

OREA 2017

**OREA
ANNUAL REPORT 2017**

**BARBARA HOREJS
&
OREA TEAM**

OREA

Annual Report 2017

Barbara Horejs & OREA Team



Current research projects at OREA

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OREA Mission Statement and Short Description

The Institute for Oriental and European Archaeology (OREA), founded by uniting 3 Commissions partly going back to 1878, covers essential prehistoric and early historical cultural developments from the Orient to Europe. This mission is reflected in research ranging from Europe, North Africa, as well as the Middle East in the context of World Archaeology. The orient and occident are frequently understood as counterpoints in different worlds and explored separately. In this research institute, these areas are deliberately considered a common cultural bracket for crucial advances of human (pre)history and are therefore explored together. The focus of basic research lies in the time horizon from the Quaternary, about 2.6 million years ago, to the transformation of societies into historical epochs in the first millennium BC.

Research methods include archaeological field work (excavations and surveys), material culture studies with diverse archaeometric methods, and interdisciplinary co-operations with a range of different disciplines, including archaeozoology, archaeobotanics, anthracology, biological anthropology, palaeogenetics, climatology, geoarchaeology and landscape modelling. The basic analysis and interpretation of early cultures lies at the core of research efforts, which aim to include all possible sources. The study of chronologies, art and early writing as well as a broad socio-cultural spectrum including religion, ideologies, economies and identities compliment research at the institute.

OREA focusses on the following research topics:

- Prehistory in the Orient & Europe
- Archaeology from the Pleistocene to Early State Societies
- Environments & Economies, Digital Archaeology
- Interdisciplinary Studies of Resources & Identities



OREA researchers cover a wide range of disciplines from Prehistoric Archaeology, Egyptology, Sudanese Archaeology, Near/Middle Eastern and early Greek Archaeology to various philolo-

gies, Anthropology and Raw Material Studies. In 2017 about 70 OREA scientists were active in 17 countries on three continents conducting field work at sites spanning from the Palaeolithic to the Bronze Age.

Targeted research on different priorities is concentrated in research groups spanning broad regions and designed to be trans-regional and diachronic. Research groups are being initiated and developed to pick up new trends in the research landscape and provide new impetus.

For ongoing national and international quality assurance as well as additional research funding, the Institute strives for success in competitive third party funding. Current financial support is provided by the Austrian Research Fund (FWF), the ERC, the EU Marie Curie programme and INSTAP as well as by the Austrian National Bank (ÖNB), the White Levy Fund, the City of Vienna, the County of Lower Austria and various private foundations. Altogether 4 ERC Grants (3 Starter, 1 Advanced) and 4 FWF START prizes mark OREA as one of the leading institutes in the international field of archaeology.

The Institute publishes six publication series and two international journals. The publications reflect the core research areas and comply with the highest scientific standards through international evaluation procedures and advisory boards.

The new tenured status of the institute as decided by the *Akademierat* of the Austrian Academy of Sciences in June 2016 is the result of this highly successful evaluation. The OREA team is proud of the accomplished mission to be integrated as a permanent institute at the Austrian Academy of Sciences.

The Cluster 'Archaeology and Classics' CLAC

OREA is now part of the Cluster for Archaeology and Classics of the Austrian Academy of Sciences. The Cluster *Archaeology and Classics* (CLAC) was founded at the Austrian Academy of Sciences with the aim of consolidating the already existing research excellence in these professional disciplines, and of increasing potential for innovation. CLAC constitutes the parent organisation for the Institute for the Cultural History of Antiquity (IKAnt), the Institute for Oriental and European Archaeology (OREA), as well as the Austrian Archaeological Institute (ÖAI). These institutes, with significant strategic priorities, cover the entire curriculum and the diversity of methods of their disciplines. The chronological range of the expertise extends from the Quaternary period up until the modern era.

With the foundation of the cluster, the largest archaeological research association of Austria, with approximately 190 colleagues in a total of 30 groups, came into being. In addition, via the establishment of the Archaeological Council (*Archäologischer Rat*) at the ÖAW in 2016 with the involvement of complementary university institutions, museums, Austrian archaeological institutions as well as the Federal Monuments Office, an instrument has been created for the management and organisation of archaeological research in Austria.

OREA Management

In spring 2017 Michaela Lochner took over the role of the deputy director of OREA. Administrative support in 2017 was provided by Barbara Hütthaler, Thomas Maier and Valentin Jovanovic.

Two new research groups were established in 2017 (see below).

The definition of research initiatives within OREA is as follows:

- **Research groups**

Innovative research on different priorities within OREA is focused in research groups – period independently/diachronic – according to the respective topic. The development of research groups was directly coupled to the structure of the new institute and led to a fundamentally new research structure. They are the basic structure within OREA in order to carry out successful in-



Digital Archaeology
Edeltraud Aspöck



Material Culture in Egypt & Nubia
Bettina Bader



The Mycenaean Aegean
Birgitta Eder



Quaternary Archaeology
Thomas Einwögerer



Urnfield Culture Networks (UCN)
Mario Gavranovic



Anatolian Aegean Prehistoric
Phenomena (AAPP)
Barbara Horejs



Levantine and Egyptian Histories
Roman Gundacker and Felix Höflmayer



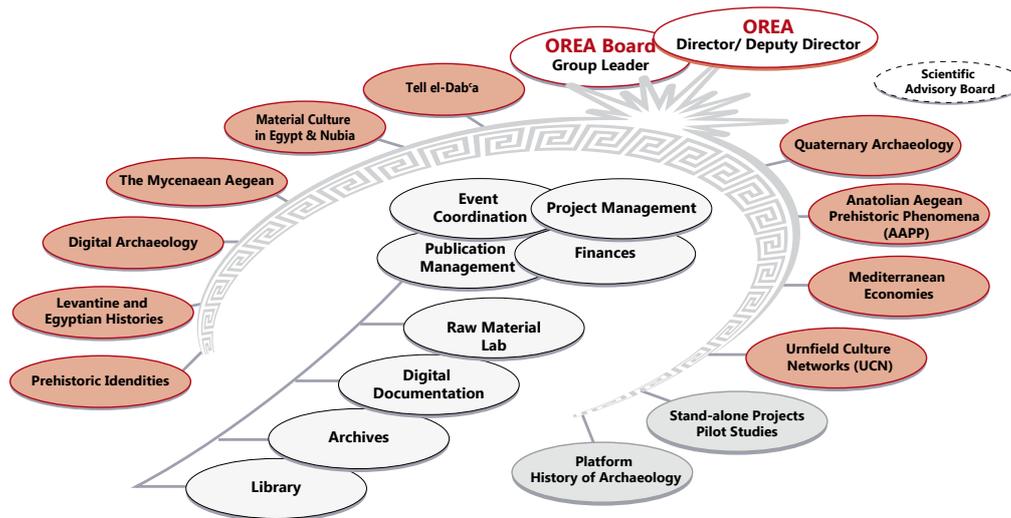
Mediterranean Economies
Reinhard Jung



Tell el-Daba Publications
Vera Müller



Prehistoric Identities
Katharina Rebay-Salisbury



Organigram of OREA institute

ternational and interdisciplinary research in a structured team framework, which also specifically integrates and promotes young researchers. The groups are constantly evolving as a dynamic element and initiated to set new impulses in the research landscape. They are implemented for a limited period and have to undergo evaluation according to recognised quality assurance criteria.

• Long-Term research, Platforms and Pilot Studies

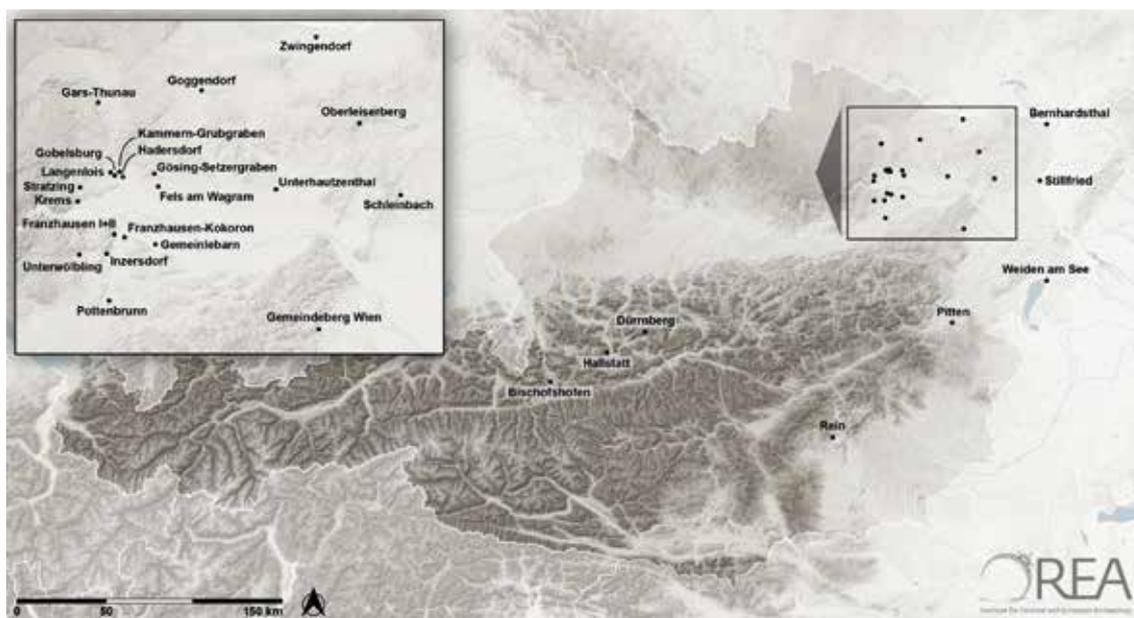
Traditional research priorities are bundled in the form of long-term research projects. This relates primarily to long-term commitments to editions, publication of old excavations material etc. The *Urnfield Culture Networks* project is OREA's highly successfully evaluated long-term research project (international evaluation spring/summer 2015).

The platform *History of Archaeology* brings together colleagues working on different topics not only concerning the history of archaeology and the biographies of archaeologists but also dealing with questions of history of art. Research is manifold and covers amongst other things research into the history of the former *Kommissionen*, the impact of Egyptian art on 19th century painting and studies on Heinrich Schliemann. The platform integrates researchers from OREA and different Austrian institutions as well as freelancers.

Research strategy

The basis of the research program are the OREA research groups, built up since 2013, whose leaders are represented in an OREA panel of research group leaders (OREA Board). The research priorities defined in 2013 are now fully organised in groups, individual studies are the exception and mostly function as strategic pilot studies for potentially larger projects. The research groups are open to new input from incoming research fellows and additional adjacent projects and groups.

The strategy follows the focus defined in the OREA mission statement (see above) from research on the basis of humankind between the Orient and Europe to the transformation to historical societies of the 1st millennium BC. In 2017 the following research groups existed: *Quaternary Archaeology*, *Anatolian & Aegean Prehistoric Phenomena*, *Mediterranean Economies*, *Mycenaean Aegean*, *Material Culture in Egypt and Nubia*, *Digital Archaeology*, *Tell el-Daba Publications*, *Urnfield Culture Networks*. In 2017 the research group *Prehistoric Identities* led by Katharina Rebay-Salisbury, based on her FWF funded studies and her ERC Starting Grant as well as the research group *Levantine and Egyptian Histories*, based on the START project of Felix Höflmayer and the ERC Starting Grant of Roman were established.



OREA's archaeological activity areas in Austria

OREA Archaeology in Austria

Many different OREA projects are located in Austria itself. Fieldwork (Lower Austria, Styria, Vienna) as well as extensive material analyses, large-scale and cross-regional studies in addition to the (re)assessment of older excavation materials/documentations concentrate on around 30 archaeological sites in Austria. Furthermore, OREA hosts long-term publication projects, supports and supervises academic theses dealing with Austrian issues and core themes, (co-)organises exhibitions at state- and national level whilst being actively engaged in national committees.

As the successive institution of the Prähistorische Kommission, which was already founded in 1878, OREA took over responsibility for all its archives and publishing obligations; moreover, several of OREA's projects examine its research history and the role of its former stakeholders.

All these studies and projects are embedded in the traditionally well-established cooperations with the federal authorities and their representatives as well as Austrian museums. Within the framework of the OREA research groups new state-of-the-art studies dealing with this wide range of topics are prepared, initiated, accomplished and published continuously. The journal *Archaeologia Austriaca* is jointly edited by the director of OREA together with the Institute for Prehistory and Historical Studies, University of Vienna, and is published by the publishing house of the Austrian Academy of Sciences. This journal is an essential publishing body and represents the only internationally ranked journal for Austrian archaeology.

Promotion of young researchers, career development, gender and diversity in 2017

The already successful practice at OREA to promote the development of young scientists has been continued. Young scientists are encouraged and supported to submit grants for their research projects and then carry out their research on an international level at OREA. The DOC scholarship holders at OREA are integrated into the research work of the OREA groups and supported by the group leaders. Three successful candidates finished their PhD scholarships in 2017. **Teresa Bürge** was guest lecturer at the Department of Oriental Studies at the University of Vienna after the completion of her doctorate, was offered a Post-Doc position in an international Swedish project and was able to secure a Post-Doc Track scholarship, all in 2016, completed in 2017. She could also secure

external funding for her Post Doc studies from the University of Gothenburg. **Gabriela Ruß-Popa** was awarded with a scholarship by the University of Vienna and a Post-Doc Track scholarship and has been exploring and submitting Post Doc research applications in 2017. In 2016 the DOC Team *The Role of Households at the Dawn of the Bronze Age – Contextualizing Social Organization* was granted to **Maria Röcklinger**, **Constanze Moser**, **Stephanie Emra** and **Sabina Cveček** and started with a kick-off workshop at OREA. The research successfully continued with international placements of the members of the team in 2017. **Mohamad Mustafa** successfully secured a DOC Scholarship for his research project “*Burial Practices in the Southern Pre-Pottery Neolithic Levant*” in 2017. The APART fellows at OREA are encouraged to build their own new projects and international networks based on their respective projects and the resulting collaborations. **Felix Höflmayer** received the START Prize of the FWF in 2016 and started his project in 2017. **Roman Gundacker** successfully applied for an ERC Starting Grant and will start his project in 2018 at OREA.

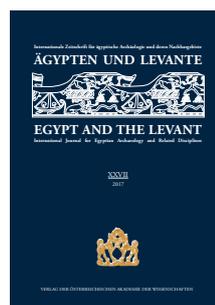
OREA supported workshops and conferences especially for young scientists, as their workshops and conferences were integrated into larger scale conferences or organised independently and will take place continuously, actively supported by OREA to give young researchers the possibility for presentation and publication of their first to their further results.

Cooperation in the field of teaching exists in Austria especially with the Institute of Prehistoric and Historical Archaeology and the Institute for Egyptology, the Department for Ancient History, Papyrology and Epigraphy, “Altertumskunde” Papyrology and Epigraphics, the Institute for Classical Archaeology as well as the Faculty of Protestant Theology, all University of Vienna. Internationally teaching co-operations with the Universities of Tübingen, Heidelberg, Leuven, New Bulgarian University (Sofia), Tel Aviv and Istanbul exist.

Publication strategy

The institute’s strategy covers two different fields of publication: OREA’s own publication series and journals as well as external international publications of OREA scientists in high ranked journals.

OREA	Publications of the Institute for Oriental and European Archaeology
CAENL	Contributions to the Archaeology of Egypt, Nubia and the Levant



UZK	Untersuchungen der Zweigstelle Kairo des Österreichischen Archäologischen Instituts (Analyses of the Cairo branch of the Austrian Archaeological Institute)
MPK	Mitteilungen der ehem. Prähistorischen Kommission (Communications of the Prehistoric Commission)
MykStud	Mykenische Studien (Mycenaean Studies)
Ägypten und Levante / Egypt and the Levant	Internationale Zeitschrift für ägyptische Archäologie und deren Nachbargebiete / International Journal of Egyptian Archaeology and Related Disciplines
Archaeologia Austriaca	Zeitschrift zur Archäologie Europas / Journal on the Archaeology of Europe

All series and journals edited and published by OREA are internationally peer-reviewed and follow the high state-of-the-art standards of scientific publications, regularly monitored by the Austrian Academy of Sciences and its publishing house as well as by international ranking institutions (ESCI, ERIH).

International perspectives and co-operations in 2017

OREA and its scientists pursue international orientated projects and actively took part in international initiatives e.g. Horizon 2020 applications, especially in the category excellent science. In collaboration with our colleagues from the Danube region and the Balkans, OREA took part in strategies concerning these areas, as well as in the AAS (JESH programme) and secured participation in the HERA initiative. The individual projects of the research group Digital Archaeology for example are integrated into a wide European network through the involved scientists and the collaboration with the Austrian Centre for Digital Humanities. The ARIADNE Collaboration was successfully completed in 2017 and further applications are currently under review. The *Tell el Daba Publication* group is responsible for the long-term excavation publication of the research conducted by Manfred Bietak until 2009.

OREA could also establish itself as the *Centre for Balkan Archaeology* featuring the FWF funded project *Gold Roads of the Balkans*, the Innovation Fund projects *Golden Treasures* and *Visualising the Balkans* granted and/or partly implemented in 2017. Several field projects in Bosnia, Croatia and Serbia complement the Balkan Archaeology forum.

A new co-operation with the Swiss Institute for Architectural Research, Cairo directed by Cornelius von Pilgrim for the research at *Elephantine* was embedded in the Studies of Material Culture in Egypt and Nubia.

Further activities concerning the Iran and the VAE have been initiated in 2017 and will be continuously developed in 2018.

In the Lebanon the surveys of Karin Kopetzky of the former year led subsequently to a successful FWF project in 2017 with the research focus *Between Land and Sea – The Chekka Region in Lebanon* in co-operation with H. Genz of the American University of Beirut.

OREA is the only archaeological institute in Austria holding highly competitive grants as well as internationally peer-reviewed and third-party funded projects to such an extent. In 2017 OREA was hosting one ERC Advanced Grant, two ERC Starting Grants, two EU Marie Curie individual fellowships, three FWF START prizes, nine FWF stand-alone projects, two APART fellowships, one ANFR PostDoc fellowship and two DOC grants as well as the above mentioned DOC-team.

Participation of OREA at ASOR 2017, Boston

The already successful participation of OREA scientists at the Annual Meeting of the School of Oriental Research in former years led to an initiative of the OREA research group leaders to launch a 'Member-Organised Workshop' with the title *Connectivities in the Ancient Near East: Social impact of shifting networks* at the ASOR 2017 Meeting in Boston.

The meeting took place on November 15 2017 in the afternoon and hosted an audience of around 60 to 70 participants. The focus was on connectivity and its impact from the Neolithic period through the Bronze Age, covering regions from Anatolia, the Levant, and reaching Egypt. The aim was to promote the broad spectrum of archaeological research themes at OREA to our fellow researchers during a large scale meeting with international outreach. The contributions were presented by Bettina Bader, Teresa Bürge, Felix Höflmayer, Barbara Horejs, Reinhard Jung, Christian Knoblauch, Christoph Schwall from OREA, our cooperation partner Katharina Streit and other contributors with international background. Chronological discourse as well as a look into material culture was presented (<http://www.asor.org/wp-content/uploads/2017/06/ASOR-Program-2017-online.pdf>).

After the Session OREA hosted a reception open to all participants of ASOR, presenting the institute to the manifold international community of Near Eastern archaeologists.



Barbara Horejs opening the member-organised workshop *Connectivities in the Ancient Near East: Social impact of shifting networks*



Susan Ackerman, ASOR President, and Andy Vaughn, ASOR Executive Director and Administrative Director, at the welcome-reception for the Session Chairs

The Raw Material Lab

(Research: M. Brandl – Clare Burke)

A decade of intensive work of the Quaternary Archaeology research group on lithic material analyses resulted in the establishment of an in-house Raw Material Laboratory. The close cooperation with the expertise of the University of Vienna (G. Trnka) was a crucial factor for the effective implementation of this facility. The head of the lab (M. Brandl) developed a specific method for provenance studies of lithic artefacts, which has been successfully tested in the framework of several international studies. Additionally, a reference collection of lithic raw materials from European and extra-European regions was established, which forms an essential basis for subsequent research.

Prime goal of this analytical facility are material and provenance studies of rocks and other materials from archaeological contexts. The Raw Material Lab combines high resolution reflected light microscopy for a non-destructive analysis of large objects and petrography applying polarised light microscopy for thin section analyses. Both units are coupled with a state of the art camera system for optimal standardised microphoto documentation.

The resources of the lab are also available for externally funded ceramic analyses involving various ongoing projects.

Analyses of lithic raw materials

The main focus of rock analyses is on siliceous raw materials such as chert and flint (silicites). Chipped stone tools produced from silicites are amongst the most abundant artefact types at pre-



High resolution reflected light microscopy for non-destructive analysis of large objects

historic sites. A crucial question concerns the characterization (“fingerprinting”) of such raw materials in order to unambiguously differentiate them from other, similar materials. Sound provenance studies form the basis to answer scientific questions pertaining to prehistoric resource management, involving the procurement, processing and distribution of lithic raw materials.

Provenance studies at the ÖAW are performed according to the internationally established *Multi-Layered-Chert-Sourcing-Approach* (MLA). The MLA combines visual (macroscopic), stereomicroscopic, petrographic/geochemical and statistical analyses in order to trace archaeological lithic finds back to their original sources.

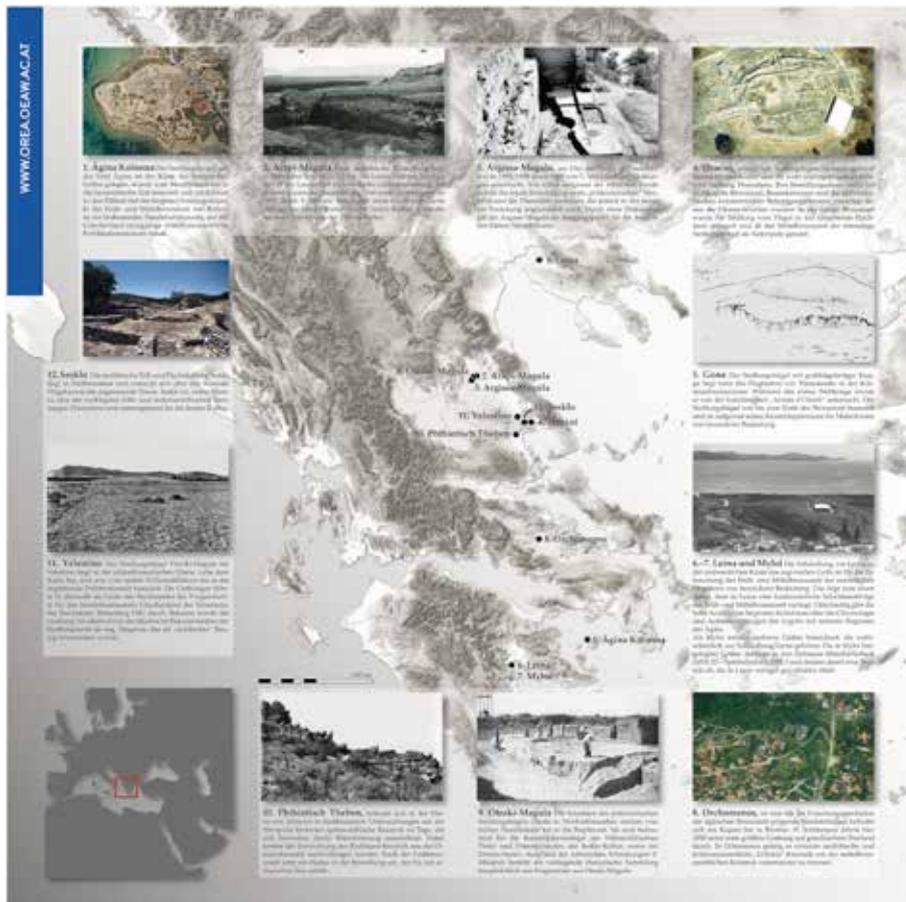


Petrography for thin section analyses applying polarised light microscopy

Exhibition of the “Collection Schachermeyr”

The *Collection Schachermeyr* consisting of around 2000 fragments and some entire ceramic vessels was donated to the OREA institute with the idea to guarantee access to experts for ceramic studies. In 2017 a permanent exhibition of selected sherds was installed at OREA using historic showcases of the time of Fritz Schachermeyr, the founder of the Mycenaean Commission in 1971.

Presentation and classification of the sherds according to latest results was realised together with students under guidance in the course of a seminar. The exhibition presents already published sherds from Neolithic Thessaly and Bronze Age Greece as well as from the Near East. In the framework of a bachelor thesis the presentation of Neolithic and Bronze Age pottery from the Balkans is in progress.



The OREA Archives

Following the fusion of the former Kommissionen OREA took over the responsibility for the hitherto accumulated and rather divers archives. Fortunately the spacial situation of OREA could be highly improved by moving into a new office infrastructure in summer 2016, which also guaranteed very good storage conditions for the valuable and heterogenous files and objects. This change of location and given the UV-protected, largely dust-free storage environment a complete survey of the portfolio was undertaken. New standards of organisation and administration updated the accessibility to a 21st-century state-of-the-art procedure. The re-organisation of the archives has been completed recently and the responsibility was assumed by Eva Alram, Michael Brandl, Mario Gavranovic and Karin Kopetzky. The new and detailed breakdown of the inventory is complemented by an on-going digitisation of the analogue data for long-term-storage at the repositories of the Austrian Academy of Sciences.

The lithic raw material collection at OREA (M. Brandl)

Currently, the lithic raw material collection at OREA is designed as a reference collection with a focus on projects situated at the institute. The collection was initiated in 2007 and is constantly extended. Due to the development of raw material research in the framework of the Palaeolithic studies at the Academy, the largest component of the collection comprises samples from northern and eastern Austrian deposits. The majority of the samples derived from *Lower Austria* with additional samples from *Upper Austria* and *Burgenland*, however the latter in comparatively small numbers. Altogether, nearly 700 samples of SiO₂ rock varieties (i.e. chert, chalcedony, jasper and others) from those sources are stored at OREA. Furthermore, there are ca. 100 pigment samples from various sand- and gravel deposits throughout Lower Austria which will be analysed in the course of studying the Palaeolithic use of ochre in this region.

Important sources from countries surrounding Austria are also represented in the reference collection by over 200 characteristic samples (Table 1). From *Germany* these are Baiersdorf, Arnhofen and Flintsbach-Hardt (chert sources located in Lower Bavaria), from *Hungary* Hárskút, Úrkút and Szentgál Tüzköveshegy (important radiolarite outcrops), Dunavarsány (Danube gravels), the Bükk Mountains with quartz-porphry, and Erdöbenye and Tolcsva for Carpathian obsidian varieties. From *Slovakia* there are samples from Viničky, also an internationally recognised Carpathian obsidian source, from the *Czech Republic* Stránská skála and Krumlovský Les representing the Southern Moravian chert types and Olomucany, from *Poland* Bęblo and Zelków for Kraków Jurassic silicites (the latter in the context of gunflint manufacturing of the 19th century), Krzemionki Opatowskie (the most significant chert mine in Eastern Europe), Cieszyn (erratic flint) and the Holy Cross Mountains where five sites were sampled for ‘chocolate silicites’.

A second component of the developing raw material collection is analytical work. Whilst the above mentioned reference samples are intended to serve mainly for microscopic comparisons, one part of the collection is designated to be investigated according to the Multi Layered Chert Sourcing Approach (MLA). This involves an entirely different sampling strategy focusing on statistically significant numbers of samples and concerns ongoing projects like Çukurici Höyük and the *Characterization of Early Neolithic chert resources in the Pusta Reka region*. In the framework of provenance studies of chert finds from Çukurici Höyük, Turkey, 65 geological and archaeological samples were exported and geochemically analysed. From *Serbia*, more precisely the Niš–Dobrič–Leskovac Basin complex, 73 samples from four geological outcrops (Lebane, Kremenac, Bučumet–Kameno Rebro and Rasovača) were collected and 45 geochemically analysed for a pilot study.

It is planned to complete the reference collection according to the needs of all newly established projects and to lay the foundation for a comprehensive analytical collection which will be used to produce data to be published in an open access raw material database.

Country	District/region	Site	Material	Linked to project	no. Samples	Find date
Austria	Lower Austria	Wachau, Danube river gravels	chert, radiolarite, quartzite, others	Austrian Quaternary Sites (AQS) reference collection	110	2007–2017
		Retz, Galgenberg	quartzite		1	2013
		Alland quarry	spiculite		1	2008
		Bisamberg	silicified sandstone		3	2010
		Gobelsburg, Gobelsberg	opal, chalcedony, chert		140	2015
		Großweikersdorf	div. silicites and inorganic SiO ₂ modifications		5	2015
		diverse sites linked to the Hollabrunn-Mistelbach Formation (i.e. Altenmarkt im Thale, Groß, Oberfellabrunn, Weyerburg, Ameisthal, Dietersdorf); gravels	div. silicites and inorganic SiO ₂ modifications		19	2010–2016
		diverse sites linked to the Laa Formation; gravels	div. silicites and inorganic SiO ₂ modifications		130	2010–2016
		Florianikogel, Bürg	radiolarite		50	2014
		Maissau	chalcedony, jasper		10	2008
		Eggenburg	chalcedony, jasper		2	2010
		Gumpung	chalcedony, jasper		3	2010
		Höllgraben	opal		20	2007
		Altenburg	chalcedony, jasper		25	2015
		Wanzenau	opal, jasper		45	2015
		Dürnkrot an der March	chert		40	2013
		gravels from Ernstbrunn, Eggenendorf im Thale, Pürstendorf, Winzing, Laa an der Thaya, Bad Deutsch-Altenburg, Niederleis, Hundsheim	div. silicites and inorganic SiO ₂ modifications		15	2007–2017
		Retz	pigments		12	2010–2015
		Fels am Wagram	pigments		11 bags	2010–2015
		div. Sand- and gravel quarries	pigments		30	2010–2015
	Mautern an der Donau	Gföhl gneiss	1		2012	
	Weitenegg	Pyroxene-amphibolite, serpentinite, granulite	9		2012	
	Upper Austria	Großraming, Pechgraben	jasper, quartzite, chert			7
Burgenland	Csaterberg	opal		21	2016	
Germany	Bavaria	Baiersdorf	tabular chert	reference collection	25	2010
		Arnhofen	banded chert		16	2009
		Flintsbach-Hardt	chert		17	2009
Hungary	Veszprém	Hárskút	radiolarite	reference collection	4	2016
	Veszprém	Úrkút	radiolarite		3	2016
	Veszprém	Szentgál Tüzköveshegy	radiolarite		15	2010–2016
	Veszprém	Dunavarsány	silicites, quartzite		16	2016
	Borsod-Abaúj-Zemplén	Bükk Mountains	quartz-porphiry		1	2016
	Tokaj-Borsod-Abaúj-Zemplén	Erdőbenye	obsidian		5	2015
Tokaj-Borsod-Abaúj-Zemplén	Tolcsva	obsidian	4	2015		
Slovakia	Trebišov	Viničky	obsidian	reference collection	5	2015
Czech Republic	Brno-Slatina	Stránská skála	chert	reference collection	20	2010
	Znojmo	Krumlovský Les	chert		25	2010–2015
	Blansko	Olomucany	chert		9	2010
Poland	Kraków	Bęblo	chert	reference collection	1	2010
	Kraków	Zelków	chert		4	2015
	Opatów	Krzemionki Opatowskie	banded chert		2	2013
	Cieszyn	Cieszyn	erratic flint		14	2015
	south-central Poland	Holy Cross Mountains (5 sites)	'chocolate silicites'		27	2014
Turkey	Izmir	Çanakgöl Tepe	chert	Çukurici Höyük chert	10	2010; 2014
	Izmir	Çukurici Höyük	chert (artefacts)		55	2010; 2013; 2014
Serbia	Nišava	Kremenac	NLS	Characterization of Early Neolithic chert resources in the Pusta Reka region	8	2017
	Jablanica	Lebane	NLS		20	2017
		Bučumet–Kameno Rebro	chalcedony		20	2017
		Rasovača	jasper		25	2017

Table 1 Reference collection of over 200 characteristic samples

Documentation and material related to various excavations in Austria, Greece, Egypt and the Sudan

The OREA Archive houses documentation and material related to various excavations in Austria, Greece, Egypt and the Sudan.

The Urnfield Culture archive (M. Gavranovic)

The Urnfield Culture archive of OREA houses documentation from several crucial sites of Late Bronze Age in Lower Austria. The collection includes mainly analogue documentation from the excavations at the sites Franhausen-Kokoron, Inzersdorf ob der Traisen and Gars-Thunau.

The Urnfield Culture burial site *Franzhausen-Kokoron* (Nußdorf ob Traisen, St. Pölten, Lower Austria) was excavated between 1982 and 1991 by the Federal Monuments Authority Austria under the direction of J.-W. Neugebauer. A total number of 403 burials was documented. The OREA archive keeps 45 folders (A4) of the field documentation (field diaries and protocols, situation plans, site plans), also including a detailed catalogue of the finds and features (drawings and photographs). The entire documentation of Franzhausen-Kokoron, including a catalogue of graves and finds, a plan of the burial ground and high quality drawings of each object, was digitised and is presented as an electronic publication on the project website <http://hw.oeaw.ac.at/franzhausen-kokoron2/>

The Urnfield Culture burial ground *Inzersdorf ob der Traisen* (Nußdorf ob Traisen, St. Pölten, Lower Austria) was excavated between 1981–1983 and in 1987 by J.-W. Neugebauer of the Federal Monuments Authority Austria. Altogether, 273 cremation burials were discovered. The OREA archive holds 13 A4-Folders with field diaries and notes as well as field protocols which are all available for further examination.

Gars/Thunau (Horn, Lower Austria) is an Urnfield Culture hill top site excavated 1965–2003 by Herwig Friesinger. The OREA archive stores 51 A4-Folders with field diaries and notes as well as field protocols, the object catalogue, photographic documentation, maps, plans and drawings. These originals are available for further studies.

In 2017 OREA initiated the digitisation project of the documentation from Gars/Thunau with the focus on finds and features from the Urnfield Culture period. The aim of this project is to digitise the enormous amount of analogue data and to create open access on-line presentation platform where all information regarding Gars/Thunau will be obtainable. This project is tackled in cooperation with the Austrian Center for Digital Humanities of the Austrian Academy of Sciences and Franz Pieler from the Department of Arts and Culture of the Office of the Provincial Government of Lower Austria. <https://www.orea.oeaw.ac.at/forschung/urnfield-culture-networks/thunau-am-kamp-eine-befestigte-hoehensiedlung-der-urnenfelderkultur/dokuplattform-thunau-am-kamp/>

Archive of the Fritz Schachermeyr Collection (E. Alram)

Fritz Schachermeyr donated his private collection of prehistoric pottery to the former Mycenaean Commission of the Austrian Academy of Sciences, to be used for study purposes by professionals and students. Over 2000 pottery fragments from the eastern Mediterranean, dating from the Neolithic to the Bronze Age are stored in the OREA Archive. A representative part of the collection is now on display (see above).

The Tell el-Daba archive (K. Kopetzky)

The largest group of material stored in the OREA archives is the documentation of the Tell el-Daba excavations (Egypt) covering the years from the beginning of the excavations in 1966 to the year 2009. Inherited from the former *Commission for Egypt and the Levant* it houses over

200.000 film negatives, 45.000 slides, 4000 field drawings, 1000 convolute cards and 24.000 object drawings. Additionally databases, geo-data, 62.000 digital images and digital maps and plans accumulated over a period of 50 years (Table 1). The digital data consist of scans of the find inventory and field protocols – the originals being stored at the ÖAI in Cairo (Table 3). To cope with the amount of documentation and to securely preserve it for future generations the institute has initiated the project *A puzzle in 4D. Digital preservation and reconstruction of an Egyptian palace (4DP)*. Within the frame of this project the analogue and digital material is process for a long-term storage repository. In a final step it will be made available for researchers and students as well as the interested public. To date over 8.000 negatives, 3.500 pages of field protocols, 19.000 pages of find inventories, 12.000 field drawings, 500 convolute cards have been digitised and provided with the matching metadata.

From the rescue excavations at Tell Hebwa in the Northern Sinai/Egypt carried out by Josef Dorner in the early 1990ies, 2 protocol folders are archived as copies at OREA. The originals are at the ÖAI in Cairo.

Resource	Description	est. numbers (@OREA)	Scans/digital objects of analogue resources	4DP scans + metadata (midterm)
Slides (mainly colour, a few b&w) analogue	Framed slides, 24×36 mm, 6×6 cm	45.000		
Photo negatives (b&w and colour) analogue	Filmstrips, 24×36 mm, 6×6 cm	200.000	8.000	600
Find sheets analogue	A6 paper	10 folders		
Scans of protocols, wall-lists, locus-lists analogue	A4 paper		3.490	327 (area F-I)
Field drawings analogue	A3 graph & tracing paper	3.700	3.700	3.670
Convolute cards (ceramic drawings) analogue	A5 cardboard	1.000	500	500
Scans of inventory of wall paintings analogue	A4 paper, b&w		3 pdf files (131 pages)	
Scans of ceramics- & find-inventory analogue	A4 paper (books and sheets)		19.000	1.300
Find drawings analogue	A4, paper and tracing paper	23.200	12.000	
Diaries analogue	A5 and A6 notebooks	15 notebooks		

Table 2 List of analogue and digitised analogue resources from Tell el-Daba with estimated numbers (project midterm). The column ‘scans/digital objects of analogue resources’ lists the number of analogue resources of which digital copies exist – many of these copies/scans were made before the start of 4DP project, which means that there are no metadata records for them

Resources	Description, file formats	Estimated no. files/size
Digital photos	.nef, .jpeg, .tiff, .pds, .raw	62.000
Databases (MS Access)	Since 2007/8 contains protocols, locus- and wall-numbers, inventory, images; .mdb	11 databases, 55MB
Databases (filemaker)	Inventory, wall paintings, seals; .fp5, .fp7	15
Spreadsheets (excel)	Locus- and wall- numbers, inventory, wall paintings, stones, bones, botanical remains, C14; .xls, .xlsx	12
Vector graphics (Adobe Illustrator)	reconstructions, illustrations, maps: ai,	650
AutoCAD Files	maps: .dwg	
Georadar	.HD, .DT1, .tiff, .gif, .jpeg	2.500

Table 3 List of types of digital resources from Tell el-Daba with estimated numbers (size)

The Assasif archive (K. Kopetzky)

The documentation of the excavations in the Assasif/ Thebes West (Luxor, Egypt) carried out in 1969–1975 under the directorship of Manfred Bietak contains field protocols, negative and positive photos as well as the object drawings and the tracings of the tomb reliefs (Table 4). A digitised storage will be envisaged at a later stage of the creation of the excavation repository.

Photo negatives (b&w and colour) analogue	2 A4-folders
Field protocols	3 A4-folders
Photo positives analogue	8 A4-boxes
Find drawings analogue	2 A4-folders

Table 4 List of analogue resources from the Assasif

The Sayala archive (K. Kopetzky)

In the early 1960ies due to the construction of the high dam in Assuan, Austria was invited by the UNESCO to investigate the region of Sayala in Upper Nubia/Sudan. From this venture under the leadership of Karl Kromer tracings of rock-carvings from the area as well as the documentation of the various rescue excavations in the area are stored in OREA's Archive. The tracings of the rock carvings have partially been digitised in the 1990ies and comprise more than 2.100 single sheets in digital format, partially reassembled to reconstruct the huge partly rock carvings (Table 5).

Around 50% of the drawings are still awaiting digitisation.

Photo negatives (b&w and colour) analogue	8 A4-boxes
Field protocols	13 A4-folders
Field diaries/notes	7 books
Tracing of rock carvings	more than 2.100 drawings on transparent paper

Table 5 List of analogue resources from Sayala

Scientific Activity 2017

QUATERNARY ARCHAEOLOGY (Research group leader: Thomas Einwögerer)

Objectives

The research group Quaternary Archaeology focusses on the investigation of hunter-gatherer cultures of the Ice Ages. Hereby, the principle field of research covers open air sites which are well-preserved in the loess sediments of the large river systems of the Middle Danube region. Ongoing fieldwork (Kammern-Grubgraben), as well as concluded field investigations (Krems-Hundssteig, Krems-Wachtberg, Gösing-Setzergraben, Schiltern, etc...) in Lower Austria provided a large database for a range of disciplines involved in Ice Age research. Occupation span, structure, and function of the individual sites are reconstructed on the basis of this data, in conjunction with interdisciplinary analyses (e.g. raw material studies, physical Anthropology involving ancient DNA) and comparison of regional and supra-regional cultural developments and climatic changes. The branch in Krems located amid the best known Palaeolithic sites of Lower Austria functions as a research platform which provides enough space for material studies, in particular for refittings on the vast lithic inventories of Krems-Wachtberg and Kammern-Grubgraben.

Current research programme

After 10 years of ongoing investigations, the Gravettian open air site of Krems-Wachtberg still constitutes a major focus of the research group. In the course of archaeological excavations conducted between 2005 and 2015, an exceptionally well preserved middle Upper Palaeolithic horizon was exposed. In addition to a large number of impressive finds it was possible to document spectacular and unique features, e.g. two infant burials, of which one represents the interment possibly of twins. These results established the international fame and importance of this Lower Austrian site as a key for investigating Ice Age climatic- and environmental conditions during the Upper Palaeolithic period. Since the end of the fieldwork in 2015 the main focus is on data analyses and their publication. State of the art excavation techniques, single artefact recording and entry of all datasets into a main database allow to address questions concerning mobility, subsistence, social structure and production processes of various material groups, e.g. lithics, bone, ivory and pigments, as well as the life histories of particular individuals. In 2017 specific attention was on the investigation of the exceptionally well preserved infant burials and associated grave goods, notably over 50 ivory beads. Besides answering detailed anthropological questions (e.g. stress events, age and cause of death), analyses of the bone material allow for the reconstruction of kinship and descent through human DNA. Results of these studies will be submitted to a high-ranked journal in cooperation with Maria Teschler-Nicola (NHM) and Ron Pinhasi (University of Vienna, Dept. of Anthropology), the manuscript is currently in preparation.

Amongst the most important results of the year 2017 is a floating tree-ring curve derived from well preserved pinus charcoal. It was possible to incorporate the Upper Palaeolithic site of Gösing-Setzergraben into the existing curve with an overlapping of several hundred years.

An additional focus during the reporting period was the evaluation of the chipped stone tool assemblage regarding raw materials and their provenance, and artefact morphology according to the *chaîne opératoire* concept. Moreover a large scale effort to refit the major part of this assemblage was undertaken. Debitage of the largest raw material unit was refitted and documented in July 2017 together with students during a course at the University of Vienna. Additionally, all

macrolithic stone tools, i.e. hammer stones, grinding stones, etc., were analysed and recorded in a database. Meanwhile all lithic analyses are completed and currently the manuscript for publication as a monograph presenting the results of all lithic finds from Krems-Wachtberg from the seasons 2005–2015 is in preparation.

In August 2017 fieldwork which commenced in 2015 at the Epigravettian site of Kammerm-Grubgraben was continued. During this season the so-called trench ‘Paul’, originally excavated in 1986 by Paul Haesaerts, was reopened. A cultural layer, most likely corresponding to the A1 2–4 sequence of cultural layers defined during excavations from 1985–1994, could be documented. Aside from frost phenomena, it was possible to expose several small anthropogenic pits, most likely post holes, in 2016, and subsequently a layer of stone plates accompanied by an exceptionally high density of finds was uncovered in 2017. The recovered lithics confirm an assignment to the Epigravettian/Badegulian. Due to the fact that it was not possible to unambiguously locate the position of the old trenches in the years 2015 and 2016 through backhoe-trenches, a new section in the area of the old excavations was opened in 2017, including a 1 x 3 m trench in the north-easternmost corner. At this locale it was possible for the first time to capture an extensive part of layer A1 1, which was recorded during the excavations from 1985–1994 (field directors A. Montet-White and F. Brandtner), and to collect dateable material. In order to clarify the numerous inconsistencies of the old excavations from 1985–1994 and to analyse the enormous body of old finds which were recently recorded into a database for a comparison with the results from the ongoing investigations, a new field project with the working title ‘Living on the edge – Success, limits and failure of adaptive strategies in eastern Central Europe during the Last Glacial Maximum’ in cooperation with the Institute of Prehistory and Protohistory, FAU (A. Maier, K. Pasda, Friedrich-Alexander-University Erlangen-Nürnberg) is currently under preparation.

In the cadastral community of Schiltern some whitish patinated flint tools well corresponding with Upper Palaeolithic finds were recovered in the course of survey activities in the area of a Neolithic triple-ditch roundel. The Quaternary Archaeology Research Group was com-



Fig. 1 Schiltern, Lower Austria, core sampling (© OREA, ÖAW)



Fig. 2 k.M.I. Christine Neugebauer-Maresch, 5th of May 2017, symposium ‘Quartärarchäologie – Die Forschungen von Christine Neugebauer-Maresch an der ÖAW’ (© OREA, ÖAW)

missioned to conduct core soundings in order to locate a potential yet unknown Palaeolithic layer and possibly recover material for dating. Altogether 13 cores were produced and investigated. Six cores produced evidence for an approximately 5 cm thick Palaeolithic layer with charcoal, pigment and fragmented bone inclusions in a depth of 2,8 m below the present surface. A 14C date derived from a particularly well preserved charcoal sample from the archaeological horizon revealed an age of almost 34.000 years BP, which corresponds with the Early Upper Palaeolithic. According to the results from the core soundings it can be assumed that the

Palaeolithic stone tools collected from the surface were displaced by Neolithic activities, e.g. during the construction of ditches and deep pits.

In the framework of the project ‘BergbauLandschaftWien’, which is planned for 2018 in cooperation with the Stadtarchäologie Wien and the University of Vienna, geo-archaeological surveys were conducted in 2017 as preparatory work. During these surveys, prehistorically used silicite deposits were investigated in the area of the city of Vienna. Main focus was on radiolarite deposits linked to the St. Veit Klippen Zone in the *Lainzer Tiergarten*, where three surveys were undertaken from August to November 2017.

Regarding public outreach, archaeological finds and results were processed and provided by the research group for several exhibitions in 2017. For instance, a number of the ivory beads from infant burial 1 at Krems-Wachtberg were exhibited in the special exhibition ‘Klimagewalten – Treibende Kraft der Evolution’ at the Landesmuseum für Vorgeschichte Halle/Saale (30 November 2017 until 21 May 2018).

Parts of the assemblage from the Upper Palaeolithic site of Gösing-Setzergraben, which is currently analysed for a Master’s Thesis at the University of Vienna (N. Buchinger) under supervision of the research group was presented between March 18th and December 3rd 2017 at the special exhibit ‘News from the Past’ at the Urgeschichtsmuseum MAMUZ in Asparn/Zaya.

Since 2017, selected stone tools and decorative items from the Upper Palaeolithic site at Kammerm-Grubgraben are part of the permanent exhibition at the Haus der Geschichte, Niederösterreich Museum in St. Pölten.

As in previous years, an increasing number of coursework on Palaeolithic topics was provided by members of the research group at the Institute of Prehistoric and Historical Archaeology of the University of Vienna (Ch. Neugebauer-Maresch, Th. Einwögerer, M. Brandl). Topics included – amongst others – Palaeolithic and Mesolithic settlement structures, Palaeolithic methods for stone tool analyses and recording, Palaeolithic burial practices, an introduction into methods for excavating prehistoric burials, a field school and raw material analysis and -economy.

On the 5th of May, the symposium ‘Quartärarchäologie – Die Forschungen von Christine Neugebauer-Maresch an der ÖAW’ was organised in honour of k.M.I. Christine Neugebauer-Maresch at the ÖAW with the active support of the research group on the occasion of her retirement. Subsequent to the introduction by w.M. HR Univ.-Doz. Dr. phil. Michael Alram, w.M. em. o. Univ.-Prof. Dr. phil. Dr. h. c. Herwig Friesinger and k.M.I. Prof. Dr. Barbara Horejs scientific talks related to the activities of Christine Neugebauer-Maresch at the ÖAW were presented by Th. Einwögerer, O. Schmitsberger and M. Brandl. Key note speaker Prof. Dr. Jürgen Richter from the Institut für Ur- und Frühgeschichte at the University of Cologne gave the talk ‘Unser Weg nach Europa. Migrationen vor 40.000 Jahren’.

Lastly, M. Brandl was awarded the Erna-Diez prize for exceptional archaeological achievements donated by the Historical Commission of the County of Styria (Historische Landeskommission Steiermark) for longstanding research of the Rein-Eisbach site in Styria. Rein chert was used from the Middle Palaeolithic to the Late Neolithic, with evidence for extensive mining in the Neolithic period.

Highlights 2017

- After repeated sampling of burials 1 and 2 it was already possible in 2016 to assign a male sex to individual 3 from burial 2. The results are published in *Nature* 2016 (Fu et al. 2016). Additional detailed anthropological analyses concerning stress events, age and cause of death and DNA analyses for the reconstruction of kinship and descent were conducted in 2017. Results of these studies will be submitted to a high-ranked journal in cooperation with Maria Teschler-Nicola (NHM) and Ron Pinhasi (University of Vienna, Dept. of Anthropology), the manuscript is currently in preparation.
- Kammern-Grubgraben – excavation and field school (granted by Federal State of Lower Austria): Discovery of a Late Palaeolithic stone paving.
- In the course of core drillings at the cadastral community of Schiltern north of Krems an der Donau it was possible to trace a so far unrecognised extensive Upper Palaeolithic cultural layer. The horizon is situated roughly 3 m below the present day surface and dates to approximately 34.000 years BP.
- On the 5th of May, the symposium *Quartärarchäologie – Die Forschungen von Christine Neugebauer-Maresch an der ÖAW* was organised in honour of Ch. Neugebauer-Maresch at the ÖAW. The key note *Unser Weg nach Europa. Migrationen vor 40.000 Jahren* was held by J. Richter from the Institut für Ur- und Frühgeschichte at the University of Cologne.

ANATOLIAN AEGEAN PREHISTORIC PHENOMENA (Research group leader: Barbara Horejs)

Objectives

The central theme of the research group Anatolian Aegean Prehistoric Phenomena (AAPP) is the synoptic analysis of Neolithic, Chalcolithic and Early Bronze Age sites in Anatolia and the Aegean from a supra-regional perspective. This enables a better understanding of phenomena, which connected these two major cultural spheres. Anatolia and the Aegean are both starting and intermediary points of formative, cultural phenomena and developments of historical relevance to humanity, which shaped the European continent. The interdisciplinary analyses crosslink our knowledge of both cultural areas and are crucial for the understanding of causes and socio-cultural impact, yet different research traditions and orientations of international academic schools have so far impeded progress. The AAPP research group, established in 2014, draws attention to this significant desideratum and unites experts of both regions. The Balkans as direct contact zones and links to inner Europe are integrated in this broad geographical approach since 2017. The focus on inter-regional prehistoric questions from the Neolithic to the Early Bronze Age in this cultural core may, via systematic comparison, lead to models and concepts that can be evaluated in a larger geographical and socio-cultural context.

Archaeological context

In the Holocene, from c. 10th to 3rd millennia BC, crucial changes in human society and lifeways took place in the Aegean-Anatolian-Balkan area that characterises the region to this day. These include the foundational and sustained changes to the oldest sedentary agricultur-

al cultures in Neolithic times and the beginnings of human-induced environmental change, associated with a fundamental change of social organizational structures. The changes in the socio-cultural structures of these first sedentary communities to the emergence of the first proto-urban societies in the course of the Copper and Bronze Age, reflect a fundamental change that becomes apparent through the onset of numerous simultaneous innovations. These dynamics can be described in concepts and models addressing e.g. the utilization of resources and the changing access to raw materials. They are also visible in the development of social hierarchies and specialised technologies. The geographical area of the archaeological cultures of this research group mainly comprises the mainland of Greece, including the northern coastal zones, the Aegean Islands and Anatolia from its western coast to the Anatolian plateau as well as the central and eastern Balkans. Supra-regional studies of the group generally include the whole Balkans as well as Anatolia, upper Mesopotamia, the east Mediterranean and the Levant.

Current research programme

Process of Neolithization (10th–7th/6th mill. BC)

The essential processes of sedentism, the cultivation of animals and plants as well as all socio-economic changes that can be summarised as Neolithization, are highly debated in the regions of our focus. Modern excavated data from the early 7th millennium site Çukuriçi Höyük in Western Anatolia are currently being used for multiple interdisciplinary and far-reaching studies focusing on the initial starting point of first settlers in the region and their potential origin. For this approach a new collaboration with the title ‘Pathways to Late Neolithic of Central and Western Anatolia’ between the Çukuriçi Höyük and Çatalhöyük (Arek Marciniak, Poznan University) projects was initiated and should start in 2018. The aim is to bring the results of both projects together and analyse potential connections and changes during the Late Neolithic period. Important for this collaboration is the research on settlement phase VIII at Çukuriçi Höyük which is currently being prepared for publication.

Investigations on lithic raw materials of the Neolithic, Chalcolithic and Early Bronze Age artefacts from Çukuriçi Höyük have been continued in a broader perspective. The aim was to



Fig. 3 Intensive Survey at Čuka/Serbia (photo: M. Börner/OREA)

figure out stone procurement and exchange strategies of a prehistoric settlement in a diachronic perspective. The results of this study have been presented at the Meeting of the Association for Ground Stone Tools Research (AGSTR) in Mainz. Several other detail studies related to Çukuriçi Höyük and the broader analyses in western Anatolia funded by the ERC have been prepared or published (s. list of publication).

In spring and summer two initial survey campaigns in course of the new ‘Pusta Reka Project’ by B. Horejs in collaboration with A. Bulatović (Archaeological Institute Belgrade) and the Museum of Leskovac were conducted to investigate the Neolithic landscape of the Pusta Reka region near the city Leskovac (Fig. 3). The concentration of prehistoric sites in southeast Serbia implies the intense use of the region alongside the South Morava River and its tributaries. A few prehistoric sites have been registered within the Leskovac territory so far, mainly through surface finds. Prehistoric sites were scattered in the river valleys and mountainous areas, while the earliest occupation in the region seems to be attested from the Neolithic period. However, only occasional and accidental finds show the presence of potential Starčevo culture in the region, while the understanding of the occupation during the Early Neolithic period remains quite unclear. The main goal of the project is to investigate the use of the valleys between river streams by focusing on the identification of potential early farming communities in the region. An additional documentation of the later prehistoric sites coinciding with Copper and Bronze Ages, seeks to provide an insight of the long-term landscape use by prehistoric communities in the area. The first survey campaign in 2017 including, intensive geoarchaeological investigations (drillings and geophysics by St. Schneider and Eastern Atlas), revealed several new potential Neolithic sites. The GIS analyses of the survey data, material studies as well as ongoing analyses of the drilling cores will form the basis for excavations in the near future.

Additionally, a characterisation of Early Neolithic chert resources in the Pusta Reka is conducted by M. Brandl. The aim is to reconstruct the Early Neolithic resource management strategies through the characterization of local versus non-local raw materials in lithic assemblages from this region in order to answer questions concerning the use of the prehistoric landscape of this micro-region.

The follow-up project ‘Modelling the Neolithic based on the spread of pressure technique’ funded by the Dr. Anton Oelzelt-Newin’sche foundation of B. Milić and B. Horejs is still going on. In 2017, literature studies regarding mapping of pressure technique in the Near East and Anatolia were conducted and in the beginning of 2018 the modelling part will be started by M. Thomas and A. Timpson from the UCL Department of Genetics, Evolution and Environment.

The AFR-Postdoc Grant by M. Brami was successfully finished. A workshop on the topic of the ‘Central/Western Anatolian Farming Frontier’ was organised for the ICAANE 2016 conference together with B. Horejs and the publication of this workshop is in preparation.

Moreover, the DOC-Fellowship on ‘Burial practices in the Southern Pre-Pottery Neolithic Levant – A case study of ritual and beliefs’, conducted by M. Mustafa started in 2017. This project aims to investigate the material culture in the Neolithic period with a focus on ritual buildings, statues, stelae, masks, figurines, burials, and various treatments of skulls to explore the possibility of defining the regional ritual patterns in the Southern Levant. Initial work focused on literature study.

Diachronic studies in Thessalian plain (6th–3rd mill. BC)

In 2016, the interdisciplinary stand-alone project Platia Magoula Zarkou: Cultural change during the 6th millennium BC, funded by FWF and directed by E. Alram-Stern, was continued. The project Platia Magoula Zarkou aims at the analysis of the stratigraphy and a contextual presentation of the pottery and finds of this tell settlement, which is located in Western Thessaly and dates to the Middle Neolithic as well as the Early Late Neolithic periods (6000–5300 BC). First results have been presented in 2017 at a workshop in Vienna. They harmonise an uninterrupted settlement sequence with new radiocarbon data dating from 5900 to 5470 BC and put the site into its palaeogeographic setting. Pottery shows a continuous development through time. Emphasis has been put on the typological, technological and experimental study of grey on grey pottery which has been produced in the vicinity of Platia Magoula Zarkou and exported to other areas of Thessaly (Fig. 4).

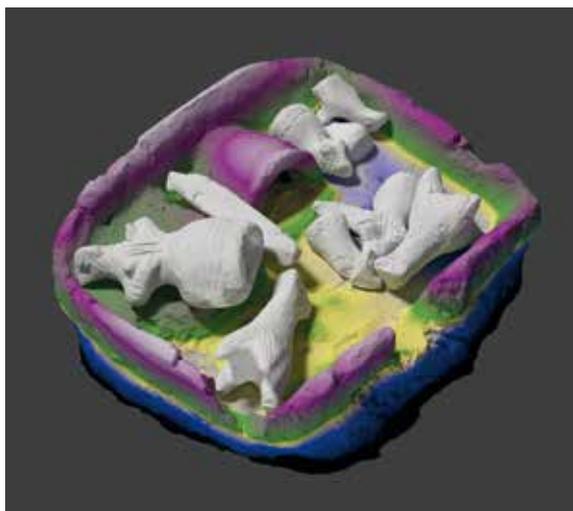


Fig. 4 3D scan of the house model found at *Platia Magoula Zarkou* showing the position of the figurines (photo: M. Börner/© OREA)

Based on 3D scanning, the well-known house model and the figurines connected to it must have been produced as an assemblage of figurines in a lying position to be buried with the destruction of a house of the transitional Middle-Late Neolithic period.

In course of the DOC-Fellowship on *Platia Magoula Zarkou* from 3500 till 2300 BC, conducted by C. Moser, the Diachronic Museum of Larisa was visited twice in 2017 to continue work on the Early Bronze Age pottery assemblage. During these stays all pottery finds which belong to certain well stratified contexts were recorded, the documentation of characteristic sherds of less certain contexts has been almost completed. Furthermore all characteristic fragments which were collected in the course of a survey that took place around the magoula in 2016 were analysed.

A preliminary chronological sequence of pottery types was established, forming the starting point for ongoing analysis that incorporates the results of recent ^{14}C samples of the Early Bronze Age Phases of *Platia Magoula Zarkou*.

Chalcolithic and Early Bronze Age settlements, economies and technologies (4th–3rd mill. BC)

The research on sites dating to the 4th and 3rd millennia BC in the Aegean and Anatolia was continued. These studies focused on settlement patterns and structures, economic background, sourcing, technological development and chronology. Regionalisms versus inter-regional networks were additionally a major topic dealing with Chalcolithic and Early Bronze Age sites. Basic research on these questions is conducted at *Çukuriçi Höyük* and in the *Pergamon* region (both ERC *Prehistoric Anatolia* project) and currently under study. At Pergamon, the documentation of the survey finds has been finished within a short one-week campaign in 2017.

In 2017, the first volume of the *Çukuriçi Höyük* series was released and, thus, the first results of the ERC project Prehistoric Anatolia have been published monographically. The book concentrates on Neolithic, Chalcolithic to Early Bronze Age material studies from *Çukuriçi Höyük*. Further volumes, including the Late Chalcolithic period will be published in 2018.

Two academic theses have been successfully finished: D. Wolf (PhD) concerning the geological studies of the *Çukuriçi Höyük* environment as well as stone artefacts studies and S. Bosch (MA) about sling missiles of *Çukuriçi Höyük* in context of Neolithization. Moreover, the FWF project ‘Interactions of Prehistoric Pyrotechnics in Crafts and Trades’ (no. P 25825) has been completed. Aside the several detail published studies, an interdisciplinary volume including the projects’ outcome had been submitted and accepted for publication.

The material and technological studies of textile production tools conducted by Ch. Britsch in course of his DOC-fellowship continued in 2017. He recorded textile tools at the Varna Archaeological Museum from several prehistoric sites and at *Kırklareli* from the sites *Aşağı Pınar* and *Kanlıgeçit*. These finds are concluding the data base for the PhD thesis, building up to a data base of over 1000 finds. The finds were already evaluated with different statistical analyses, but are still being studied. His PhD is planned to be submitted in 2018 (Fig. 5).

The project *Midea* in the Argolid deals with the finds of the Upper Acropolis of the site dating from the Late Neolithic to the Middle Bronze Age periods. During 2017 the Neolithic (4300–3100 BC) and Early Helladic I (3100–2700 BC) pottery was presented for the first time in terms of its chronology, typology and fabric. This analysis is based on a data base as well as on a large

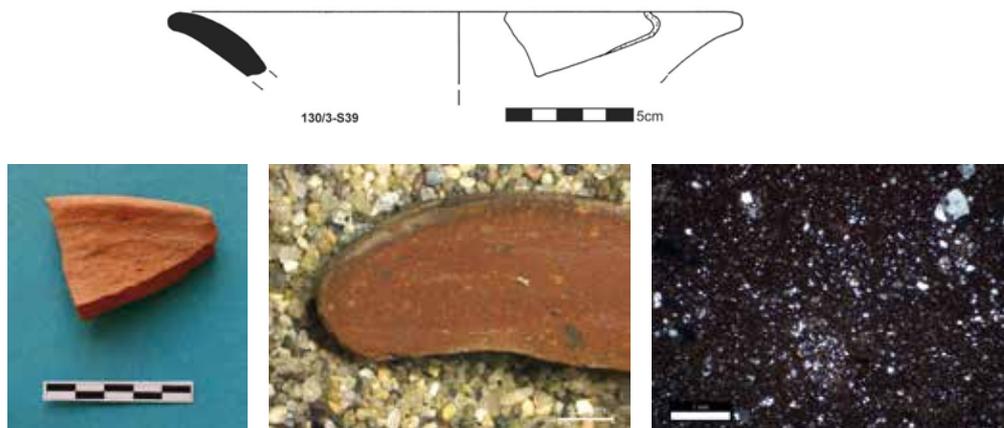


Fig. 5 Illustration and sherd of a 'Talioti' bowl (sample 39), alongside its macroscopic fabric and an image of the petrographic sandstone fabric (photo: C. Burke/© OREA)

number of petrographic and chemical samples and draws new implications on technology, use and distribution of the pottery of this period. For the Late Neolithic period this is one of the rare opportunities to characterise the pottery based on a closed context.

The Neolithic pottery is dominated by tempering with crushed pottery sherds (grog), a practice which disappears during the Early Bronze Age. The Early Helladic I pottery is characterised by large usually red painted and/or red fired fruit stands and bowls of fine grained macroscopic fabric which has been produced in the Argolid and exported to the neighbouring regions. This fabric is made using sandstone based raw materials from the area of the Talioti Valley in the Argolid. This fabric is found in the Neolithic period and goes on to dominate local assemblages during the Early Bronze I and II periods. It is also widely distributed to other regions in relation to Early Bronze I fruit stands in particular.

Digitizing Early Farming Cultures

This project under the direction of E. Aspöck is strongly linked with the AAPP research group; it has been successfully fulfilled in autumn 2017. The DEFC App is now available at an online platform (<https://defc.acdh.oeaw.ac.at/>). Up to now, more than 1000 archaeological sites and more than 3000 finds had been added to the database.

The Role of Households at the Dawn of the Bronze Age

The project is a jointly planned set of interdisciplinary PhD projects, funded by the DOC-team scholarship of the Austrian Academy of Sciences. Although it already started in 2016, the award ceremony at the Austrian Academy of Sciences took place in June 2017. Within this ceremony, a jointly prepared poster was presented. During 2017, all four PhD candidates (S. Cveček, St. Emra, C. Moser, M. Röcklinger) participated in several group meetings, different workshops and conferences and in individual study campaigns abroad. Within this year's study seasons, C. Moser finished the processing of the material culture from *Platia Magoula Zarkou* (Thessaly, Greece). At the end of the year, M. Röcklinger started her research stay at the Department for Maritime Civilizations, University of Haifa, Israel. For 2018 a workshop on household archaeology hosted by the OREA institute is planned.

A new Approach for Golden Treasures

The new Innovation Fund project 'A new Approach for Golden Treasures. Innovative Analyses in Archaeometry' started in March 2017. This project combines archaeometrical and archaeo-

logical studies to find answers of so far unsolved questions regarding the gold's provenance of 3rd millennium BC treasures in the Aegean and Anatolia. For this approach a portable device will be built up which allow us to sample nearly non-invasive objects at museums or collections. The advantage of this method is that only a small amount of the material – that means between 1 and 2 mg – is needed which will be taken by laser ablation technique. The laser beam typically has a diameter of 0.05 mm and the crater of the sample spot can hardly be seen by the human eye. To collect the sample filters are used, which will be analysed later on in the laboratory with a mass spectrometer for gaining the major and trace element composition. Our aim is to reveal details of the composition and, thus, provenance of the gold objects. Beside the archaeometrical analyses of gold objects, the socio-cultural development and context of the precious gold finds of the 3rd millennium BC in the Aegean and Anatolia should be focused. Starting point for this innovative approach directed by B. Horejs and E. Pernicka are the famous gold treasures of the Early Bronze Age settlements of *Troy* in western Anatolia have been well known ever since they were discovered during Schliemann's investigations in the 19th century. Chronologically, the treasures can be associated with the phases of *Troy* I (late) and II–III (EBA 2–3), dating mainly to the second half of the third millennium B.C. Remarkable is the enormous number of high quality gold objects, in particular vessels and jewellery. The high amount of jewellery with partial fine filigree gold applications is striking and leads to the question of the people who produced and wore these precious objects. Interestingly, the practice of hoarding prestige objects is not known in previous time periods in the Aegean and in western Anatolia. This phenomenon seems to be accompanying the formation of hierarchical structures and the first 'proto-urban' centres in the developed EBA 2. The influence of these centres is shown by a gold treasure from the settlement Poliochni on Lemnos, an island just off the western Anatolian coastline and close to Troy. Moreover, distinct gold elements indicate far-reaching communication and trade networks from the Aegean to the Indus region. Within Ch. Schwall's postdoc studies, these gold finds are archaeologically re-studied; their interpretation as social indicators for the formation of hierarchical structures is expected to reveal interactions between emerging elites in the Early Bronze Age.

Within the first year of this project the installation of the sampling device has been started by M. Numrich (CEM, Mannheim). The results of the archaeological part have been presented in papers by Ch. Schwall in Vienna, Athens and Boston. Moreover, in August and September Ch. Schwall had the opportunity to visit Athens in course of a two months ATHEN fellowship at the OeAI Athens. Within this timeframe an application for sampling distinct gold objects, stored in the National Archaeological Museum at Athens (NAM) was submitted.

Highlights 2017

- The OREA series volume *Çukuriçi Höyük 1. Anatolia and the Aegean from the 7th to the 3rd Millennium BC* (B. Horejs) was published.
- DOC-Fellowship of the Austrian Academy of Sciences 2017 for Mohamad Mustafa: *Burial practices in the Southern Pre-Pottery Neolithic Levant – A case study of ritual and beliefs*.
- The workshop *Platia Magoula Zarkou*. The Neolithic and Early Bronze Age settlement was organised by E. Alram-Stern and held at OREA, Vienna, 9th–10th November 2017.
- Starting of the Innovation fund project *A new Approach for Golden Treasures*
- Honorary certificate and plaque 'Zlaten Vek' ('The golden century') of the Bulgarian Ministry of Culture for the promotion of the Austrian-Bulgarian relationships in the field of Culture and for communicating and disseminating of the Bulgarian culture in Austria.

PREHISTORIC IDENTITIES
(Research group leader: Katharina Rebay-Salisbury)

Objectives

The aim of the research group is to deepen our understanding of bioarchaeological methods and their diverse and complex scientific results, as well as to embark on a new, discursive path in identity research that discusses cultural and contextual information on an equal footing with bioarchaeological data.

Aspects of prehistoric identities – building blocks of how people saw themselves and others – include age, sex and gender, descent, social relationships, ethnicity, status and religion. Many of these aspects are inextricably linked to the human body, through which the world is experienced and which is the biological basis of existence.

Material culture is directly involved in the creation and maintenance of identities; it also serves to categorise people. Recording and interpreting artefacts, their spatial distribution and chronological development is one of the core competences of archaeology.

Increasingly, the analysis of human bones and teeth focuses on individual life histories of prehistoric persons, with the help of the latest scientific methods. Detailed anthropological analyses allow the reconstruction of biographies, including stress events and traumas, and form the basis for reconstructing health and nutrition. Examinations of human genetic material reveal relationship patterns, lineages and genetic origin. Isotope analyses provide valuable information about nutrition, mobility and migration.

Bioarchaeological data form the basis of the third science revolution in archaeology, which, in combination with established archaeological methods, are currently revolutionising research into prehistoric identities. The temporal and cultural depth as well as the archaeological context, however, now need to be reemphasised.

More than ever, a detailed examination of all aspects of identity, as they develop over time, intersect and influence each other, allows us to understand the human experience in prehistory, while at the same time allowing us to explore the archaeological record in a new light. The developed expertise will be employed by contributing to public and political debates on gender relations, origin and migration.

Current research

The research group *Prehistoric Identities* emerged from *Urnfield Culture Networks* and was established as an independent group on 14.12.2017. It is based on Katharina Rebay-Salisbury's ERC



Fig. 6 Michaela Spannagl-Steiner and Doris Pany-Kucera recording skeletal remains of the multiple burial from Schleinbach (photos: K. Rebay-Salisbury)

Starting Grant project ‘*VAMOS. The Value of Mothers to Society: Responses to motherhood and child rearing practices in prehistoric Europe*’ (No. 676828), which examines how female identity changes through motherhood in the last three millennia BC. The year 2017 was the last year of its FWF-funded pilot project ‘*The social status of motherhood in Bronze Age Europe*’ (P 26820, 1.1.2015–31.12.2017). The research group further includes Elisa Perego’s Marie Skłodowska-Curie Individual Fellowship ‘*CoPOWER: Government of Life and Death: The Rise of Coercive Power in European Late Prehistory*’ (No. 750596, 1.7.2016–30.6.2021). Elisa Perego is hosted by Katharina Rebay-Salisbury and joined OREA on 1.7.2017.



Fig. 7 Walther Parson, Katharina Rebay-Salisbury, Doris Pany-Kucera and Michaela Spannagl-Steiner at the Legal Medicine department of the Innsbruck Medical University

The social status of motherhood in Bronze Age Europe

PI: Katharina Rebay-Salisbury, project members: Doris Pany-Kucera

Analysing the link between reproduction and women’s social status, the projects explores social responses to pregnancy, birth and childrearing in the Bronze Age. The FWF-funded pilot study centres on developing a methodology of differentiating mothers from non-mothers in the skeletal record and focuses on large, Bronze Age cemeteries in Lower Austria.

Activities in 2017 included the analysis of skeletal collections (Unterhauzenthal, Schleinbach, Franzhausen, Fels am Wagram, Pottenbrunn and Zwingendorf) (Fig. 6), including data acquisition of pelvic features and selected pathologies, statistical analysis and reporting. A pilot study on tooth cementum annulation (TCA), the radio-carbon dating of samples, C and N isotope analysis as well as DNA analysis was performed on selected samples. The multiple burial from Schleinbach, preserved in articulation, was 3D scanned and recorded. Research networking activities included a meeting at the Legal Medicine Department in Innsbruck (Fig. 7) and a joint workshop with Fabian Kanz from the Medical University in Vienna. The final year of the pilot phase included the preparation of the collected data for publication (Rebay-Salisbury et al. 2018 in press).

Funding: FWF-P 26820 Stand-alone project, 1.1.2015–31.12.2017

The Value of Mothers to Society: Responses to motherhood and child rearing practices in prehistoric Europe

PI: Katharina Rebay-Salisbury; project members: Marlon Bas, Michaela Fritzl, Doris Pany-Kucera Roderick B. Salisbury, Michaela Spannagl-Steiner, Lukas Waltenberger; Project Manager: Barbara Saringer-Bory

This ERC-funded diachronic study expands Katharina Rebay-Salisbury’s research on motherhood both chronologically and thematically to write the history of motherhood over the last three millennia BC, from the late Neolithic to the late Iron Age (c. 3000–15 BC) through case studies in central Europe. With the aim of documenting and analysing social responses to pregnancy, birth and childrearing, the project focuses on the application of innovative archaeological and bio-anthropological methods. Archaeological methods include the analysis of graves of infants, pregnant women, as well as double burials of women and children and a reconstruction of their social status. Anthropological methods include the palaeo-pathological reassessment of women’s and infants’ skeletons, tooth cementum analysis of selected individuals, isotope analyses to assess infant feeding practices and aDNA analyses to clarify genetic relationships between buried

individuals and to determine the sex of infants. Through the juxtaposition of the status analysis of women's graves with documented physical changes in their bodies connected to pregnancy and birth, the link between reproduction and women's social status will be revealed.

New staff was hired to complement the ERC-VAMOS team. On 1.7.2017, Lukas Waltenberger joined as a PhD student at the University of Vienna, supervised by Philipp Mitteröcker of the Department for Theoretical Biology. His research entitled 'Human pelvic morphology and the physical effects of childbirth' will focus on pelvic metrics and the digital documentation of pelvic features that might relate to pregnancy and birth.

Marlon Bas joined the research team as a PhD student at the Medical University Vienna supervised by Fabian Kanz on 1.9.2017. His proposed research 'Macro and micro-wear in the developing juvenile dentition: the study of diet and masticatory mechanics in past populations' will gain insights into the diet of children at our case study sites.

Activities in 2017 continued the anthropological analysis of skeletal collections, in particular focussing on the documentation of life-style indicators, evidence for stress and malnutrition as well as strain through pregnancy and childbirth. The topics of the PhD research to be undertaken in the framework of the project were researched and a work plan was developed in collaboration with the team and the supervisors.

A pilot-study analysing molecules extracted from foodstuffs absorbed into feeding vessels was developed in collaboration with researchers from the Chemistry Department of the University of Bristol (Julie Dunne), using chromatographic techniques, mass spectrometry and isotope mass spectrometry to characterise the compounds. First results are promising and we are aiming to continue this additional angle of research.

Funding: ERC Starting Grant Project 676828

The Early Urnfield Culture cemetery of Inzersdorf ob der Traisen, Lower Austria

PI: Michaela Lochner, supervisor: Katharina Rebay-Salisbury, staff: Michaela Fritzl

Despite grave robbing in antiquity, the 273 urn burials and scattered cremations of the cemetery were found exceptionally well equipped with grave goods. The analysis and interpretation of the cemetery is undertaken by Michaela Fritzl in the framework of the ERC project VAMOS.

Selected cremations have been analysed by Lukas Waltenberger and Michaela Fritzl. Michaela Fritzl has finished and defended her Master's thesis on the double and multiple burials from Inzersdorf. She will continue to work on Inzersdorf as a PhD student, focussing on mobility and migration on the basis of strontium analysis of cremated human bones. Her research links *Prehistoric Identities* to the *Urnfield Culture Networks* team.

*CoPOWER: Government of Life and Death:
The Rise of Coercive Power in European Late Prehistory*

PI: Elisa Perego

CoPOWER adopts state-of-the-art archaeological and bioarchaeological approaches to investigate the transition to urban society, inequality, and the rise of social control mechanisms in Europe 2200–500 BC. Within this framework, a network of international collaborations on funerary archaeology, human-environment interaction, epigenetics, bioarchaeology, burial taphonomy, and computational approaches to the archaeological evidence, is being developed (e.g. Veronica Tamorri, Claudio Cavazzuti, Durham, Rafael Scopacasa, UFMG & Exeter, Corinna Riva, UCL). Collaborative publications and research activities have been planned and delivered (e.g. Perego and Scopacasa in press; in review; organization of an event on social marginality & archaeology at UCL, London, in 2018). A database holding data on abnormal burials potentially indicative of extreme social marginality in the study area (north-east Italy, Austria), has been created and is being updated.

Funding: Marie Curie Fellow 750596

Events

- 5–6.4.2017, Vienna: Late Bronze Age Cultural Phenomena and Influences from the Adriatic Region to the North (organised with UCN: M. Lochner, M. Gavranovic and S. Gimatzidis)
- 16–17.10.2017, Vienna: 4th Central Europe TAG (Theoretical Archaeology Group, organised with R. Salisbury and E. Weiss-Krejci)
- September 2017, Maastricht, Netherlands: Burials as complex features, Session at the 23rd Meeting of the European Association of Archaeologists (organised with F. Fahlander and A. Klevnäs)
- 15–17.10.2017, Vienna: New Approaches to Burnt Human Bones and Teeth: the bioarchaeology of cremations and tooth cementum annulation (organised with Fabian Kanz and UCN) (Fig. 8)



Fig. 8 Hands-on discussions of dental thin sections at the microscope during the conference ‘New Approaches to Burnt Human Bones and Teeth’ (Fabian Kanz, Vicky Wedel) (photo: K. Rebay-Salisbury)

Outreach activities

- Katharina Rebay-Salisbury continued to write her research blog <https://motherhoodinprehistory.wordpress.com/>.
- Articles about her work appeared in the newspapers *Die Presse*, *Der Standard*, *Welt der Frau*, *First Time Parenting Magazine* and on the ÖAW homepage.
- Lukas Waltenberger and Michaela Fritzl participated at the European Researcher’s Night 2017 (ERN), held at the Higher Technical School in Vienna (TGM) on 29.9.2017. They presented the VAMOS project to a broader audience and offered an osteological workshop on sexing-techniques. About 3700 visitors, including many children, attended the ERN in Vienna between 5pm and midnight.
- Presentation of scientific results of investigating skeletons from Hallstatt and anthropological methods at the ‘Archäologie am Berg’ event in Hallstatt, Upper Austria, on 19–20 August 2017.
- Elisa Perego contributed with a blog post on CoPOWER to the Day of Archaeology international outreach project on 28.7.2017. <http://www.dayofarchaeology.com/>.

Guest researchers

- Claudio Cavazutti (Durham University, United Kingdom) visited OREA from 1.5. to 30. 6. 2017 in the framework of a Marie Skłodowska-Curie Individual Fellowship secondment. The main aim of his stay was to collaborate with Katharina Rebay-Salisbury, Mario Gavranovic and Michaela Lochner on understanding the introduction of cremation during the Middle and Late Bronze Age in Central Europe, resulting in a joint publication (Cardarelli, A., et al. in prep. The first Urnfields in the plains of the Po and Danube).
- Zsuzsanna Siklósi (Eötvös Loránd University, Budapest) won a visiting fellowship ERC_16_Mobil programme (NKFI 125780) to fund her research stay in Vienna. She was hosted by Katharina Rebay-Salisbury to benefit from the experience of a successful ERC grantee whilst writing her own grant. On 28.06.2017, she presented ‘New advances in the chronology of the Copper Age on the Great Hungarian Plain’ in the OREA lecture series. Zsuzsanna Siklósi submitted her ERC Starting Grant 2018 proposal ‘Lifelong learning in prehistory’ in the autumn.

- Veronica Tamorri (London/Durham, UK, Rome, Italy) visited OREA from 11. to 15.9.2017 to finalise and submit the Marie Skłodowska-Curie Individual Fellowship proposal ‘ArchaDIS: From the Ground to the Lab: a holistic approach in funerary archaeology combining archaeo-othanatology and the study of bone diagenesis (H2020–MSCA-IF-2017)’ together with her host Katharina Rebay-Salisbury. Her stay was supported by the ÖAW Grant Service under the Compensation for H2020 application costs scheme.

Networks

The research group provides a discussion forum for OREA researchers of all chronological and geographic areas generally interested in using both biological and cultural indicators to capture individual and group identities. The research group aims to intensify existing cooperations with national institutions such as the Museum of Natural History Vienna (Margit Berner, Sabine Eggers, Karin Wiltschke-Schrotta), forensic medicine departments in Vienna (Fabian Kanz) and Innsbruck (Walther Parson), the University of Vienna and the University of Natural Resources and Life Sciences, for example through joint events such as workshops and lectures.

International cooperation partners include Jo Appleby, Colin Haselgrove (University of Leicester), Claudio Cavazutti, Ben Roberts (Durham University), Julie Dunne (University of Bristol), Patrik Galeta (University of West Bohemia, Pilsen), Viktória Kiss (HAS Institute of Archeology, Budapest), Tamsin O’Connell, Marie Louise Stig Sørensen (University of Cambridge), Zsuzsanna Siklósi (Eötvös Loránd University, Budapest), Klára Šabatová (Masaryk University, Brno), and Sofija Stefanović (University of Belgrade).

Highlights 2017

- Elisa Perego was awarded a Marie Skłodowska-Curie Individual Fellowship for her project CoPOWER: Government of Life and Death: The Rise of Coercive Power in European Late Prehistory (No. 750596, 1.7.2016–30.6.2021).
- The workshop *New Approaches to Burnt Human Bones and Teeth: the bioarchaeology of cremations and tooth cementum annulation* (organised with Fabian Kanz and UCN) took place in Vienna and brought together archaeologists and physical anthropologists (15–17.10.2017).
- Michaela Fritzl successfully finished her Master’s thesis (Fritzl, M. 2017. Die mehrfach belegten Gräber des urnenfelderzeitlichen Gräberfeldes von Inzersdorf ob der Traisen, Niederösterreich. MA Thesis, University of Vienna).
- Katharina Rebay-Salisbury received her Venia Legendi (Habilitation) at the University of Vienna (Rebay-Salisbury, K. 2017. Bodies, identities and social relations in Bronze and Iron Age Central Europe. Kumulative Habilitationsschrift zur Erlangung der Venia Docendi im Fach Urgeschichte und Historische Archäologie, University of Vienna).

DIGITAL ARCHAEOLOGY
(Research group leader: Edeltraud Aspöck)

Objectives

Research data has now been recognised to be an important output of archaeological projects. The research group Digital Archaeology addresses important questions related to the long-term preservation of research data and their dissemination for data sharing and re-use. The research group is well connected internationally and projects build on international research and standards in the field. The activities of the research group span across all OREA departments and there are collaborations with several other OREA research groups and projects. The group represents an interface between archaeologists and technicians.

The overall aims of *Digital Archaeology* are to:

- develop strategies to overcome fragmentation of archaeological research data
- improve strategies to guarantee long-term preservation of archaeological research data for sharing and re-use of data

Research objectives

- Long-term preservation of OREA research data:
 - Digital archaeology projects as case studies leading to the development of a repository for archaeological research data at the ÖAW-ACDH.
- Creation of an OREA e-research infrastructure:
 - Make selected OREA research data accessible open access online
 - Creation of standardised research datasets from heterogeneous data typically resulting from traditional long-term excavation projects and from research in archaeological regions with different research traditions.
 - Preservation of non-digital resources: Digitising analogue OREA resources and archiving them in the repository if analogue materials are degrading.
- Improvement of data management practices in archaeology:
 - Adaption, modification and development of guides to good practice in archaeological IT.

Additionally, we are interested in the theoretical and social implications of increasingly digital research methods in archaeology.

Current research

DEFc – Digitizing Early Farming Cultures

(ACDH go!digital Antrag ACDH 2014/22; 1.November 2014 – 31. October 2017; Partners: OREA Digital Archaeology & AAPP research group, ÖAW ACDH, ARIADNE); OREA project team: Edeltraud Aspöck (project leader), Seta Štuhec, Irene Petschko (project assistants); ACDH team: Matej, Durco, Peter Andorfer, Ksenia Zaytseva; data entry team: Marina Brzakovic, Dominik Bouchatz, Sheba Schilk, Theresa Rinner, Eleonora Semilidou; AAPP team: Eva Alram-Stern, Christoph Schwall, Bogdana Milić, Maria Röcklinger, Maxim Brahmi.

The DEFc project was completed in 2017. The DEFc project has reached the aims that were set out in the project proposal: we have created a standardised research dataset on sites and finds from Neolithic Greece and Anatolia, which is available open access online and a tool for collaborative research (including further data entry and querying) across the whole region <https://defc.acdh.oeaw.ac.at/defcdb/> (Fig. 9).

The dataset contains information from published resources as well as manuscripts and databases held by the OREA AAPP research group. Furthermore, provision of information about typ-

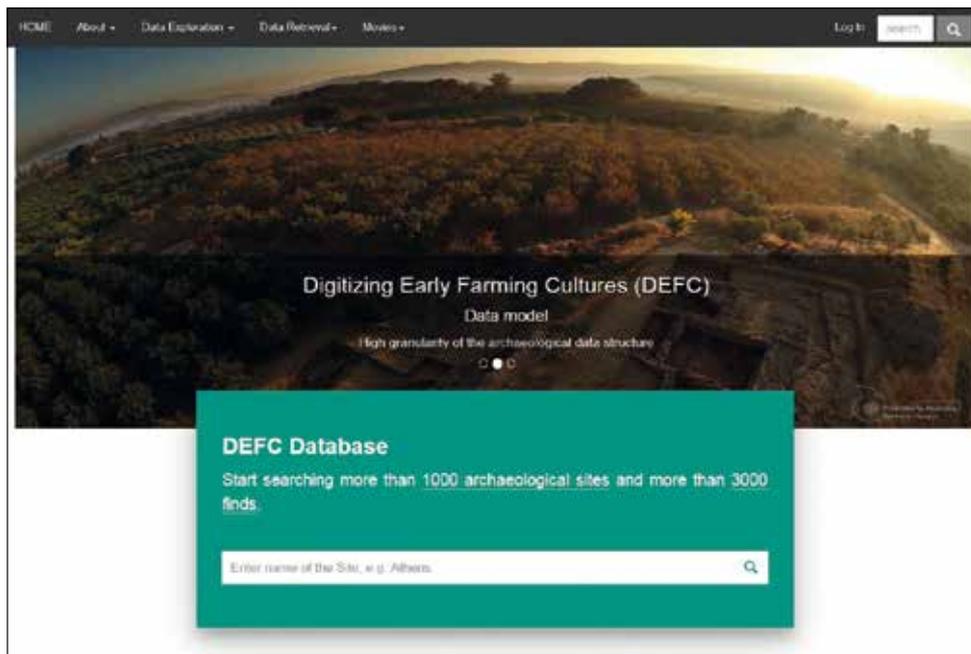


Fig. 9 DEFC project website <https://defc.acdh.oew.ac.at/defcdb/> (© OREA, ÖAW)

ical finds for a period and region (e.g. characteristic pottery) has been defined as another research objective during the project. The DEFC dataset contains 3D models of typical pottery sherds of the Schachermeyr collection, which are also linked to the dataset through the archaeological and technical metadata.

In 2017, data entry of DEFC app has been completed. Geo-visualization of sites is available as well as customised filtering and ordering of separate entries.

The DEFC thesaurus was completed in 2017 and an interactive visualisation of the thesaurus is accessible on the project website. Last steps towards interoperability of the dataset were carried out. The data was mapped to the CIDOC CRM ontology and stored in RDF triple store with a SPARQL endpoint. The mappings are documented on the DEFC website (<https://defc.acdh.oew.ac.at/mapping2cidoc/>).

In October 2017 we were contacted by the Pelagios team (<http://commons.pelagios.org/>). Pelagios is a community supporting open data methods and provides an infrastructure for Linked Open Geodata in the humanities. A serialiser was written that queries all 'site objects' from the database and provides the information needed by Pelagios via a geojson endpoint, hence integrating DEFC app data into the Pelagios open data network.

DEFC app is an open access database and everyone is able to browse, query and download published data. App online data is licensed by OREA ÖAW under the CC BY 4.0 license. As such, you are free to share, use and remix DEFC App data, as long as you attribute the source data accordingly.

For more detailed information see our 'Building the DEFC App' posts on the homepage of the DEFC app: <https://defc.acdh.oew.ac.at/blog/>.

We will provide long-term preservation for the DEFC app dataset by depositing it in the ÖAW data repository ARCHE, which was launched in December 2017 (<https://www.oew.ac.at/acdh/tools/arche/>).

4DPuzzle: A Puzzle in 4D: digital preservation and reconstruction of an Egyptian palace

(1. February 2015 – 31. January 2020; OREA Project team: Barbara Horejs (project leader), Edeltraud Aspöck (scientific coordinator OREA), Angela Schwab (project management), Karin Ko-

petzky (archiving), Martina Simon (project assistant), Karl Burkhart, Stefanie Fragner, Irene Petschko, Julian Posch; LBI Project team: Wolfgang Neubauer (project leader LBI), Nives Doneus, Matthias Kucera (scientific coordinator LBI); Project partners: OREA Tell el Daba research group, ÖAW ACDH, Österreichisches Archäologisches Institut (ÖAI) Ludwig Boltzmann Institute (LBI), ARIADNE, PIN, ADS, University of Chicago, Universität Bochum.



Fig. 10 Handling photographs for digitisation (photo: M. Simon © OREA, ÖAW)

2017 was the year of midterm evaluation of the A Puzzle in 4D project. In 2017, we completed metadata forms for all analogue resources and mapped part of the data to the CIDOC CRM (see report 2016). Digitisation

of most field drawings and a part of the photos was completed (Fig. 10). A website for data archiving and dissemination of resources was set up (Fig. 11). Furthermore, OREA had to take on online publication of the geodata and 3D models produced by their project partner. After the positive midterm evaluation of the project, we will proceed to ingestion of the 4DP resources in the ÖAW data repository ARCHE in 2018 (<https://www.oeaw.ac.at/acdh/tools/arche/>).

Presentations 2017

Aspöck, Edeltraud; Hiebel, Gerald; Durco, Matej; Andorfer, Peter (04.12.2017) ‘A puzzle in 4D’: integrating and archiving the resources of a long-term excavation project. Presentation at: dha2017 – Digital Humanities Austria 2017, Innsbruck, Austria. <https://www.uibk.ac.at/congress/dha2017/programme/>

Aspöck, Edeltraud; Horejs, Barbara; (24.11.2017) Challenges and Opportunities in Digital Archaeology. Presentation at: Heritage Science Days (Kunsthistorisches Museum/TU Wien/ÖAW), Wien, Austria

Aspöck, Edeltraud; Štuhec, Seta; Zaytseva, Ksenia; Andorfer, Peter (10. 11. 2017) DEFC app. Presentation at: CHNT 22, ‘App-Session’, Vienna, Austria. <http://www.chnt.at/program-2017-abstracts/>

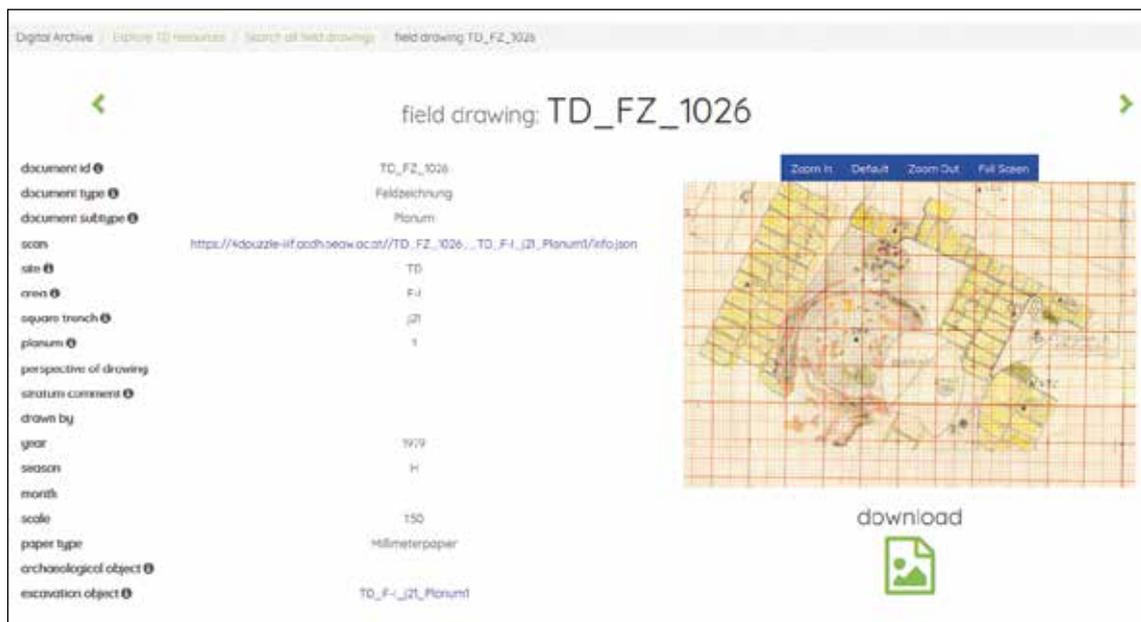


Fig. 11 A Puzzle in 4D website, view of a field drawing from area F-I, square trench j21 with metadata (© OREA, ÖAW)

Aspöck, Edeltraud; Štuhec, Seta; Masur, Anja; Andorfer, Peter; Zaytseva, Ksenia (2. 9. 2017) Digitizing Early Farming Cultures (DEFC): converting, browsing and sharing archaeological legacy data. Presentation at: EAA 2017, session 372, 'Re-engineering the process. How best share, connect, re-use and provide access to archaeological information' Maastricht, Netherlands. <http://www.eaa2017maastricht.nl/>

Hiebel, Gerald; Aspöck, Edeltraud; Kucera, Matthias (4.4.2017) Excavation Interface in CRMarchaeo?. Presentation at: CRM-SIG meeting 2017 Crete: 3.–6. Apr., Crete, Greece (http://www.cidoc-crm.org/meetings_all): The 38th joined meeting of the CIDOC CRM SIG and ISO/TC46/SC4/WG9 and the 31st FRBR – CIDOC CRM Harmonization meeting. http://www.cidoc-crm.org/sites/default/files/Excavation_Inference4CRMarchaeo.pdf

Highlights 2017

- Launch of DEFC app and DEFC website (Figs. 9, 10) <https://defc.acdh.oeaw.ac.at/defcdb/>
- Open data from Neolithic Greece and Anatolia available online !
- Set up of A Puzzle in 4D website with test version access to digitised field drawings and photos (Fig. 11) documentation, web GIS and 3D models.

LEVANTINE AND EGYPTIAN HISTORIES

(Research group leaders: Roman Gundacker & Felix Höflmayer)

Objectives

Near Eastern Studies, Biblical Archaeology, and Egyptology have developed individual approaches and specific traditions for addressing the historical questions and specific problems of the pre-classical period of the wider Near East. The Austrian Academy of Sciences is one of the few international research institutions that has developed a multidisciplinary focus on, and an integrative approach to, the history and archaeology of Egypt and the Levant. The research group Levantine and Egyptian Histories, which was established in December 2017, aims at consolidating and expanding this internationally unique research profile and at continuing to stimulate and advance the cooperation between Egyptology, Biblical Archaeology, and Near Eastern Studies via a combination of philology and archaeology. Textual sources from Egypt and the Levant on the one hand, and the material culture unearthed by the archaeological disciplines on the other hand, are both considered as vital sources of equal importance.

Levantine and Egyptian Histories focusses on the Chalcolithic, Bronze, and Iron Ages (c. 5000–600 BC) in the region of the Nile Valley, the eastern Mediterranean littoral and its hinterland up to the Syrian and Jordanian deserts. Levantine and Egyptian Histories explores the history and archaeology of these lands, as well as transregional phenomena such as trade and exchange, migration and identity, cultural transfer, adaptation, and adoption, language contact, and language development. While current projects focus mainly on chronology, history, culture, and interregional contacts of the Bronze Ages, Levantine and Egyptian Histories also aims at developing new projects including the Iron Age.

The long-term aim of Levantine and Egyptian Histories is to provide a firm basis for overarching research questions that lead to the historical synthesis of Egyptian-Levantine interconnections based on the evaluation of philological and archaeological data in concord with a radiocarbon-backed chronological framework, all contributing as equal sources.

Current research

CINEMA – Chronometric Investigations in Near Eastern and Mediterranean Antiquity

PI: Felix Höflmayer, Aaron Burke (University of California, Los Angeles)

This long-term project aims to create a radiocarbon-backed chronological sequence for the Bronze Ages of the Levant and served as a pilot study for the archaeological projects mentioned

below. At the Annual Meeting of the American Schools of Oriental Research in San Antonio, TX in November 2016, a workshop was organised by Felix Höflmayer and Susan Cohen (Montana State University) on “The Middle Bronze Age in the Southern Levant Revisited: Chronology and Connections”. Papers given at that occasion were published in a special volume of *Journal of Ancient Egyptian Interconnections*, edited by Felix Höflmayer and Susan Cohen. Felix Höflmayer was also awarded a Glassman Holland Research Award by the American Schools of Oriental Research, during which he spent three months (February–April 2017) at the W.F. Albright Institute of Archaeological Research in Jerusalem, working on Middle Bronze Age radiocarbon sequences from several sites of the southern Levant.

Funding: Fritz Thyssen Foundation, German Archaeological Institute, University of California, Los Angeles, Glassman Holland Research Award

Cooperations: Dr. Stephen Bourke (University of Sydney), Prof. Dr. Eric Cline (George Washington University), Prof. Dr. Steven Falconer and Prof. Dr. Patricia Fall (University of North Carolina, Charlotte), Prof. Dr. Hermann Genz (American University Beirut), Prof. Dr. Jens Kamlah (University of Tübingen), Prof. Dr. Amihai Mazar (Hebrew University of Jerusalem), Prof. Dr. Peter Pfälzner (University of Tübingen), Prof. Dr. Suzanne Richard (Gannon University), Prof. Dr. Glenn Schwartz (Johns Hopkins University), Prof. Dr. Assaf Yasur-Landau (University of Haifa)

‘Challenging Time(s)’ – A New Approach to Written Sources for Ancient Egyptian Chronology

PI: Roman Gundacker

This research project will be devoted to the historical chronology of ancient Egypt and the written sources on which it is founded. The periodisation of Egyptian history and its division into 31 dynasties is based on the kinglist of Manetho, an Egyptian priest and historian (c. 280 BC) writing in Greek for the Ptolemaic kings. Nevertheless, there has never been an in-depth analysis of Manetho’s kinglist and of the names in it. Until now, identifying the Greek renderings of royal names with their hieroglyphic counterparts was more or less educated guesswork. ‘Challenging Time(s)’ will thus, for the first time, evaluate the royal names as found in Egyptian sources according to the principles of onomastics and linguistics and it will apply revocalisation on a broad scale. At the same time, textual criticism will be applied to the preserved text of Manetho’s kinglist. In particular, the Armenian line of tradition, to which, until now, insufficient attention has been paid, shall be included thanks to the cooperation with Prof. Dr. Armenuhi Drost-Abgarjan. On this firm basis, the royal names as transmitted in Manetho’s kinglist will be evaluated in order to assess the chronological value of his records.

In order to counterbalance the information gained from Manetho’s kinglist, further Greek (records of Herodotus and Didorus of Sicily, kinglist of Pseudo-Apollodorus/Pseudo-Eratosthenes, ‘Leipziger Weltchronik’) and Egyptian kinglists (Royal Canon of Turin, kinglists of Abydos, Saqqara, Abusir, table of kings at Thebes, sequence of kings in Papyrus Westcar) will be investigated. This will help to lay bare the historiographic lines of tradition from ancient Egypt to the latest (Greek) kinglists, the relations of one kinglist to the others and the credibility of information contained within it when compared to contemporaneous inscriptions.

In addition, a comprehensive catalogue of dated inscriptions will be compiled in order to assess the regnal lengths of Egyptian kings. Consideration of contexts (textual, archaeological and cultural) will further increase the degree of security in the case of dated inscriptions which do not give a royal name but are assigned to particular kings. At the same time, prosopographic information will be collected in order to establish genealogies for royals and commoners and sequences of officials. A ‘network’ of personal relations will provide an additional opportunity to estimate the longevity of certain individuals, the duration of officials’ periods of service and of regnal lengths of kings.

It is the primary aim of ‘Challenging Time(s)’ to test established theories and to get new information from written sources in order to advance further the rigour and accuracy of ancient Egyptian historical chronology, which is a highly important reference point for the chronological systems of neighbouring Near Eastern and Mediterranean cultures and for the calibration and statistical evaluation of C14 dates. The final results, including the first comprehensive Egypto-

logical commentary on Manetho's kinglist, shall be published in a book series towards the end of this research project. Core data and prosopographic dossiers will also be published in an online repository.

Funding: ERC Starting Grant (start in March 2018)

Cooperation: Julia Budka (Ludwig-Maximilian-Universität München), Georg Danek (Universität Wien), Günter Dreyer (Deutsches Archäologisches Institut, Abteilung Kairo), Armenuhi Drost-Abgarjan (Martin-Luther-Universität Halle-Wittenberg), Heiner Eichner (Universität Wien), Peter Jánosi (Universität Wien), E. Christiana Köhler (Universität Wien), Nadine Moeller (The Oriental Institut, University of Chicago), Thomas Schneider (University of Vancouver), Stéphane Polis (Université de Liège)

Egyptian-Levantine Relations in the 4th and 3rd millennia BC

PI: Felix Höflmayer

This project reassesses the relations between the Levant and the Nile Valley based on the new radiocarbon-backed high Early Bronze Age chronology. This period encompasses state formation processes in Egypt during the Proto- and Early Dynastic Period, the Old Kingdom, and its collapse at the end of the 6th Dynasty. The Levant saw the so-called Egyptian 'colonies' at the beginning of the Early Bronze Age, the rise of urbanism during Early Bronze II and III, its collapse, and the advent of the de-urbanised Early Bronze IV (or Intermediate Bronze Age). Several articles on various aspects have been published in recent years, and in 2017, the proceedings of a conference on 'The Late Third Millennium in the Ancient Near East: Chronology, ¹⁴C and Climate Change' were published by the Oriental Institute of the University of Chicago. In addition, in 2017, the radiocarbon sequence for the Early Bronze Age site of Tel Yaqush (Israel) was finished and a preliminary report by Yael Rotem accepted for publication in the Bulletin of the American Schools of Oriental Research.

Funding: APART Fellowship (until April 2017)

Cooperation: Yael Rotem (University of Pennsylvania), Yorke Rowan (University of Chicago)

*Tracing Transformations in the southern Levant:
From collapse to consolidation in the mid-second millennium BC*

PI: Felix Höflmayer

project staff: Katharina Streit (Hebrew University of Jerusalem), Lyndelle Webster (Austrian Academy of Sciences), Vanessa Becker (University of Vienna)

This project started in May 2017 and was opened with an international workshop on "Late Bronze Age Chronology and Connections in the Eastern Mediterranean" with speakers from Austria, Israel, the Netherlands, the United States, Germany, Switzerland, and Italy. The project is conducted in close cooperation with the University of Vienna and Hebrew University of Jerusalem and explores the history and archaeology of the late Middle and early Late Bronze Age in the southern Levant. This period saw the demise of the Middle Bronze Age city-states, the end of the Hyksos Empire in Egypt, and the rising interest and involvement of the Pharaohs in the Levant, culminating in the military campaigns of the Thutmosid period and leading to the 'International Age' of the Late Bronze Age Amarna period. This transformative period is still poorly understood due to an insecure chronological framework with many open questions regarding the chronological synchronization of Egypt and the Levant. So far, assessments of this period were dominated by a text-based approach relying heavily on Egyptian sources, while archaeological data from the southern Levant was not always fully appreciated.

'Tracing transformations' sheds new light on this formative period by (1) a targeted excavation of late Middle and early Late Bronze Age settlement layers at Tel Lachish, (2) establishing an absolute chronology for the late Middle and early Late Bronze Age based on sequences of radiocarbon dates that can be correlated with the radiocarbon-backed New Kingdom chronology of Egypt, (3) an in-depth study of the value of Egyptian scarabs seals for chronological purposes,



Fig. 12 Visitors at the open dig day of the 2017 season at Tel Lachish. From left to right: Zvika Zuk (Nature and Parks Authority), Ambassador Martin Weiss, Felix Höflmayer (Austrian Academy of Sciences), Katharina Streit (Hebrew University of Jerusalem), David Ussishkin (Tel Aviv University), Yehuda Dagan (Israel Antiquities Authority), Eli Yannai (Israel Antiquities Authority) in front of the Assyrian rampart (photo: Jared Dye)



Fig. 13 Tel Lachish Area S at the end of the 2017 season (photo: Jared Dye)

(4) a comprehensive study of the development of material culture of the southern Levant based on the radiocarbon chronology, and (5) a new historical assessment of the period based on the new chronological framework, the results of the study on material culture, and a critical study of the available textual sources.

In July 2017, the project started the Austrian-Israeli excavation project at Tel Lachish (Israel). Here, work focused on Area S on the western edge of the site, where the expedition of Tel Aviv University directed by David Ussishkin already excavated down to the mid-Late Bronze Age. Excavation was resumed, with part of a substantial Late Bronze Age building of the last known stratum S-3 re-discovered, and an earlier stratum (S-4) of the early Late Bronze Age traced below, proving the future potential of this area. Lyndelle Webster acquired a substantial set of radiocarbon samples from stratified deposits that have been analyzed at the University of Groningen. Initial results seem to support a slightly higher chronology for the Late Bronze Age than previously estimated. Additionally, Lyndelle Webster was able to acquire further short-lived samples from stratified deposits at Gezer and Azekah.

Funding: FWF START Y-932

Cooperations: Israel Antiquities Authority, Israel Nature and Parks Authority, Ilan Sharon (Hebrew University of Jerusalem), Matthew Adams (W.F. Albright Institute of Archaeological Research, Jerusalem), Jens Kamlah, Simone Riehl (University of Tübingen), Michael W. Dee (University of Groningen)

Untersuchungen zur Nominalkomposition des Ägyptischen

PI: Roman Gundacker

The main objective of this research project is to identify and analyse compound nouns as found in ancient Egyptian. This requires the meticulous evaluation of hieroglyphic, hieratic and demotic writings of potential compound nouns and the search for offspring in Coptic or Egyptian Arabic and for vocalised renderings in cuneiform, Hebrew, Aramaic, Greek, Meroitic and Old Nubian texts. It is paramount to distinguish between morphological compounds (traditionally called 'Ältere Komposita') and syntactical compounds or juxtaposita (traditionally called 'Jüngere Komposita'). Beyond linguistic aspects, the evaluation of compound nouns ('Ältere Komposita'), many of which denote key concepts of Egyptian elite culture, also contributes to the determination of the Egyptians' mindset at the dawn of Egyptian civilization in the fourth and third millennium BC.

Research on the linguistic significance and the topographic localisation of ancient Egyptian hydronyms continued. It is significant that seven hydronyms, which denoted the largest bodies of water known to the Egyptians, all follow one and the same morphological and compositional pattern thus forming a specific subgroup among 'Ältere Komposita'. Beyond the identification of designations for the (south-eastern) Mediterranean Sea, the Aegean Sea, the Red Sea and, most likely, the Indian Ocean around the horn of Africa, three hydronyms could be attributed to once big bodies of water on the African continent. One denoted palae-lake Mega-Chad, which during the third millennium BC covered more than 200,000 square kilometres, and another one the seasonal lake at the confluence of the White and the Blue Niles covering more than 40,000 square kilometres during inundation. Lake Qarun in the Fayum, for which several other designations are known, was connected to another hydronym of this type. The identification of those bodies of water not only allows for the determination of the geographical horizon of Egyptians in the third millennium BC, but this is also the first time that contemporaneous names for Saharan palaeo-lakes can be given.

At the interdisciplinary and international conference 'Componendo Composito. Compound Word Formations in the Ancient Eastern Mediterranean and the Ancient Near East', specialists presented the latest research results from their work with ancient Egyptian, Sumerian, Akkadian, Hebrew, Arabic, Ethiopian, Berber, Hittite, Indo-Iranian, Mycenaean, Classical and Hellenistic Greek. One topic, which was discussed for many languages, was the importance of compound nouns for the formation of proper names (in particular personal names). In the case

of ancient Egyptian, all multipartite names are compounds, but very few can be assigned to the type of ‘Ältere Komposita’. All examples of this latter group are either attested from the Old Kingdom onwards or are later formations embracing an expression (the actual ‘Älteres Kompositum’) attested since the Old Kingdom. This is in perfect agreement with previous results on the formation of ‘Ältere Komposita’, which ceased with the end of the third millennium BC. Research on Egyptian personal names continued during 2017 until the end of the research project.

In addition, selected sections of the pyramid texts were examined in order to test the feasibility of textual criticism and stylistic evaluation for the determination of compound nouns, in particular ‘Ältere Komposita’. First results are promising and allowed for the solution of putative grammatical conundra concerning word order, all of which can be explained on the basis of established syntactic rules if certain sequences of words are accepted as compound nouns.

Funding: APART Fellowship (until December 2017)

Cooperation: Dr. Ingelore Hafemann (Berlin-Brandenburgische Akademie der Wissenschaften), Prof. Dr. Janet H. Johnson (The Oriental Institute, University of Chicago)

Highlights 2017

- Felix Höflmayer and Katharina Streit started the *Austrian-Israeli excavations at Tel Lachish (Israel)*.
- *Componendo Composito. Compound Word Formations in the Ancient Eastern Mediterranean and the Ancient Near East*, a Workshop held from 3–5 May 2017, at OREA, the Austrian Academy of Sciences, Vienna, was organised by Roman Gundacker with internationally renowned linguists participating.
- The workshop *Late Bronze Age Chronology and Connections in the Eastern Mediterranean*, 11–12 May 2017, Austrian Academy of Sciences, Vienna was organised by Felix Höflmayer.
- Roman Gundacker was appointed permanent member of the scientific advisory board of the peer reviewed journal *Lingua Aegyptia. Journal of Egyptian Language Studies* and was approved an ERC Starting Grant ‘*Challenging Time(s) – A New Approach to Written Sources for Ancient Egyptian Chronology*’ (Funding: ERCEA, Horizon 2020).
- Felix Höflmayer was appointed *Senior Fellow of the W.F. Albright Institute of Archaeological Research* (Jerusalem).

MATERIAL CULTURE IN EGYPT AND NUBIA
(Research group leader: Bettina Bader)

Objectives

The objectives of the Research Group *Material Culture in Egypt and Nubia* are on the one hand to gather information and data from Egyptian Archaeology in order to complement nothing less than the history of Ancient Egypt, namely the life circumstances of ancient Egyptians reconstructed by means of their possessions. This task includes all social strata of ancient Egyptians, although during current work the middle and lower strata of society are more prominent than the élite. The middle and lower social strata of ancient Egyptians are not usually a direct research subject in ancient Egypt and thus a gap is being filled at the same time. The material culture used by ancient Egyptians to fulfil certain tasks in daily life or on their last journey to the netherworld, and the manufacture of such objects are in the focus of research as well as the contextual information. Special attention is given to the sequence of steps necessary to manufacture an object (*chaîne opératoire*) and possible differences between similar objects or differential use of a variety of objects. These differences are especially observed with a view to regional differences, which are particularly strong in certain periods of Egyptian history. On the other hand the theoretical approaches of the wide field of material culture studies provides tools to interpret objects and the way they are handled, used, repaired, re-used and finally discarded in order to get closer to the essence of ancient people, their ways of life and, also, their hardships. Whilst the focus of the group's research currently lies on the mid-second Millennium BC Egypt and Nubia, namely the Second Intermediate Period (ca 1800–ca 1550 BC), it is not restricted to this era or area as material culture exists in all the other research groups as well. Thus, various aspects of material culture and their contexts can be discussed across times and areas, from where objects were derived.

Current research

As in previous years the group members devoted much of their research time to a wide variety of fieldwork projects taking place in Egypt itself as well as in Museums in Europe and the US (PI: B. Bader, collaborators C.M. Knoblauch, L. Hulková, student member Elke Schuster and honorary member J. Bourriau). The overview of activities will be given in the order of relevant sites arranged from north to south.

Field work projects in Egypt and in Museums

The excavations of the Polish-Slovak Mission at *Tell el-Retaba in the Wadi Tumilat* (co-operation partners S. Rzepka (Institute of Archaeology, University of Warsaw) and J. Hudec (Aigyptos Foundation Bratislava: <http://aigyptos.sk/en/o-nadacii>) was continued in 2017. L. Hulková again recorded tombs and settlement remains in Area 4 dating to the Second Intermediate Period and the early New Kingdom as well as the accompanying finds of these features. The work focused on the north western fringes of the ancient tell (settlement hill) as this area is particularly endangered by modern activity. Documentation of two housing units was finalised. These two units underwent at least three sub-phases of use, which extend into the early New Kingdom. This year it was possible to explore the surroundings of these house units to a greater extent. Particularly important was the find of three undisturbed tombs, which demonstrate the continuation of the burial traditions from the Second Intermediate Period into the early New Kingdom. An earlier building from the Second Intermediate Period, already known and close by, was also excavated further. Although finds were scarce, they offer important glimpses into the settlement history of Tell el-Retaba. A further six tombs from this earlier period add more information on society in the Wadi Tumilat in the Second Intermediate Period.



Fig. 14 Pottery from the excavations at Lisht with fragments from the late Middle and the New Kingdoms © University of Alabama, Birmingham, photo: Bettina Bader)



Fig. 15 Bread mould fragments from Sounding 1, Ehnasya el-Medina (© Museo Arqueológico Nacional, photo: Bettina Bader)

The manuscript of a monograph on the western part of the late Middle Kingdom settlement at *Tell el-Daba* in Area A/II was further edited and finalised by B. Bader. It was submitted to the publishing house of the Austrian Academy of Sciences to be included in the *Tell el-Daba* series (see also research group *Tell el-Daba Publications*).

Continued participation of B. Bader in the excavation of a late Middle Kingdom rock-cut tomb of the earlier 12th Dynasty at *Lisht*, undertaken by a team from the University of Alabama, Birmingham, US directed by S. Parcak made further research in the Memphis-Fayoum area possible. The tomb is situated south of the pyramids of Lisht and also includes a number of tomb shafts, which were laid out in part at the same time and later than the initial tomb. Although the entryway and the shafts were robbed in modern times, the project allows direct access to archaeological material which dates to the 12th Dynasty, on into the 13th and even later. Some tell-tale ceramic material, derived from the transition of the late Second Intermediate Period to the early New Kingdom (Fig. 14) was also found, although not in pristine contexts as yet. This, in contrast, might hint at activities from the whole of the Middle Kingdom through the Second Intermediate Period and on into the New Kingdom in the wider area around the original rock cut tomb although the evidence from the earlier SIP is as yet still scarce.

Further south, at *Ehnasya el-Medina* close to the Fayoum oasis, the long-term co-operation of B. Bader with the Museo Arqueológico Nacional, under the direction of Carmen Pérez-Die, led to a find of great importance for current research. The team discovered ceramic material of the late Second Intermediate Period and/or the early New Kingdom in the course of undertaking several soundings in and around the Hery-shef temple of Ramesses II. This finding attests for the first time to archaeological layers of this date since Flinders Petrie excavated the area in 1904. The subsurface water was much lower at that time, before the Aswan High Dam had been built. The soundings were sunk at strategic places in and around the Hery-shef temple in order to better understand its architectural history and the history of activities in the area of the temple. Another objective was to gather evidence to discover whether below that Ramesside temple there was an earlier sacred building or other types of archaeological remains. The massive amount of bread moulds (Fig. 15) in one of the soundings of restricted exposure indicates a bakery (Sounding 1, Fig. 16). As is so often the case in Egyptian Archaeology the single object group found in this instance consists of broken pottery. Some of the intact contexts (not destroyed by the Ramesside temple) provided ceramic material, the latest of which belongs to the late Second Intermediate Period/early New Kingdom phase. At the same time older material from the Middle Kingdom proper and the First Intermediate Period also came to light, attesting earlier use of the area. The restricted exposure makes it impossible, though, to gain a clear insight of the earlier function of these areas. Taken together this ceramic material will tie in at the end of the sequence of the Second Intermediate Period/early New Kingdom with that from



Fig. 16 Sounding 1 in the Hery-shef temple (Hypostyle), Ehnasya el-Medina
(© Museo Arqueológico Nacional, photo: Antonio Gomez)

the other sites in the Fayoum region, such as Abusir el-Meleq and Memphis/RAT, and provide a different type of context to tombs and settlement layers.

Work concerning *Abydos* continued with focus on the period between the Middle Kingdom and the New Kingdom. Chr. Knoblauch collected the final data on ca 180 objects from selected contexts during research visits in Europe (British Museum and Petrie Museum of the University College London, UK in collaboration with B. Bader) and in the US (Oriental Institute Museum, Chicago; Cornell University Museum, Ithaca). These contexts were carefully selected to cover the entire sequence from the end of the Middle Kingdom to the beginning of the New Kingdom and they represent the regional peculiarities of Abydos in this period. It can already be stated that there are quite notable differences to other contemporary archaeological contexts and objects from Egyptian regions further north and further south, namely both in terms of composition of contexts and in varying details of similar objects. In addition, the members of the research group (Bader, Hulková, Knoblauch) took part in the excavation season of the Abydos Middle Cemetery Project directed by Janet Richards (University of Ann Arbor, Michigan, US). The team concentrated on documenting the Late Middle Kingdom phase of site use during which an earlier cult building dedicated to a local saint became an important focal point for burial activity and votive activity for deceased ancestors. Initial analysis suggests that the votive activity is roughly contemporary with the last third of the 12th Dynasty, while significant morphological and technological changes in the pottery assemblages indicates continuing activity over a considerable period of time. From the perspective of material culture, one can clearly observe a shift from production by and large mirroring wider patterns of distribution and production in the earlier assemblages, to idiosyncratic – and perhaps – local trends in the later deposits. The team also was kindly granted permission to restudy material collected in the Abydos North Cemetery by Richards for her 1988 PhD thesis that documents, amongst other things, the further development of the ‘local style’. A monograph that combines the results of this diverse research on Abydos with contributions by leading scholars is nearing its completion.

Another excavation of the early 20th century AD, which has never been properly published, covers the site of *Deir el-Ballas* and was conducted by George A. Reisner. Deir el-Ballas is most famous for having housed the campaign palace of the Pharaoh Ahmose on his way north to reconquer that area from the Hyksos – this is the political history connected to that site. G.A. Reisner excavated large parts of the site including settlements and cemeteries in 1901, which at least partly include remains both of the late Second Intermediate Period and the early New Kingdom. In the course of a new publication project conducted and co-ordinated by collaborator Peter Lacovara (The Ancient Egyptian Heritage and Archaeology Fund) covering several aspects of the site of Deir-el-Ballas the material culture straddling the political transition between the late Second Intermediate Period and the early New Kingdom is important for current research. To this end Bader, Knoblauch and Lacovara conducted research at the Phoebe A. Hearst Museum of Anthropology, University of California, Berkeley, where 260 pottery vessels (BB/CK) and over 300 small finds (PL) from the cemetery were recorded and drawn. The bulk of the material fits late in the sequence probably already in the early New Kingdom and, thus, provides an ideal case-study of the twin process of political centralisation and homogenisation of material culture following the end of the Second Intermediate Period. Our preliminary observation is that while there are certainly trends which appear to be part of a wide-spread adoption of new customs and styles, there are still many local technological and stylistic features that have their roots firmly in the Second Intermediate Period. These features allow to distinguish the material culture of Ballas from neighbouring centres. In comparison to Thebes, for example, a seemingly local marl clay (Marl B) was very commonly used to manufacture a wide variety of shapes and there is a remarkable preference for small drinking beakers in a variety of fabrics and surface treatments. As such the period of political centralisation certainly did not lead inevitably to an immediate or absolute homogenisation of material culture with local features remaining in play throughout the first century after the political beginning of the 18th Dynasty. A similar process has been observed at Tell el-Daba.

A new co-operation project came to fruition in 2017, namely at *Elephantine* with the Swiss Institute for Architectural Research, Cairo directed by Cornelius von Pilgrim. The site is important for the current research of the group because it is situated at the ancient border of Egypt to Nubia and shows interplay between Nubian and Egyptian material culture. The analysis of the archaeological find material excavated in the 41st and 42nd season at Elephantine in Area XXXVI, includes ceramic material as well as small finds (B. Bader, L. Hulková). The Nubian presence makes these objects very interesting in comparison with the north of the country, where the impact of the Levantine Middle Bronze Age culture is strongly noticeable. Thus, the processes occurring when two different traditions of use of material cultures meet and mix may be compared as well in the course of this sub-project. Area XXXVI comprises a section of the Middle Kingdom city wall which was covered by a series of dumping layers (on the east and west side, also some material is derived from under the city wall). The date range of this material is from the late Middle Kingdom to the end of the Second Intermediate Period. Although the material is basically constituted of objects that were considered rubbish by the ancient people and therefore thrown out, it gives valuable clues to the chronological sequence of the archaeological material, as well as to the use of shapes, raw materials and manufacturing technologies in the southernmost part of Egypt. In the first season one sequence of material could be recorded and already some new traits in the way bases are manufactured could be observed. It is also interesting to note that some of the objects were not completely broken, when discarded. Thus, valuable clues to waste management, and what was actually considered waste, will be available in the future.

Nubia was covered this year by re-recording of archaeological finds from the site of *Kerma* (B. Bader). This site was first excavated by George A. Reisner in 1913–1916 and he published the results in several hefty volumes according to the state of the art in the 1920s, the material and archive being housed in the Museum of Fine Arts, Boston. Although the site has been further excavated since by Swiss scholars, the finds and objects from tombs surrounding the largest tumuli

graves are still very valuable in the discussion of the course of the Second Intermediate Period and how to synchronise the Kerma sequence with the Egyptian sequence. Accompanying finds imported from Egypt (scarabs, stone vessels, pottery) will yield valuable data for synchronisation as most of them were never published.

Conferences

The Round Table *Second Intermediate Period Assemblages: Building blocks for local sequences of material culture* organised by the members of the research group (Bader, Hulkova, Knoblauch, Schuster) brought together international scholars (Australia, Japan, US, Europe) working at archaeological key sites of the Second Intermediate Period and its relative chronology based on material culture found there. The conference concentrated on key sites in the Nile valley and Nubia with further input from the Mediterranean coast, the oases the Nile Delta and Wadi Tumilat. The results of these two days of discussion go a long way towards a better understanding of how the archaeological sequences of these sites have to be correlated to each other. It quickly became apparent that one of the biggest obstacles in this undertaking is the continued use of dynastic terms (especially the 13th Dynasty) to date archaeological levels and material culture without any independent means of corroboration (i.e. associated inscriptions, C¹⁴ etc.). Notwithstanding the high probability that there was no clear break in most types of material culture (except scarabs) at the points of transition from the 12th to the 13th Dynasty and from the 13th Dynasty to its various successors south of the delta that would allow us to clearly identify an entity equivocal to the political 13th Dynasty in the archaeology, there is agreement on neither the longevity nor geographical boundaries of the dynasty in the first place. For this reason, it was proposed that the final publication of the proceedings eschew political termini and concentrate on site-specific archaeological phasing. It was also agreed that comparative studies make more sense when using sites in spatial vicinity rather than to use sites which are situated very far from each other, such as delta sites and the far south as the points of connection might change somewhere down the line.

The invitation to the conference *Beyond Memphis – The Transition of the Late Old Kingdom to the First Intermediate Period as reflected in Provincial Cemeteries*, organised by the Institute for Egyptology at the Julius-Maximilians-Universität Würzburg, the Dutch-Flemish Institute in Cairo, and KU Leuven, Belgium 31st August–1st September (Bader, Knoblauch) enabled us to gain a very good overview over the archaeological appearance of a similar period of regionalism earlier in Egyptian history, although its causes may be different.

Participation in the Annual Meeting of the American Schools of Oriental Research, in Boston, in the session *Connectivities in the Near East: Social Impact of Shifting Networks* organised by B. Horejs (OREA) afforded the opportunity to present some aspects of the work of the group on regionalism in the Second Intermediate Period in a diachronic and cross-cultural context in the framework of the Institute for Oriental and European Archaeology (Bader, Knoblauch).

Highlights 2017

- Organisation of the international Round Table *Second Intermediate Period Assemblages: Building Blocks of Local Relative Sequences of Material Culture* 21st to 23rd of June 2017 (Fig. 17).
- Positive mid-term evaluation of the START project *Beyond Politics : Material Culture in Second Intermediate Period Egypt and Nubia*, no V754-G19 awarded by the Austrian Science Fund, continued financing of the project for three more years as planned.
- Presentation of project *Beyond Politics* in the framework of the session *Connectivities in The Near East: Social Impact of Shifting Networks* at the Annual Meeting of the American Schools of Oriental Research organised by B. Horejs (OREA) in Boston, 14th to 18th November 2016.

- An Erasmus plus traineeship was awarded to guest researcher Divina Centore in co-operation with the University of Pisa for the project *Analyzing Ceramics in the Second Intermediate Period*.
- The new member of the research group, Uroš Matic, started his Post Doc project awarded by the Deutscher Akademischer Austauschdienst *Beautiful Kush: Cosmetic substances and utensils in Egyptian New Kingdom Nubia* in December 2017 at the University of Münster (Westfälische Wilhelms-Universität) and will join the research group in February 2018 by means of the exchange programme P.R.I.M.E (Postdoctoral Researchers International Mobility Experience).

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Second Intermediate Period Assemblages

The Building Blocks of Local Relative Sequences of Material Culture

**INTERNATIONAL ROUND TABLE VIENNA,
June 21st / 23rd, 2017.**

Organised by the
Beyond Politics Project at the Institute for Oriental and European Archaeology –
OREA, Austrian Academy of Sciences – ÖAW

Opening Public Lecture, June 21 17:30
José M. Galán *Latest discoveries of the Spanish mission in Dra Abu el-Naga*

Final List of Participants and Topics

Ayers, Natasha	<i>Edfu (settlement)</i>
Bader, Bettina	<i>"Lower" Middle Egypt (Abusir el-Meleq, Eltasiyah, Sedment)</i>
De Souza, Aaron	<i>Hierakonpolis (Nubian/Pan Grave materials)</i>
Galán, José-M.	<i>Thebes (cemetery)</i>
Gallorini, Carla	<i>Aswan-Kom Ombo (Pan Grave material)</i>
Hein, Irmgard	<i>Thebes (Karnak North/Thutmosis I Treasury area)</i>
Hulková, Lucía	<i>Wadi Tumilat (settlement/cemeteries)</i>
Kawai, Nozomu	<i>Northeast Sappara (cemetery/cultic context)</i>
Knoblauch, Christian	<i>Abydos (cemetery), Second Cataract (cemetery/settlement), Hu</i>
Lacovara, Peter	<i>Deir el-Ballas (cemetery/settlement)</i>
Marchand, Sylvie	<i>Oases (Bahariya, cemeteries/settlement), Delta (Kom el-Gdigan)</i>
Millet, Marie	<i>Thebes (settlement)</i>
Miniaci, Gianluca	<i>Harageh, Thebes (cemeteries)</i>
Willems, Harco	<i>Dayr al-Barsha (cemetery)</i>
Wodzinska, Anna	<i>Tell el-Retaba/Wadi Tumilat (cemetery/settlement)</i>
Yazawa, Ken	<i>Dahshur North (cemetery)</i>

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Fig. 17 Poster of the Round table meeting Second Intermediate Period Assemblages: Building Blocks of Local Relative Sequences of Material Culture, in June 2017

TELL EL-DABA PUBLICATIONS
(coordinated by Vera Müller)

Objectives

The members of this research group are mainly engaged in the final publication of the excavation results of M. Bietak's excavations at Tell el-Daba from its beginning in 1969 until Bietak's retirement in 2009. Tell el-Daba is the modern site name of the ancient capital Avaris, the capital of the ancient Hyksos who had governed the northern part of Egypt during the so-called 15th Dynasty (ca. 1650–1550 BC). The site was founded around 2000 BC and continued well into the early 18th Dynasty. Developed from a small planned settlement in the later part of the 11th or the beginning of the 12th Dynasty to a major harbor town with widespread international connections during the advanced Middle Kingdom, the site encompasses a wide range of Egyptian and Near Eastern cultural traits. These cultural traits are reflected in the architecture of houses, palaces, temples and tombs as well as in the diversity of materials that can be retrieved by archaeological means, especially pottery and stone vessels, scarabs and seal impressions, tools and weapons, etc. The publications will present these materials in their respective contexts and different spheres of life of the ancient inhabitants will be elucidated in the analyses and discussions.

In addition, each member of this research group is engaged in further scientific activities, such as the involvement in other excavations in Egypt (D. Aston in Deir el-Bersheh and the Valley of the Kings at Luxor; V. Müller at Abydos; B. Bader with her own research group 'Material cultures' in several sites in Egypt and Sudan) or the Levant (K. Kopetzky in diverse Levantine coastal sites and on her own new excavation project in Lebanon) as well as with the history of Egyptology (E. Czerny).

Necropolis Area F/I

For the publication of nearly 450 tombs dating from the late Middle Kingdom (13th dynasty) to the late Hyksos period (15th dynasty) and another 50 burials belonging to the Late Period in area F/I this year's focus was directed on the layout and the architecture of the tombs by K. Kopetzky. In addition, work on the catalogue of finds continued. The tombs are either amongst the houses arranged in small groups or attached to the latter in small enclosures. Newborn and small children were buried in large jars along the walls and the corners of buildings. Contrary to the burials excavated in the tell area A/II nearly all constructed mud brick tombs in area F/I were robbed already in antiquity, whereas jar and pit burials were spared. This is clearly an indicator that their location was not recognizable anymore after a short time, in opposition to the constructed tombs. Preliminary anthropological results reveal that during the 13th dynasty there were one third more female than male burials and more than twice the amount of children. In the following 15th dynasty there seems to be a shift in favour of the male burials. Large burial crypts as found on the tell and typical for the end of the Hyksos period, are absent in area F/I. It seems that the number of the tombs fits more or less to the figures Miriam Müller has calculated as the number of the inhabitants of the houses of this area in her PhD thesis on the settlement of area F/I finished in 2012. The preparation of the final publication is continued.

Ritual Activities in Area A/II

The study of the material relics of ritual activities in the forecourts of the temple compound in area A/II was continued by V. Müller. Although the area was deeply pitted by later activities, patches of original contexts allow for the reconstruction of at least a part of the deposited material consisting mainly of pottery vessels and animal bones. Only very few vessels could be reconstructed to complete profiles, while the majority consists of fragments. The state of preservation and wear reveal that rituals such as the burning of offerings and the intentional breaking of pots were part of the religious activities. Further analyses are directed at questions such as if the spectrum of

vessels used in rituals is the same as those deposited in tombs or in the settlement or if we have to account for differences. For the time being it is obvious that the amount of vessels restricted to ritual purposes is very limited. It will also be of interest if the spectrum of vessels changed over time or if the same varieties were used during the whole period of use-life of the temples some of which operated from the late Middle Kingdom until the early New Kingdom.

Middle Kingdom settlement in Area A/II

The manuscript of a monograph on the western part of the late Middle Kingdom settlement at Tell el-Daba in Area A/II was further edited and finalised by B. Bader. It was submitted to the publishing house of the Austrian Academy of Sciences to be included in the Tell el-Daba series (see also research group *Material Culture in Egypt and Nubia* of B. Bader).

Scarabs and sealings from Ezbet Helmi

E. Czerny continued to work on the publication of scarabs and sealings from Ezbet Helmi, where 480 objects (scarabs, scaraboids, amulets, plaques and sealings with and without imprints) were found. The time range of this material stretches from Late Middle Kingdom via Second Intermediate Period to the New Kingdom. Special attention was given to the stratigraphic analyses of the find-spots and the archaeological contexts. In the vast area of the site of Ezbet Helmi, which encompasses strata from the Hyksos Period until the epoch of Ramesses II, a great variety of find-spots is encountered. Each group of finds has to be analyzed individually. Scarab TD 9316 (Fig. 18) is the only scarab from Ezbet Helmi found in the earliest stratum g (probably to be equated with Phase D/3, middle of the 15th Dynasty) in a deep test trench in a domestic quarter of the Hyksos period. According to its features it should belong to MB IIB.

Ezbet Helmi Area H/VI

Work conducted by D. Aston this year concentrated primarily on the preparation of the numerous ceramic finds from Ezbet Helmi area H/VI for publication (9 phases from the late Second Intermediate Period to mid 18th Dynasty). Progress has been considerable as all the plates (ca. 550) have been arranged and most of the descriptive parts of the book have been finalised. A working manuscript of the pottery analysis of this area should be ready by the end of 2018.

Tell el-Daba Archive

In her role as archivist of the Tell el-Daba documentation K. Kopetzky is scientifically involved in the project *A Puzzle in 4D* (see Research group *Digital Archaeology* of E. Aspöck). The aim of this project is to store the analogue and digital field documentation of the Tell el-Daba excavations from the years 1966 to 2009 in a long-term archive and open-access online publication. This year customised templates for the metadata of the different groups of documentation were created following the CIDOC CRM model. Based on the field documentations the visualization and digital reconstruction as well as walk-through of an Egyptian Palace dating to the early 13th dynasty were performed in cooperation with the company 7reasons. Furthermore, K. Kopetzky created with the team from the *Puzzle in 4D*-project reconstructions in 3D of tombs and a cellar from Area F/I. In cooperation with the excavator M. Bietak she also provided all the scientific information for the new website of

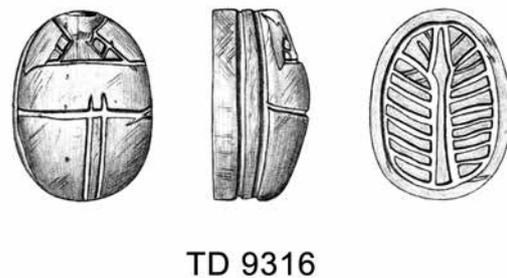


Fig. 18 Scarab of the Hyksos period from Tell el-Daba (© ÖAI/ÖAW archives)



Fig. 19 Tell Mirhan: south section of E-W cut through the site (graphics: M. Börner, Ch. Schwall/ © OREA)

this project (<https://4dpuzzle.orea.oeaw.ac.at/>) and to a film about the Egyptian Palace of area F/I made by 7reasons.

Stratigraphie comparée

The research on the project *Egypt in the Levant* – initially started in 2010 – continued with a lecture about *Burial rituals at Sidon and Tell el-Daba: a comparative study* at the international symposium ‘Tyre, Sidon and Byblos. Three global harbours of the ancient world’ in Beirut. Parallel to this the documentation of the Egyptian material from the excavations at Sidon (British Museum, Director: C. Doumet-Serhal) and Tell Fadaous-Kfarabida (AUB, director: H. Genz) was continued. At Sidon all the Egyptian pottery was found to be imported, mainly containers from the MB and the late LB/early IA levels – no locally made, egyptianised vessel could be detected. The same holds true for material from Tell Fadaous-Kfarabida which came from MB pits that cut into EB layers.

The project *Between Land and Sea: The Chekka region in Lebanon* submitted to the FWF was positively evaluated, thus the investigation of the site of Tell Mirhan and its hinterland can be continued in the following years in cooperation with H. Genz from the AUB in Lebanon. In 2017, the documentation of the material retrieved from the survey from last year in the Chekka Region at the coast of Lebanon and at the site of Tell Mirhan was continued at the AUB (Fig. 19), giving a time range from the MB till the early IA.

Further activities

D. Aston also took part in the activities of the *University of Basel Kings’ Valley Project* directed by S. Bickel, namely during the excavation in Egypt as well as at a conference to celebrate *200 years of Excavation and Research in the Valley of the Kings* also organised by that institution. Work in January/February concentrated on the pottery from the undecorated tomb KV 38, and the recording and drawing of all diagnostics (rims, bases, handles, decorated pieces) could be finished (Fig. 20). Overall, this is an interesting and important project since there is an academic dispute as to whether this tomb was originally cut under the reign of Tuthmosis I, thus making it the first tomb in the Valley of the Kings, or that it was cut during the reign of Tuthmosis III. This question, however, still cannot be fully answered – the pottery is certainly different to private tombs cut during the reign of Tuthmosis III, but since the pottery from the tomb of Tuthmosis III has been lost it is not possible to compare the KV 38 material to that from a contemporary king’s tomb. Nevertheless, more evidence on the pottery corpus in use during the New Kingdom can now be brought forward with this project.

The second long term project of D. Aston was conducted in co-operation with the University of Leuven at Deir el-Bersheh in March/April directed by Harco Willems. Work was concentrating on the New Kingdom pottery washed down from a slope above Shaikh Said, just north of Tell el-Amarna. This material is being processed via a 20% random sampling technique in that every fifth context is being drawn in full, whilst the remainder will just be examined for ‘unusual’ piec-



Fig. 20 Pottery vessels from the Valley of the Kings
(© University of Basel Kings' Valley Project, photo: D. Aston)

es, not present in the random sample in order to build up a complete corpus of all pottery forms and types found at that site. These additional sherds will be classified as a 'purposive sample' and will play no part in any statistical analyses planned for this material. At present the random sample from the first excavation season has been recorded and drawn in full, whilst the random sample from the second excavation season is well under way to completion.

The work on materials recovered at and around the tomb of king Den (1st Dynasty) at Umm el-Qaab in Abydos was continued by V. Müller with a stay of two weeks in the excavation house at Abydos and with the processing of the drawings and data for their publication. A small part of the material was presented during the conference 'Origins 6 – International Conference on Predynastic and Early Dynastic Egypt' which took place in September in Vienna. The highly fragmented material encompasses a large diversity of different objects that had been deposited in the tomb, such as pottery and stone vessels with associated sealings, furniture and boxes made of wood, ivory and gold covering, jewellery, gaming pieces, tools and weapons, etc. Not only the great diversity of objects, the precious materials, their extraordinary workmanship, the amount of inscriptions but also their large quantity clearly reflects the royal status of this tomb. In addition, it could be worked out that depositions found to the east of Den's tomb and to the south of Djer's tomb were not laid out during the Middle Kingdom in the course of the installation of the Osiris cult – as thought earlier – but have to be considered as contemporary and were partly created during the building of the tombs and partly during the funeral.

D. Aston and E. Czerny were furthermore involved in the editing of publications. D. Aston edited the volume of Peter French, *The Anubeion at Saqqara IV, The Late Period Pottery*, London EES (due to appear 2018) and started to edit the volume of Perla Fuscaldo, *Tell el-Dab'a X/3*. While E. Czerny edited vol. 27 of the journal *Egypt and the Levant* (published on december 30, 2017) with 450 pages and 21 articles. In addition, E. Czerny edited the publication of Penelope A. Mountjoy, *Decorated pottery in Cyprus and Philistia in the 12th century BC: Cypriot IIIC and Philistine IIIC*.

Furthermore, E. Czerny was involved into work for the research platform *History of Research* (see below).

Highlights 2017

- The FWF-project *Between Land and Sea: The Chekka Region in Lebanon. An archaeological and palaeo-environmental approach towards the potential of an East Mediterranean coastal region* has been granted (PI: Karin Kopetzky, FWF Stand Alone Project P30581-G25).

MEDITERRANEAN ECONOMIES
(Research group leader: Reinhard Jung)

Objectives

The approach of the research group combines archaeological case studies with economic theory. The development of the forces of production constitutes a decisive factor in the history of economic and political structures of all social systems and determines contacts between societies to a large extent. Therefore, modes of production and property as well as exchange relationships between different Mediterranean societies are in the focus of the projects in the research group. A first level of research is related to the establishment of chronological frameworks, in order to give each site and project its proper historical framework. At a second level, the research questions aim at the economic basis as well as related political and social structures. This includes local and regional perspectives as well as interregional products exchange and migration. In terms of methodology all the projects practice close interdisciplinary cooperation with colleagues from a wide array of archaeometric disciplines – e.g. for analyses of different materials (pottery, metals, archaeozoological remains) or for chronological purposes (¹⁴C). In addition, written and archaeological sources are analyzed in a comparative way in order to arrive at historical conclusions. The projects treat different Mediterranean and circum-Mediterranean regions with pre-state and early state societies as case studies, from Italy in the West to the Levant in the east and from the central Balkans in the north to Egypt in the south.

The *Zentral-Café discussion group*, which is directly affiliated to the research group, unites researchers from different OREA research groups as well as from the University of Vienna. They represent various disciplines of archaeology and social anthropology work on chronological periods from the Neolithic up to the modern era. Discussions center on important texts of economic theory on the one hand and specific case studies from archaeology and anthropology on the other hand.

Current research

Studies on the new Mycenaean palace of Ayios Vasileios in Laconia

PI: Reinhard Jung

In the research project *Studies on the new Mycenaean palace of Ayios Vasileios in Laconia* a major task was the detailed recording of the pottery from the site. During the study season in summer and fall, E. Kardamaki was able to complete the recording of the largest part of the material from the central areas of the palace excavated thus far, namely the Great Court, the surrounding porticos (especially the Western Stoa) and further structures located to the south. A conservator assisted in the study of the pottery, whereas the drawing and digitalization of large quantities of vessels and diagnostic sherds took place from October until December 2017. This enabled the creation of a huge data set comprising more than 3,500 pottery individuals and forming the basis for the following statistical, chronological, typological and macroscopic processing and interpretation of the material. With the 2017 study season, one of the main goals of the research project was accomplished. This is the exact dating of the various building, rebuilding and destruction horizons of the palace at Ayios Vasileios by E. Kardamaki.

The archaeometric analyses relating to provenance, technology and use (by means of organic residues) of the Ayios Vasileios pottery represent another major focus of the project. The team is investigating the existence of pottery workshops in Laconia and the consumption practices at the palace. In October E. Kardamaki selected the second and final set of sherds to be examined by thin section petrography and NAA (80 sherds; analysis conducted by Peter Day, University of Sheffield, Anno Hein and Vassilis Kilikoglou, NCSR ‘Demokritos’) as well as organic residue analyses (76 sherds; analysis conducted by Cynthianne Spiteri; University of Tübingen). The new group of sherds covers now almost the whole range of the identified fabrics at the site and the chronological

phases from the early 14th down to the early 12th century BCE. In January, M. Choleva conducted detailed technological studies on manufacturing techniques on more than 200 sherds in the storeroom of Sparta. In order to obtain a wider, inter-regional perspective for these analyses, R. Jung and M. Choleva studied comparative material from another Mycenaean palace, i. e. Tiryns in the Argolid, in September. The results of this study will appear in an article that is currently in preparation. Finally, the first large article by E. Kardamaki on the pottery from the palace appeared in December 2017 in the journal *Archaeologia Austriaca*. Furthermore, E. Kardamaki, V. Hachtmann and A. Vasilogamvrou presented preliminary results of the 2018 study season at an international pottery workshop that took place at the British School at Athens in September. Finally, another article focusing on the character of the architecture and construction phase of the palace at Ayios Vasileios was submitted by E. Kardamaki, A. Vasilogamvrou and N. Karadima in September.

Funding: FWF 28023

Bronze Age Gold Road of the Balkans – Ada Tepe Mining

PI: Barbara Horejs

In the framework of the research project *Bronze Age Gold Road of the Balkans – Ada Tepe Mining* B. Horejs and H. Popov realised an exhibition in cooperation with the Kunsthistorisches Museum Wien. It had the title *Das erste Gold. Ada Tepe: Das älteste Goldbergwerk Europas* and presented the Ada Tepe gold mining and settlement site as well as the related new research results to a broader public. The exhibition comprised 330 objects from 14 different museums (Fig. 21), and 150,000 visitors came to see it. Since October, the Vienna exhibition has moved to Sofia, to the National Archaeological Institute with Museum, where it is on show under the title ‘Gold & Bronze. Metals, technologies and networks in the Eastern Balkans during the Bronze Age’ (October 25th 2017 to January 28th 2018).

Funding: FWF 23961

For her contribution to the Bulgarian-Austrian relations, the Bulgarian Ministry of Culture awarded B. Horejs the price ‘Zlaten vek’.



Fig. 21 Golden kantharos (4.395 kg of gold) from the assemblage of Vălčitrăn as shown in the Vienna exhibition ‘Das erste Gold. Ada Tepe: Das älteste Goldbergwerk Europas’ (photo and ©: F. Ostmann)

The conference *Searching for Gold Resources and Networks in the Bronze Age of the Eastern Balkans* organised by R. Jung and H. Popov from June 8th to 10th at the OREA Institute provided the opportunity to present a series of new results of the research project and to discuss them with international experts. The proceedings of the conference are scheduled to be published in dedicated volume.

During the exhibition, M. Börner (OREA) made additional 3D scans of several artifacts, and E. Pernicka (University of Heidelberg) took a series of metallurgical samples from copper oxhide ingots. In an intensive campaign between May and August L. Burkhardt and the team were able to complete the artifact studies of the house inventories related to the northeastern settlement quarter on the Ada Tepe at the Krumovgrad storerooms.

A next step in the project will be a detailed spatial analysis of the house inventories by L. Burkhardt. It aims at the reconstruction of the settlement organization and the daily life of the miners. Petrographic analyses of the ceramic material from the northeastern settlement quarter and comparative studies in the central Balkans and northern Greece will help us to understand the role and impact of the Late Bronze Age gold mine at Ada Tepe and its socio-economic context.

In the current issue of *Archaeologia Austriaca* – ArchA 101 – special emphasis has been put to the publication of the first striking results of this research focus, by the publication of three extensive articles covering topographie, stratigraphie, chronology, imported ceramics and complete find assemblages of one part of the excavations.

The Collapse of Bronze Age Societies in the Eastern Mediterranean: Sea Peoples in Cyprus?

PI: Peter Fischer, University of Gothenburg, Sweden; co-researcher: Teresa Bürge, recipient of a Post-DocTrack fellowship of the Austrian Academy of Sciences in 2017, guest researcher at OREA. A major task of the project *The Collapse of Bronze Age Societies in the Eastern Mediterranean: Sea Peoples in Cyprus?* (The Swedish Research Council [Vetenskapsrådet],) was the continu-



Fig. 22 Hala Sultan Tekke, City Quarter 1, Stratum 3, Room 67 with storage facilities (photo and ©: P. M. Fischer)

ation of the excavations at the Bronze Age city of Hala Sultan Tekke with its eighth season lasting from May to June. In City Quarter 1, georadar survey had indicated stone structures to the south of the fenced area. Massive domestic structures, which belong to three phases of occupation (Strata 1–3), were exposed from 2010–2012 and in 2016. In 2017, excavations continued in the southern part of City Quarter 1, where – for the first time – clear evidence for the so far oldest settlement occupation, Stratum 3, has come to light. Massive Stratum 3 structures with a markedly different building technique were exposed, in addition to two furnaces and ample remains from copper production, and storage facilities (Fig. 22). The most recent Strata 1 and 2 had been destroyed in conflagrations during the first half of the 12th century BCE (LC IIIA), whereas the exact cause of the end of Stratum 3 in the second half of the 13th century BCE (LC IIC) is not clear yet.

Excavations were also carried out in Area A, just outside of the city and roughly 600 m to the southeast of City Quarter 1. These excavations targeted a number of anomalies previously indicated by a magnetometer survey. It was possible to identify them as Late Cypriot wells, and rich offering pits as well as a tomb (Tomb LL) from the same period. In addition to numerous complete locally produced vessels and other finds, the tomb contained a complete Late Minoan II/IIIA piriform jar with bird motifs finding close parallels at Knossos on Crete (Fig. 23). Other finds from Tomb LL include a diadem of sheet gold, jewellery of amethyst, and nine sphendonoid balance weights of haematite together with a whetstone of hornblende. The features from Area A cover a period from the 16th to the 13th centuries BCE (LC IB–IIC).

The season of 2017 yielded a number of ¹⁴C samples, which will be analysed by E. M. Wild at the VERA laboratory in Vienna. Samples from the 2016 season are being processed. P. Waiman Barak (University of Haifa) is carrying out the study of petrographic samples from the 2010–2017 excavations. Preliminary results revealed numerous ceramic imports from the Aegean (including Crete), Anatolia, the Northern and the Southern Levant as well as Egypt. Pottery samples for NAA analysis are processed J. Sterba (Technical University of Vienna). In addition, D. Kaniewski (University of Toulouse) and his team took sediment cores in May 2016, in order to establish a quantitative climatic proxy based on pollen records from the Larnaca Salt Lake. The aim is to produce more detailed data relevant for reconstructing the environmental context along the south-eastern Cypriot coast for the Late Bronze Age crisis period. The study of the cores is in progress.

Dietary and Mobility Reconstruction using Stable Isotope Analyses for Mycenaean Greece: the Case of Portes

PI: Reinhard Jung, staff: Annalisa Rumolo

A new research project titled *Dietary and Mobility Reconstruction using Stable Isotope Analyses for Mycenaean Greece: the Case of Portes* will combine tomb contexts and related published archaeometric data from all over Mycenaean Greece with a specific case study, in which new

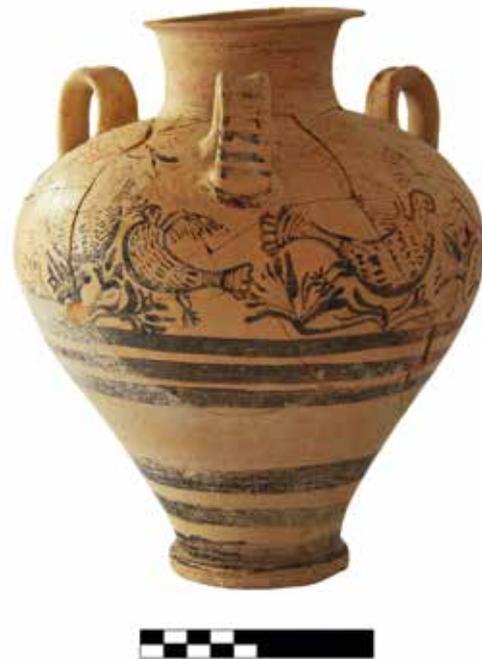


Fig. 23 Late Minoan II/IIIA piriform jar from Hala Sultan Tekke, Area A, Tomb LL (photo and ©: P. M. Fischer)

analytical evidence from well-stratified contexts excavated at Portes (Achaia) shall be produced. First, the project aims at reconstructing diet and mobility of individuals from Portes by means of carbon, nitrogen and strontium stable isotope analyses executed on bone collagen and in tooth dentine. Second, the study includes a wider reassessment of published isotopic and archaeological data from coeval sites in Achaia and other regions of Greece. The re-analysis will be rigorously contextual in combining isotope results and grave assemblages with the associated material culture.

Funding: Gerda-Henkel-Stiftung, doctoral scholarship for A. Rumolo

R. Jung completed the study of *Mycenaean pottery from the settlement at Tall Zirā'a (Jordan)* excavated by the German Protestant Institute of Archaeology at Amman (DEI) and the Biblical Archaeological Institute of the University of Wuppertal. He submitted the manuscript including NAA results by H. Mommsen to the excavation directors D. Vieweger and J. Häser for the final publication of the site. This material is remarkable in several respects. Most importantly, more than half of the Mycenaean vessels date to LH IIIA1, i. e. the time prior to the peak of Mycenaean pottery export towards the Near Eastern kingdoms.

T. Bürge, P. Fischer and R. Jung presented results of their research projects (Tall Zirā'a, Hala Sultan Tekke and Tell Abu al-Kharaz) during the session organised by OREA at the *annual meeting of the American Schools of Oriental Research (ASOR)* held at Boston, USA, from November 15th to 18th.

Highlights 2017

- From March 7th to June 25th the exhibition *The First Gold. Ada Tepe: Europe's Oldest Gold Mine* was open at the Kunsthistorisches Museum Wien. 150,000 visitors saw 330 Objects from 14 different museums, while the catalogue was sold out within 2017.
- Publication of 3 papers in a special section of *Archaeologia Austriaca* 101 (2017), *Ada Tepe and the Rhodopes in the Late Bronze Age*:
 H. Popov – M. Koleva – A. Andonova – J. Dimitrova – I. Vălčev, *Das Goldbergwerk auf dem Ada Tepe. Zu Topografie, Stratigrafie, Chronologie und Interpretation des Nordareals*
 B. Horejs, *Zum Alltagsleben der Ada Tepe Goldproduzenten im 15. Jh. v. Chr. Das Fundensemble aus Haus 7 in funktionaler und kontextueller Analyse*
 R. Jung – S. Alexandrov – E. Bozhinova – H. Mommsen mit einem Appendix von A. Hein und V. Kilikoglou, *Mykenische Keramik in der Rhodopenregion. Herkunft, regionaler Kontext und sozialökonomische Grundlagen*.
- In June, the proceedings of the conference *Sea Peoples Up to date*, held at OREA/the ÖAW in Vienna appeared in print, see P. M. Fischer – T. Bürge (eds.), 'Sea Peoples' Up-to-Date. New Research on Transformations in the Eastern Mediterranean in the 13th–11th Centuries BCE. Proceedings of the ESF-Workshop held at the Austrian Academy of Sciences, Vienna, 3–4 November 2014. Contributions to the Chronology of the Eastern Mediterranean 35 (Vienna 2017).
- R. Jung and H. Popov organised the conference *Searching for Gold. Resources and Networks in the Bronze Age of the Eastern Balkans* held at OREA, Vienna, June 8th to 10th.
- In December, a major part of the *Ayios Vasileios pottery sequence* was published, see E. Kardamaki, The Late Helladic IIB to IIIA2 Pottery Sequence from the Mycenaean Palace at Ayios Vasileios, Laconia, *Archaeologia Austriaca* 101, 2017, 73–142.

**THE MYCENAEAN AEGEAN:
CULTURAL DYNAMICS FROM THE MIDDLE BRONZE AGE TO THE EARLY IRON AGE**
(Research group leader: Birgitta Eder)

Objectives

The work of the Mycenaean Research Group covers various aspects of the Late Bronze Age cultures of the Greek Mainland and the Middle Bronze Age strands of its genesis (Minoan Crete, Middle Helladic mainland) as well as its transformation into the Greek Early Iron Age. Various projects study aspects of the political structures of Mycenaean Greece and its political geography, the northern and western regions of Mycenaean Greece, the relations between the Greek mainland and Crete during the Late Bronze Age, the textual evidence of the Linear B documents, Mycenaean cult practice and rituals, but also Middle Helladic and Early Mycenaean pottery, burials and habitation sites. The geographical scope includes all areas of the Mycenaean civilisation from Thessaly to Crete and from the Ionian Islands to the Dodecanese and the coast of Asia Minor. Several projects are dedicated to the preparation of final excavation reports and the interdisciplinary evaluation of Middle Bronze Age and Mycenaean pottery.

An internal discussion group dedicates to the ways and means, conditions and implications of the social (re)production of (material) Mycenaean culture. Discussions of theoretical issues support the creation of relations and interfaces between the individual projects. The regular exchange of ideas in the discussion circle offers benefits for the work on individual projects, but also helps designing future research questions and projects.

Current research

Middle Bronze Age Pottery from the Peloponnese

PI: Michaela Zavadil

M. Zavadil continued studying the MH pottery from the acropolis excavations at *Pheneos (Korinthia/Peloponnese)* in the museum at Pheneos, and in 2017 her work focused on the abundant MH III pottery. Macroscopic analysis suggests a change in the main (local or broadly local?) fabrics between the earlier Middle Bronze Age and MH III. While schist characterises the main fabric of the earlier pottery, mudstone temper seem to have been favoured in MH III. After the pertinent permission of the Greek Ministry of Culture had been received, Clare Burke took samples of 147 sherds for petrographic analysis in September 2017. The samples cover the chronological span from EH III/MH I to LH III with emphasis on the early and late Middle Bronze Age.

A pithos found in the EH III/MH I stratum contained pebbles that do not originate from the acropolis (Fig. 24). An application to conduct organic residue analysis of some its fragments as well as of the soil adhering to the pebbles was submitted to the Greek Ministry of Culture and Sport. Use-Wear Analysis of some of the pebbles will also be carried out.

Gerhard Forstenpointner and Gerald Weissengruber (University of Veterinary Medicine, Vienna) examined the animal bones found in the prehistoric and historic strata of the Pheneos acropolis excavation, and Michael Schultz (University Medical Centre, Göttingen) studied the human bones of the Middle Bronze Age. The three infant



Fig. 24 The Early to Middle Bronze Age settlement layers at Pheneos in the Korinthia revealed a pithos, which was half-filled with pebbles (photo courtesy of the Institute of Archaeology, University of Graz)

burials recovered during the excavations revealed signs of birth trauma. Hitherto unknown remains of two further infants were identified among the material from the settlement strata.

Technological transition and social changes: Middle Helladic pottery analyses in the Peloponnese, Greece: M. Zavadil worked together with E. Kiriati and G. Kordatzaki (Fitch Laboratory of the British School at Athens) in preparing a larger project that is dedicated to an integrated archaeological and scientific study of ca. 850 MH pottery fragments from eight sites in the Peloponnese (Korakou, Gonia [Korinthia], Tiryns [Argolid], Asea-Palaiokastro, Pheneos [Arkadia]), Ay. Stephanos [Lakonia], Nichoria [Messenia], Pisa [Elis]). This envisages the study of Middle Bronze Age ceramic production in two stages. Adopting a bottom-up approach, the team plans to move from the site to a regional level in order to gain a better understanding of the entire region. The scientific methods applied (combining petrography, Wavelength Dispersive X-ray Fluorescence Spectroscopy, Neutron Activation Analysis and Scanning Electron Microscopy) will serve various purposes and will contribute to clarify questions concerning provenance and technology.

Funding: INSTAP, University of Graz

Cooperation partners: K. Kissas (Ephorate of Antiquities of the Corinthia), P. Scherrer (University of Graz).

Kakovatos and Triphylia in the second millennium BCE

PI: Birgitta Eder

This project pursues two major perspectives. On the one hand, it is dedicated to the evaluation of the recent excavations (2010–2011) and the (re)publication of the old finds from the tholos tombs at the site of Kakovatos in Triphylia (Peloponnese). On the other hand, it considers the regional dimension and integrates the material from three neighbouring sites into the study and analysis of Mycenaean pottery production and circulation within a Late Bronze Age micro-region.

2017, in the course of three study seasons in the archaeological museum at Olympia the recording and documenting of the pottery from the LH I–IIB levels at Kakovatos and that from the neighbouring sites Kleidi-Samikon and Aghios Dimitrios was completed. The evaluation of the stratigraphy and archaeological contexts at Kakovatos continued.

The quantitative analysis of the pottery revealed some interesting preliminary results. Concerning fabrics, vessel types and decoration the Triphylian sites Kleidi-Samikon and Epitalion seem to follow similar lines of developments. The choice of fabrics for drinking vessels (e.g. goblets, kylikes) developed in a similar way in both sites throughout the Mycenaean period: the ratios of the different fabrics deviate just around $\pm 4\%$ from each other.

Contacts with other parts of Mycenaean Greece also show in the pottery. In Early Mycenaean times, Triphylia shared certain ceramic features especially with Messenia, e.g. certain vessel types that are uncanonically painted monochrome and the use of special shapes. At Kleidi-Samikon and Epitalion contacts with the northern Peloponnese are suggested by the presence of wishbone handles and some other features that are known from that area.

Furthermore, the examination of the material from Kleidi-Samikon confirmed J. Huber's previous impression about the chronology of the habitation. As in Epitalion, judging by the pottery, the settlement starts probably in the Middle Helladic period, but there exist indication for an Early Bronze Age phase of habitation. In contrast with Kakovatos, both sites were inhabited at least until the end of the palatial period (LH IIIB), but abandoned thereafter. No fragment can be assigned to LH IIIC, reoccupation started probably in the Early Iron Age.

The current stage of petrographic analysis shows that there is long-range circulation of the pottery within Triphylia through the Early Mycenaean and Palatial period, though the possibility of different production units operating at the same time under the same potting tradition using similar clays for manufacturing cannot be excluded. However, each of the four sites under study has pottery fabrics that cannot be observed or appear in different amounts in the material of the other sites.

Imported pottery, potentially from adjacent mainland regions, Kythera, Crete and the south-east Aegean comes mostly from the tholoi at Kakovatos. It seems that the inhabitants of this site had access to different networks, both continental and maritime. Kleidi-Samikon and especially Epitalion lack this wide spectrum of imports. Possible reasons for this distribution of imports could be the hierarchical organisation of the area (Kakovatos as redistribution center in Early Mycenaean times), chronological differences and quantitative factors (in the case Epitalion much less material is preserved).

Project staff: J. Huber; G. Kordatzaki. Main Cooperations: Ephorate of Antiquities, Olympia, P. Moutzouridis, K. Niko-lentzos; Fitch Laboratory of British School at Athens (E. Kiriatzis); H. Mommsen (NAA).

Funding: FWF; INSTAP.

Kleidi-Samikon – Investigations of the Archaeological Landscape

PI: Birgitta Eder

The site of Kleidi consists of a group of small hills and lies west and below the classical Hellenistic fortress of Samikon and close to the modern village of Kato Samiko (Fig. 25). It is known as a Bronze Age settlement on the west coast of the Peloponnese. In March 2017 a cooperation project between the Ephorate of Antiquities in Elis, directed by E. I. Kolia, and B. Eder (OREA), was devoted to the systematic survey of the terrain of the hill group of Kleidi. The aim of the geodetic survey is to prepare for the first time a plan of the morphology of the hills and the existing building remains. This plan should provide an important basis for the understanding of the character of the Bronze Age settlement as well as for the use of the landscape in historical times. After cleaning some parts from vegetation, the entire surroundings of Kleidi was recorded with the aid of a terrestrial laser scanner. Geodetic references were collected via HEPOS (Hellenic Positioning System). The procession of the digital data and the subsequent creation of a topographical map and a 3D-model of the site is under way.

In this context, geo-archaeological investigations were carried out by a team of the University of Mainz under the direction of A. Vött that promise to develop the understanding of the palaeo-environment. Site prospection based on electrical resistivity tomography and vibracoring



Fig. 25 Geo-archaeological and geodetic investigations took place in Kleidi-Samikon in the coastal area of Triphylia (photo: B. Eder)

was carried out to detect and analyse subsurface stratigraphies in the east of the northern hillock. The geophysical prospection revealed a well-defined basin-type structure with a fine-grained, silt-dominated sediment infill that potentially corresponds to harbour sediments, the latter being expected to have accumulated in a sheltered low-energy water body with appropriate water depth. Further geochemical and microfossil analyses of the sediments as well as age control by radiocarbon dating of selected organic materials are required to evaluate if they correspond to one or more harbour phases. Radiocarbon dating of selected samples is currently undertaken.

Technical staff: M. Börner, V. Jansa; cooperation: E.I. Kolia (Ephorate of Antiquities of Elis); A. Vött (Institute for Geography, University of Mainz)

LH IIIC settlement of Aigeira in Achaia

PI: Eva Alram-Stern; project staff: Mario Börner

Excavations in the settlement at Aigeira on the coast of the Corinthian Gulf in the ancient region Achaia have revealed an important phase covering the Mycenaean post-palatial period of the 12th and early 11th century BCE. Excavations have taken place from 1975 until 1981 under the auspices of the Austrian Archaeological Institute (director: Wilhelm Alzinger). E. Alram-Stern has been working on the publication of the stratigraphy and architecture of the Mycenaean post-palatial habitation on the acropolis of Aigeira that will be presented in a single volume. In 2017, the analysis of the stratigraphic units have produced a stratigraphic matrix that allows drawing a detailed picture of the three Mycenaean settlement phases. Especially settlement phase 1b (Late Helladic IIIC Early – Developed) has left significant remains. Workshops were apparently situated within the settlement and were closely connected to houses of craftsmen. An updraft kiln may be interpreted as pottery kiln (Fig. 26), and another oven was used for casting of tools of metal. Fruits were stored in two storage rooms that are characterised by bins of unfired clay as well as containers of perishable material. In contrast, pithoi of fired clay appear only as individual pieces in these storage rooms or in other houses in the settlement. The pithoi of settlement phase



Fig. 26 Pottery kiln of settlement phase 1b at Aigeira in Achaia (photo: T. Römer; © ÖAI)

2 (Late Helladic IIIC Advanced) are characterised by plastic bands with incised decoration. This evidence of elaborated patterns is paralleled by a development towards complex decoration styles in Mycenaean fine wares and underlines the importance of storage during this settlement phase.

The Transformation of the Mycenaean World

This exciting period at the transition from the Bronze Age to the Iron Age (12th–9th century BCE) witnessed major changes in the political and economic conditions that led to the emergence of new social structures in the Aegean. The current state of research is at present only accessible to specialists due to the small-scale publication structure. B. Eder has written and continues to contribute general surveys of the period to several handbooks that will make specialised research much easier accessible to a wider group of scholars. In 2017 Eder wrote together with I. Lemos the chapter “From the collapse of the Mycenaean palaces to the emergence of Early Iron Age communities in Greece” for the Companion to the Archaeology of Early Greece and the Mediterranean, which is edited by A. Kotsonas and I. Lemos and will appear with Wiley-Blackwell.

(Social) Place and Space in Early Mycenaean Greece

B. Eder and M. Zavadil have received the majority of written contributions to the international conference on “(Social) Place and Space in Early Mycenaean Greece” that was held at the Austrian Archaeological Institute at Athens (<http://www.orea.oeaw.ac.at/place-and-space.html>) in October 2016. The editing process is well under way, and the book will be submitted in 2018.

Highlights 2017

- B. Eder, J. Huber, G. Kordatzaki and M. Zavadil participated in the second scientific meeting *Archaeological Work in the Peloponnese*, organised by the University of the Peloponnese in Kalamata, 1st – 4th November 2017. They took the opportunity to present results of their current research to the archaeological community working in the Peloponnese. M. Zavadil summarised the preliminary results of the Greek-Austrian excavations, 2011–2013 in her paper on *The acropolis at Pheneos (Arcadia) in the Middle Helladic period*. B. Eder, J. Huber, E.-I. Kolia, P. Moutzouridis, K. Nikolentzos, L. Obrocki and A. Vött offered the first outcome of their joint project *New Research at Kleidi-Samikon*; The paper by G. Kordatzaki, E. Kiriati, J. Huber, B. Eder, H. Mommsen, K. Nikolentzos, P. Moutzouridis was dedicated to *Kakovatos and Triphylia during the Early Mycenaean times: ceramic technology and provenance perspective*.
- Assunta Mercogliano BA, a student of Prof. E. Borgna at the University of Udine spent the period between 11th September and 30th November, 2017 at the OREA institute as visiting researcher. In the framework of her master thesis, she works on the ceramic material from a field survey at Trapeza, a mainly Middle Helladic site near Aigion in Achaia (northern Peloponnese). During her stay, she has integrated herself very well into the research group *Mycenaean Aegean*. The presentation of her material fuelled fruitful discussions about similarities and differences between the different regions of the Peloponnese, especially its western and northern parts during the Middle Helladic and Early Late Helladic period.

URNFIELD CULTURE NETWORKS
(Group leader: Michaela Lochner)

Objectives

Urnfield Culture Networks research group is committed to the long-term study of the Late Bronze and Early Iron Ages (13th to 8th century BC) in Central and Southeast Europe with a special focus on the Urnfield Culture and interactions with neighbouring, contemporary cultural phenomena.

Special attention is given to burial customs, socio-economic phenomena, as well as religion and ritual and their impact on the cultural and social developments. Selected research questions include: resources, technologies and power, motherhood and the social status of women, cremation burials and cultural transmission as well as social identities and mobility.

The social, economic and religious aspects of the Urnfield Culture are explored by the team members through various regional studies in Austria and the Balkans and embedded in supra-regional, European context of the Late Bronze Age. Essential for the successful cooperation is the integration of local researchers and specialists in a common network and implementation of the projects. UCN strongly supports medium- and long term research and inclusion of young talent.

Of central importance for the research in Austria is the utilisation of large data sets from excavations that have been conducted over many years, such as the settlements of Thunau am Kamp, Stillfried an der March, as well as the cemeteries Franzhausen-Kokoron and Inzersdorf ob der Traisen. Recently started investigations in the Southeast Europe (Croatia, Bosnia-Herzegovina, Serbia and Macedonia) yielded a significant amount of new data regarding burial practice, settlement strategies and resource management that all together represent another important pillar of the UCN research programme.

Open access digital initiatives such as cremation burial database (CBAB) or interactive publications (Franzhausen), international workshops held regularly at OREA (UC dialogues) and international conferences organised by the members of the UCN in Austria and abroad round out the research program.

Current research

Urnfield Culture dialogues (“UK-Gespräche”)

The UC dialogues (“Get together”) are conceived as a workshop for the researchers on the Late Bronze Age/Urnfield Culture (1300–800 BC) in Europe with different thematic and regional focuses. All meetings are organised by UCN and home institute OREA. The concept combines a one or two-day thematic workshop with a corresponding public evening lecture.

Workshops 2017:

- 5.4.2017 UK-Gespräche “Get together” / Key note lecture: Elisabetta Borgna, Udine “Bronze Age Aquileia and the role of the northern Adriatic in the interaction between Europe and the Mediterranean during the Late Bronze Age”.
- 6.4.2017 UK-Gespräche “Get together” / Workshop: “South Wind - Late Bronze Age cultural phenomena and influences from the Adriatic region to the north”.
- 15.11.2017: UK-Gespräche „Get Together, organised together with ERC project VAMOS / Key note lecture: Estella Weiss-Krejci, Vienna “Fuel for Thought: Thermal Modification of the Corpse in Cross-Cultural Perspective”
- 16.–17.11. 2016: UK-Gespräche „Get Together“, organised together with ERC project VAMOS / Workshop: “New Approaches to Burnt Human Bones and Teeth: the bioarcheology of cremations and tooth cementum annulation”

International conferences and initiatives:

– *PEBA (Perspectives on Balkan Archaeology)*

In 2017, the PEBA initiative was officially established as a long term scientific platform in cooperation between the OREA Institute, Institute for Prehistoric and Early Medieval Archaeology and the Archaeology of the Roman Provinces, Ludwig-Maximilians-Universität in München (Germany) and Institute of Classical Archaeology, Charles University in Prague (Czech Republic). The primary aim of the PEBA initiative is to create an international platform for young academics that will refresh, further facilitate and maintain cross-border archaeological research exchange between Central and Southeast Europe.

Within the frame of the PEBA initiative M. Gavranović co-organised the international conference “Spheres of Interaction. Contacts and Relationships between the Balkans and adjacent regions in the Late Bronze / Iron Age (13/12th – 6/5th BCE)” that took place between 15th and 17th September in the Institute of Archaeology in Belgrade, Serbia. In 2018, the main task of the PEBA initiative will be the publishing of the conference proceedings that will be released in newly established series (PEBA Conferences).

– *First Urnfields between Po and Danube*

Claudio Cavazutti (Durham University, United Kingdom) visited OREA from 1.5. to 30. 6. 2017 in the framework of a Marie Skłodowska-Curie Individual Fellowship secondment. The main aim of his stay was to collaborate with Katharina Rebay-Salisbury, Mario Gavranović and Michaela Lochner on understanding the introduction of cremation during the Middle and Late Bronze Age in Central Europe. The objective is to prepare two publications with the participation of Late Bronze Age experts from Austria, Italy and Hungary (Cardarelli, A., et al. in prep. The first Urnfields in the plains of the Po and Danube).

On November 20th 2017, the members of the UCN visited the Institute of Archaeology in Budapest and took part in a workshop organised by Hungarian colleagues. The aim of the meeting was to discuss further steps and mutual involvement in the joint paper as well as to facilitate future cooperation between OREA and Institute of Archaeology in Budapest.

Ongoing projects

– *Cremation Bronze Age Burials (CBAB)*

Team: Mario Gavranović, Michaela Lochner

The aim of this project is the coordinated assessment of the European phenomenon of the cremation burials in the Late Bronze Age based on a shared database, a comparison of local and partial analyses of cemeteries, anthropological analyses as well as theoretical considerations of funerary rituals.

Thanks to the cooperation with the research group *Digital Archaeology* and the *Austrian Centre for Digital Humanities*, the open access and browser supported database app CBAB (Cremation Bronze Age Burials) was developed and completed by the end of 2017. After the successful test phase and first entries (conducted by associated researcher V. Tiedtke), the CBAB database has been publicly presented in October 2017 at the international conference “Cremation Burials in Europe between the 2nd millennium BC and the 4th c. AD Archaeology and Anthropology” in Munich. Several junior researchers from Austria, Slovenia and Hungary started filling the data base with data. The official release of the database is scheduled for February 2018. Throughout 2018, it is expected that CBAB database will be used by colleagues from different European regions.

– *OREA Doku Plattform Thunau am Kamp – a fortified hilltop settlement of the Urnfield Culture*

PI: Michaela Lochner

This project is part of the analysis of excavations carried out between 1965 and 2003 (director: H. Friesinger, E. Szameit), which began in the 1980s. The large number of finds from over 430

excavation trenches, dug over the whole extent of the 20 ha complex, comprises over 100.000 individual objects. The finds have already been inventoried and categorised; a large part has been drawn and parts of the sections/plans of contexts have been digitised.

In 2017, the extensive collection of data, including plans, documentation and drawings was prepared for the online publication and secured in a digital archive (repository) of the Austrian Academy of Sciences. The associated young researcher M. Konard has worked on the structure of the on-line presentation and arranged further data sets for the digital archive.

The goal for 2018 is to accomplish the on-line presentation (web page within OREA) where all processed data will be available for public and scientific purposes. This action will be conducted in cooperation with the *Austrian Center for Digital Humanities* (ACDH), the OREA research group *Digital Archaeology* and Franz Pieler, Head of the Archaeological Department for Prehistory in Lower Austria.

– *The Late Urnfield Culture cemetery of Franzhausen-Kokoron, Lower Austria*

PI: Michaela Lochner

The extensive analysis and interpretation of the 403 cremation graves with approximately 1600 individual objects includes a catalogue and photographic material (overview plan, photographs and drawings of finds and contexts), which is available as digital, interactive open-access publication via the Austrian Academy of Sciences Press. An update and supplementation of the data (plates of characteristic types, results of the physical anthropological assessment) and a re-launch of the graphical user interface is being prepared in collaboration with the publishing house (<http://epub.oead.ac.at/franzhausen-kokoron2/>). To provide an opportunity to combine the database with other, thematically similar data sets, it was also mapped using the CIDOC-CRM.

In 2017 N. Mittermair (University of Vienna) started her master thesis on metallography of selected bronze object groups (knives, razors and pins) from the cemeteries Franzhausen and Inzersdorf. The working title of the MA Thesis is “Metallurgische Aspekte der urnenfelderzeitlichen Bronzen der Gräberfelder Franzhausen-Kokoron and Inzersdorf“. N. Mittermaier already started with the detailed recording of the finds that will be analyzed in further actions.

– *Urnfield Culture in Lower Austria*

PI: Michaela Lochner

The book project with contributions from numerous authors will include about 350 pages with colour illustrations and diagrams. In 2017 three meeting of editors and contributors took place. The manuscript will be submitted by the end of 2018 and will appear in the series ‘Archaeology in Lower Austria’, published by the Austrian Academy of Sciences Press in 2019.

Funding: Amt der Niederösterreich. Landesregierung, Lower Austria

– *Late Bronze Age metallurgy in the western and central Balkans*

PI: Mario Gavranović; Key researcher: Mathias Mehofer

The project aims to investigate metal producing Late Bronze Age societies in Balkans and to reveal their intermediary role in the supra-regional exchange networks between Central Europe (Urnfield culture) and the Mediterranean World. By using various chemical-analytical and archaeological methods, the investigation will develop new idea about the importance of the local metallurgy and ore resources.

In 2017 following actions took place:

- September 2017: Geomagnetic and ground-penetrating radar prospections of the sites Trnjane, Hajdučka česma, Čoka Njica and Banjska Stena in eastern Serbia. The aim of the prospection was to detect smelting ore places and zones of increased metallurgical activity as well as to get new insights into the organization of settlements and necropolises of metal producing Bronze Age communities.
- December 2016: M. Gavranović and M. Mehofer sampled a large series of Late Bronze Age from the National Museum of Bosnia and Hercegovina in Sarajevo, Bosnia-Hercegovina



Fig. 27 M. Gavranović during the geomagnetic prospection of the site Hajdučka česma, eastern Serbia (photo: I. Jovanovic)

(120 artefacts) and from Museum of Krajina in Negotin, Serbia (70 artefacts). Furthermore, new samples of copper slag from sites Trnjane and Ružana have been collected in the Museum of Mining and Metallurgy in Bor, Serbia. The first analyses of the copper slags will be published in first half of 2018.

- Presentation the first results of project at the international conference “Searching for Gold – Resources and Network in Bronze Age of the Eastern Balkan” in Vienna in June 2017.
- Submission of the application for a long term investigation (“The social impact of metallurgy in the western and central Balkans: resources, settlements and social transformation in the Late Bronze Age - RESET, FWF-Start programme).

The most important milestone for 2018 is the analysis, evaluation and preliminary publications of large data sets gained in the course of 2017. The results of the current investigations will be published in two peer-reviewed papers. In winter semester 2018/2019, M. Gavranović and M. Mehofer will also hold a seminar for students of the University of Vienna with focus on the pre-historic metallurgy in Southeast Europe.

– *Burial*

PI: Mario Gavranović

The project focuses on the analysis and interpretation of Late Bronze Age archaeological remains from the contact zone between the Carpathian Basin and the Balkans. This area plays a key role, both geographically and culturally, in connecting the European continent to the Aegean-Anatolian World. Starting point of the investigations is the cemetery and associated settlement of Dolina at the Croatian bank of the river Sava.

In the last year of the project Burial following have been finalised:

- Analysis of finds and features of Dolina (radiocarbon dating of organic material from the excavation campaign in 2016, archeometallurgical and lead isotope analysis of new metal finds, analysis of stone artefacts, determination of wooden remains).

- Creation of digital documentation from the excavation in 2016 and preparing for the publication
- Evaluation of the recorded finds from other museums in northern Bosnia and Croatia (drawing, classification, digitalization)
- Two meetings with Croatian cooperation partners from Institute for Archaeology in Zagreb regarding the final publication
- Presentation of the project achievements at the international conference ‘Objects, Ideas and Travellers. Contacts between the Balkans, the Aegean and Western Anatolia during the Bronze and Early Iron Age’ in Tulcea, Romania in November 2017

The main goal for 2018 is the conclusion of the final publication for the OREA series. The monography will include all achieved results of the field work in Dolina between 2015 and 2017 (geomagnetic survey, excavations) and the outcome of different analysis (radiocarbon, petrography, archaeozoology, archeometallurgy and anthrachology).

Funding: Marie-Curie Programme/EU (1.9.2015 – 30.8. 2017)

– *Securing resources, power and cult in Stillfried?*

PI: Michaela Lochner, Team: Monika Griehl (Key Researcher), Benedikt Biederer

The project is devoted to the question of whether the central site Stillfried had the function of a supra-regional grain storage space, which was accompanied by elaborate rituals. The remarkably high density of cone-shaped (storage) pit with similar filling patterns gave rise to these considerations; particularly the depositions of wild and domesticated animals in these pits are exceptional.

Funding: FWF P28005-Stand-alone project (1.11.2015–31.10.2018)

Actions and accomplishments in 2017:

- B. Biederer successfully finished his master thesis at the University of Vienna. The title: ‘Speicherung im Boden. Wie organisierten spätbronzezeitliche Gesellschaften in Mitteleuropa ihre Vorratshaltung?’. Starting from the results of the project and his master thesis, B. Biederer enlarged upon basic aspects of food storage in prehistory and started a PhD thesis with working title ‘Herausforderung Vorratshaltung. Essentielle Strategien im urgeschichtlichen Europa vom Neolithikum bis in die Eisenzeit’. In December 2017 he submitted the application for the DOC Fellowship of the Austrian Academy of Sciences.
- In July and August 2017, M. Griehl and B. Biederer recorded further finds from Stillfried in depot of Lower Austria Museum in Hainburg. The digitalised overview plan of the site Stillfried with all storage pits in all excavated areas is also completed in this time frame.
- The analysis of Sr-Isotopes from human skeletons in Stillfried in cooperation with the University of Natural Resources and Life Sciences (BOKU), Vienna. The results will be published in 2018 in a joint paper by M. Griehl (OREA), Th. Prohaska, A. Retzmann and A. M. Kriechbaum (BOKU).



Fig. 28 M. Griehl and B. Biederer working on finds from Stillfried in the depot of the Lower Austria Museum in Hainburg (photo: M. Lochner)

- Conclusion of the analyses of animal bones from the pits, cooperation with Natural History Museum Vienna and selection and submission of the samples (14 specimens) for the radiocarbon dating.
- Presentation and publication of the conference contribution (Archaeology in Lower Austria, Asparn/Zaya, June 2017) and presentation of the project in the newsletter of the European Association of Archaeologists (January 2017).

– *The Early Urnfield Culture cemetery of Inzersdorf ob der Traisen, Lower Austria*

PI: Michaela Lochner

Despite grave robbing in antiquity, the 273 urn burials and scattered cremations of the cemetery were found exceptionally well equipped with grave goods. The analysis and interpretation of the cemetery will be carried out by several researchers over a time-span of three to five years, depending on individual research emphases and with the help of scholarships (e.g. Doctoral Fellowship Programme). The further evaluation of the finds and features from Inzersdorf will be conducted in a joint action of UCN and recently founded research group *Prehistoric Identities*.

In 2017 M. Fritzl successfully finished her master thesis at the University of Vienna (Title: ‘Die mehrfach belegten Gräber des Gräberfeldes von Inzersdorf ob der Traisen, NÖ. Eine Studie zu sozialen, religiösen und rituellen Implikationen von mehrfach belegten Gräbern der Urnenfelder-kultur‘). Within the new research group ‘Prehistoric Identities’, M. Fritzl will continue her work on Inzersdorf with her PhD thesis.

Metallographic analyses of the selected bronze finds (knives, razors and pins) from Inzersdorf are included in the master thesis of N. Mittermayer, a young researcher associated with the UCN group.

– *Human and animal depositions - sacrificial cult in Stillfried?*

PI: Irmgard Hellerschmid

In this project selected findings of large storage pits including human and animal depositions were analysed and interpreted, including the reconstruction of stratigraphic and depositional sequences as well as the application of natural science approaches, to help understanding background and practice of ritual actions. The final monograph is being prepared to be published soon.

Funding: FWF P 22755 Stand-alone project

– *The value of mothers to society: responses to motherhood and child rearing practices in prehistoric Europe*

PI: Katharina Rebay-Salisbury, project members: Roderick B. Salisbury, Michaela Spannagl-Steiner, Michaela Fritzl

Analysing the link between reproduction and women’s social status, the projects explore social responses to pregnancy, birth and childrearing from the late Neolithic to the late Iron Age (c. 3000–15 BC) through case studies in central Europe. The ERC-funded diachronical study expands both chronologically and thematically to write the history of motherhood over the last three millennia BC.

In December 2017, the PI of the project Katharina Rebay-Salisbury started a new research group (‘Prehistoric Identities’) within the OREA Institute. She will however still closely cooperate with the UCN and remains as an associated member of the research group.

Funding: ERC Starting Grant Project, 1.7.2016–30.6.2021

– *The Early Iron Age site of Polichni in Thessaloniki*

PI: Stefanos Gimatzidis

A total of approximately 1021 graves including cremations and inhumations have been unearthed at the Early Iron Age western necropolis so far. A detailed documentation is available from the excavation campaigns, which spanned several years. S. Gimatzidis left OREA in 2017 and the project will not be further realised within the UCN research group.

Funding: INSTAP, FWF P26150 Stand-alone project

Forthcoming projects

– South Connections: Spreading of the Urnfield Phenomena and mobility in Bronze Age

Team: Mario Gavranović, Michaela Lochner, Austrian Agency for International Cooperation in Education and Research (OEAD), Program Scientific & Technological Cooperation (WTZ), Federal Ministry of Science, Research and Economy, 1.1.2018 – 31.12.2019.

Based on the first results of the Burial project and fruitful cooperation with Institute for Archaeology in Zagreb, M. Gavranović and M. Lochner applied for a two year bilateral (Austria-Croatia) project in the frame of Scientific & Technological Cooperation of the Austrian Agency for International Cooperation in Education and Research (OEAD). In December 2017, the submitted project was selected for support and will enable further joint actions with Croatian colleagues. The project members will analyze a number of important new finds from both regions and compare objects related to the so-called Baierdorf-Velatic cultural complex. The objective is to understand the spreading of certain characteristic archeological features and to elucidate, if the distribution of the artifacts signals the mobility of the people or transfer of knowledge and technologies. The official start of the project (HR 13/2018) is January 1st, 2018.

– Visualizing the unknown Balkans

Team: Barbara Horejs, Mario Gavranović, Innovation Fund of the Austrian Academy of Sciences, 1.3.2018 – 28.2.2020.

This project represents a joint action of the research groups AAPP (Anatolian Aegean Prehistoric Phenomena) and UCN. Based on the studies of the OREA Institute in several Balkan countries, the project targets to communicate the results of the archeological research with the understandable and accessible visual concepts. The translation of the archeological data into GIS-created maps, digital animations and landscape and site reconstructions will establish a much-needed framework for future investigations but also build a foundation for better and fact based understanding of the past.

The interdisciplinary actions will generate large amounts of new and essentially missing data that will uniquely incorporate archaeology, geoscience, cartography and digital visual media. The planned surveys, geophysical screenings and mapping of the selected areas with high research potential will also provide an excellent starting point for museums and adequate presentation of the common cultural heritage. The project will start on 1st March 2018.

Main cooperation partners

Anthropological, Zoological and Prehistoric Department of the Natural History Museum in Vienna, Vienna Institute of Archaeological Science, Department of Botany and Biodiversity Research/University of Vienna, VIRIS Laboratory/University of Natural Resources and Life Sciences, Institute of Archaeometry/Technical University Vienna, Federal Province of Lower Austria, Department of Archaeology/Austrian Federal Monuments Office (BDA), Mickiewicz University Poznan, Poland, Curt-Engelhorn-Centre Archaeometry, Mannheim, Germany, University of Durham, UK, Institute of Archaeology, Zagreb, Croatia, Institute of Archaeology, Belgrade, Serbia, Regional Museums Travnik and Doboje, Bosnia and Herzegovina, Ephorate of Prehistoric and Classical Antiquities, Thessaloniki, Greece; Sofija Stefanovic, University of Belgrade, Zsuzsanna Siklósi, Eötvös Loránd University, Budapest, Viktória Kiss, Hungarian Academy of Sciences, Klára Šabatová, Masaryk University, Brno, Czech Republic, Jo Appleby, University of Leicester, Marie Louise Stig Sørensen, University of Cambridge, Museum Brodskog Posavljja, Slavonski Brod, Croatia, Faculty of Mining, Geology and Petroleum Engineering in Zagreb, Croatia, National Museum of Bosnia and Herzegovina in Sarajevo, Bosnia-Herzegovina, Museum of Semberija, Bijeljina, Bosnia-Herzegovina, Regional Museum in Zenica, Bosnia-Herzegovina, Museum of Krajina, Negotin, Serbia, Museum of Mining and Metallurgy in Bor, Serbia.

Highlights 2017

- Accomplishment and first presentation of CBAB database to the international scientific community.
- Organization and hosting of international workshops and conferences:
 - *South Wind – Late Bronze Age Cultural Phenomena and Influences from the Adriatic Region to the North* (UK-Gespräche, Vienna, April 2017).
 - *Spheres of Interaction. Contacts and Relationships between the Balkans and adjacent regions in the Late Bronze / Iron Age* (PEBA initiative, Belgrade, September 2017).
- Successful application for the two new projects starting in 2018:
 - *Visualizing the unknown Balkans*, in cooperation with AAPP research group, Innovation Fond of Austrian Academy of Sciences (Team: B. Horejs, M. Gavranović).
 - *South Connections – Spreading of the Urnfield Phenomena and Mobility in Bronze Age*, Austrian Agency for International Cooperation in Education and Research (OEAD), Program Scientific & Technological Cooperation (WTZ).

PLATFORM: HISTORY OF ARCHAEOLOGY (coordinated by Michaela Zavadil)

Objectives

Research into the history of their own discipline played for a long time a minor role for archaeologists. In recent years interest has increased noticeably and studies concentrate not only on the beginnings of archaeology, but also on its recent past. Following this trend the platform *History of Archaeology* was established in 2015. It brings together colleagues working on different topics dealing not only with the history of archaeology and the biographies of archaeologists but also with the history of the former commissions. The Prähistorische Kommission and the Ägyptische Kommission were among the oldest commissions within the Academy (founded in 1878 and 1907), whereas the Mykenische Kommission – established in 1971 – was comparatively young.

Current research programme

– *Archeology and ideology. The Prehistoric Commission of the Austrian Academy of Sciences between 1938 and 1948 is currently investigated by Birgitta Mader within the Frame of a*
PI: Barbara Horejs, researcher: Birgitta Mader

The predominantly archival research project is concerned with the history of the Prehistoric Commission during the Nazi era, when Oswald Menghin held its presidency and considered it the task of prehistoric research to provide ‘essential contributions to the national socialist worldview’. The aim of the work is therefore to examine the structure and activity of the Prehistoric Commission for changes resulting from ideological influence, the instrumentalisation of its research for national socialist purposes, and the possible lasting effects and consequences for modern prehistoric archeology. The publication has been accepted for publication and will appear early on 2018.

Funding: Kultur, Wissenschafts- und Forschungsförderung der Stadt Wien

– *Archäologie zwischen Doppeladler und Zweiter Republik. Die Prähistorischen Kommission der Österreichischen Akademie der Wissenschaften zwischen 1918 und 1945*

PI: Barbara Horejs, researcher: Birgitta Mader

The study presents the history and the activities of the Prehistoric Commission of the Austrian Academy of Sciences during the years 1918 to 1938 and therefore deals with a time period that

was characterised by historical-political upheavals and economic hardships in an article in *Archaeologia Austriaca* 101, 2017.

Funding: Kultur, Wissenschafts- und Forschungsförderung der Stadt Wien

Ernst Czerny continued his research on Anton Prokesch von Osten. In July he attended the “12th Biennial Conference of *The Association for the Study of Travel in Egypt and the Near East*” at the premises of the University of East Anglia, Norwich (Great Britain) and gave a lecture with the title “Anton Prokesch von Osten and his contribution to evolving Egyptology”. Furthermore he co-organised several events in the lecture hall of the Kunsthistorisches Museum:

1. Presentation of the book: Th. L. Gertzen – W. B. Oerter, Nathaniel Julius Reich. *Arbeit im Turm zu Babel*, Berlin 2017 (April 2017).
2. Lecture by Daniela Picchi (Museo Civico Archaeologico di Bologna): Pelagio Palagi and his Egyptian Collection (October 2017).
3. Presentation of the book: C. Gütl (ed.), Hermann Junker. *Eine Spurensuche im Schatten der österreichischen Ägyptologie und Afrikanistik* (November 2017).

In cooperation with the International Research Group *Egypt & Austria* Ernst Czerny organised a series of lectures, which were held at OREA:

1. St. Malfer (Institut für Neuzeit- und Zeitgeschichtsforschung, ÖAW): Österreich und der Suez-Kanal (March 2017).
2. Th. L. Gertzen (Selma Stern Zentrum für Jüdische Studien Berlin-Brandenburg): Die Bedeutung von Judentum und Konfession in der Geschichte der deutschsprachigen Ägyptologie im 19. und 20. Jh. (May 2017).
3. D. Modl – C. Ertl (Archäologiemuseum Schloss Eggenberg): Es war ½ 6 Uhr als ich auf das Verdeck trat, um das klassische Land zu erblicken ...“ – Erzherzog Johann in Konstantinopel und Griechenland im Jahr 1837 (December 2017).

DEEPDEAD – DEPLOYING THE DEAD:

ARTEFACTS AND HUMAN BODIES IN SOCIO-CULTURAL TRANSFORMATIONS

(HERA Project, Project leader: Estella Weiss-Krejci; postdoctoral researcher: Sebastian Becker)

Overall Objectives

The HERA-JRP-III funded DEEPDEAD-project is a collaboration involving literary scholars, archaeologists and anthropologists in the UK, Austria, Germany, and the Czech Republic. The project examines historic and prehistoric encounters with human remains and artefacts in order to shed light on their cultural and social power. Through a series of case studies juxtaposing distinct eras, cultures, and types of evidence, the DEEPDEAD-project focusses on what is constant and what is locally and historically specific in our ways of interacting with the long-dead.

2017 Research of the Austrian Team

The Austrian team has finished its literature search for prehistoric and historic graves and dead bodies that experienced disturbance, adaptation or reuse. E. Weiss-Krejci, S. Becker and K. Mandl (assisted by M. Teschler-Nicola) are currently conducting an examination of bone ornaments in Austrian museum collections (looking for objects made of human bone) (Fig. 29).

Highlights 2017

- 23rd Annual Meeting of the European Association of Archaeologists, 5–8 September, 2017, Maastricht, Netherlands. Organization of Session 402, ‘Deploying the Dead: Interdisciplinary Dialogues’ (Estella Weiss-Krejci, Sebastian Becker and Ladislav Šmejda). Presentations

by Sebastian Becker: *Reading the Dead: approaching funerary complexity through digitised archives* and by Estella Weiss-Krejci: *Empowered objects: amulets and post-mortem agency in medieval and post-medieval Europe*.

- 4th Central European Theoretical Archaeology Group (Disciplinary in Archaeology), Conference organization (Roderick Salisbury, Katharina Rebay-Salisbury and Estella Weiss-Krejci), 16–17 October, 2017, Vienna, Austria. Introduction by Roderick Salisbury, Katharina Rebay-Salisbury and Estella Weiss-Krejci. Presentation by Estella Weiss-Krejci and Ladislav Šmejda, Sebastian Becker: *The archaeologist as a writer: lessons from the DEEPDEAD project*.
- International Conference Approaches to Burnt Human Bones and Teeth: the bioarchaeology of cremations and tooth cementum annulation, 15–17 November 2017, Vienna, Austria. Key-note lecture by Estella Weiss-Krejci: *Fuel for Thought: thermal modification of the corpse in cross-cultural perspective*.
- 82nd Annual Meeting of the Society for American Archaeology, 30 March–2 April, 2018, Vancouver, Canada. Presentation by Estella Weiss-Krejci: *Osteonarratives in the German-language tradition*.
- International Conference Rest in Peace? Burial grounds as spaces for non-funerary activities, 11–12 November, 2017, Hamburg, Germany. Presentation by Estella Weiss-Krejci: *Falling into oblivion: how to recognise dissolved burial grounds in prehistory*.
- Dissertation co-supervision by Estella Weiss-Krejci, completed 2017, Marko Kölbl, ‘Burgenlandkroatische und kroatische Totenklagen’, University of Music and Performing Arts Vienna.
- University semester course WS 2017/2018 with Khaled Hakami at the Department of Social and Cultural Anthropology, University of Vienna, ‘Interdisziplinarität in der Sozialanthropologie’.
- International symposium on Grave disturbance in early medieval Europe, Department of Archaeology and Classical Studies, Stockholm University, 12 January 2017. Estella Weiss-Krejci, invited panel member.

Project Funding

HERA JRP III UP, Joint Research Programme III, Uses of the Past; CRP 15.055 DEEPDEAD (July 1, 2016–June 30, 2019). HERA is a research program, which is co-funded by the humanities funding agencies in 23 participating countries and the European Commission. The DEEPDEAD project has received € 1,160,116 across four partners (the Austrian share comprises € 317,870).

Consortium Partners

Philip Schwyzer (PL), Department of English, University of Exeter, United Kingdom
 Andrew James Johnston (PI), Department of English, Freie Universität Berlin, Germany
 Ladislav Šmejda (PI), Czech University of Life Sciences Prague, Department of Ecology, Czech Republic

Associated Partners

Harald Meller, Landesmuseum für Vorgeschichte, Halle (Saale), Germany
 Maria Teschler-Nicola, NHM, Vienna, Austria



Fig. 29 The DEEPDEAD-Team (S. Becker, K. Mandl and E. Weiss-Krejci) conducting research at the Natural History Museum, Vienna (photo: M. Teschler-Nicola)

ACROSS ANCIENT BORDERS AND CULTURES
(Principal Investigator: Julia Budka)

Objectives

The research project Across ancient borders and cultures (START project J. Budka) focuses on settlement patterns in Northeast Africa of the 2nd millennium BC based on the detailed analysis of material remains. The relevant case studies are plotted across ancient borders (Abydos and Elephantine in Egypt; Sai Island in Egypt) and are of diverse environmental and cultural preconditions, but show a correspondence with the archaeological remains datable to the 18th Dynasty. Up to now, no attempt has been made to explain this intriguing situation in detail. Interactions and mutual influences between the areas of Pharaonic Egypt, on the one hand, and the African Kingdom of Kush (Kerma) on the other hand, have not escaped the attention of modern researchers, but the precise character of these interrelationships is still unknown.

The focus of the project is the site of Sai Island as the prime example for domestic life of New Kingdom Egypt (c. 1539-1077 BC) in Upper Nubia. Sai has only partially been explored until now and still offers enormous potential. Whether this settlement can be evaluated as an Egyptian microcosm despite its location outside of Egypt will be tested at the micro-spatial level. The major aim is to establish “standards of living” for Sai on the basis of the material culture and architecture and compare these systematically with data from Egypt. Data from the town of Sai are complemented by new excavations in the contemporaneous pyramid cemetery.

Current research

Sai Island

The 2017 field season on Sai Island lasted from December 30 2016 to March 11 2017. Excavations were carried out in two areas in the Pharaonic town (SAV1 East and SAV1 West) and in the New Kingdom cemetery SAC 5 in Tomb 26. The latter was the focus of the FWF project. During the excavations in Tomb 26 (December 31 to March 04), a new chamber (Feature 6) was



Fig. 30 Burials in chamber 6 (photo and ©: J. Budka)

discovered in the north. It held two coffins of which only traces survived in the flood sediments as well as rich burial equipment of Egyptian style: scarabs, faience vessels, pottery vessels and one stone shabti were used as burial goods. Traces of the funerary masks have also survived. According to the inscribed finds and the human remains, the double burial in Feature 6 can be identified as the chief goldsmith Khnummose and an anonymous female person. Another focus of work in Tomb 26 was Feature 5, a newly discovered chamber located to the west of Feature 2. It yielded 11 adult and 3 infant burials, again with a nice selection of finds comprising scarabs, amulets and pottery vessels as well as few traces of the funerary masks and coffins. All in all, the burials in Features 5 and 6 can safely be dated to the mid-late 18th Dynasty. The burials unearthed in the upper part of Feature 4, a trench along the north wall of the main chamber of Tomb 26 (Feature 2), seem to attest the Ramesside re-use of the burial place; the same holds true for some of the burials in Feature 2 which are as late as Pre-Napatan in date.

Post-excavation work focused on a detailed analysis of the anthropological findings in Tomb 26 (Fig. 30).

Scientific analyses of bones and dental tissue were undertaken to explore the origin of people from Sai (in cooperation with the University of Natural Resources and Life Sciences, Department of Chemistry – VIRIS Laboratory). The Strontium isotope values suggest the autochthony of the skeletal remains from Tomb 26 which is of major importance for the project and will be investigated further.

From September 30 to October 12 2017, a study season in the National Museum of Sudan, Khartoum, was undertaken. All objects from Tomb 26 which were brought to the museum were re-checked and re-photographed (with a full-frame camera); selected pieces were also documented by drawing. The eye inlays of the funerary masks were cleaned and newly photographed. The pottery was processed regarding their date and ware. All finds from Tomb 26 are now processed and ready to be prepared for final publication as a monograph.

Elephantine

The final season on Elephantine (Egypt) lasted from October 26 2017 to November 16 2017, was undertaken in cooperation with the Swiss Institute in Cairo and was financed by the ERC project AcrossBorders (LMU Munich) because of the end of the FWF project by October 14 2017. The results will be incorporated into the ultimate publication of House 55.

Conference and workshop

Important results of the project were presented at the international conference *From Microcosm to Macrocism: Individual households and cities in Ancient Egypt and Nubia*, hosted at the LMU Munich, September 01–03, 2017. Furthermore, an international workshop was organised by the Young Academy in Vienna on November 27 2017 under the title *Across ancient borders and cultures: New approaches to Egyptian and Nubian Archaeology*, bringing together most of the project's collaborators.

THE ENIGMA OF THE HYKSOS
(ERC Advanced Grant Project; Principal investigator: Manfred Bietak)

Objectives

So far the objectives of this five-year project are on track and the reported slight delay in recruitment of all the team members only means that people will remain longer within the project than initially anticipated. This can be also seen as an advantage as the outcomes are more likely to be presented in a more concise timeline; and therefore the initial phase of intensive planning, scheduling and liaising can be regarded as a nonetheless productive process in the implementation phase.

As outlined in the later part of this report, this second year within the project life has been used to confirm established and new relations, search for adequate source material and overcome some bureaucratic hurdles which did not allow the team members to arrange any site visits in Egypt. Alternative finds were located and their availability checked.

This ERC AdG project runs for five years and explores the origin, the ethnicity and the influence of the ‘rulers of the foreign countries’ – the Hyksos, ruling the North of Egypt in the Second Intermediate Period. Therefore archaeological findings from several missions working in the Eastern Delta of Egypt, have to be compared to structures and objects known from the Levant and surrounding regions.

The projected investigations will be conducted in eight interrelated research tracks, incorporating an array of archaeological, historical, theoretical and analytical approaches. Archaeological analyses, cultural interference studies and new onomastic studies are going to play an equal role as well as most up-to-date DNA and Sr isotope analyses. The aim of this interdisciplinary project is to reveal the origin of the western Asiatic population, the dialogue with the host country, the impact on the culture of the latter and finally their heritage in Egypt (Fig. 31).

For more detailed information: <http://thehyksosenigma.oeaw.ac.at/>

Current Research

The Core Team of the Project under the direction of the PI Manfred Bietak is now complete. Within the second year of the project, 2017, all positions, as envisaged in the Grant Agreement (GA) #668640, were filled. Work milestones of all Research Tracks 1 to 6 were outlined and staff commenced to prepare for workshops, work on articles and publications. At the same time Bournemouth University, the Co-Beneficiary managed to employ their chosen Post-Doc candidate and fulfil their recruitment requirements within the project.

Manfred Bietak continued work on a book on comparative studies on temple architecture in connection with Near Eastern types in Tell el-Daba. He oversees not only work of the whole team but also continued talks about possible co-operations with Claude Doumet-Serhal, Holger Schutkowski, Nicolas Grimal, Laurent Schmitt, Jean-Philippe Goiran, Arwa Kharobi, Jwana Chahoud and other representatives such as the Tel Aviv University.

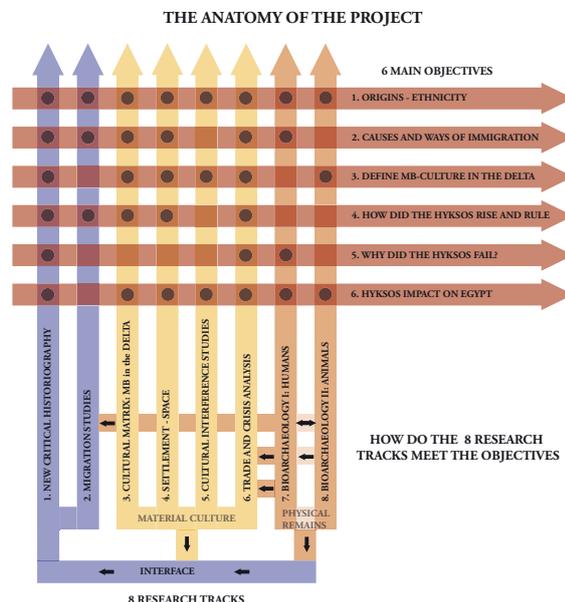


Fig. 31 Diagram illustrating the 8 Research Tracks and the objectives



Fig. 32 Sarah Vilain examining ceramic material
(photo: © The Enigma of the Hyksos)



Fig. 33 Nina Maaranen checking samples
(photo: © The Enigma of the Hyksos)

Silvia Prell (RT3) progressed with the compilation and analyses work on equid burials in Egypt and the Levant, she also started work on analyses of warrior burials in the same area. Rosa Matic (Project Manager) co-ordinated, supported the team in all administrative tasks, necessary travel arrangements and assisted with the acquisition of literature. She also continues to act as the interface between the bio-archaeological team at Bournemouth University under Holger Schutkowski and the team in Vienna, supplying updates and disseminating the communication between various research tracks, when and where relevant.

Anna-Latifa Mourad, responsible for the RT5 ‘Cultural Interference’, worked on defining religious influences and the Egyptian culture in Egypt, attributed to the Western Asian immigrants in the Delta. She also started with editing work on a very comprehensive manuscript by Ernest Bumann on the acculturation of the Hyksos.

Sarah Vilain, worked on RT6, ‘Trade and Crisis’ the chronological evaluation of funerary relicts from Tell el-Daba (Fig. 32) and established a working relation with Ezra Marcus from the Univ. Haifa, who will contribute with his sub contractual work to her research track.

Elisa Priglinger started her post in June within her research track RT2 on ‘Migration studies’, preparing for various presentations in the New Year and articles.

Silvia Gómez-Senovilla, the PhD researcher, compiled a presentation for her dissertation on RT4 ‘Settlement and Space’ and started collating settlement maps from the 2nd millennium in Egypt and the Levant. Her PhD proposal, covering her research track RT4 was accepted at the University of Vienna.

BU’s PhD student, Nina Maaranen attended various conferences relevant to her study area (Naples, London, Liverpool and Girona) and arranged visits for sample checks in Vienna, the Lebanon and Sydney. In Lebanon she spent couple of weeks over the summer (July until August ’17 Sidon) to organise the transport of sampling from the area and excavation work (Fig. 33). The Post Doc Christina Stantis joined the BU before the autumn term and started liaising with the other team members and familiarising herself with the requirements of RT7, ‘Bioarchaeology I – Human remains’ as well as supporting her colleague.

Hanan Charaf-Mullins, the SC4 subcontractor, supplied her work plan in researching regionalism during MBA in Syria and the Lebanon. At the same time she supported the BU Bio-Archaeological Team in obtaining osteological material from the Lebanon and prepared her first progress report. Dr. Ezra Marcus, who is responsible for subcontract SC5, supporting ‘Trade and Crisis’, worked on stratigraphic material from Tel Ifshar and Tel Naami in Israel and will supply his report in the New Year.

Thomas Schneider from the University of British Columbia, Vancouver commenced his onomastic analysis work as a voluntary contributor on this ERC-Project within RT1.

During an invited research trip at the beginning of the year to the Getty Research Centre in Los Angeles, Manfred Bietak held various presentations at the Getty Villa, UCLA and was able to liaise with more scientists in relation to the project. He attended the EES 5th Delta Survey Workshop at Alexandria in April and was invited to the Tyre, Sidon and Byblos Symposium (Beirut) in October.

The team organised a double workshop at the ASOR 2017 Conference in Boston, Massachusetts in November with 108 participants where besides the PI the RT3 & RT5 Post-Docs – Silvia Prell and Anna-Latifa Mourad – as well as RT7 PhD student, Nina Maaranen from the BU, presented papers. The young researchers made the most of the trip by planning additional visits to Museums in Boston and New York (Metropolitan Museum) and arranged meetings with the subcontractors. Towards the end of the year plans for 2018 included organisation of a workshop at the 11th ICAANE in spring time and participation at some other conferences by submitting abstracts for consideration.

Longterm Research

F.E.R.C.AN.

Fontes Epigraphici Religionum Celticarum Antiquarum

(Principal Investigators: Gerhard Dobesch and Herwig Friesinger,
coordination: Manfred Hainzmann)

Ancient inscriptions containing names of gods and religious terms on monuments and small finds are of outstanding importance for knowledge of Celtic religion in its various forms. Equally revealing are the evidence of votive offerings, the groups of dedicators and their motives. So far, these sources have never been systematically documented and analysed; a research gap shall be closed through the F.E.R.C.AN. Project of the Austrian Academy of Sciences launched in 1998.

The aim of this major international project is the complete documentation, new edition and analysis of Greek, Latin and Celtic written records of religious content. As part of the edition, archaeological and historical findings, as well as linguistic-philological and religious studies, will be taken into account. For this reason, an interdisciplinary research advisory committee was established to support the epigraphic research.

The *Corpus F.E.R.C.AN.* (*Fontes epigraphici religionum Celticarum antiquarum*) re-edits religious inscriptions from the provinces of the Roman world with a probably Celtic-speaking background. The *F.E.R.C.AN.* editions are meant to offer not only a thorough philological commentary on and a translation of the documents collected, but also an in-depth interdisciplinary analysis and classification of the invocations and the divine names contained in them, from a linguistic, an epigraphic-historical, and also an iconographical perspective.

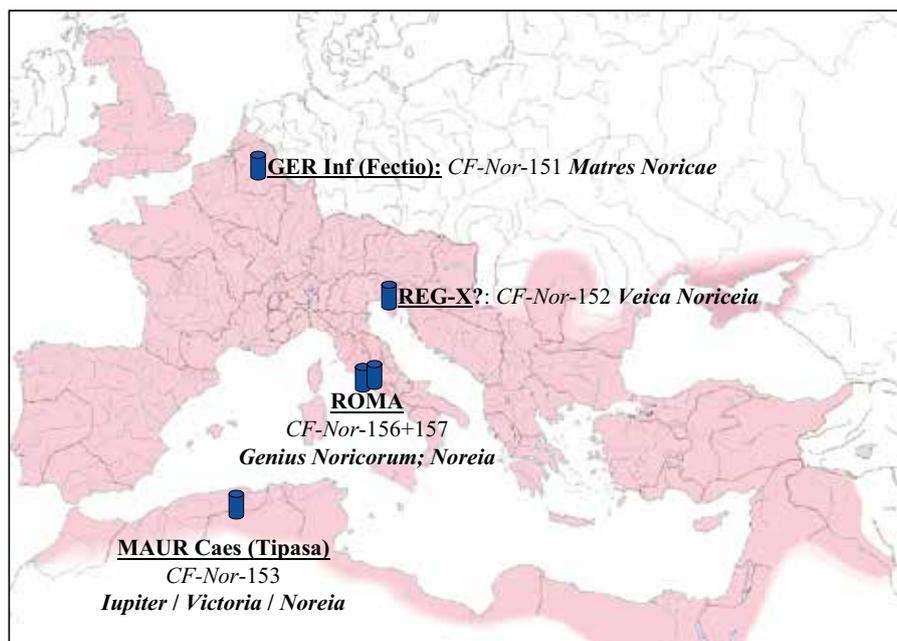


Fig. 34 Map of regions covered by Coprpus F.E.R.C.AN. Vol. 1, findspots beyond Noricum (© M. Hainzmann)

The first volume of the series collects the Norican evidence and consists of two fascicles. In the first one, a methodological section (“From divine names to deities? On the analysis of the divine names”) is followed by a section discussing the numina in alphabetical order and comprising the individual linguistic and historical commentaries on the invocations attested, together with several tables illustrating the diffusion of the single Norican cults, their mutual relationship, and the social provenance of their dedicants. An iconographical analysis of the few extant representations of ‘Norican’ numina constitutes the third main section of *Fasciculus 1*. An extensive and well-illustrated inscription catalogue represents the core of *Fasciculus 2*, with 145 *tituli sculpti* and 13 *instrumenta inscripta*, while an appendix with concordances of the votive strings and the personal names contained in the documents is distributed, together with further information, over both fascicles. The major editing has been achieved – the volume is expected to be published soon.

Scientific Board:

Helmut Birkhan (Vienna, Department of German Studies)

Patricia de Bernardo Stempel (UPV/EHU, Linguistica and Celtic Studies)

Gerhard Dobesch (Vienna, Department of Ancient History, Papyrology and Epigraphy)

Ute Klatt (Mainz, Department of Ancient History and Classical Archaeology)

Nicolas Mathieu (Grenoble, Department of Ancient History)

Francisco Marco Simón (Saragossa, Department of Religious Studies)

Otto H. Urban (Vienna, Department of Prehistoric and Historical Archaeology)

Rainer Wiegels (Osnabrück, Department of Ancient History and Epigraphy)

Funding: FWF P 14306

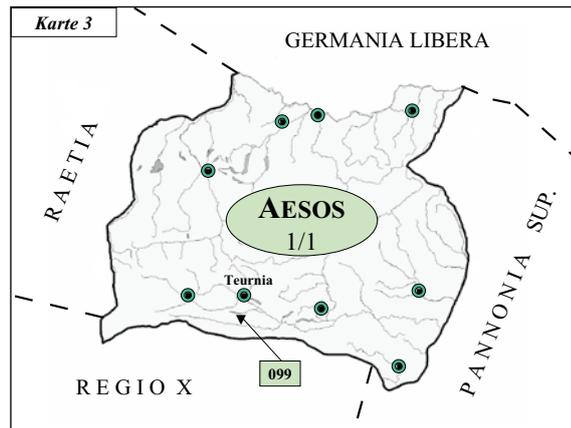


Fig. 35 Schematic map of findspot of CF-Nor- 099
(© M. Hainzmann)



Fig. 36 Postamentum CF-Nor-099
(© Landesmuseum Kärnten; photo: U. P. Schwarz)

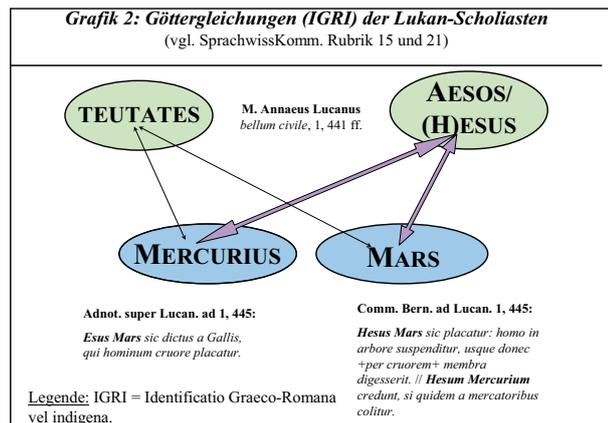


Fig. 37 ‘Göttergleichungen’ (IGRI) of the Lucan scholiasts
(© M. Hainzmann)

THE TEMPLE INSCRIPTIONS FROM PHILAE

Principal Investigator: Erich Winter, co-researcher: Holger Kockelmann

Overall Objectives

The temples of Philae island, 5 km south of Aswan, form a conglomerate of sanctuaries, colonnades, kiosks and gates. The aim of the project 'Edition der Tempelinschriften von Philae' (Edition of the temple inscriptions from Philae) is to publish all hieroglyphic inscriptions of all buildings on the island of Philae, including a translation and commentary.

Heinrich Schäfer, Hermann Junker and the photographer Friedrich Koch documented all temple reliefs of Philae on large-format glass negatives during the winters of 1908/09 and 1909/10 on behalf of the Prussian Academy of Sciences. These 'Berlin photos' remain the basis of the edition, even if today's digital photography is gaining more and more importance for detailed questions of iconography and inscriptions.

The UNESCO rescue mission to save the Nubian temples reached the island of Philae in 1974. The Austrian Academy of Sciences, supported by a UNESCO research grant, sent Erich Winter to Philae for many months in order to document all relief-decorated columns accurately using latex coating before dismantling of the buildings was to begin.

Since latex copies dry up over the years and become brittle, drawings of all latex copies had to be produced within the next few years (on behalf of and at the expense of the Academy). Only after this task had been completed, could the work of the Philae project again focus on the actual publication of the third volume of the Philae Edition, 'Die Zweite Ostkolonnade des Tempels der Isis in Philae' (second eastern colonnade = Philae III). Holger Kockelmann was integrated into the preparation of the edition from 2005, and the manuscript of 'Philae III' could be completed with him as co-author. In 2016, Philae III was published at Austrian Academy of Sciences Press, Vienna. Questions on readings were clarified on the spot in annual campaigns, since 2009 with the scholarly cooperation of Shafia Bedier (Ain Shams University, Cairo).

Current Research

The Philae Temple Text Project continued its field work with campaigns in February/March and September/October 2017. Members of the mission were PD Dr. Holger Kockelmann (Second Director/Field Director), epigraphists Silke Caßor-Pfeiffer, M.A., Prof. Dr. Stefan Pfeiffer, Prof. Dr. Shafia Bedier, Dr. Peter Dils, Dr. Jérémy Hourdin, and Dr. Sohair Said Abd el Hamid Ahmed; Osama Amir (Site Management); Eric Desèvre (stone mason); Juliette Fayein and Abubakr Hassan Sayed (restorers); Kathryn Piquette (RTI prospection); inspectors were Heba Saad Harby, Hala Mohamed Hessein, Sayed Ahmed Ali, Omneia Mohamed Abdallah Hala Abdelhamid, Haytham Mohamed, Mustafa Abdelshakor (Nubian Heritage Fund), Heba Alders, and Ahmed Masaoud.

The mission pursued the epigraphic survey of the Temple of Hathor; main tasks were collating already existing temple relief facsimiles with the originals and photographing new scenes for digital facsimilation at home. With financial support by the Holzhausen Legat of the Austrian Academy of Sciences, more than 50% of the Hathor Temple decoration have already been copied in accurate drawings by Pauline Calassou; a large proportion of the texts has been translated.

In addition to the epigraphic work, the team inaugurated a new site management project *The Second Salvage of Philae*. It is funded by the Gerda Henkel Foundation, Düsseldorf, and takes care of the loose inscribed temple blocks, which were found on Old Philae during the UNESCO translocation of the temples in the 1970s. Since then, these spoils have been kept in the depots of Talaina and Shisha (south-east of Aswan) under rather provisional conditions. Many of them belong to the earliest Temple of Isis on Philae (6th century BC), which was dismantled and replaced by a monumental sanctuary in the early 3rd century BC; other blocks are part of Graeco-Roman temple buildings. The main objective of the site management project is to transfer this precious epigraphic material from the depots to New Philae (Agilkia Island) for permanent storage under ideal and safe

conditions. In total, 277 spoils with a weight between several kilograms and one ton were transported to their new location on Agilkia, where they were placed on brick-built supports. The logistics of this enterprise were managed by Eric Desèvre and Silke Caßor-Pfeiffer (Fig. 38), with the support of local workmen. The blocks stored in Gebel Shisha could not be moved to Agilkia, due to their fragile condition; instead, they were recorded, consolidated and secured by a fence.

A selection of the most important and representative spoils of the transferred convolute was put on public display on Agilkia. For the first time, the earliest testimonies of the local cult of Isis can now be seen by visitors in the neighbourhood of the Philae temples to which they belong. Tourist signs will provide information on the early history of the cults of Philae and on the significance of the blocks on display. Moreover, a preliminary depot of spoils at the Temple of Hathor was sorted, recorded and transformed into an exhibition area (Fig. 39); the study of these blocks revealed new insights into the building history of the Temple of Hathor.

Some results of the ongoing work of the Philae Project were presented in a lecture delivered at Institute OREA on 22 November, 2017.



Fig. 38 A block of the earliest Temple of Isis is being moved onto Agilkia Island



Fig. 39 The new block exhibition at the Temple of Hathor on Agilkia; the Temple of Isis is seen in the background

OREA-Team 2017

Eva Alram-Stern	Roman Gundacker	Doris Pany-Kucera
Edeltraud Aspöck	Marc Händel	Areti Pentedeka
David A. Aston	Irmtraud Hellerschmid	Elisa Perego
Bettina Bader	Felix Höflmayer	Irene M. Petschko
Marlon Bas	Barbara Horejs	Julian Posch
Sebastian Becker	Stephanie Horvath	Silvia Prell
Benedikt Biederer	Jasmin Huber	Elisa Priglinger
Manfred Bietak	Lucia Hulková	Katharina Rebay-Salisbury
David Blattner	Barbara Hütthaler	Maria Röcklinger
Dominik Bochatz	Valentin Jovanovic	Roderick Salisbury
Mario Börner	Reinhard Jung	Ulrike Schuh
Maxime N. Brami	Elefteria Kardamaki	Elke Schuster
Michael Brandl	Christian Knoblauch	Angela Schwab
Christopher Britsch	Karin Kopetzky	Christoph Schwall
Clare Burke	Michaela Lochner	Martina Simon
Laura Burkhardt	Thomas Maier	Ulrich Simon
Karl Burkhardt	Nicola Math	Michaela Spannagl-Steiner
Ernst Czerny	Rosa Matic	Seta Štuhec
Birgitta Eder	Dagmar Melman	Roswitha Thomas
Sarah Eder	Bogdana Milić	Sarah Vilain
Thomas Einwögerer	Constanze Moser	Lukas Waltenberger
Stefanie Fragner	Anna-Latifa Mourad	Lyndelle Webster
Michaela Fritzl	Sandra Müller	Estella Weiss-Krejci
Mario Gavranović	Vera Müller	Michaela Zavadil
Stefanos Gimatzidis	Mohamad Mustafa	
Silvia Gomez-Senovilla	María Antonia Negrete Martínez	
Monika Griebel	Felix Ostmann	

Guests and Associated scientists 2017

Katrin Bernhardt	Sigrid Deger-Jalkotzy	Christine Neugebauer-Maresch
Julia Budka	Stefan Grasböck	Chiara Pappalardo
Teresa Bürge	Peter M. Fischer	Annalisa Rumolo
Claudio Cavazzuti	Herwig Friesinger	Gabriela Ruß-Popa
Divina Centore	Manfred Hainzmann	Oliver Schmitsberger
Christine de Vree	Brigitta Mader	Zsuzsanna Siklósi

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