.

Shennan, S. (2011) Property and wealth inequality as cultural niche construction. *Philosophical Transactions of the Royal Society B: Biological Sciences* 366: 918-926.

Silvi Antonini, C. (1963) Preliminary Notes on the Excavations of the Necropolises Found in Western Pakistan. *East and West* 14, 1-2: 12-26.

Silvi Antonini, C. (1973) More about Swat and Central Asia. *East and West* 23, 3-4: 235-244.

Silvi Antonini, C. and G. Stacul (1972) *The Protohistoric Graveyards of Swat (Pakistan). Part I: Description of Graves and Finds, Plates; Part II: Description of Graves and Finds*, *Text*. IsMEO, Rome.

Singh, P. (1979) Early Iron Age in Gangetic Doab. In D.P. Agrawal and D.K. Chakrabarti (eds.) *Essays in Indian Protohistory*. B.R. Publishing House, New Delhi: 313-319.

Singh, U. (2008) *A History of Ancient and Early Medieval India: From the Stone Age to the 12*th *Century*, Pearson Education India, New Delhi.

Sjøvold, T. (1990), Estimation of stature from long bones utilizing the line of organic correlation. *Journal of Human Evolution* 5, 5: 431-447.

Smith, B.D. (2011) General patterns of niche construction and the management of 'wild' plant and animal resources by small-scale pre-industrial societies. *Transactions of the Royal Society B: Biological Sciences* 366: 836-848.

Smits, E., A.R. Millard, G.M. Nowell and D.G. Pearson (2010) Isotopic investigation of diet and residential mobility in the Neolithic. *European Journal of Archaeology* 13, 1: 5-31.

Snoy, P. (1962) *Die Kafiren. formen der Wirtschaft und geistigen Kultur*. PhD Dissertation, University of Frankfurt/Main.

Sogen Hori, V. (2003) *Zen Sand. The book of capping phrases for koan practice*. University of Hawai'i Press, Honolulu.

Southworth, F.C. (2005) *Linguistic Archaeology of South Asia*. Routledge, Curzon, New York.

Stacul, G. (1966a) Preliminary Report on the Pre-Buddhist Necropolises in Swat (W. Pakistan). *East and West* 16, 1-2: 37-79.

Stacul, G. (1966b) Notes on the Discovery of a Necropolis near Kherai in the Gorband Valley (Swat - West

Pakistan). *East and West* 16, 3-4: 261-274.

Stacul, G. (1967) Discovery of Four Pre-Buddhist Cemeteries near Pacha in Buner Swat, West Pakistan. *East and West* 17, 3-4: 220-232.

Stacul, G. (1969) Excavation near Ghaligai (1968) and Chronological Sequence of Protohistorical Cultures in the Swat. *East and West* 19, 1-2: 44-91.

Stacul, G. (1973) A Decorated Vase from Gogdara (Swat, Pakistan). *East and West* 23, 3-4: 245-248.

Stacul, G. (1974) Su alcuni ritrovamenti archeologici presso Katelai, nella valle dello Swat. In *Gururajamanjarika. Studi in onore di Giuseppe Tucci*. Serie Minor I, vol. II. Istituto Universitario Orientale, Naples: 367-370.

Stacul, G. (1975) The Fractional Burial Custom in the Swat Valley and Some Connected Problems. *East and West* 25, 3-4: 323-332.

Stacul, G. (1978-1979) On Periods and Cultures in the Swat Valley and Beyond. *Puratattva* 10: 89-91.

Stacul, G. (1979) Early Iron Age in the Northwest of Subcontinent. In: Agrawal, D.P. and Chakrabarti, D.K. (eds.) *Essays in Indian Protohistory*. B.R. Publishing Corporation, Delhi: 341-345.

Stacul, G. (1987) *Prehistoric and Protohistoric Swat, Pakistan (c. 3000-1400 B.C.)*. IsMEO Reports and Memoirs, XX, Rome.

Stacul, G. (1990) On Charsada and Beyond: What is Wrong with Sir Mortimer? In M. Taddei and P. Callieri (eds.) *South Asian Archaeology 1987*. Proceedings of the 9th Conference of the European Association of South Asian Archaeologists (Venice, 5-9 July 1995), Serie Orientale Roma 66/1-2, 2 vols. IsMEO, Rome: 605-610.

Stacul, G. (1993) Kalako-deray, Swat: 1989-1991 Excavation Report *East and West* 43, 1-4: 69-94.

Stacul, G. (1995) Kalako-deray, Swat: 1992-1993 Excavation reports. *East and West* 45, 1-4: 109-126.

Stacul, G. (1997a) Kalako-deray, Swat: 1994-1996 Excavation reports. *East and West* 47, 1-4: 363-378.

Stacul, G. (1997b) Early Iron Age in Swat: Development or Intrusion? In B. Allchin and F. R. Allchin (eds.) *South Asian Archaeology 1995*. Proceedings of the 13th Conference of the European Association of South Asian Archaeologists (Cambridge, 5-9 July 1995). Oxford University Press and IBH Publishing Co., New Delhi: 341-348.

Stacul, G. (2001) The Swat Valley in the Late 2nd and Early 1st Millennium BC. In R. Eichmann and H. Parzinger (eds.), *Migration und Kulturtransfer. Der Wandel vorder- und zentralasiatischer Kulturen im Umbruch vom 2. zum 1. vorschristlichen Jahrtausend*. Proceedings of the International Conference (Berlin, 23-26 November 1999). Bonn: 237-246.

Stacul, G. and S. Tusa (1975) Report on the Excavations at Aligrama (Swat, Pakistan) 1966, 1972. *East and West* 25, 3-4: 291-322.

Stacul, G. and S. Tusa (1977) Report on the Excavations at Aligrama (Swat, Pakistan) 1974. *East and West* 27: 151-205.

Stein, M.A. (1930) *An Archaeological Tour in Upper Swat and Adjacent Hill Tracts*. Memoirs of the

Archaeological Survey of India 42. Calcutta.

Steinbock, R.T. (1976) *Paleopathological Diagnosis and Interpretation*. Charles C. Thomas Publisher, Springfield.

Stuart-Macadam, P. (1992), Anemia in past populations. In P. Stuart-Macadam and S.K. Kent (eds.), *Diet, demography and disease. Changing perspectives on anemia*. Transaction Publisher, New York.

Tafuri, M.A., R. A. Bentley, G. Manzi and S. di Lernia (2006) Mobility and kinship in the prehistoric Sahara: Strontium isotope analysis of Holocene human skeletons from the Acacus Mts. (southwestern Libya). *Journal of Anthropological Archaeology* 25: 390-402.

Tewari, R. (2003) The Origins of Iron-Working in India: New Evidence from the Central Ganga Plain and the Eastern Vindhyas. *Antiquity* 77, 297: 526-544.

Tripathi, V. (2002) *The Age of Iron in India: A Reappraisal.* Indian Council of Historical Research. New Delhi.

Trotter, M. and G.C. Gleser (1977) Corrigenda to "estimation of stature from long limb bones of American Whites and Negroes," American Journal of Physical Anthropology (1952). *American Journal of Physical Anthropology* 47, 2: 355-356.

Tucci, G. (1958) Preliminary Report on an Archaeological Survey in Swat. *East and West* 9, 4: 279-328.

Tucci, G. (1963a) The Tombs of the Asvakayana-Assakenoi. *East and West* 14, 1-2: 27-28

Tucci, G. (1963b) Oriental Notes II: An Image of a Deva Discovered in Swat and Some Connected Problems. *East and West* 14, 3-4: 146-182.

Tucci, G. (1977) On Swat. The Dards and Connected Problems. East and West 27, 1-4: 9-85, 94-103.

Tusa, S. (1981) Notes on Some Protohistoric Finds in the Swat Valley (Pakistan). *East and West* 31, 1-4: 99-120.

VanPool Ch., S. and VanPool T.L. (1999) The Scientific Nature of Postprocessualism. *American Antiquity* 64, 1: 33-53.

Vidale, M., R. Micheli and L.M. Olivieri (2011) Iconography of Protohistoric Swat and the Agricultural Intensification of Period IV (2nd Millennium BCE). *Journal of Asian Civilizations* 34, 1: 79-102.

Vidale, M. and L.M. Olivieri (2002) Painted Rock Shelters of the Swat Valley: Further Discoveries and New Hypotheses. *East and West* 52, 1-4: 173-224.

Vinogradova, N. (2001) Towards the Question of the Relative Chronology for Protohistoric Swat Sequence (on the Basis of the Swat Graveyards). *East and West* 51, 1-2: 9-36.

Vogelsang, W. (1988) A Period of Acculturation in Ancient Gandhara. *South Asian Studies* 4: 103-113.

Waldman, S.D. (2012) Ischial Bursitis. In S.D. Waldman (ed.) *Atlas of Common Pain Syndromes*. Elsevier/ Saunders, Philadelphia: 288-289.

Walker, P.L., R.R. Bathurst, R. Richman, T. Gjerdrum, and A. Andrushko (2009) The Causes of Porotic Hyperostosis and Cribra Orbitalia: A Reappraisal of the Iron-Deficiency-Anemia Hypothesis. *American*

Journal of Physical Anthropology 139, 2: 109-125.

Watson, P.J., S.A. LeBlanc and C.L. Redman (1974) The Covering Law Model in Archaeology: Practical Uses and Formal Interpretations. *World Archaeology* 6, 2: 125-132.

Wheeler, M. (1962) *Charsada, a metropolis of the North-west Frontier, being a report on the excavations of 1958*. Oxford University Press, London.

White, C., F.J. Longstaffe and K.R. Law (2004) Exploring the effects of environment, physiology and diet on oxygen isotope ratios in ancient Nubian bones and teeth. *Journal of Archaeological Science* 31: 233-250.

Wintrobe, M. (1974), *Clinical Hematology*. Lippincott, Williams & Wilkins, Philadelphia.

Witas, H.W., J. Tomczyk, K. Jędrychowska-Dańska, G. Chaubey, and T. Płoszaj (2013) mtDNA from the Early Bronze Age to the Roman Period Suggests a Genetic Link between the Indian Subcontinent and Mesopotamian Cradle of Civilization. *PlosOne* 8, 9. doi:10.1371/journal.pone.0073682.

Yatoo, M.A. (2015) Iron Age Material Culture in South Asia – Analysis and Context of Recently Discovered Slag Sites in Northwest Kashmir (Baramulla District) in India. *Ancient Asia* 6, 3: 1-8. doi: http://dx.doi.org/10.5334/aa.12322

Zahir, M. (2012) *The Protohistoric Cemeteries of Northwestern Pakistan: The Deconstruction and Reinterpretation of Archaeological and Burial Traditions*. Ph.D. Thesis (unpublished) University of Leicester, UK.

Zhang, F., Z. Xu, J. Tan, Y. Sun, B. Xu, S. Li, X. Zhao, H. Zhou, G. Gong, J. Zhang, L. Jin et al., (2010) Prehistorical East-West Admixture of Maternal Lineages in a 2,500-Year-Old Population in Xinjiang. *American Journal of Physical Anthropology* 142, 2: 314-320.

LIST OF TABLES

LIST OF PLATES

(UDG 36); Two fragments of Iron pins from Grave 19 (UDG 37 and UDG 38); Crescent shaped gold ear-ring from Grave 1 (UDG 28); Circular gold ear-ring from Grave 27 (UDG 154); Two ring-like copper/bronze ear-rings from Grave 29 (UDG 129) (Photos by M. Aurangzaib Khan).

Plate XI. The stratigraphic complexity of the Udegram site: a) The example of Grave 24; b) A field sketch of the same context (Photos by R. Micheli and M. Vidale).

Plate XII. The stratigraphic complexity of the Udegram site: a) View of the overlapping Graves 3, 6, 4 and 5; b) Cross section of Grave 31 (Photos by R. Micheli, L.M. Olivieri and M. Vidale).

Plate XIII. a) The recovering of archaeological material from Grave 3; b) The cleaning of recovered material; c) Classification of the findings; d) Grave 14 as it appeared after the removal of the superficial layers at Udegram; e) (Photos by M. Aurangzaib Khan and M. Vidale).

Plate XIV. Chronometric evidence from Gogdara IV (Graves A and B) and Udegram (Graves 1, 3 and 5). Dates were performed by Accelerator Mass Spectometry (AMS) by Centro di Datazione e Diagnostica (CEDAD) of Lecce University (Italy). Calibration: OxCal version 4.2.3 (Bronk Ramsey 2013); IntCal13 atmospheric curve (Reimer et al. 2013).

Plate XV. Chronometric evidence from Udegram (Graves 10, 15, 19 and 28). Dates were performed by Accelerator Mass Spectometry (AMS) by Centro di Datazione e Diagnostica (CEDAD) of Lecce University (Italy). Calibration: OxCal version 4.2.3 (Bronk Ramsey 2013); IntCal13 atmospheric curve (Reimer et al. 2013).

a

b

a

b

a

b

a

b

c

a

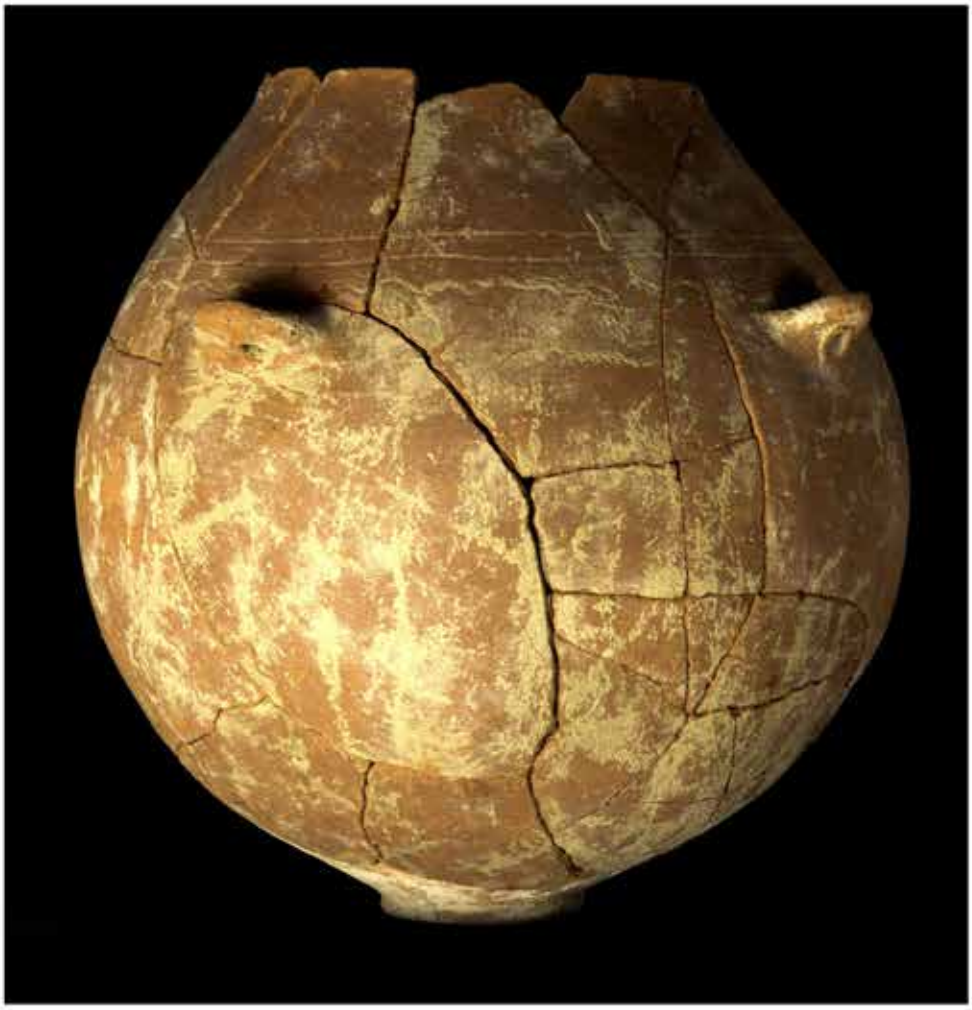
b


UDG 65
UDG 66
UDG 67
UDG 63
UDG 64
UDG 69
UDG 68

a

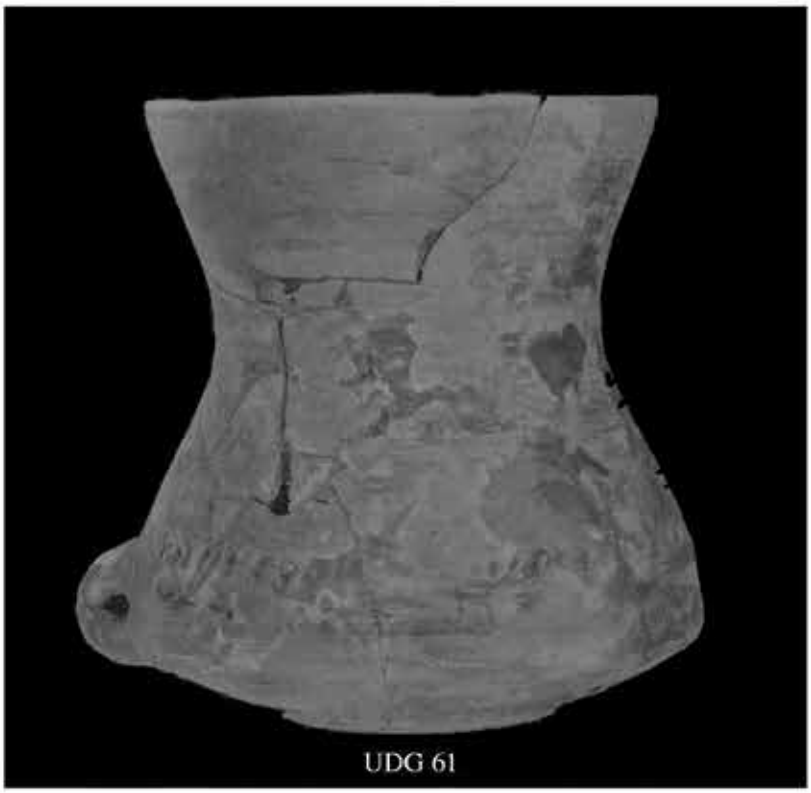

UDG 16
UDG 17
UDG 15
UDG 14
UDG 13

b



a

b

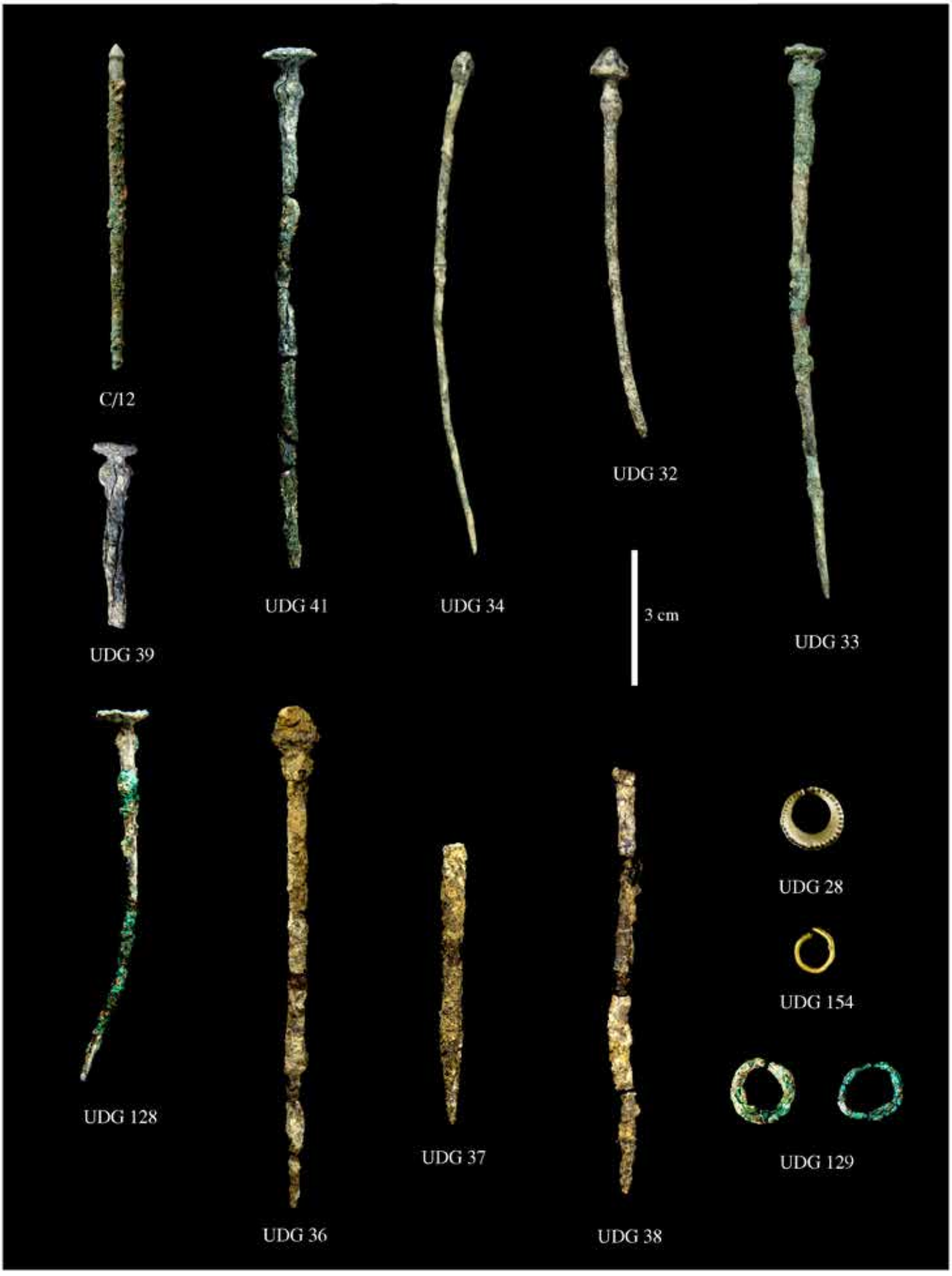


a

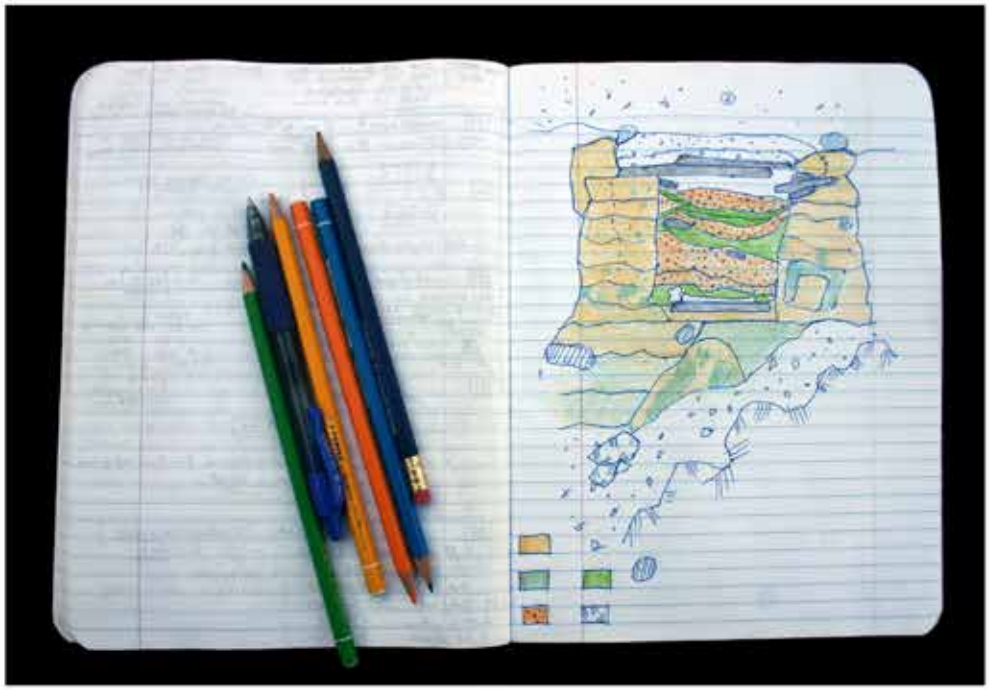
b


UDG 35
3 cm
UDG 127
UDG 29
UDG 105
UDG 40
1 cm
UDG 132
UDG 151

Pl. X


C/12
UDG 39
UDG 41
UDG 34
UDG 32
3 cm
UDG 33
UDG 128
UDG 36
UDG 37
UDG 38
UDG 28
UDG 154
UDG 129

a

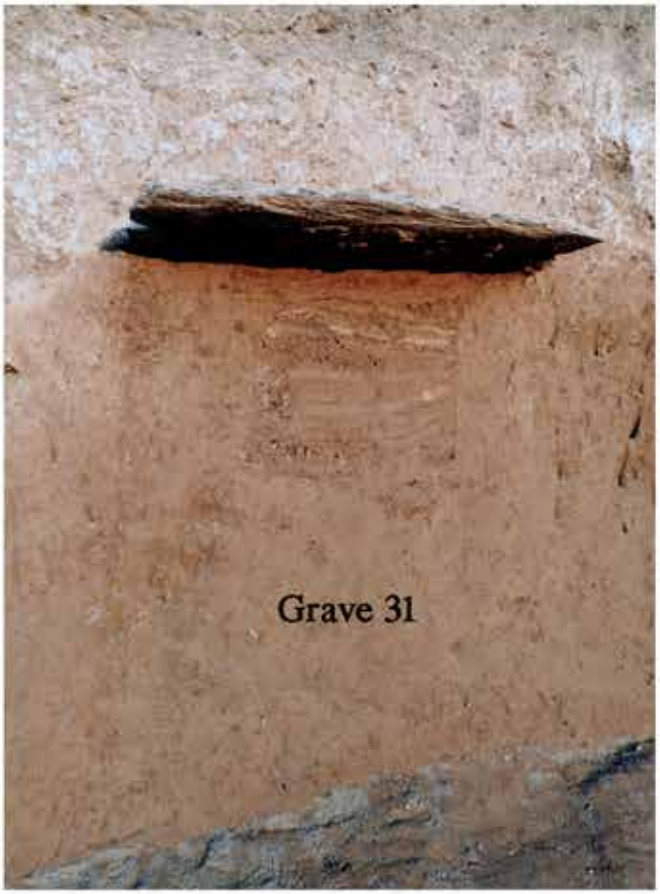


b

Pl. XII


Grave 16=23
Grave 22
Grave 24
Grave 6
Grave 3
Grave 4
Grave 5

a


Grave 31

b

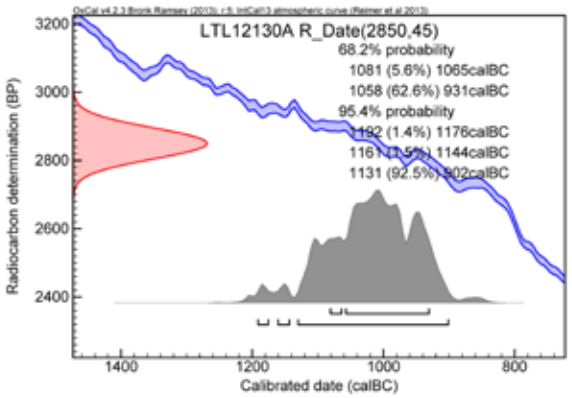
a

b

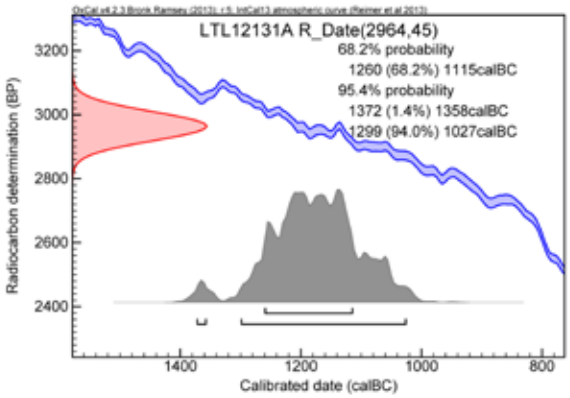
c

d

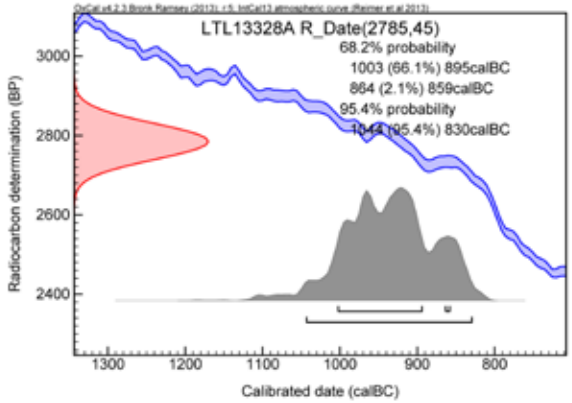
Pl. XIV



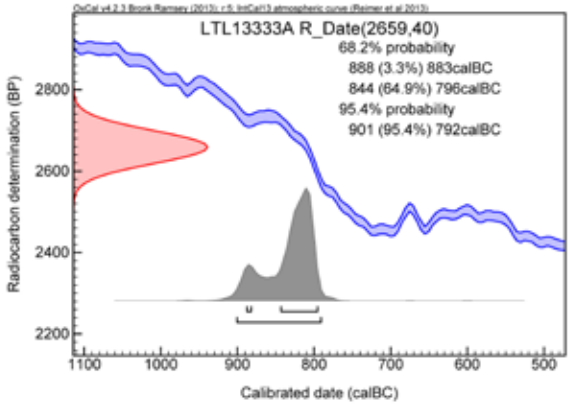
GGD Grave A



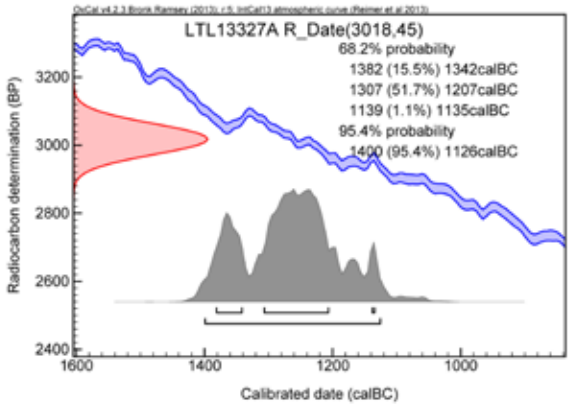
GGD Grave B



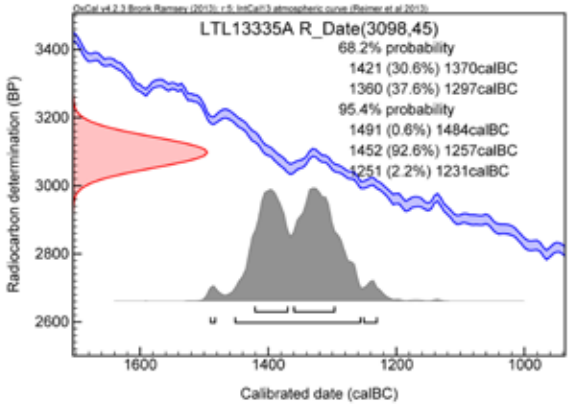
UDG Grave 1 (Individual 1)



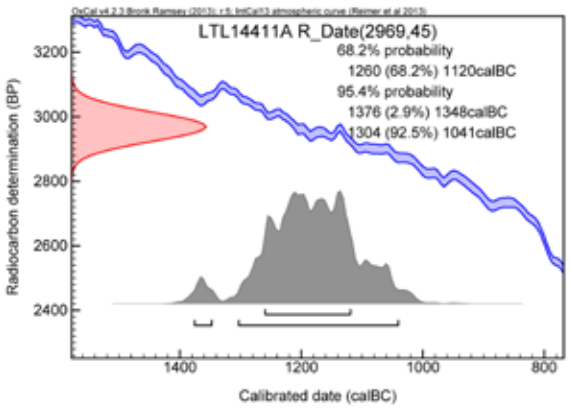
UDG Grave 1 (Individual 2)



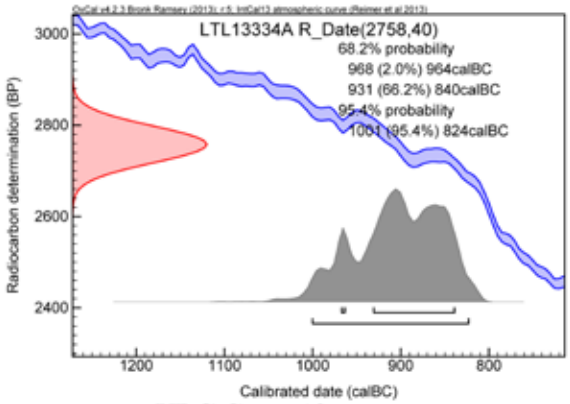
UDG Grave 3



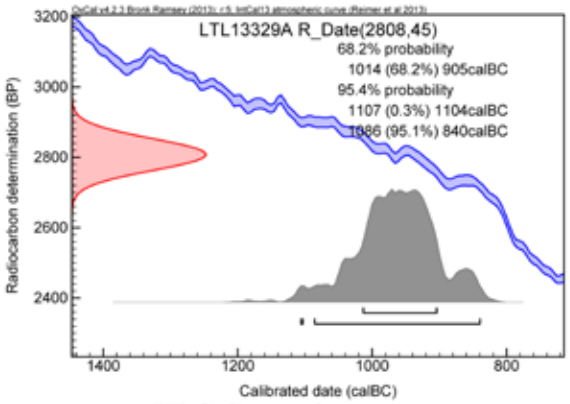
UDG Grave 5 (Individual 1)



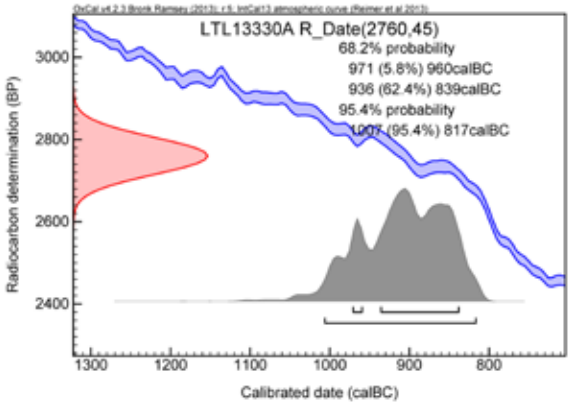
UDG Grave 5 (Individual 2)



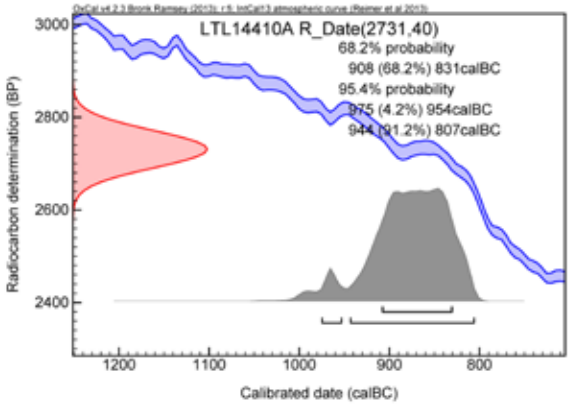
UDG Grave 10 (Individual 1)



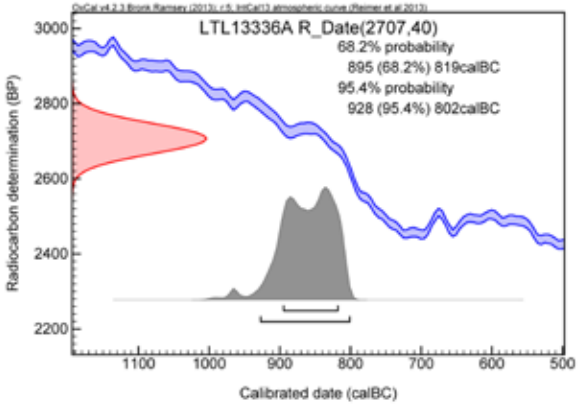
UDG Grave 10 (Individual 2)



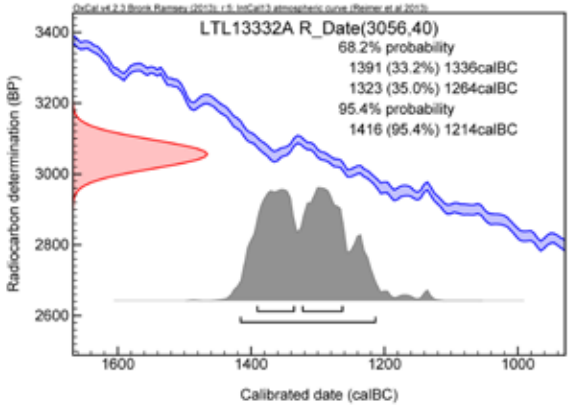
UDG Grave 10 (UDG 104/Vessel 4)



UDG Grave 15



UDG Grave 19



UDG Grave 28