The “Great Temple” of Yeha in Ethiopia, built in Southern Arabian style by migrants from Saba in what is today Yemen, is the most important pre-Christian religious building in the north part of the Horn of Africa. After consolidation and restoration work on the masonry was completed and a steel support structure was fitted, the historically significant monument was reopened to the public in spring 2017 as one of Ethiopia’s prime tourist destinations.

Since the building is still seen as a sacred place, all the restoration measures were discussed with and approved by the priesthood and the local population. More on page 10 in the article “Rescuing a monument. Successful restoration work at the Great Temple of Yeha” in the Cultural Heritage section.
The Roman imperial palace on the Palatine still remains one of the defining architectural landmarks of the city of Rome. The hill was always a place where money and influence was concentrated, but under Emperor Augustus (63 BC to AD 14) it went through a phase of unsurpassable aggrandizement. The Palatine was the residence of the emperors of Rome. Just like their counterparts today, decision-makers of the ancient world knew that important matters were best settled in pleasant surroundings – like the “Sunken Peristyle” in the Domus Augustana, a low-lying courtyard with a pool of water framed by shady porticoes.

THE PERISTYLE AS IT MAY HAVE LOOKED
Reconstruction Lengyel-Toulouse Architekten

2,000 YEAR OLD TEXTILES, GOLD ORNAMENTS, FINE CERAMIC ART AND GRAVE GOODS
Photos: Museo de Arqueología, Antropología e Historia del Perú, MALI
DEAR READERS,

Decision-making processes are an important characteristic of social complexity. That is true as much for ancient cultures as for our own times. Research, too, is a constant blend of well founded analysis and careful deliberation. The choice of location for an archaeological dig or choosing an object of research is dependent upon transparent and well considered decision-making processes. And also while a concrete project is in progress, decisions have to be constantly taken, moderated and meaningfully implemented. Decisions about investigation methods and documentation techniques in particular have a significant role to play.

As the biggest German research institute operating in the archaeological sciences and the study of the ancient world, the German Archaeological Institute is itself a complex, many-branched organization in which decision-making processes take place in negotiation and consultation and with the consensual support of all parties involved.

Diversity in research activities and in the organizational structure is one of the strengths of the DAI. Still we are constantly looking to embed more expertise from different regions and disciplines in our institute in order to be able to face the challenges of a world that is getting ever more complex. And to consolidate these strengths, it has been unanimously decided by the DAI’s governing bodies to modify the institute’s structure in such a way that the departments and commissions should all be advised by advisory boards on the matter of strategic decisions and the future development of their research work. In so doing they will adhere to a recommendation by the German Council of Science and Humanities (Wissenschaftsrat) in its evaluation of the DAI.

Since structural development of this kind should be well conceived, in this issue of the magazine we take a look at the diversity of decision-making processes possible in the ancient world (Title Story). Even though we are naturally concerned with differences, in view of the great time intervals, we discover here and there that similarities in fact sometimes predominate.

How lengthy and involved decision-making processes in various research projects can be is illustrated by a feature on a project in Morocco in the section “Everyday Archaeology.” And how archaeologists’ decisions can be made in conformity with the preferences of people in our host countries can be seen in a report on the rescue of a monument in Ethiopia in the section “Cultural Heritage”.

It’s an easy decision for me to commend this issue of our magazine to you and to hope you enjoy reading it!

Prof. Dr. Dr. h. c. Friederike Fless
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# NEWs

- Johann Joachim Winckelmann – anniversary celebrations

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- Living Environments – The DAI and geosciences

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# DECISION MAKING

Archaeological evidence of social complexity

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# EVERYDAY ARCHAEOLOGY

African Trail – decisions in difficult terrain

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# PANORAMA

Plant Communities – how the sweet potato changed the world a bit too
Johann Joachim Winckelmann

Anniversary celebrations

He is regarded as the founder of Neoclassicism in the German-speaking world – the son of a shoemaker from a small town in Saxony-Anhalt. Patronage by the Schönebeck Foundation enabled him as a young man to pursue an academic career that would immortalize the name Winckelmann. Johann Joachim Winckelmann was born in Stendal on 9 December 1717 and died in Trieste on 8 June 1768.

As Winckelmann was the father of scientific archaeology and art history, the 300th anniversary of his birth this year and the 250th anniversary of his death next year will be commemorated by the German Archaeological Institute with a series of events.

Winckelmann’s work is inextricably linked with the Eternal City. He first journeyed there, from his base in Dresden, in 1755, and set about studying the collection of ancient sculptures. In association with the Vatican Museums and the Casa di Goethe, the Rome Department of the DAI will organize a series of lectures under the title “Johann Joachim Winckelmann (1717–1768): a phenomenon of European reception”.

The lecture series – to be delivered by eminent scholars from Germany, Italy, France, Great Britain, the Netherlands, Spain, Poland, the Czech Republic and Russia – has the aim of revealing the European-wide effect of Winckelmann’s scholarship. The lectures will be held at various places associated with Winckelmann’s work, for instance in the Vatican Museums. A volume containing the papers delivered will later be published.

A highlight in the commemorations is the Winckelmann celebration at the Rome Department of the DAI on 14 December 2017. Max Kunze will speak on Winckelmann’s reception in the German-speaking world.

Few people have influenced our perception of antiquity so much as JOHANN JOACHIM WINCKELMANN.

Painting by Anton Raphael Mengs. Photo: Metropolitan Museum of Art, online collection CC0 1.0

NEWS

On 5 December, Winckelmann will be jointly commemorated by the Archaeological Society of Berlin and the DAI. A special commemorative lecture will be held by Adolf H. Borbein.

In Weimar on 6 April 2017, Prof. Dr. Ortwin Dally, First Director of the Rome Department, held a speech at the opening of the exhibition “Winckelmann. Antike Moderne”.

The Madrid Department of the DAI will organize a conference in cooperation with the Real Academia de la Historia and the Real Academia de Bellas Artes in Madrid in autumn 2017. It will be entitled “La recepción del legado de Johann Joachim Winckelmann en occidente: Hispania y Centroamérica” (i.e. The reception of Winckelmann’s legacy in the west: Spain and Central America). Then in the second half of October 2018 a conference will take place in Madrid on the subject “Winckelmann, Classical Archaeology and Iberoamerica”. The organizers will be the Real Academia de la Historia, the Madrid Department of the DAI and the Winckelmann Society of Stendal. The conference will consider Johann Joachim Winckelmann’s effect on the development of archaeology in Central and Southern America. It follows a previous conference held on 20 June 2017 in Madrid.

At a Winckelmann commemoration at the Athens Department to take place on 15 December 2017, Adolf H. Borbein will give a speech on Winckelmann’s conception of Greek art.
Standard work by Wolfram Kleiss wins top Iranian award

Wolfram Kleiss’s book Geschichte der Architektur Iran ("History of the architecture of Iran"), published by Reimer Verlag in July 2015, has won the 24th World Award for Book of the Year of the Islamic Republic of Iran. The award was announced in February 2017 and comes with $10,000 prize money. With the support of the German Archaeological Institute, this standard handbook on the history of Iranian architecture has been translated into Farsi and printed. At the annual archaeological conference in Tehran on 5 March 2017, Wolfram Kleiss, former director of the Tehran department, was honoured for his lifetime achievement in Iranian archaeology. At the same time the director of the Iranian Center for Archaeological Research, Dr. Hamideh Choobak, visited the author in Berlin and presented him with a copy of the Farsi version of his book.

In Iran the book met with a rapturous reception and is already regarded as an indispensable handbook on the history of Iranian architecture. The work is a summation of half a century of research. It contains some 800 drawings by Kleiss and his colleagues, including Dietrich Huff, who worked at the Tehran department for many years and took part in the DAI’s first campaigns in Iran alongside Wolfram Kleiss.

During his research career Kleiss documented 6,000 years of Iranian architecture – rock-hewn monuments, sacred architecture, bazaars and palaces as well as modern public buildings.

Kleiss, an architectural historian, first visited Iran in 1959 on a DAI travel grant and stayed on. After a brief stint at the DAI in Istanbul, Kleiss was transferred to Tehran in 1962. In the same year he was appointed deputy director and in 1971 first director of the department. An official ceremony in Berlin involving the DAI and the embassy of the Islamic Republic of Iran is in the planning stage.
Nasca – Signs for the Gods
International exhibition on a significant Peruvian culture

2,000 years ago people in southern Peru drew giant images and figures on desolate and deserted plains. Geometric forms – trapezia, spirals and zigzag lines several kilometres long – can be found there along with representations of humming birds, monkeys, spiders and whales. They can only be recognized from the air. The geoglyphs were created by people of the Nasca (or Nazca) Culture, and the same motifs and patterns appear on their textiles, ornaments and pottery. Now artefacts of the Nasca Culture – 2,000 year old textiles, priestly ornaments of gold, fine ceramic art and grave goods – are to be shown in a major exhibition, first in Lima from June 2017, before travelling to Zurich in November and Bonn in May 2018. It is the first time that the most important Nasca objects from Peruvian museums and lenders are being presented outside Peru. Markus Reindel from the Commission for Archaeology of Non-European Cultures (KAAK) of the DAI is acting as a scientific adviser to the exhibition.

The colourful ceramic vessels and the musical instruments look oddly modern because of their abstract shapes, and are intriguing for the strange creatures in stylized human and animal form which they are decorated with. The artistically worked pottery is distinctive for its use of bold, intense colour and its shiny glaze, superbly preserved over thousands of years thanks to pre-fire slip painting and burnishing of the surface. The camelid hair and cotton textiles are amongst the finest specimens in the world. With their depictions of flying shaman figures, lavishly attired, bedecked with jewellery and wearing masks, they may furnish clues on how to decipher the figures drawn in the surface of the ground on the pampas – the expansive plains between river valleys.

Archaeologists regard these geoglyphs as transition zones between the riverine settlements and the sacred mountains, source of life-bringing water, and furthermore as places for communication with the gods. Without close study of the landscapes and natural environment inhabited by the Nasca, it would be impossible to understand their culture. Projects exploring these questions are being conducted under the direction of Markus Reindel and Peruvian partners.

The exhibition is a collaboration between the Rietberg Museum in Zurich and the Museo de Arte de Lima, Peru. It is curated by Cecilia Pardo Grau (Museo de Arte de Lima, MALI) and Peter Fux (Museum Rietberg Zurich). Markus Reindel of the DAI and Johnny Isla Cuadrado (Ministry of Culture, Peru) are acting as scientific advisers.

Archaeologists regard these geoglyphs as transition zones between the riverine settlements and the sacred mountains, source of life-bringing water, and furthermore as places for communication with the gods. Without close study of the landscapes and natural environment inhabited by the Nasca, it would be impossible to understand their culture. Projects exploring these questions are being conducted under the direction of Markus Reindel and Peruvian partners.

PLACE AND TIME
Museo de Arte de Lima, MALI: June – October 2017
Museum Rietberg Zurich: November 2017 – April 2018
Bundeskunsthalle Bonn: May – September 2018

CATALOGUE
approx. 250 pages, bilingual (Spanish and German)
published by Museo de Arte de Lima and Museum Rietberg Zurich

Potsherds of this type were in fact instrumental in a political process in Athens in the 5th century BC: ostracism. Citizens would gather for an ostrakophoria, a casting of (ceramic) ballots, to vote on who should be banished. In general, ostracism was the punishment for people whose conduct had attracted the ire of their fellow citizens. The ballots were commonly the product of political power struggles. The man named most often on collected potsherds had to leave Attica within ten days for ten years.
About 3,000 years ago in the province of Tigray in what is today Ethiopia, a community by the name of Di’amat emerged which was the result of immigration by Sabaean population groups from Marib in modern-day Yemen. In the early 1st millennium BC, these groups together with the indigenous population established a network of settlements dotted along the trade routes.

A “great temple” was the name given to the temple built in the 7th century BC in the village of Yeha in the northern highlands of Ethiopia. Erected in Southern Arabian style by migrants from Saba in modern-day Yemen, the temple, which survives to a height of 14 metres, is the most important pre-Christian religious building in the northern part of the Horn of Africa. It was damaged by a great fire in antiquity.

Photo: Wagner

RESCUING A MONUMENT
Successful restoration work at the Great Temple of Yeha
The Sabaeans brought a range of cultural techniques and expertise – their language and writing system, practical knowledge in agriculture, architecture, arts and crafts, as well as their religious, political and social institutions.

“From originally different societies, a new Ethio-Sabaean culture emerged and continued to exist till the middle of the 1st millennium BC,” explains archaeologist Iris Gerlach, director of the Sana’a Branch of the DAI’s Orient Department.

Yeha was the administrative and political centre of this society. If one approached the village from the trade routes, the ancient palace and at least two religious buildings would have been visible from a long way off. The temple was built around the middle of the 7th century BC and dedicated to the supreme god of the Sabaeans, Almaqah. The temple is preserved to a height of 14 metres. In the 6th century of the Christian era the building was converted into a church and is today still a sacred place.

The building material used for the outer walls of the gigantic edifice was not the local sandstone but, as customary in South Arabia, a snow-white limestone that does not occur in the region and had to be transported a great distance. The quarries at Mekele (Wuqro) are about 80 kilometres away. 1,000 cubic metres of stone was cut there and transported to the building site – quite a feat of logistics. The stone was carefully worked and smoothed; many workers familiar with South Arabian building techniques must have been employed in building the temple walls. “In keeping with South Arabian building traditions, no mortar was used and the stone ashlars were laid with the utmost precision,” Iris Gerlach says. “The wooden entrance portal, at least 4.70 metres high and just 1.10 metres wide, also follows Sabaean models.”
Involving the Priesthood and the Local Population in Yeha was important, as the building is still considered a sacred place.

Photos: Schnelle

Structural Documentation

Iris Gerlach and her colleagues have been working with the Ethiopian Antiquities Administration since 2009 on a project to preserve the substance of this unique building. First of all they produced exact and detailed structural documentation and a damage assessment map. In the process traditional methods were supplemented by the most modern technologies including 3D laser scanning. The structural documentation served as the basis for the thorough restoration that followed as the next step. Restoration was essential as the structure was at acute risk of collapsing. The Great Temple was already in a partly ruinous state when the famed German Aksum Expedition visited Yeha in 1906. A big fire had badly damaged the temple probably in the middle of the 1st millennium BC. The fire completely destroyed the entrance porch, originally supported on six pillars, as well as the temple’s upper storey and its inner wall shell. This was the part of the building that needed urgent restoration and the installation of a steel supporting structure. In cooperation with the Ethiopian Antiquities Administration and the DAI’s own advisory committee on historical monuments, the DAI sought to identify solutions through discussion, so as firstly to provide static stability of the frail temple walls and secondly to ensure the restoration measures were acceptable from both a conservation and an aesthetic point of view. A workshop was organized in Adwa, to which were invited specialists from the Ethiopian Antiquities Administration and the Ministry of Culture, architects and statics experts from various Ethiopian universities, who discussed different possibilities of stabilizing the Great Temple with construction history specialists and monument conservators.

Agreement on Site

It was important to involve the priesthood and the local population in Yeha. As the building is still considered a sacred place, every step in the restoration process had to be explained and permission for it had to be sought. All the institutions and individuals involved in the process were finally able to agree on a reversible plan that complied with good conservation practice and was also acceptable in aesthetic terms. The plan envisaged the installation of a high-grade steel structure to support the interior walls upwards of a height of six metres, allowing the Great Temple to continue being used in the future by worshippers, pilgrims and tourists.

To carry out the restoration work, first of all scaffolding was put up round the temple. Since it is a principle of the DAI to work in a sustainable manner, the project included training for local craftsmen and specialists from the local population. As a result Ethiopian colleagues from the Ethiopian Antiquities Administration came to Berlin to take part in workshops. Furthermore members of the Ethiopian Antiquities Administration and inhabitants from the locality received on-site training in restoration and mortaring, excavation and surveying techniques. Some locals were also trained as stonemasons.

Training Local Craftsmen and Specialists was also part of the project. Members of the Ethiopian Antiquities Administration and inhabitants from the locality were trained in stone restoration and mortaring, excavation and surveying.

Photo: Wagner
Archaeological and historical research into the region around the religious centre of Yeha has been ongoing since 2016 as part of a twelve-year Ethiopian-German project funded by the German Research Foundation (DFG). The project is being carried out jointly by the DAI and Friedrich-Schiller-Universität Jena and augments the DAI’s research into cultural contacts that existed between southern Arabia and eastern Africa.

Iris Gerlach summarizes the DFG long-term project as follows: “Building on the known archaeological and epigraphical remains and the results expected from Yeha and its environs, the intention is to further analyse the cultural area’s emergence and transformation and to identify possible traditions that extend into the Axumite period.” The project will also focus on climate history and the exploitation of resources. “In our work what we’re interested in is not only researching cultural transfer, architecture and transregional trade, but also arriving at a comprehensive reconstruction of the ancient environment,” Iris Gerlach explains.

After consolidation and restoration work on the masonry was completed, a steel support structure was fitted inside the Great Temple in late 2016 with the help of a German engineering firm. The historically significant monument was officially reopened to the public in spring 2017, becoming one of Ethiopia’s prime tourist destinations.
Geoinformation systems, 3D reconstructions, Lidar and satellite imagery, drilling cores and new algorithms for digital terrain models are not methods exclusive to the geosciences. They have long been the tools of the archaeologist too, even though they may, for some, lack the romance of traditional approaches – contemplating statues, drawings and squeeze copies, scrutinizing inscriptions on columns and vessels. Archaeology may seem to have been stripped of its enchantment and nowadays be about pressing buttons and gazing at screens. It is certain at any rate that the questions and thus the methods of archaeology have changed.

**LIVING ENVIRONMENTS**

The DAI and geosciences

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**ISLAND WITHOUT TREES. RAPA NUI** (Easter Island) is famous for the moai, colossal stone statues which populate the island, and notorious for interference in its ecosystem with calamitous consequences. When Rapa Nui was settled towards the end of the 1st millennium AD, the inhabitants began to transform their island on a massive scale.

Photo: Vogt

When an object is placed in a context, new meaning can be wrested from it. But that context must first of all be reconstructed. In archaeology, reconstruction is a virtual model that is produced, not just of an artefact or a building, but also of a landscape or a settlement.
The German Archaeological Institute answers questions that get ever more complex, and does so in collaboration with many other disciplines. Archaeology and geoscience work together to reconstruct landscapes, human environments and the climate of bygone ages and thereby gain an insight into the conditions of life of human communities in the past. Analysing how our ancestors coped with the challenges that the natural environment confronted them with, how they developed systems and technologies and established certain social frameworks, and combined them into an intelligent sustainable solution, can generate lasting and sustainable knowledge.

For this reason the DAI continues to deepen its collaboration with national and international research facilities and universities. It is a partner in large interdisciplinary, multi-institutional research initiatives and has participated in projects with geoscience institutes and departments for many years already. Some examples will be presented in this section.

**COASTS**

Coasts, interfaces between mighty, often contesting elements, are delicate ecosystems. They are dynamic, always in flux, subject to constant change by virtue of their situation. Where humans get involved in that system, the dynamics become more complex. Harbours and ports develop and strive to withstand the ravages of the natural elements to which they are exposed.

The geomorphodynamics of coasts is one of the main areas of study for a research group made up of geoarchaeologists, coastal morphologists and geochronologists at Cologne University’s Institute of Geography. The group is led by Helmut Brückner. “We want to find out how exactly the natural development of coasts proceeded in the last few thousand years,” Brückner states. “And on top of that, we’re also looking at the interactions between humans and the environment in the coastal zone.” A key part in these investigations is played by the reconstruction of landscape developments in the vicinity of the coastal settlements of antiquity, often integrated with archaeological surveys and excavations.

What sort of effect did naturally shifting coastlines and altering environmental conditions have on the development of coastal settlements? How did human activity influence the coast? These are just some of the questions that arise in respect of virtually every inhabited coastal area.

**Where today one of the world’s biggest container harbours is being built, there was, 2,000 years ago, a small harbour that grew into a strategic satellite of the powerful kingdom of the Attalid dynasty which ruled a large part of Asia Minor. The capital was Pergamon (Pergamum) and its harbour was called Elaia. The evolution of the harbour and its changing relationship with the Pergamene capital are being studied by the Istanbul Department of the German Archaeological Institute under the direction of its First Director, Felix Pirson. Elaia, which had Anatolian and Greek roots, flourished under the reign of the Attalids. In the 3rd century BC it was incorporated in the Kingdom of Pergamon, massively enlarged and remodelled, and henceforth operated no longer only as a commercial harbour but also had a military function. Copious archaeological evidence – pottery, architectural remains as well as a typically Hellenistic street grid – attests the links between Elaia and Pergamon. “The permanent presence of military units and international merchants and travellers fundamentally changed the character of the town,” Felix Pirson says. The expansion of the harbour had an impact on the bay of Elaia too. Geomagnetic and geoelectric investigations carried out by Kiel University under the direction of Wolfgang Rabbel have revealed structures – evidently harbour-related facilities – that were constructed in Hellenistic times. “The fact that a territorial power like Pergamon required a functioning harbour, actually needs no further explanation,” Felix Pirson says.

In the closed harbour, geoarchaeologists sank a drilling core to a depth of 10 metres in order to gain an insight into the progressive development of the site. The results showed that the marine fauna of the initially natural harbour recedes, giving way to fauna that tends to dwell in brackish water, as is typical of closed harbours. For a time the harbour played a prominent role, strategically situated as it was on the coast of the Aegean Sea; but once Asia Minor was firmly under Roman control, it is mentioned much less often in written sources. The harbour lost its strategic importance, becoming one of many in the Mare Nostrum of the Roman world. But it was not only geopolitical developments that led to the loss of importance. Geoscientists have shown that in late antiquity the harbour of the once bustling town silted up.
The notion of what a desert is is widely held and age-old. The burning sun beats down implacably on endless expanses where nothing grows and nothing lives. The desert is inhospitable, forbidding, desolate and, well, deserted. Far from it, in fact. Arid areas were never the barren wastes of the romantic imagination. Here and there, since antiquity, they have supported populations. Their human inhabitants have even carried on agriculture there. This means they were able to secure an adequate supply of water. And to do so they would have needed a great deal of highly specialized knowledge about the environment and also possessed considerable technical skills.

"Water is a scarce resource in almost all regions where we conduct research," says Brigitta Schütt, head of the Physical Geography research group at the Institute of Geographical Sciences at Berlin's Free University. Be it in parts of the western Mediterranean, be it in North Africa or the Near East – all regions in which the German Archaeological Institute is active, and has been in some cases for decades. Settlement of arid regions is naturally a central question for researchers there. And water always plays the leading role.

"You have to know how much water was available in a given region at a given time," explains Brigitta Schütt. "For that, it’s not enough to know how much precipitation there might have been. You also have to determine how much water evaporated." The key question in arid places, of course, is where the water comes from. Was it surface water, water near the surface, or did it have to be drawn from deep underground? Parameters such as these are important if one is to find out the means by which people obtained and transported that vital resource. Geographers and archaeologists are together trying to establish how all this was organized on a social level and what cultural framework it was embedded in.

The DAI has grouped together its projects on the African continent within the TransArea Network Africa (TANA). The network examines the development of cultural areas on the African continent and the dynamics of interaction, interdependence and conflict. "One of our main lines of enquiry is the question of utilization of landscape and resources throughout the ages," explains Philipp von Rummel, General Secretary of the DAI and also coordinator of the TransArea Network Africa jointly with Jörg Linstädter from the Commission for the Archaeology of Non-European Cultures (KAAK).

Part of TANA is an interdisciplinary project – with Brigitta Schütt’s research group among other contributors – that focuses on the settlement of seemingly inhospitable regions and asks how natural conditions on the one hand and human activities on the other are connected. What are the minimum requirements for a particular area to be inhabitable? What technical knowledge was necessary to ensure survival in an extreme habitat? And finally how did the cultural appropriation of these spaces occur? This interdisciplinary study of the past by archaeologists and geoscientists generates insights into human–environment interaction over very long periods of time and can reveal how people in the past reacted to a change in the climate, what technological and social systems of water supply they devised and how successful these were. Which is important because the dynamics in the cultural zones in question persist in some cases today, allowing us to understand many a present-day development.

A FOSSIL BEACH RIDGE in central Sahara (Republic of the Niger). Just visible in the distance is a member of the expedition. Photo: Schütt

CAMEL CARAVAN IN CENTRAL SAHARA EAST OF THE PLATEAU DI DJADO (Niger). Archaeologists and geoscientists work together to investigate the interaction of humans and the environment over very long periods in order to identify developments that may persist in the present day. Photo: Schütt
ISLANDS

A strange place. Travellers seek mystical experiences in the South Pacific, far from their own familiar environment, far from any continental landmasses. Rapa Nui – Easter Island – is famous for the moai, colossal stone statues which populate the island in large numbers, and it’s notorious for an interference in its ecosystem that had calamitous consequences. When Rapa Nui was settled towards the end of the 1st millennium AD, the inhabitants, who arrived in the course of the Polynesian Expansion and originated from Mangareva or the Marquesas, began to transform their island on a massive scale. They introduced new plant and animal species, built settlements and ceremonial centres. One of the most dramatic interventions, from the 13th to the 16th century, was the eradication of the palm trees that had covered the island before the settlers arrived. The soils were degraded and worsening erosion was the consequence. One of the reasons for cutting down the palm trees was water scarcity. In dry periods, the inhabitants were to drink palm sap, says Hans-Rudolf Bork of Kiel University.

Analysing ecosystems, understanding the causes of change, assessing the impact of human communities are research tasks at the Institute for Ecosystem Research and Geoarchaeology at Kiel University, directed by Hans-Rudolf Bork, who at the same time is a member of the DAI. One of the main areas of the institute’s research is island ecosystems. “We’re applying ecosystem and geoarchaeological methods to investigate when, where, how and why people have utilized landscapes of the Earth,” Bork says. The geoscientists want to understand the consequences of land use and the interaction between human society and ecosystem modification. On Rapa Nui they are analysing soil and sediment archives in search of data on how and why the ecosystem changed and what effect this had on the society and culture of the island’s inhabitants.

Burkhard Vogt, First Director of the DAI’s Commission for the Archaeology of Non-European Cultures, is carrying out field research on Rapa Nui in the framework of a project examining the exploitation of resources. How did the inhabitants acquire the scarce resource, water, and how did they use it? “The way water was used is connected in terms of meaning with various aspects of deliberate landscape modification as well as with sacrificial rites and burial customs,” Vogt explains. The archaeological site of Ava-Ranga Uka A Toroke Hau is unique among ritual sites on Rapa Nui because of the modifications of the natural environment and landscape, the hydraulic installations, monumental architecture including a temple construction, and rich deposits of sacrificial offerings. “We’re interpreting it provisionally as a water and fertility sanctuary, that was probably in use between the 13th and the 17th century,” Vogt says. The depth of the deposits and other stratigraphic details presented the archaeologists with new puzzles. “Why should people bury constructions with such effort and thus make them unusable after they had erected them so labour-intensively?” After all, as the geomorphological analysis of the soil profile shows, most of the layers were formed not by alluvial transport but by human action. Some layers were created by bringing sediment gathered at other places, that was then evened out and compacted, whereas for other layers what was transported by the stream was evened out by hand over a large area.

“It’s possibly a taboo that is manifested here,” Burkhard Vogt says. “Water was a scarce, valuable resource that had to be protected.”
Transparent decisions

The ancient world had some interesting forms of decision making. Often it was divine signs that decided what course of action would be taken. In Rome the flight of birds was observed and interpreted by a group of experts, the augurs. Inspecting the entrails of sacrificial animals was explored as a source of information, as were other natural phenomena. And before making a decision people consulted oracles, too. Delphi is probably the best known Greek oracle. Ancients cultures are known furthermore for their attempts to render decision making transparent and objective. In Athens, water clocks were employed as a way of regulating public speaking time. Speakers could see their allotted time literally draining away. The aim was of course to ensure that everyone had the same amount of time to speak during the various decision-making processes of Athenian democracy. Complicated systems and devices for drawing lots were introduced to randomly select presiding officers for the public assemblies. Selection by lot was intended to prevent one party of litigants influencing who would serve as jurors and thereby manipulating the verdict. The composition of the jury was thus randomized.

In view of the current controversy about elections and election results being determined by social media, it is exceptionally interesting to consider what classical cultures did to try to minimize undue influence and to put in place transparent and objective procedures. Today there is software in use on Facebook that can cause certain content to get liked so much that it appears right at the top in the eyes of the users. The computer programs in question create fake accounts that bring certain news items and information to the attention of multiple other users, generating what appear to be widely shared opinions. The question of what basis decisions are made on has become quite critical. It’s not always a factual basis these days as there are also “alternative facts”. “Facts” can be invented to suit the ideology or political ambition of particular individuals or groups. Determining whether we are dealing with facts or fictions is difficult, but not because we have too little information. On the contrary, the plethora of information on the internet clouds our judgement. Another aggravating circumstance is that the form of communication is changing. Digital communication takes place within groups and networks, which can become tightly knit around certain statements and views, sometimes to the exclusion of other statements and views. This creates what is known as an echo chamber.

Scientists went onto the streets to protest on 22 April on the March for Science. The organizers were explicit about their concerns: "Critical thinking and well-founded judgement are predicated on the existence of reliable criteria that make it possible to establish the validity of information. Systematic study of our world and classification of the knowledge gained in the process is the mission of science. When science-based facts are denied, relativized or considered of equal value to ‘alternative facts’ for the purpose of making political capital, it abolishes the basis for all constructive dialogue. Since constructive dialogue is fundamental to our democracy, these developments affect not only scientists but society as a whole.”

Critical examination, interpretation and appraisal, working on ways of developing objective evaluation procedures – these all lie at the heart of science. That’s why scientists are particularly disturbed by the careless way of dealing with facts and with the democratic formation and expression of opinion that is observable outside the world of science. Science runs the risk of becoming isolated if it doesn’t respond to these developments actively.

EXTENDING THE DIALOGUE

For the German Archaeological Institute, the general conditions in which it does its work in many countries have changed in recent years. For one thing, questions of security have become more acute. The nature of scientific research at the institute itself has also evolved. Research projects today are projects in which a number of different disciplines work together. The natural sciences and technologies, for instance, play an ever greater role these days. The need for expert guidance in specific areas has grown, confronting the DAI with the question of how it should respond to the changing situation.

In its evaluation of the DAI published in autumn 2015, the German Council of Science and Humanities (Wissenschaftsrat) recommended the DAI review its structures with respect to consultation and decision-making processes. The institute’s boards and committees have given due consideration to this recommendation and have been constructive in pursuing structural change. To do justice to the diversity of its specializations as well as locations, it is beyond doubt that the individual departments and commissions of the DAI have a very specific need for specialist advice. The German Council of Science and Humanities did after all speak in favour of preserving these locations in their diversity. Discussion currently centres on which tasks and responsibilities are to be entrusted to advisory bodies at the DAI’s departments and commissions and which are to be entrusted to its traditional central body, the Zentraldirektion, i.e. the supervisory board. The aim must be to procure as much external expertise as possible to aid the further development of the DAI, and to integrate this expertise into collective efforts to study the past.

The new structures of the institute’s boards and committees are intended to facilitate precisely this. Instead of restricting dialogue and partnership, they extend it. Setting up the Archaeological Heritage Network goes in the same direction. The objective is not to inhibit but to enhance connectivity among institutions and disciplines in terms of know-how and expertise in the interests of protecting and preserving global heritage.
The Archaeological Heritage Network and “Zero Hour – A Future for the Time after the Crisis”

The Archaeological Heritage Network (archerNet) was set up in response to rising demand around the world for German expertise in the preservation and protection of cultural assets, and because of federal structures and defined responsibilities, the wealth of expertise that German institutions undoubtedly possess in this field remains restricted to Germany and/or individual federal states. The Archaeological Heritage Network (archerNet) has the express aim of pooling this know-how on a shared platform and thereby making it more visible and utilisable for specific missions in other countries. Another objective is to learn from the work done abroad and to adapt our own actions around the globe accordingly.

ZERO HOUR – A FUTURE FOR THE TIME AFTER THE CRISIS

During the constitutive phase in 2015, the members of archerNet decided to implement Zero Hour – A Future for the Time after the Crisis (Stunde Null – Eine Zukunft für die Zeit nach der Krise) as their first joint project. Therefore the year 2016 began with a workshop of archerNet members – held at the DAI in Berlin on 9 February – to finalize details of the project and allocate responsibilities. Through its liaison office at the DAI, archerNet, sponsored by the Foreign Office and in partnership with the Prussian Cultural Heritage Foundation (SPK) and the German UNESCO Commission, was actively involved in planning and organizing the international UNESCO experts’ conference Emergency Safeguarding of Syria’s Cultural Heritage, which took place in Berlin on 2–4 June 2016. The conference participants decided on the practical implementation of the 2014 UNESCO action plan on safeguarding endangered cultural heritage in Syria. At the same time they identified capacity building measures as the most pressing of the tasks at hand.

Against this background “Zero Hour” has the following main missions: it makes digitized Information available for cultural preservation and reconstruction; it supports Syrian PhD students and experts in their reconstruction projects in Syria; it offers specialized training to the young generation of scientists in the region, and provides humanitarian assistance through vocational training programmes, for instance for craftpeople. These measures are taking place in Germany and in the conflict region, primarily the states bordering Syria.

INFORMATION FOR RECONSTRUCTION

Since 2013 the Syrian Heritage Archive Project – a collaborative project between the DAI and the Museum für Islamische Kunst (SMIB) in Berlin, financed by the Foreign Office – has been compiling a digital record of archaeological sites and historical monuments in Syria. Building on this archive, a number of projects were launched in 2016 to collect digital cultural heritage data that is more detailed and application-specific. Among these are a project at the Museum für Islamische Kunst on documentation and damage assessment in the towns and cities of Syria as well as a project by the OTH Technical University in Regensburg to develop a digital 3D model of the bazaar of Aleppo at a basis for discussions on possible restoration work. Both projects were launched at the start of 2017 with funding from the Gerda Henkel Foundation. General guidelines for best practice in dealing sensitively with war damage to historical sites were discussed at a colloquium entitled “Guidelines on Safeguarding Cultural Significance of Urban Structures Damaged by Armed Conflict” at the Brandenburg Technical University in Cottbus (BTU) from 30 June to 2 July 2016. Also at the BTU, a digital map of the Old Town of Aleppo was created in 2016 in the framework of the Aleppo Archive in Exile.

VOCATIONAL AND SPECIALIST TRAINING

Vocational and specialist training initiatives in the region include the continuation of a Master’s degree course in Cultural Heritage and Site Management at Helwan University in Cairo in cooperation with the Brandenburg Technical University in Cottbus (BTU) and the DAI, as well as a successful relaunch of the Master’s programme Conservation Studies / Cultural Heritage at the German-Jordanian University (GJU) in Amman, offered in cooperation with the Chair of Historic Building Conservation and Research at the RWTH Aachen and the Master’s course in conservation at Berlin Technical University (TU Berlin). New grant opportunities from the German Academic Exchange Service (DAAD) make it possible specifically for refugees from the region to enter the programmes at Cairo and Amman. When German foreign minister Sigmar Gabriel visited Jordan in April 2017 he talked with students at the GJU, who were enthusiastic about having the chance to study there. Specifically for Syrian refugees in Turkey, a further training programme entitled “Guidelines on Safeguarding Cultural Significance of Urban Structures Damaged by Armed Conflict” at the Brandenburg Technical University in Cottbus (BTU) from 30 June to 2 July 2016. Also at the BTU, a digital map of the Old Town of Aleppo was created in 2016 in the framework of the Aleppo Archive in Exile.

Measures aimed at capacity building and awareness raising for cultural heritage in the region include for instance practical, hands-on training in conservation-related skills and training in professional film documentation of archaeological sites – both programmes organized by the Orient Department in 2016 at Baalbek in Lebanon and Ur in Iraq. Similar projects have taken place in Jordan too. At archaeological site of Gadara near the modern town of Umrn Qais, local craftpeople and Syrian refugees have received training in stone masonry techniques and a training course has been carried out in museum education and cultural mediation, on which Syrian and Jordanian specialists and non-specialists were trained in how to communicate the history, archaeology and environment of their native region (the “train the trainers” programme). This was augmented by projects for Syrian refugee children and Jordanian school children from the region as part of the Cultural Mediation Program for Children in partnership with the local museums.

Investment in Education, Training, Culture, Science and Communication is a guarantee of ending the cycle of violence. It’s not only a matter of rapid assistance in rebuilding areas devastated by war and crises. For lasting benefit it’s also important to impart basic artisanal, technical and scientific know-how.
Where some see a “dynamic development”, others speak less enthusiastically of the “clash between modernity and tradition”. At bottom this is a question of how much of the past is to be sacrificed for the future. In experiencing this clash, Istanbul shares the fate of many expanding cities around the world; the city astride two continents has a growth rate of the kind otherwise known only from the megacities of Asia. Visitors keen on antiquities need to look harder in Istanbul than in cities like Rome or Athens. Istanbul has 39 districts in all, 25 in the European part and 14 in the Asian. The ancient city centre of what was once Constantinople lies on the European side, separated from the northern districts by the Golden Horn, and girt on the west by the Theodosian land walls. The number of inhabitants of modern Istanbul: 18 million.

Photo above: Modern Istanbul skyline at sunset.jpg, by Ben Morlok, CC-BY-SA 2.0
Photo below: Polat
"In Istanbul, large parts of the cultural heritage are incorporated in the urban fabric," says Felix Pirson, First Director of the DAI’s Istanbul Department. "Vestiges of the past are a self-evident part of the present," he adds, citing the example of ancient vaulted structures at the legendary Egyptian Bazaar in the quarter called Tahtakale. Unlike the iconic buildings of the city, for instance Hagia Sophia or Topkapı Palace, they’re not very easy to find. The vaults date from the Byzantine period but are still in use today. The shops located inside these venerable structures are usually considerably younger, of course, but they retain the general appearance and location of their predecessors. Moreover, it’s in such places where cultural heritage remains alive over long periods and is integrated into modern modes of use that continuities may be observed in social structure and economic life, which are valuable sources of information for students of the past.

Studying continuities is among the tasks of the archaeologist. And the German Archaeological Institute has been doing it in Istanbul since 1929; the department was founded on the 100th anniversary of the DAI. "Investigating ancient urban culture and urban topography is one of the central research fields," says Pirson. Even though the main focus of the department’s research is the cultural landscape of Anatolia, research has always been carried out in the capital too. Wolfgang Müller-Wiener, First Director of the department from 1976 to 1988, carried out investigations into Istanbul’s architecture and historical topography – hence buildings that once commanded the admiration of one of the great architects of the 20th century.
When Le Corbusier arrived in the incomparable city on the Bosporus in 1911, what fascinated him more than the city’s magnificent monuments were its typical timber buildings, their variety in form and colour, the delicate detail of their construction. The architect and architectural historian Martin Bachmann, Second Director of the Istanbul Department until his unexpected death in 2016, extended and expanded the research by Wolfgang Müller-Wiener and Johannes Cramer into the wooden houses of Istanbul. When Le Corbusier visited, Istanbul was still almost entirely a wooden city. A paradigm change in town planning, huge population growth and other upheavals in the course of the 20th century have meant that little of that ancient urban fabric now survives.

Both shorelines of the Bosporus have for a long time been favourite places for the wealthy to build their summer residences. Timber buildings that served this purpose, known as yalıs, have a distinctive typology. Only one of these buildings from the 18th century is still preserved, the justly famous Amcazade Yalısı. Martin Bachmann included it in his research programme as an “incunabulum of Istanbul timber construction.”

In the 19th century the tastes of those who could afford to build retreats along the shore of the Bosporus or on the Princes’ Islands changed. The historical summer houses of the Ottoman elite gave way to European-type villas in an international architectural style. Modernization processes taking place today are essentially identical in all big cities of the world. In Istanbul they are exemplified by the shoreline district of Tophane, once the “visiting card of the late Ottoman Empire.” The gentrification observable there is being accelerated by construction of the Galataport.

In all investigations into the urban topography of Istanbul, it’s never only about architecture,” explains Felix Pirson. Architecture is a reflection and expression of societal processes that affect every city. So the make-up of a city’s inhabitants and of the residents of particular quarters is of relevance to the scholar. What groups live in which districts? And how is that reflected in the architecture? Another question that is always topical is: where do the builders, craftsmen and other workers come from? Where did they learn their trade and how do they pass those skills on?” As an architectural historian Martin Bachmann had a wide-ranging approach to the topic, as Felix Pirson remembers. “In addition he looked into the question whether there were correlations between location in the urban topography, ground plan typology, and social stratum of the owners, users and occupants.”
The quarter known as Tophane, lying north of the Golden Horn on the Bosphorus shoreline, represents a sort of toto the historical and contemporary urban developments in Istanbul. Named after an early Ottoman armoury where canons were cast, the quarter was used primarily for military purposes until the founding of the Turkish Republic in 1923. In the 19th century it served as a kind of visiting card of the late Ottoman Empire, displaying to tourists and inhabitants alike how westernized and modernized the city was. Today Tophane is an example of the ongoing gentrification processes in Istanbul, driven in this case by the Galataport, a 1,200 metre long quay with hotels and shops designed for cruise ships and currently under construction.

An ensemble of harbour buildings demolished in 2016 for the Galataport were built in the second half of the 1950s. At that time virtually all of the military structures dating from the 19th century were pulled down in a redevelopment in which an active part was played by German city planner Hans Högg, whose documentation was acquired by Wolfgang Müller-Wiener in 1976 for the DAI’s Istanbul Department. As part of the same project, selected monuments were renovated or reconstructed from old photographs in an effort to restore supposedly historic urban fabric of the Turkish capital. Simultaneously the population of the quarter changed. In Ottoman times Tophane had been home to remarkably diverse groups. After the Istanbul pogrom of 1955 which targeted Christians, above all Greeks, many of these people left the city. Migrants from Anatolia as well as Kurds then came to Tophane, which thus was fundamentally altered in terms of the built environment and the inhabitants. This all led to a complex situation in terms of city planning – a difficult legacy, what’s more in a highly prominent location. In 2013, Doğuş Holding acquired the rights to commercial operation on the site for thirty years. With the planned Galataport, Tophane will again become a display window and gateway for the city.

Looking back at the long-term evolution of the quarter informs us about its radical transformation – not just a recent phenomenon – and it heightens our awareness of the consequences of seemingly bygone debates and initiatives on the present-day situation in Istanbul: a selective view of the past and an ongoing search for modernity.

Katja Piesker

Dr.-Ing. Katja Piesker is on the scientific staff of the DAI Architecture Section. She has been conducting research on Tophane since a foreign study grant took her to the Istanbul Department in 2010-13.

Tophane – metamorphosis of an urban quarter
The gardens of Istanbul

A very special but internationally little known part of Istanbul’s cultural heritage is the tradition of gardening, which has supplied a large section of the city’s population with fresh fruit and vegetables for 1,500 years. At the beginning of the 5th century AD Emperor Theodosius II had a 20 km long fortification circuit built to protect Constantinople. The walls stood two kilometres further out, to the west and north, than the old Constantinian city wall. This enlarged the urban area more than twofold. The newly enclosed land was never fully occupied by buildings and came to be used, among other things, for gardening and crop cultivation. In 350 gardens about 1,300 people produced up to 35 tonnes of fruit and vegetables per year.

“Food intake is one of the essential needs of humankind,” says Felix Pirson, explaining why the subject of eating is of interest to archaeologists too. Archaeology seeks to discover as fully as possible the circumstances of life in ancient times. Material remains pertaining to eating are plentiful, taking the form of household objects, the layout and furnishings of dwellings, and the utilization of land. “For us, researching this ‘garden zone’ is an essential component of city research,” the archaeologist says. And it’s possible that gardening within the city walls will soon be ancient history, after a 1,500 year tradition, as it is directly threatened by the ever-growing city. The modern variant is called “urban agriculture” and is one of the big lifestyle trends in many cities of the world, including Istanbul. Lettuce will then come not from the Theodosian land walls but from the shops and fancy restaurants in gentrified city districts.

The combination of a 4,000 year long history and record-breaking growth rates makes Istanbul a city that has no alternative but strive to reconcile a desire for modernity with a wish to draw its identity from its own rich cultural heritage. This clash probably contributes to the city’s magnetism, which is indeed hard to resist. “The special physiognomy of the city communicates itself in the atmosphere,” says Felix Pirson. The only city in the world that straddles two continents, it is uniquely situated between two seas; the Sea of Marmara is part of the Mediterranean and shares its culture, while the Black Sea forms a link with Asia. Where else is like that? The special atmosphere of the city is made of many things, including one phenomenon that can be understood only by those who have experienced it: hüzün, the melancholy feeling that comes when fog rises over the Bosphorus.

For archaeologists of the Istanbul Department, researching the ‘garden zone’ of Yedikule is an essential part of the urban research programme, eating being one of the essential needs of humankind.

Gardening within the city walls might soon be ancient history, after a 1,500 year tradition, as it is directly threatened by the ever-growing city.

Photos: Polat

Photo: Modern Istanbul skyline at sunset, by Ben Morris, CC-BY-SA 2.0

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Gardening within the city walls might soon be ancient history, after a 1,500 year tradition, as it is directly threatened by the ever-growing city.

Photo: Polat
When the forerunner of the German Archaeological Institute, the Instituto di corrispondenza archeologica, was founded on Rome’s Capitoline Hill in 1829, it was initially a European research facility, even though from the outset it had operated under the auspices of Prussia. In the course of the 19th century the institute became more and more of a Prussian institution, and finally a German imperial one after the unification of Germany in 1871. This evolution was not without consequences.

Evidence of this can be seen in the “language dispute” that blew up shortly before the widely known and highly regarded institute changed its name. The dispute began with an article in the Kölnische Zeitung in January 1885 by the philologist and ancient historian Wilhelm Ihne, who complained that talks at the adunanze – the public sessions of the Roman institute – were not given in German, in spite of the fact that the institute received considerable financial backing from the state. The resultant scandal led to Otto von Bismarck – from 1871 to 1890 first chancellor of the German Empire – getting involved.

Bismarck, who had spoken out against financing the recently launched excavations at Olympia too heavily, ordered on 1st March of that year that the German language must be used at the institute in Rome (see illustration).

From that point on, the adunanze had to be given in German, as did the official introductions and the closing words. The publications, which had previously been in Italian, now had to include German contributions in equal measure. Bismarck’s ordinance carried with it the unspoken threat of withdrawal of financial support for the institute.

Consequently the archaeological institute’s “Central-Direktion” – supervisory board – in Berlin acceded to the ordinance despite the misgivings of reputed scholars like historian Theodor Mommsen (1817–1903) and Wilhem Henzen (1816–1887), who had been First Secretary at the institute in Rome since 1856. This led to the two mentioned scholars resigning from the Central-Direktion, fearing the institute would lose its international dimension; but this did not mean the end of the institute. The political pressure had been, as Marie Vigener put it recently, an expression of the reality of the institute being the German Imperial Archaeological Institute and a Prussian imperial agency. Without generous state subsidy and patrons’ donations, large-scale research projects would not have been possible. And in actual fact, despite the language dispute there was no real interference in the work carried out by the institute. The institute was free to organize its research activities itself, which it did highly successfully both nationally and internationally.

Ortwin Dally

The object

Bismarck ordered that German should be used at the archaeological institute in Rome. His order of 1 March 1885 became effective with an ordinance (“Instruktion”) of 28 May 1885, which is kept in the archive of the DAI Rome. It was signed by the president (in that period still known as the general secretary) Alexander Conze, who was at the same time chairman of the supervisory board (“Central-Direktion”).
Decisions are complex processes that depend on countless factors and are manifested in a variety of ways. It’s not always clear how decisions come about or who exactly takes them. If people consult an oracle—as in ancient Greece on all matters affecting one’s life—then they delegate decision-making to higher powers. If people take decisions collectively by means of a majority vote, then it’s important that the vote should be preceded by a phase of opinion formation.

Assemblies of free and equal citizens can produce collective decisions of an egalitarian nature, as happened in the ancient Greek polis. If one or the other citizen strove to rise above the others to get an advantageous view, then in Athens at least, those who did not want to act as decision makers themselves could subject that man to an ostracism vote. When a few powerful individuals make decisions that affect the lives of many, it is a different sort of political practice, and one that is commonly accompanied by architectural manifestations of power so massive that they can still be awe-inspiring today. The imperial palace complex on the Palatine in Rome, which dominates the city, is such an edifice. The palace also became the venue of judicial proceedings in the imperial period. Decisions on life and death as in the case of gladiatorial combat took place in the framework of subtle negotiation processes between high-ranking figures in public life who, during the Roman Republic, put on lavish shows to win over the populace. When it became the imperial prerogative to host gladiatorial shows, the emperor theoretically shared power with the populace in deciding on the life or death of a gladiator in the arena.

Archaeological evidence of complex societies
THE POWER OF THE ORACLE

Decisions taken high up

Just as people today read horoscopes or seek the advice of gurus and pundits before making weighty decisions, so in the ancient world people would take no action that may have far-reaching consequences without first consulting an oracle. The judgement of the gods, uttered by a medium or revealed by omens, determined what course would then be followed in matters of business, affairs of the heart or public policy with great international scope.

The oracle of Delphi was one of the big national oracles, where counsel was sought in political decision-making. A visit to the oracle of Delphi was de rigueur before groups of Greeks put to sea to establish settlements all over the ancient world in what is known as the Great Colonization. “In Greece, oracles played a major role in private and political life,” says Katja Sporn, First Director of the DA’s Athens Department. “While we know Delphi was important in Greek colonization, we can only guess what a visit to the oracle actually entailed,” says Sporn. “In the case of the colonization, we can assume the oracle probably encouraged people to begin their voyage. So a political decision was delegated to a higher power and thereby legitimized.”

The oracle increasingly took on a political function and became powerfully influential. So much so that it came in for some criticism. What its critics objected to is broadly similar to what certain “advisers” and spin doctors are accused of today, namely that they are out to line their pockets, are easily bribable and untrustworthy. But it is in the nature of oracles to be vaguely formulated. Thus it is easy to brush off criticism afterwards and attribute the blame to poor interpretation.

“From the archaeological point of view, oracles are by nature a subject that’s hard to pin down,” says Katja Sporn. “We know in some cases how the questions were formulated, but we know very few of the answers.”

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What kinds of question were asked? A recent exhibition at the Acropolis Museum in Athens displayed strips of sheet lead on which simple people had scratched their questions for the gods. Among the questions were these: Is the man I’m going to marry the right one? Will I be happy if I marry Filonides’ daughter? Should I start a business?
“Dodona is one of the oracles where prophecy was not only via a medium: it was also where divination through natural phenomena was practised,” Katja Sporn explains. “Water, sounds, the flight of birds – all phenomena of nature, inhabited as it was by gods, could be deciphered to discover what the future held. At the sanctuary of Dodona there was a prophetic oak tree which answered the many questions with the rustle of its leaves.”

**TOWN AND COUNTRY**

It is perhaps hardly surprising that oracles and the sanctuaries housing them were located in the countryside – except for the big national oracles like Delphi and Olympia. “In cities people regarded themselves as enlightened and were less inclined to seek the help of an oracle as a basis for their decisions,” says Katja Sporn. This being so, a recent discovery in the heart of Athens – at the Kerameikos, the most famous of all ancient cemeteries – can be seen as a minor sensation.

During the 2015 season Jutta Stroszcek, director of the Kerameikos excavation at the DAI Athens Department, and her team examined three wells in a sanctuary near the famous street of the tombs. Inside one of the wells they found the recurrent inscription: “Come to me, o Paian, and bring the true oracle.” Jutta Stroszcek conjectures that the sanctuary was the site of a water oracle of the god Apollo Paian, in which a sacred well played a central role.

The well, which is eight metres deep, was discovered by archaeologists in the course of restoration work. The inscription invoking Paian was found on the clay cylinders that lined the inside of the well as well as on the omphalos itself and on its marble base.

“This new find not only revolutionizes what we know about the cults in ancient Athens, as this is the first time an oracular site has been established within the urban area,” says Jutta Stroszcek. “It’s also so important because the oracular procedure and hence the functioning of a water oracle here, for the first time, becomes easier to comprehend. The secret formula of words invokes divine power to utter an oracle.”

**THE ORACLE OF ABAI**

“Abai in the Archaic period was one of the most important and richest oracles in ancient Greece and was mentioned in the same breath as Delphi and Didyma,” explains Katja Sporn. The DAI has been carrying out archaeological investigations at a sanctuary near Kalapodi in the ancient region of Phokis on and off since 1973. “We can state with some probability it is the ancient oracular sanctuary of Abai,” says Katja Sporn. Inscriptions from the surrounding area and topographical investigations in the region support the archaeologists’ assumption. Work on the site has not yet been concluded. There still is targeted excavation and geophysical prospecting to be done in the vicinity of the site, which is expected to supply information on the exact form of the sanctuary and its relationship with the ancient town of Abai (Abae). “We hope that way to gain an understanding not just of how the sanctuary functioned but also what its role was in the immediate vicinity and wider area.”

**EVOLVING ROLES**

Priests and mediums relaying divine answers to human questions is a role that evolves over time and takes on an aspect that seems familiar in our own day and age. “We shouldn’t suppose that divination was a linear process from the oracle giver to the oracle taker,” Katja Sporn explains. “Rather we can presume there was often some discussion about the kind of answer.” The discussion was not just with priests and mediums but also with the supernatural forces that were invoked and involved in the making of a decision. As well as that, the figure of the interpreter of oracles changed radically in the Roman imperial period, if not indeed earlier – coming to resemble the coach, the business consultant and the political adviser.
OSTRACISM
A collective ritual as an instrument for political decision making

On some potsherds only the name is scratched in. On others it appears next to the word “traitor”. If the name figures on enough ostraka (potsherds), its bearer will be banished from Attica for ten years. The process known as ostracism lives on today. People who have made themselves unpopular are excluded from a group or society by general consent, and so cease to have any influence upon it. In Athens in the 5th century BC, eminent individuals were shunned in this way if they had attracted the ire of their fellow citizens by, for instance, the ostentatious display of wealth or morally reprehensible conduct. The ballots were commonly the product of political power struggles.

Stefan Brenne from the University of Giessen explains the political situation in Athens in the early fifth century before the Common Era: “After the reforms of Kleisthenes the middle class defended its newly won power and vigorously espoused the ideal of equality. The aristocracy no longer considered it appropriate to erect lavish tombs or put up votive statues, and vase painters began to adopt subject matter for ordinary citizens. Equality in the state was realized politically by appointing people to public office in certain cases by the drawing of lots, for example. And ostracism demonstrated the sovereignty of the people and its power over the individual.”

Ostracism was not, however, an instrument to avert an acute threat, as has been commonly supposed in the period since antiquity. “Rather than that, it was a political ritual, a sword of Damocles above all who wanted to be more than the populace would allow them to be,” as ancient historian Brenne explains. “But in the course of the 5th century BC the law was used repeatedly as a political instrument, and some of the ostraka clearly reveal the very personal motives of the voters.”

Every year in January the popular assembly decided whether an ostracism vote should be held. If there was a simple majority in favour, a date was set for the action. There was no list of candidates and neither was there any organized public debate. But the run-up to the vote was no doubt used to engage in political propaganda.

“Ostraka are direct evidence of historical events and discussions,” says Brenne. “More than virtually anything else, they deepen our knowledge of the coterie of individuals who were particularly active politically at that time.”

The first time such a ceramic ballot was arranged was in 487 BC. That ostrakophoria, or gathering of potsherd votes, resulted in the banishment of Hipparchos, a relative of the exiled tyrant Hippias. One year later Megakles from the powerful Alkmaionid family had to follow him into exile. In 484 BC the Athenians banished Xanthippos, father of Perikles. In 482 BC, the ostracizing of Aristides settled the deadlock between him and Themistokles on the question of building a fleet to counter the threat from Persia. The ostrakophoria of 471 BC sent Megakles into exile for a second time. He had been criticized for his love of luxury. His chief political opponent was Themistokles, who would be ostracized himself one year later.
THE CONSEQUENCES

On the day of the vote, the citizens assembled on the agora. Generally speaking, it was here that they wrote a name on a fragment of pottery (ostrakon) with some pointed implement. “There was no fixed rule as to when, where and how the ballot sherd were to be inscribed,” Brenne explains. “The story of the Athenian statesman Anaxides helping an illiterate man suggests the inscribing took place on the agora directly before the ballots were cast.”

Some citizens brought already inscribed ballot sherd with them; some sherd had even been inscribed before the pottery was fired in the oven. Only citizens were entitled to vote and citizenship was checked before voters entered a marked-off area. When casting their vote, citizens had to show both sides of their sherd. This was in fact not to deny ballot secrecy. As Brenne explains: “Many sherd were inscribed on both sides. It was more about proving you only had one sherd in your hand.”

The sherd were probably transported to counting stations, where they were sorted and the votes were tallied. The man whose name figured most often on the potsherds – above a minimum of 6,000 votes – had to leave Attica within ten days for ten years. He was stripped of the right to take part in managing the affairs of the polis for the duration of his exile, but he did not lose his property. On returning, he took up his place in civic life once again immediately and without restrictions.

The last ostracism vote was probably held in 416 BC, when the rivals Nikias, Alkibades and Phaias decided to unite their various factions against the wealthy lamp producer Hyperbolos, who was a keen debater in the assembly, attracting both admiration and mockery. He might even have initiated the ostracism process himself. In the wake of this, the system was evidently regarded as discredited.

THE POTSHERDS FROM THE KERAMEIKOS

To date, over 10,500 ostraka have been found, some 9,000 of them at the archaeological site known as the Kerameikes, predominantly in the partially filled, old branch of the river Eridanios. They are original sources documenting an important phase in the history of Athens. An interesting observation is that many sherd actually fit together, even sherd naming different people, and several ostraka are inscribed in the same hand.

“The hoard found in the Kerameikes is representative of the vote held in 471 BC and throws a spotlight on the leading figures, the political questions as well as the ceramics and the writing at that point in time,” says Stefan Brenne. This was the vote at which Megakles – who is named on half of all the ostraka found there – was ostracized and thus exiled for the second time.

“The unique assemblage of finds from the Kerameikes has substantially expanded the material basis for the investigation of ostrakismos and presents a basis for resolving some problems in history, archaeology and philology,” Brenne points out. “But at the same time it poses new questions. The individual voting sherd may appear insignificant at first sight, but on closer scrutiny they come to life and afford an unobstructed view of people in the 5th century BC as they took their – not always politically motivated – decisions.”

The man named most often on the potsherds had to leave Attica within ten days for ten years. The first such vote was held in 487 BC, and resulted in the banishment of Hipparchos, a relative of the exiled tyrant Hippas. Photo: Hellner

The front and rear side of an ostrakon against Kallas Kratiou. The sketch suggests he was pro-Persian. Photo: Hellner

Dr. Stefan Brenne is on the scientific staff of the History and Cultural Studies Faculty at the University of Giessen. Photo: private

His monograph on the ostraka from the Kerameikes will appear in December 2017. Stefan Brenne: “DIE OSTRAKA VOM KERAMEIKOS” in the series “Kerameikes. Results of the excavations” published in two volumes by Reichert Verlag, Editorial office of the Head Office of the DAI.
The site was known only to shepherds, it is said. They led the antiquaries of past centuries to the place where a few scattered ruins of temples marked the heart of an ancient city. All that stands upright today are two rows of lintelled columns, known to locals as Tavole Palatine ("knight's tables") and belonging to one temple on the outskirts of the ancient city on the road to Tarento. Not much more appeared to remain of the ancient city and its environs: the stone buildings had been used as a quarry from late antiquity onwards, and the land had been silted up by rivers and was infested with malaria-bringing mosquitoes.

In the 1820s, Duc de Luynes came to the Gulf of Tarento. He was a wealthy scholar and a patron of the sciences, a patron also, as it happens, of the Instituto di corrispondenza archeologica, the forerunner of the German Archaeological Institute, then based in Rome. De Luynes found terracottas that, to the surprise of many people, proclaimed their Greek ancestry in vivid colours.

In the 7th century BC, Greeks from the region of Achaea in the Peloponnese migrated to southern Italy. The colonists took possession of land on the Gulf of Tarento and named their new city there Metapontion, "beyond the sea". It was good farming land, providing the basis for a comfortable prosperity. The city would later be the birthplace of the philosopher Hippasos and the final place of residence of his master Pythagoras.

"Metapontum is the best illustration of a large Greek polis in the West with all its constituents," says Dieter Mertens, formerly First Director of the DAI's Rome Department. Mertens directed excavations at the site at the request of and in cooperation with the Soprintendenza Basilicata, starting in the mid 1960s. "Formal characteristics of highly diverse provenance from the Greek motherland blend into a new 'colonial style'. The most important structure on the agora of Metapontum was the unique assembly building, a monument to the Greek settlers' inventiveness."

The Metapontine building is the oldest one of its kind that is known. Construction of this rather sophisticated design began shortly after the settlers arrived. Why did they go to such trouble while they were still engaged in the business of making the land cultivable?

"You have to bear in mind the situation the settlers faced," Mertens says. "They were suddenly living in an alien environment and had to get their bearings first. It's essential to have a place for the affirmation of one's identity." The colonists may not even have come from the same Greek city. So they had to find common ground and develop a sense of community in order to be able to make sensible decisions that were in the interests of the polis as a whole.

The first archaeological evidence of this assembly building was a wooden tribune, remains of which came to light during excavations. Over time, archaeologists found other finds and features, and a picture emerged of how the building evolved. The early timber structure fell victim to a fire shortly after its construction. Towards the middle of the 6th century BC it was replaced by a more solid structure that was the biggest of its kind in the Greek world in its day. It consisted of two semicircles set facing one another like an amphitheatre. But unlike the common solution in the Greek homeland, here it wasn't possible to lean the structure against a hill. It had to be erected on flat ground. For the raked tribunes or stands where the spectators were to sit, earth was banked up and enclosed by a circular retaining wall 3.20 metres high. Between the two semicircles lies an oblong area accessible on both sides by a corridor. The diameter of the assembly building was 60 metres – a record. "In Greek architecture the structure is unique," Mertens points out.

"The Temple outside the city on the road to Tarento. Only two rows of lintelled columns of the Temple of Hera still stand, known to locals as Tavole Palatine - "knight's tables". Photos: Mertens"

Photos: Mertens
“One shouldn’t imagine a place like this to be a purely political space in the sense we have today,” Dieter Mertens says. “Holding a meeting at a place was of decisive importance for identity building and cohesion.”

It was also essential to assure oneself of divine support. Everything that happened at the place of public assembly happened under the aegis of Zeus Agoraios, who oversaw civic affairs. His sanctuary was situated in the immediate vicinity. Divine decision-making and human decision-making were indivisible. Sessions were inaugurated, therefore, by ritual dances. The archaeologists found chalk marks put there for the choreography. Agreement between the gods and the mortals was as important as consensus between the members of the new polis in administering the affairs of the community.

“All Greek colonial cities were necessarily planned; they had an orthogonal ground plan,” Mertens explains. “Ground and land were divided up on an equal basis. For that to happen there needed to be an extensive political consensus that had to be created and constantly consolidated for the citizens through collective civic events.”

In the 5th century BC, the ekklesiasterion was enlarged again, the masonry wall raised to contain higher mounds of earth. The structure had now attained its largest size, seating as many as 7,500 to 8,000 people according to Mertens’ calculations. It presumably held the entire population of Metapontum – another record.
DECLINE AND ABANDONMENT

At the end of the 5th century BC, the city went into decline. By the early 4th century, the ekklaiasterion was no longer in use as a place for public meetings. The building was abandoned and partly pulled down. Restoration work was carried out in a brief but intensive building phase in the last decades of the 4th century, when the ekklaiasterion was converted into a theatre with a stage building and a cavea. But in the rest of Greece, the building would have been used not only to hold theatre performances but also to make political decisions affecting the city’s future.

“its great importance is reflected in the innovation - unprecedented in the Greek world - whereby the building for the audience was given an ornate architectural exterior, as later in Roman theatres, and this gave the edifice stand-alone singularity in the urban landscape,” says Mertens.

However, in the course of the 3rd century BC, the theatre’s external walls collapsed and were repaired in a makeshift way. As, subsequently, Roman influence spread throughout the Italian peninsula and the Greek colonies in Italy disappeared, Metapontum fell into obscurity. The inhabitants left the city, and the two rivers Bradano and Basento covered the terrain with alluvial sediment. The final mention of Metapontum is in Pausanias, who only found ruins when he visited the site in the 2nd century BC.

THE RECONSTRUCTION

Today the small town of Metaponto is a tourist destination for the ruins that lie nearby. The urban sanctuary and the agora with their structural remains have now been more or less completely excavated. To present the unique architectural ensemble to the public in an effective way, the authorities decided to partially reconstruct some of the buildings upon their foundations, using original architectural remains as well as new material, and to make them accessible and visitable in an archaeological park. A museum that exhibits finds from the excavations and holds special exhibitions has attracted so many visitors that it will have to be enlarged.

“What’s special about the big public assembly place on the agora of Metapontum was its continuity through the whole of Greek history,” says Dieter Mertens. Today Metaponto is not as big as it was long ago, nor is it a place where weighty political decisions are taken. But with the simple seating that has been laid across the ancient fabric, it has once again become a place for public entertainment and culture with theatre shows and other events.
“The Roman imperial palace on the Palatine remains one of the defining architectural landmarks of the city of Rome in the present day,” says Ulrike Wulf-Rheidt, head of the DAI’s Architecture Section. “Its ruins, along with the Circus Maximus, create an impressive backdrop which still conveys something of the splendour of the palace facade, which once was more than 300 metres long.” The Palatine hill, with the low-lying Roman Forum bounded by it to the north, the Circus Maximus to the south and the Capitoline Hill on the west side, was the core and focal point of classical Rome. As the Roman Empire rose to become the dominant Mediterranean power, the residence of the Roman emperors became the centre of power in the ancient world.

But what are rulers without the ruled? “The antithesis of the palace architecture is the city of Rome itself,” says Ulrike Wulf-Rheidt. “It’s only by juxtaposing them and seeing one in relation to the other and in the context of traditional urban-aristocratic social structures and political organization that we can understand what a palace is and how it functions – and how the Palatine became what it ultimately was.” How the palace related to the city as a whole in urban planning terms is clearly revealed by the development of the facade of the imperial palace facing the Circus Maximus.

To understand how such a place functions as a centre of government and centre of adjudication, its interior and inner life must be examined. Although the ruins of the complex have been well known since the 16th century, there has been little investigation of the development of the imperial palace as an architectural ensemble, the range of its functions, and the status and significance of its constituent parts throughout the various construction phases. Ulrike Wulf-Rheidt and her colleagues from the DAI Architecture Section, in cooperation with the Soprintendenza Speciale per il Colosseo e l’Area archeologica centrale di Roma and the Brandenburg of University Technology (BTU), have conducted numerous research projects on the Palatine since 1998 to discover as it were the architectural inner life of this centre of power. The team of construction history specialists have produced detailed and comprehensive documentation of the architectural structures on the Palatine, using a combination of methods including tachymetry, photogrammetry, laser scanning and measurement by hand. The measurement data make it possible to create three-dimensional models that are highly informative about the architectural ensemble of the imperial palaces. Thus an uncannily detailed picture of the complex can be derived from the sprawling ruins.

CENTRE OF POWER

The imperial palaces on the Palatine

In imperial Rome, emperors and gods resided in the same district: on the Palatine Hill, one of the seven hills of Rome. At its foot, the Via Sacra – sacred way – led up to the Capitoline Hill, site of the city’s chief temple. Wealthy Romans had their houses on the Palatine – tribunes and orators, aristocrats and consuls. Then came Augustus (ruled 31 BC to AD 14), ushering in a phase of unsurpassable aggrandizement on the Palatine. The hill was henceforth the seat of the emperor of Rome.
DOMUS FLAVIA

In the west of the palace complex lay the Flavian Palace, Domus Flavia, which offered a grand setting for the emperor to carry out his official functions. The north (or north-east) facade was built on a high podium in front of a large square. The facade was fronted by a portico from which the emperor could show himself to palace visitors who had gathered in the square. From the portico one entered the palace through three giant doorways, each leading to a hall. The hall on the right is thought to be the lararium, a shrine for the emperor’s patron deities. The middle hall is the largest in the palace, measuring 30 by 39 metres. This was a fitting space for the emperors to display their grandeur and power. At the far end of the hall, seen from the doorway, was an apse. This could have been where the emperor sat for official receptions and audiences. The hall on the left was a kind of administrative centre. It had a large semicircular apse and was probably used to deal with juridical, political and administrative matters.

In the centre of the complex lay the Domus Augustana, containing further imperial reception rooms no less sumptuous. In it, a succession of large halls and small rooms were grouped round a peristyle courtyard.
The construction history research has yielded some completely new and unexpected results. It turns out the architectural display of imperial majesty evolved in a much more complex way than was previously supposed. Ulrike Wulf-Rheidt gives an example: “Until now it was assumed the complex of the Domus Augustana and the Domus Flavia was the result of a construction project under Emperor Domitian (AD 81–96).” But also before Domitian’s reign the Roman emperors felt the need for a suitable architectural manifestation of their power and authority. “It became clear for example that, in the sunken Peristyle – a courtyard lying lower than the surrounding porticos – of the Domus Augustana, a large part of a predecessor building was integrated into the palace,” the construction historian explains. That predecessor building could date from the reign of Domitian’s father, Emperor Vespasian.

Modification, extension and renovation work continued more or less without interruption on the imperial palace complex on the Palatine. “The end point and high point in the development of the palace was one further gigantic extension when a bathhouse was built onto the east side of the palace under Emperor Septimius Severus at the beginning of the 3rd century AD,” says Ulrike Wulf-Rheidt. This last major addition is probably to be attributed to Emperor Maxentius (AD 306–312). The state rooms of the Domus Flavia and Domus Augustana remained the heart of the palace throughout all its modification phases.

Just as today, in the classical world decision-makers knew that important things are best settled in pleasant surroundings. The sunken Peristyle of the Domus Augustana is such a place, a sunken courtyard with a big water basin, surrounded on all four sides by shady portico walkways. Here the emperor’s architects employed all their artistry to create a harmonious and multifaceted ensemble where the emperor could retire to enjoy moments of tranquillity and pleasure. In addition to a pool that was deep enough to swim in, there was a big water basin with an artificial island in the centre that could probably be reached by bridges. During lavish banquets with selected guests, the emperor could withdraw to this place and eat and mull over his advisers’ counsel in a pleasant atmosphere.
Where cases were heard in the Roman Republican and Imperial periods

Anyone looking in the Roman Republic for a palace of justice, the architectural manifestation of the justice system, may be surprised by what the customary practice was. Justice was dispensed wherever the judge was. This is already suggested by the language: the Latin word *ius* means both law/justice and law court.

“Roman rule was embodied in individuals,” explains ancient historian Roland Färber, who has devoted a monograph to the subject of venues of Roman judicature. “The administration of justice was a core area of the general practice of government and rule. There’s no clear boundary between executive, legislative and judiciary powers – and the same applies to the places where they were exercised.”

If the idea of an abstract office or ministry has no meaning, then any place where cases are heard and justice dispensed is effectively a court of law. Roman law courts didn't always require permanent structures or architecture, but instead were flexible to a high degree. This does not mean that the judge was entirely free in his choice of seat. “It was expected of him that he should find a worthy location,” Färber says. Public spaces could fit the bill, as well as palatial residences. Religious ideas and local traditions could also play a role in the choice of venue. And then there were a range of practical considerations too, e.g., was the venue within easy reach and accessible to all? Was a judge available? As time passed considerations like these led to certain venues being preferred and fixed structures emerging.

**JURISDICTION IN A PUBLIC SPACE**

In Rome during the Republic, justice was dispensed primarily in public spaces. The Roman Forum was a favoured location; there were no architectural trimmings beyond the presiding magistrate's foldable chair (*sella curulis*), his wooden podium and such other transportable furniture as was needed to conduct judicial proceedings. "Complex proceedings did take place there as well, though arbitration tribunals would also convene in the halls of aristocratic houses," Färber adds. As the big basilicas went up around the edge of the Forum Romanum and one by one the imperial fora were constructed, judicial practice gradually changed and a certain concentration was evident. In the 1st century AD it had become customary for the praetor urbanus and the praetor peregrinus – traditionally the most senior magistrates in the city – to preside over their cases regularly in the Forum of Augustus. As Färber points out, "it is certainly conceivable that opposing litigants in a case, meeting at the nearby place of assembly, managed to reach agreement by themselves prior to going before the praetor." It was also on the Forum of Augustus that, in the early Imperial period, the permanent criminal tribunals convened with their large number of jurors. It appears that Augustus had moved them from the old Roman Forum to the new forum that bore his name.
Exerting influence through “bread and circuses”

When muscle-bound men with hue and cry throw themselves into combat armed with swords and what look like Viking helmets and Saracen armour, they are probably gladiators – movie gladiators, that is. There are, it seems, few subjects from history that appeal to audiences so much as the grand spectacles in the amphitheatres of ancient Rome; and few that are presented in so distorted and historically incorrect a way as gladiatorial combat.

In the original version, what the gladiators wore and carried and how they fought were formally regulated; games followed a prescribed sequence and were even presided over by professional referees. Who it was who suffered the fate of being a gladiator was not in doubt: gladiators were slaves, prisoners of war, occasionally also pets of powerful gentlemen and wealthy ladies.
They were not free citizens of Rome. Above all, they weren’t sportsmen, as Heinz-Jürgen Beste of the DAI’s Rome Department points out. The construction history specialist is investigating one of the most famous and extraordinary venues where gladiatorial combat was staged: the Colosseum in Rome.

“Gladiatorial combat was an event for the masses,” Beste says. “It was extremely popular with the public, and also had a social and even a political function – just as most major sports events do today.” The similarities with modern events may encourage us to regard gladiators as sportsmen and thus as an object of study for historians of sport. “Nothing could be further from the truth,” says Beste emphatically. “For every sport there is one basic condition precedent: it is done on a voluntary basis and as a rule you don’t literally fight for your life. And the decision on a gladiator’s life or death lay in the hands of the person responsible for staging the event, usually the emperor, who, at least in the arena, shared the power over life and death with his subjects and allowed them to have their say.

“In origin, gladiatorial combat had a religious motive in Rome too, as in the Etruscan precursor,” Beste explains. The souls of the dead or of the fallen were supposed to be propitiated with the spilled blood of enemies. But that original purpose was soon forgotten as the contests became so popular that stands had to be built to accommodate the growing numbers of spectators. Apart from the great Roman thinker Seneca (AD 1–65) there was no one who seriously criticized the bloody spectacles.

It was primarily this great popularity that caused gladiatorial shows to become a political instrument. At first they were staged by ambitious, wealthy citizens who wished to demonstrate their power and increase their influence. They, after all, were the only people capable of covering the enormous cost of the event and the concluding feast single-handedly. Some ambitious politicians in the days of the Roman Republic recognized the potential of “bread and circuses” in exerting influence on public policy-making, but it was Emperor Augustus (63 BC – AD 14) that turned gladiatorial combat more or less into a ceremony of state. From 27 BC onwards, organizing the shows was the prerogative of the Roman emperor. Especially in the provinces they subsequently became central components of the imperial cult because of their mass impact.

The Colosseum is one of the supreme achievements of Roman structural engineering. “It’s a structure of gigantic dimensions that was built in just ten years,” Beste says. The amphitheatre could seat around 50,000 spectators and the flood of visitors in and out of the venue was perfectly managed and stewarded. Visitors entered the amphitheatre via the entrance appropriate to their rank and social status, and the distance to their seats was short or long accordingly. Senators sat right up close to the action in the easily reachable VIP lounge; while the equites, or knights, and other dignitaries were directed to tiers behind them, which were accessed via a moderate flight of stairs. The commoners had to walk the farthest and climb the most stairs. When the event ended, additional staircases were opened to allow the spectators to leave the amphitheatre conveniently and regardless of class. “Not all spectators arrived at the same time,” says Beste. “But they all left at the same time. So the populace was able to go out through the senatorial exits, because they [the senators] had already left their seats on the podium.”
The amphitheatre in Capua, which Beste is also conducting research on, is another colossal feat of Roman architecture. Only slightly smaller than its Roman counterpart, this building was also designed to stage spectacles for a mass audience and to serve as a fitting venue for the celebration of Rome’s many festivals.

Glabdatorial combat was always embedded in lavish public entertainments. It followed on from executions by the sword or by wild animals, where the victims were people not “lucky” enough to be condemned ad ludum – to the “games” – and to be trained as gladiators. The executions were often elaborately staged theatre pieces, in many cases presenting historical or mythological subjects. Underneath the arena in the Colosseum and the Capua amphitheatre was space for stage machinery including ingenious lift mechanisms that could make people, animals and scenery appear in the arena as if by magic.

Those who were condemned to be gladiators (remaining so for at least three years) were well fed and received good medical care. They were, however, confined to the gladiator school. Refusing to fight was not an option. If they fought well, they could reasonably expect to be shown mercy by the emperor and the spectators and even had the prospect, if they survived two more years of fighting, of escaping the status of slave and working as a trainer in a gladiatorial school.

Capua and its arena achieved notoriety in 73 BC when eighty gladiators escaped from a gladiator school and were joined by other slaves in a rapidly growing revolt. They managed to procure weapons and win military confrontations until they were defeated in 71 BC and their leader was executed. His name was Spartacus.
If we know everything already, why bother to study the ancient world? The popular misconception still going the rounds today was familiar to many a student of historical science in the not so distant past too, as Hans-Joachim Gehrke remembers. Nothing could be further from the truth, as the prospective ancient historian quickly came to realize. "The more we know, the less
clear things become."

Hans-Joachim Gehrke is Senior Adviser to the Rector at the University of Freiburg and Director of Outreach at University College London. He was appointed in 2011. From 2008 to 2011, he was president of the German Archaeological Institute.

Gehrke studied history, classical philology, philosophy and pedagogy at the Georg-August-Universität in Göttingen, obtaining his doctorate there in 1973. After working as an assistant lecturer in the Department of Ancient History at Göttingen University, he submitted his postdoctoral lecturing thesis in 1982 and then became a professor at Julius-Maximilians-Universität in Würzburg until 1984. This was followed by a professorship at the Freie Universität Berlin that lasted until 1987. From 1987 to 2008, he was Professor of Ancient History at the Albert-Ludwigs-Universität in Freiburg.

"You shouldn't follow the ideology – you should ask questions," says Gehrke, summing up his approach to research. This was inspired by Thucydides, the Greek commander and historian, who committed historiography to telling the truth instead of sacrificing it for the sake of hero worship. Greece itself needed to be viewed, at long last, in this sober light, Gehrke found, and he rejected the "sugar-coated" construct of "sublime Hellenism".

"I have seen the darkest sides of Greek history," the historian points out. His postdoctoral lecturing thesis took him deep into the never-ending civil wars of the Hellenes, a violent reality that nevertheless did not kill off his love for the subject. This unflinching look at history throws up a raft of questions relating to the present day. "What does a modern society do if it sees itself

The more readily they can take on the character of invention.

In a period when "European values" often seem without domicile and stray through political debates without further clarification, scientists and researchers should not propagate cultural assumptions themselves, Gehrke believes. In 2006 he became chairman of the advisory council of EUnCult, a network of European universities that has the aim of offering an alternative to a university education that is increasingly standardized and "school-like"; it aspires to a fundamentally new approach. "There has always been disagreement and debate about the great foundational texts," Gehrke says. "The different national and regional traditions in Europe play a big part in that. Cultural openness both internally and externally is a characteristic of European culture."

There is a similar philosophy behind the European Masters Degree in Classical Culture Studies, a new course of study offered by eleven universities in eight European countries. The core disciplines are ancient history, classical philology and classical archaeology. Gehrke, an enthusiastic teacher, has been involved right from the beginning.

Cultural structures are always provisional, and are the results of scientific enquiry. "Self-criticism is the most important attribute of the scientist," Gehrke says with conviction. The necessity of collaborating with other disciplines arises out of an awareness of one's own limitations. "Historians and archaeologists can learn a lot from each other when exploring what remains of ancient cultures and in the process can sometimes clear away old misunderstandings" – the ancient historian speaks from experience. "Nobody can do everything." An illustration of this in Gehrke's view is the ODA, whose president he was for three years. Not always a matter of course, collaboration amongst the "classical" disciplines of the archaeological and historical sciences and philology is actively engaged in at the institute both internally and externally. "I myself was on a perpetual further education programme and was therefore able to constantly widen my horizons."

Since 2011 Hans-Joachim Gehrke has been involved in an innovative new project, the University College at the University of Freiburg, where, he says, "the teaching programmes are not designed in such a way that all of a given professor's specializations have to be reflected in every conceivable subject."

The initiators want to re-imagine the university. "At the moment there is the danger that the balance between research and teaching is being lost," Gehrke warns. "It's alarming when the impression is created that, by doing very good research, you can be exempt from teaching. The reality is that a very good researcher can be seen from the fact that he or she wants to engage with younger people."

"Doing just that is self-evident for Hans-Joachim Gehrke. More than that, it is the ongoing fulfillment of a career dream: 'I've had the good fortune of being able to achieve my original and sole professional goal, namely becoming a teacher.'"

And his students' responses repeatedly show he has made the right choice.

Soon he will be back in Greece (as always with his students), that most beautiful of countries, with its difficult history – in the fields around Olympia, to be exact, conducting research into the multidimensional space of Olympia: a place that promotes remembrance both for the local inhabitants and for the region, for the Peloponnese, for the Greeks. Once again Hans-Joachim Gehrke is confronted with the question of identity: what is a Greek in point of fact? "That's not an easy one..."
Engagement in difficult times

It takes skill to recognize the right moment when it comes, and to take advantage of it. For Peter Funke there have been many such moments. Many of them he made use of, some he let pass. One shouldn’t be taken in by the illusion of constant control, he finds, because often enough an opportunity presents itself just like that and, if seized, can lead into realms that are a source of lifelong fascination. For Peter Funke, ancient history was such a realm. He is a professor at the University of Münster. From 2011 to May 2017 he was a member of the select committee and deputy of the President in the supervisory board of the German Archaeological Institute.

After studying history, archaeology and German philology, Peter Funke was awarded a doctorate by the Philosophical Faculty of Cologne University in 1978, where he was assistant lecturer at the Institute of Classical Studies until 1985, also teaching ancient history at Siegen University in the years 1979–1981. He received his postdoctoral lecturing qualification in ancient history at Cologne University in 1985. A professorship in ancient history at Siegen was followed in 1988 by an ancient history professorship at the University of Münster. From 1988 to 2011 he was a member of the Commission for Ancient History and Epigraphy of the German Archaeological Institute. In 1989 he was elected Ordinary Member of the DAI.

The appointment at the University of Münster reached Peter Funke while he was in Greece, a research destination and a country close to his heart. “It was a very welcome challenge,” Funke remembers, as was the offer of a position of considerable responsibility that presented itself a short time later. Barely two years after his appointment he was asked to assume the mantle of deputy vice chancellor responsible for academic and student affairs at “a not exactly small university.” Diving into cold water can sometimes be a cold shower, at least at first, when you see cherished certainties called into question and no longer stand on firm ground. Without such an occasionally unsolicited but invigorating dip, however, advances in knowledge are hardly possible, Peter Funke believes. “You’ve got to be good in your own field, but without the intellectual exertion of collaboration you won’t stumble on any major insights.”

With the deputy vice chancellorship in Münster began Funke’s committee activities, which he has taken seriously throughout his academic career. He has held senior positions in important academic self-governing bodies and has been a member of several working groups of the German Council of Science and Humanities; at the DFG he has been an evaluator, member of several committees and the senate as well as finally vice president. In 2004 he was appointed First Chair of the Association of the Historians of Germany (VHD), only the second ancient historian to be so honoured.

For Funke, committee work is indispensable in difficult times. “You do have to get engaged, instead of just making demands,” he says. In an increasingly technologized world and amid heated debates about making the academic sector useful, the ancient historian considers it highly important to break a lance for teaching the “small subjects” at German universities. “Higher education in Germany traditionally has a high proportion of these important subjects which are indispensable intellectually for the big subjects if they are to solve global problems,” Funke says.

For Peter Funke, the place where such interdisciplinary work has always flourished best is Greece. It’s not individual aspects that interest him, but the whole – what may be referred to by that agreeably old fashioned term “regional studies.” The DAI has a long tradition here in the form of courses and excursions organized by the Athens Department, which Funke takes part in along with his colleague Hans-Joachim Gehrike. Here classical archaeology, ancient history, classical philology and construction history are brought together to generate a comprehensive understanding of the landscape as a whole with both the natural and the man-made environment.

Funke has been working with the DAI since the 1980s. “In those days it wasn’t usual practice anywhere else to carry out wide-ranging, interdisciplinary projects in historical regional studies. Today surveys are a matter of course,” he says. At his Münster institute Peter Funke has set up a research unit – Historical Regional Studies of Ancient Greece – where among other things ancient travel literature on Greece is studied. “Literary accounts of travels, also from post antiquity, can be a source of valuable information about the classical world,” he says. The research unit also focuses on exploring landscapes in north-western Greece by means of surveys in situ.

One of the central areas of interest for researchers in the ancient history seminar at the University of Münster is the topic of religion and its functions in the societies of the ancient world. Since 2007 Peter Funke has been principal applicant of the Excellence Cluster “Religion and Politics in Pre-modern and Modern Cultures” in which more than 20 disciplines work together. They are investigating links between domains often thought to be separate. “Where are the central points beyond the poles?” is one of the topics of research for ancient historians. “At sanctuaries, political and legal matters are negotiated too.” An outstanding example is Delphi. “Religion is always also a medium for transmitting things that are altogether different,” Funke points out.

When Peter Funke goes on historical regional studies excursions with his students in Greece, his enthusiasm for the country and its people is communicated to the young researchers. Commitment to the small subjects is important not only in research but also in teaching, he believes. By developing the European Masters Degree in Classical Culture Studies, a new international and decidedly interdisciplinary course of study offered by eleven universities in eight European countries, Funke and his equally committed colleagues have created a “broad European network” to counteract “pillarization” on a national level and isolation on the level of academic disciplines. The core disciplines on the masters programme are ancient history, classical philology and classical archaeology, and it requires more of the candidates than that they speak English as a foreign language. Research and teaching institutions can take an example from this kind of international orientation at Funke says, as they can from the international collaborative activities of the DAI as well. Working with host and partner countries on an equal footing so successfully sets standards for research and training practice, Peter Funke believes. When he traveled a long time ago in Attica and north-western Greece he is currently continuing in Phocis: historical regional studies for the whole of Greece.
Just what would there be to find in this remote, karstic area? Morocco’s Mediterranean coast between Tangier and Melilla was far away from previously investigated archaeological sites and was terra incognita for researchers. But then during a coastal road construction project, DAI archaeologists discovered evidence of early human settlement in caves. More and more researchers came and before long the Eastern Rif, a mountainous region in the north-east of Morocco, found itself at the centre of the discussion about the second “Out of Africa”:

AFRICAN TRAIL

Decisions in difficult terrain

IFRİ OUDADANE. The cave, west of the Oued Kert delta, is one of a host of significant find-sites on Morocco’s Mediterranean coast.
Photo: Linstädter
Did humans from Africa who resettled the world leave the continent not only from the north-east but also from the west? This remote region, hitherto on the margins politically and culturally, may have been a contact zone. It is now the focus of a special DFG-funded research initiative “Our way to Europe” carried out by the University of Cologne.

The DAI’s Commission for the Archaeology of Non-European Cultures (KAAK), the University of Cologne and Morocco’s Institut National des Sciences de l’Archéologie et du Patrimoine (INSAP) have a long tradition of working together at various research sites. They are collaborating too in the Eastern Rif. “In 2005 Josef Eiswanger, then Second Director of the KAAK, and Abdessalam Mikkad of the INSAP discovered a few caves in Rabat, west of the Oued Kert delta,” recounts Jörg Linstädter, who is today Scientific Director of the KAAK and who subsequently carried out excavations in the cave Ifri Ouaddane. Ifri Ouaddane is one of a host of significant find-sites on Morocco’s Mediterranean coast, along with Ifri Ouzabour and Ifri Armaz (ifri is the Berber word for cave). The deposits that the archaeologists found inside extend from the North African Epipalaeolithic to the Neolithic. Find sites remain rare in the Eastern Rif. “We asked ourselves whether there might be more sites in the region that could support our findings,” Linstädter says.

But where to begin the search? From the initial suggestion of doing an excavation to a finalized plan is a long way. Finding the right place to start is very much more complex than it may appear at first sight. “How do you actually know where to dig?” is a question archaeologists often get asked – and it is posed at the start of every excavation project.

WHERE TO DIG?
Archaeological finds are a common source of information needed to localize potential dig sites, so researchers needed one or more locations where sediments and assemblages are such as to be able to provide answers to scientific questions. But how do they know where to look for these?

“One option is to re-investigate known sites,” Linstädter explains. In recent years many new methods of scientific investigation have started to be used in archaeology too. With their aid, researchers can sometimes gather new data that was not available in earlier excavations where traditional methods were in use.

“But it doesn’t end there, of course. As a rule, new answers always prompt new questions.” Linstädter says. If re-investigation of old archaeological sites doesn’t seem worthwhile or isn’t possible, another option is to look for new find-sites. How was that done in this concrete case? In the zone under investigation, the archaeologists felt the area around Jebel Bou Salah and Jebel Lahouta between the Oued Kert delta in the east and Ras Aftou in the west looked promising. They chose this area because, as Linstädter says, ‘caves and rock shelters were all over the place’. There was one further very clear indicator of possible prehistoric occupation of the area: “The Oued Kert is the only water source that’s available all year round here.”

MAP READING AND EXPERIENCE
“As with every survey our investigation began with studying maps,” says Linstädter. The archaeologist carried out the survey with colleagues and students from Aachen University (RWTH), Cologne University and the INSAP. “At the start we studied the maps of the whole region and looked for toponyms with the word ifri. Also of interest were steep slopes in which caves can form.” The archaeologists searched for caves because experience teaches us that find-sites on open terrain hardly survive at all because of intensive grazing in the region and the resultant soil erosion. However, searching for possible sites was more easily said than done. The area of investigation is vast and poorly accessible. Vehicles didn’t take the researchers very far, who had to go much of the way on foot. “That way it would’ve taken years,” comments Linstädter. “So we had to come up with a method to reduce the survey area.”
NARROWING DOWN THE INVESTIGATION AREA

Knowing that caves occur more likely in karst landscapes than in other types of rock is a pointer in the right direction. As part of a scientific paper, Anne Roeloffs from Aachen University combined available information on limestone formations in the region with existing topographic maps and satellite images. “That enabled us to reduce the survey area to five per cent of the original area,” Linstädter says. The archaeologists were ultimately able to identify 13 potential sites.

ESTABLISHING PRIORITIES

In spite of a reduced survey area, the survey remained a mammoth undertaking. “To be able to make a decision about where to continue our search, we have to establish priorities on the kind of places where we’re going to search for evidence of human activity,” Jörg Linstädter explains. “All in all there are three kinds of cave in the region. There are those with archaeological deposits, those with natural deposits and there are caves without any deposits.” Where no deposits were found despite the existence of caves, there were most probably no water sources or other necessary resources in the location. “The permanent accessibility of water is always the decisive criterion,” Linstädter notes. “But we must take care no to apply our own standards.” Linstädter and his colleagues learned from ethnographic studies on the recent culture of the region that drinking water is transported in some cases up to eight kilometres.

IS THERE SUFFICIENT DATA?

By this stage the archaeologists have accumulated a quantity of clues and pointers. If things go well, they will localize a site that has potential and where closer inspection is worthwhile. The first step is to take a look at the potential find-site’s form and its situation in the terrain. “Then we’ll take a look at any surface survey finds and carry out further investigations,” Linstädter says. Here non-invasive geophysical methods are utilized, for example ground-penetrating radar.

The measures taken so far have generated a large amount of data which then needs to be evaluated and compared. Is the data sufficient to justify an excavation? “If there’s still doubt at this stage, there’s the possibility of sinking a drilling core,” Linstädter notes. “The material acquired that way can provide us with further clues.”

WHERE TO START DIGGING?

Should all the data from the survey – surface survey, satellite images, local expert knowledge, geophysical survey, soil samples – arouse reasonable suspicion, the decision to conduct an excavation may be taken. Why is decision-making such an elaborate process?

“An excavation is always a major undertaking, especially in rough terrain,” the archaeologist explains. “It’s immensely time-consuming, you need the right personnel, the logistics can really present problems and naturally an excavation costs money. So it all needs to be carefully weighed up.”

On the mountains Jebel Bou Salah and Jebel Lahouta, the archaeologists had no luck. So the search will go on till they find other caves with the remains of human occupation that may help to answer some of the important questions of human history.
OBJECTIVES

“Africa is the continent that is most broadly affected by global climate and environment change,” Linstädter says. “Africa is also the continent which we owe countless cultural inspirations and innovations to and in archaeological terms it is one of the hot spots in human evolutionary research.” Mobility and food procurement through hunting and gathering is one of the modes of subsistence that humans developed; the sedentary lifestyle and the production of food is another. The transition from the one to the other is one of the big subjects in archaeology. And on the African continent it occurred differently to what we might expect from a European standpoint, as illustrated by the archaeological site of Ifri Oudadane, where Jörg Linstädter has been conducting excavations since 2006 together with his Moroccan colleagues Abdessalam Mikdad and Abdessalam Amarir from the INSAP.

A site with great potential, Ifri Oudadane has evidence of human occupation dating from between 9,000 and 3,700 BC, and illustrates the transition of North African groups from an exclusively foraging mode of subsistence to a productive one. The archaeologists have found decorated pottery as well as evidence of animal husbandry and crop cultivation. In fact they also found the oldest evidence of agriculture on the African continent: a lentil.

“But that doesn’t mean what we see here is a complete changeover from one mode of economy to another, such as we know from Europe and the Near East,” says Linstädter, warning against hasty comparisons. “Outside the temperate zones, a way of life that depended solely on the production of food was much too risky,” the archaeologist explains. “When the domestication of animals and plants emerged as part of the Neolithic innovations, the old method of food procurement via hunting and gathering did not disappear completely.” A perfect adaptation to a difficult environment.
Archaeology in Portugal

The Lisbon research unit of the Madrid Department

Zambujal, Sizandro-Alcabrichel, São Miguel da Mata, Centum Celas, Cabeço das Fráguas, Vale de Rodrigo, the temple of Évora – these are just some of the German Archaeological Institute's excavation sites in Portugal. Starting in 1964, a number of projects were conducted, and a branch of the DAI's Madrid Department existed in Lisbon from 1971 to 1999. When the branch was closed in 1999, its library was transferred to Institute of Management of Architectural and Archaeological Heritage (IGESPAR, today the DGPC, Direção Geral do Património Cultural) on permanent loan. Finally a DAI research unit was opened in Lisbon in 2009. It is accommodated on DGPC premises in the Palácio Nacional da Ajuda.

Every year the DAI invites archaeologists conducting research on Portuguese topics to take part in a research trip. The aim of the research unit is also to provide DAI researchers working in Portugal with a base and a contact point.

Issuing invitations is a special highlight of the research unit. An invitation relates to one research visit to one of the DAI departments in Germany or abroad. Applications can be submitted by anyone who has the necessary university qualifications and conducts archaeological research in Portugal. Invitations for research trips are available for topics in the fields of prehistory and early history, classical archaeology, early Christian archaeology, Islamic archaeology and ancient history.

The research unit offers archaeologists working together with the DAI a place to work in the library, where they can also use the Leisner Archive and the map collection of the former DAI branch. Also, conferences are arranged there and Portuguese PhD students work on topics that are part of DAI projects.

The libraries in Lisbon and the Madrid Department are in regular contact. All of the Madrid Department's publications and some publications from the Head Office and other departments of the DAI – plus personal book donations – are regularly dispatched to Lisbon.

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“One of the regions of the world where arable farming began was the central Andes,” says archaeologist Hermann Gorbahn. “The sedentarization of foraging communities is one of the most momentous steps in many human communities on the way to the emergence of complex societies,” he explains. But the Neolithic Revolution (Gordon Childe) did not proceed identically in all regions of the world. “And strictly speaking it wasn’t a revolution,” Gorbahn says. “The transitions are always gradual and seamless.” And in the New World the development was different to that in the Old World. Many details of this development remain unknown and a great deal of clarificatory work is required. Some clarification is being achieved by Hermann Gorbahn’s investigations in the Peruvian Andes. It was here that the potato (Solanum tuberosum), the common spud, which we regard as virtually indigenous, started out on its dazzling global career. In contrast another tuber from the same part of the world has to a large extent preserved the flair of exoticism. It was only a few years ago that it began to appear on dining tables in Europe, first as a vogue vegetable, and now as a wonder-worker that is supposed to promote good health and well-being: Ipomoea batatas, the sweet potato. But hardly anyone is aware of its historic importance.

Pernil Alto is a small village in central Peru, located at the foot of the Andes, right between the coast strip and the highlands. The early settlement strata uncovered there reach back to the Archaic period, i.e. from 3800 to 3000 BC. Yet a few indications of even older settlement activity have also been found in the region. Archaeologists from the Commission for the Archaeology of Non-European Cultures (KAAK) of the DAI directed by Markus Reindel therefore excavated the village and have now exposed and examined all its layers. Hermann Gorbahn took part in the excavations and analysed the results for his dissertation, which he completed in the “Human Development in Landscapes” Graduate School at the University of Kiel. The DAI has been working together with the Graduate School for some years now. In a reconstruction of the development of the settlement he was able to demonstrate that there was a gradual change in the subsistence food procured. "Agricultural activity increases continuously," Gorbahn reports. "Shortly after the inhabitants established the settlement (ca. 3800 BC), they began to grow domesticated plants on a small scale. From the second occupancy phase, ca. 3300 BC, the proportion of cultivated plants then surpasses that of gathered wild plants," the archaeologist says. This was accompanied by another development: "Hunting activities increasingly lost importance."
There is naturally a reason why the inhabitants of the small village consumed so many sweet potatoes. They are nutritious, filling and have all manner of culinary applications. A sweet potato contains 68–73% water, 1–2% protein, 0.3% fat and a large amount of carbohydrates, some 25–28%. They have a high starch content and are rich in potassium, vitamin A, calcium, phosphorus and iron. They can be eaten roasted or boiled, made into flour or fermented into a kind of beer. They also have much in their favour when it comes to cultivation. Providing they received sufficient water, they could have been harvested two times a year in Pernil Alto, so the ancient population would have been kept well supplied with a staple food.

Among the botanic macroremains that Gorbahn has analysed are leaves, twigs, flowers and seeds of eleven species and a few genera. It turns out that the sweet potato figured prominently in the diet of the early population of Pernil Alto. Moreover “it was definitely a cultivar and not a wild plant” – a significant difference, Gorbahn adds. And it didn’t have the dimensions of cultivated varieties that exist today. “Nearly one quarter of total botanic remains are remains of sweet potatoes. We can assume the early inhabitants of Pernil Alto had sweet potatoes on the menu every day.” By 2600 BC at the latest the sweet potato was a firmly established vegetable in the area of the early complex societies in the central part of the Peruvian coast. Unfortunately sweet potatoes perish very easily, so finds that are millennia old are very much the exception. Of the macroremains of sweet potatoes that have been found here, one is the oldest that has been documented so far.

NUITRITIOUS AND VERSATILE

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Whereas today it is maize that is the omnipresent nutritional staple of Central and South America, indeed its most characteristic vegetable, in the initial phase of food production it was most likely the sweet potato in certain parts of the Central Andes. We are still some way from being able to answer all the questions about the development of arable farming in the Americas, which ultimately led to the sedentarization of the first complex societies. Did it emerge in one region and spread from there, or did it develop at several places at the same time – or at different times? In any case the sweet potato played its part in these historic developments. Where precisely the sweet potato originated is not fully clear – possibly it spread southwards along the western slopes of the Andes and reached the central Peruvian coast, where around 3000 BC the first complex societies of the Central Andes erected their early monumental buildings. So the sweet potato changed the world a bit too.

**COOPERATION PARTNERS**

Museo Nacional de Historia Natural, Lima, Gabriela Bertone (identification of botanic macroremains)

Ministerio de Cultura del Perú, Lic. Johny Isla Cuadrado
The gigantic modifications of the Earth’s surface are on such a scale that they can be made out only from a great height. They have given rise to speculation about supernatural or extraterrestrial causation, yet they are very much of earthly origin, dating from the ancient past of the Americas in southern Peru. Water was central to the creation of the world famous geoglyphs, also known as the Nazca Lines after the nearby town. Dead straight lines up to 20 kilometres long, triangles and trapezoid shapes, patterns and figures on a giant scale representing humans, monkeys, birds and whales are scored into the earth a few centimetres deep. These works of art were first created in the period of the Paracas Culture between 800 and 200 BC – much earlier than originally supposed.
The Roman imperial palace on the Palatine still remains one of the defining architectural landmarks of the city of Rome. The hill was always a place where money and influence was concentrated, but under Emperor Augustus (63 BC to AD 14) it went through a phase of unsurpassable aggrandizement. The Palatine was the residence of the emperors of Rome. Just like their counterparts today, decision-makers of the ancient world knew that important matters were best settled in pleasant surroundings – like the “Sunken Peristyle” in the Domus Augustana, a low-lying courtyard with a pool of water framed by shady porticos.

Cover Photo

2,000 YEAR OLD TEXTILES, GOLD ORNAMENTS, FINE CERAMIC ART AND GRAVE GOODS

Photos: Museo de Arqueología, Antropología e Historia del Perú, MALI

Reconstruction: Lengyel-Toulouse Architektur
The “Great Temple” of Yeha in Ethiopia, built in Southern Arabian style by migrants from Saba in what is today Yemen, is the most important pre-Christian religious building in the north part of the Horn of Africa. After consolidation and restoration work on the masonry was completed and a steel support structure was fitted, the historically significant monument was reopened to the public in spring 2017 as one of Ethiopia’s prime tourist destinations.

Since the building is still seen as a sacred place, all the restoration measures were discussed with and approved by the priesthood and the local population. More on page 10 in the article “Rescuing a monument. Successful restoration work at the Great Temple of Yeha” in the Cultural Heritage section.