



Excavations in 2001 and 2009 in Çukurbağ, Turkey, uncovered polychrome reliefs and statues of a Roman structure that shed light on the art and history of Roman Nicomedia, onetime capital of the eastern Roman Empire. Ongoing research as part of the Çukurbağ Project—highlighted in this month's Project Gallery—is combining stylistic and iconographical analysis of the reliefs and statues with 3D digital reconstruction of the structure to which they once belonged. ©Çukurbağ Project.



Terrace farming along the Refaim Valley in the Judean highland of Israel. A new research project, highlighted in this month's Project Gallery, proposes to address the subject of human subsistence strategies in the highlands of Israel through survey, excavation and dating using optically stimulated luminescence (OSL). Photograph: Vered Bosidan.

EDITORIAL

☞ In a famous and oft-quoted passage, the Greek historian Herodotus tells us of a curious custom concerning the Scythians, the peoples inhabiting the steppe lands north of the Black Sea. After burying their dead, they purify themselves in a makeshift tent: “when they have set up three pieces of wood leaning against each other, they extend around them woollen cloths; and having joined them together as closely as possible, they throw red-hot stones into a vessel placed in the middle [. . .] They have a sort of hemp growing in this country, very like flax, except in thickness and height: [. . .] When therefore the Scythians have taken some seed of this hemp, they creep under the cloths, and then put the seed on the red-hot stones; but this being put on, smokes, and produces such a steam that no Greek vapour-bath would surpass it. The Scythians, transported with the vapour, shout aloud; and this serves them instead of washing, for they never bathe the body in water” (Herodotus 4.73–75)¹.

It wasn't of course some special steam bath that Herodotus was describing here, but a cannabis tent. The ingestion of mind-altering substances is one of those things that humans have long engaged in. Fermented alcoholic beverages go back to at least the fourth millennium BC—witness the famous drinking scenes on Sumerian vessels from Mesopotamia (backed up by archaeochemical analysis)—and psychoactive plants are mentioned in Egyptian papyri of the second millennium BC². And it wasn't only the search for tipsiness that led people to take these substances. Ritual also played a part. The cannabis smoking described by Herodotus was clearly part of mortuary ceremonial.

But drugs also have therapeutic qualities, and it is in that context that they feature in the current issue of *Antiquity*. Kaman-Kalehöyük is a tell site in central Anatolia with a lengthy occupation from the Early Bronze Age to the Ottoman period. It was in the Ottoman layers that an earth oven or *tandır* was found containing numerous seeds of henbane. Henbane contains atropine and scopolamine, which disperse in the smoke when the seeds are burned. The most likely explanation for the concentration of seeds in this earth oven is that the smoke was inhaled to relieve toothache or a similar painful condition. Practices like this may go back a long way into the past, but here is the first good evidence for the medicinal use of henbane in this part of the world. Medical treatments of the past may frequently make us cringe—the tooth implant from Iron Age France springs to mind (*Antiquity* 88)³—but in this case, at least, the henbane probably did some good.

The house conundrum

☞ One of the abiding mysteries of west European prehistory is the patchy nature of the settlement record. For many times and places we have abundant burial mounds and

¹ Cary, H. (trans.) 1858. *Herodotus*. London: Henry G. Bohn.

² A survey of the archaeological evidence is provided in: Guerra-Doce, E. 2014. The origins of inebriation: archaeological evidence of the consumption of fermented beverages and drugs in prehistoric Eurasia. *Journal of Archaeological Method and Theory*. <http://dx.doi.org/10.1007/s10816-014-9205-z>

³ Seguin, G., d'Incau, E., Murail, P. & B. Maureille. 2014. The earliest dental prosthesis in Celtic Gaul? The case of an Iron Age burial at Le Chêne, France. *Antiquity* 88: 488–500.

ceremonial monuments but of dwellings, in general, remarkably little remains. There are exceptions, it is true. So for example, in Early Neolithic Ireland some 90 rectangular post- and plank-built houses have been excavated, many of them in advance of road developments. But radiocarbon dating and Bayesian analysis have demonstrated that these rectangular houses belong within one relatively short window of time, a hundred years or so *c.* 3720–3620 cal BC. For the centuries that preceded and followed this brief interval, traces of houses are notable above all for their scarcity. What is true for Ireland obtains equally for Britain and many other regions of western Europe. The lack of house remains has led some to conclude that these early farming communities were not fully sedentary, but moved around the landscape tending their herds and gathering seasonal resources as they became available.


But perhaps the problem is that houses did exist, and we just can't see them. Post-built houses should leave visible traces, but what of other constructional methods that didn't involve digging holes in the ground? All that might remain would be a scatter of flints and pottery, and perhaps the occasional pit.

On the north coast of Brittany is a Middle Neolithic (late fifth millennium) site that might go some way to explaining the mystery of the missing houses. On the low hill of Lillemer, rising out of the coastal marshes, was a settlement with terraces of houses built into its flanks. More surprisingly, as Luc Laporte and his colleagues discovered (pp. 800–817), some of these rectangular buildings had collapsed *in situ*, scattering the remains of mud walling and mud brick across their floors. Mud bricks of the unbaked variety are not a building material one customarily associates with north-west Europe. Surely winter snow and rain would simply dissolve them? It appears nonetheless that houses were successfully built from this fragile medium, and one is left to speculate how extensive a practice that might have been. Were mud-brick houses a regular feature of Neolithic settlements in north-west Europe? We clearly need to look much more carefully in future.

Of course the scarcity of houses doesn't just bedevil the Neolithic. Mesolithic houses are known from western Europe—at Mount Sandel in Ireland, for example, or at Howick in northern England—but they are few and far between, even allowing for the fact that Mesolithic populations were much smaller than their farming successors. Targeted excavation can sometimes yield results: witness the oval structure discovered at Star Carr a few years ago (reported in *Antiquity* 86)⁴. But it is often difficult to know exactly where to start. One way to approach the problem is to use geophysics to search likely locations for traces of pits or postholes. That was the method employed by Pablo Arias and colleagues on the north coast of Spain. The shell middens of the Mesolithic 'Asturian' are numerous and well-known—but there are precious few traces of dwellings. Using targeted geophysics, however, the team have explored six sites in detail, and at one in particular, El Alloru, structural features relating to a possible Mesolithic house were found. There is clearly potential for further discoveries of this kind using this method, but it is hard work, and Mesolithic dwellings remain among the most elusive features of prehistoric Europe. Their scarcity is especially frustrating given the potential of household archaeology to throw light on the lived experience of prehistoric communities. Mortuary evidence, for example, is all very well, but it only gets us so far.


⁴ Conneller, C., Milner, N., Taylor, B. & M. Taylor. 2012. Substantial settlement in the European Early Mesolithic: new research at Star Carr. *Antiquity* 86: 1004–1020.

A threatened species?

 In the rapidly changing world of modern technology, many tasks traditionally carried out by people are being handed over to machines. Machines are often more efficient, and in theory should release people from the drudgery of daily work and allow them more leisure time. As we are all aware, the promised land of a shorter working week has so far eluded us, and many areas of society have suffered severely from the reduction or mechanisation of whole sectors of traditional heavy-labour activity. At the same time, the advantages and opportunities of new technologies are enormous, and have entirely transformed everyday lives. They have also transformed the way we do archaeology, providing us with clever new equipment that enables us to do things that would have been scarcely imaginable only 20 years ago. Ancient DNA and stable isotopes are rewriting entire chapters of the human past, and resolving thorny old questions. That includes the recent demonstration (from ancient DNA) of large-scale migrations from the steppes into central and northern Europe during the third millennium BC. It may have been these steppe-dwelling Yamnaya people that introduced Indo-European languages, laying the foundations for the linguistic map of Europe that is familiar to us today (Allentoft *et al.* 2015)⁵.

But there are potential downsides to the new technology. What if GPR, or some similar device, developed to the point where excavation was no longer necessary? That of course is fanciful, from our present viewpoint, but the idea that machines might replace archaeologists—and not only by taking on most of the heavy earth-moving—is worth considering. We should take comfort, then, from a recent study by Carl Benedikt Frey and Michael A. Osborne.⁶ In their 2013 paper ‘The Future of Employment’, they reviewed the possible impact of technological takeover on various professions over the next 20 years. The world they envisage is one in which artificial intelligence and cunning algorithms supersede humans in a whole variety of tasks. Frey and Osborne reckon that by 2033, there is a 99% probability that insurance underwriters and watch repairers, and a 98% probability that sports referees will have been replaced by computers. Only slightly less at risk (between 67% and 94% probability) are tour guides, bus drivers, construction workers, archivists and lifeguards. Archaeologists, however, should take heart. Frey and Osborne calculate the risk of archaeologists (and anthropologists) being replaced by computers at a mere 0.77%, making us one of the safest professions. It is ironic that a profession such as ours that focuses on the development of material culture and technology over the *longue durée* should be future-proofed against technological advance in coming decades—at least according to this study!

Pushing back the stones

 So much for looking forward. But what about looking back, towards the origins of human technology? A field team that has been working for several years in the area of Kenya


⁵ Allentoft, M.E. *et al.* 2015. Population genomics of Bronze Age Eurasia. *Nature* 522: 167–72.

⁶ I am grateful to former Antiquity Trustee Warwick Bray for drawing my attention to this study, which was covered by Yuval Harari (“Who owns the future?”) in *New Statesman* 12–18 June 2015. The study by Frey and Osborne is available at http://www.oxfordmartin.ox.ac.uk/downloads/academic/The_Future_of_Employment.pdf

west of Lake Turkana one morning took a wrong turn and came across a scatter of stone tools at the edge of a small ravine. The stone tools are even simpler than those of the well-known Oldowan and have been given a new label, the Lomekwian, and dated to 3.3 million years ago (Harmand *et al.* 2015)⁷. Much interest surrounds the hominin who might be responsible for these tools. Back in the 1950s, when Louis and Mary Leakey first discovered Oldowan tools in Tanzania, they found them in association with the fossilized bones of a robust Australopithecine, *Zinjanthropus*. So very naturally their initial suggestion was that *Zinjanthropus* was the first tool-maker. Then, a year later, they found remains of *Homo habilis* nearby, and reassigned the stone tools to that species. But there have been lingering doubts that early *Homo* was not the first tool-maker, and intriguing clues that stone tools might be older than that. The discoveries at Lomekwi confirm those suspicions and demonstrate that the Oldowan was not the oldest stone tool industry, but was preceded by an earlier phase. The Lomekwi finds are indeed a million years older than the oldest known *Homo*. Who the maker (or makers) were is not quite clear, but *Kenyapithecus platyops* is a likely candidate.

Creation of material culture is a key human characteristic, one of the things that makes us human. So pushing the development of tool-making back in time is extending the formative processes of human identity. But can that be right? We already know that chimpanzees in West Africa manufacture stone tools, and gorillas have been credited with regionalised material cultures. Accordingly, there is now an archaeology of primates in their own right (*Antiquity* 86: 299–315)⁸. That in no way detracts from the new discovery, but it makes the relationship of human origins to stone-tool technology ever more intriguing.

San Francisco 1915–2015

 In seeking to cover current affairs in *Antiquity* editorials one soon becomes aware of how quickly texts can be overtaken by events. A lot can happen in the weeks between writing and publication. Hence June's editorial went to press just as news broke of the ISIS conquest of Palmyra, and the international concern that that triggered. It is with great sadness that I recall a visit to Palmyra 25 years ago, where we watched on the hillside among the tower-tombs as dawn broke and the sun rose. It scarcely bears thinking what fate they may suffer at the hands of the self-declared caliphate.

It is also rather late to be writing now about the Society for American Archaeology (SAA) Annual Meeting in San Francisco that took place back in April, but it would be a shame to let it go by without a mention. San Francisco was (not surprisingly) a popular venue, and the meeting was attended by more delegates than ever before: over 5300 in all. There were 418 sessions spread over four days in parallel sessions, but since all were in the same venue, moving between sessions was relatively quick and easy. A regular feature of recent SAA meetings has been the holding of sessions in honour of senior colleagues who have made a particular impact on the field. On this occasion those honoured in this way included Diane Gifford-Gonzalez, who has taken over from Jeffrey Altschul as President of the SAA. There was also a special session to mark Brian Fagan's contribution to archaeology. Here I

⁷ Harmand, S. *et al.* 2015. 3.3-million-year-old stone tools from Lomekwi 3, West Turkana, Kenya. *Nature* 521: 310–15.

⁸ Haslam, M. 2012. Towards a prehistory of primates. *Antiquity* 86: 299–316.



Detail of the neoclassical Palace of Fine Arts, San Francisco (photograph: Tara-Jane Sutcliffe)

should declare an interest, having worked closely with Brian for several years, but his series of books on climate change remind us how important it is for archaeologists to connect with the wider reading public, and get across the relevance of archaeology on crucial issues such as this. The session was a well-deserved tribute to Brian's work.

San Francisco itself is not, of course, an old city, and much of its earlier fabric was destroyed in the earthquake of 1906. Nestled away in the north of the city, not far from the Golden Gate Bridge, is a curious structure built shortly after the earthquake as part of the great Panama-Pacific International Exposition that marked the city's recovery from that disaster. The Panama Canal was completed and officially opened in 1914, a year before the exhibition. The latter was a flamboyant celebration on a massive scale: "Within the 635-acre fairgrounds [. . .] America's new empire was re-created in gigantic miniature and celebrated as a manifestation of the United States' imperial prowess and revitalized national manliness" (Moore 2013: 4)⁹. One of the 'miniatures' depicted the Panama Canal itself, occupying nearly 2ha; others on a similar scale portrayed Yellowstone Park and the Grand Canyon. Overseas cultures too were represented in the exhibition, not least by a series of impressive scale models of Chinese pagodas—the Tushanwan pagodas—crafted by teenage boys at an orphanage in Shanghai, and currently on display at San Francisco International Airport.

⁹ Moore, S.J. 2013. *Empire on Display. San Francisco's Panama-Pacific International Exhibition of 1915*. Norman: University of Oklahoma Press.



The central rotunda of the Palace of Fine Arts, San Francisco (photograph: Tara-Jane Sutcliffe).

The Panama-Pacific International Exposition in its vast complex of buildings opened on 20 February 1915 but closed after less than 10 months (and 18 million visitors), on 4 December. Despite the effort that had gone into construction, most of the buildings were then demolished, and only the Palace of Fine Arts survives *in situ* to illustrate something of what (fleetingly) had been. It is an impressive neoclassical structure with central rotunda, exhibit hall, and flanking colonnades fronting an artificial lake. But even that isn't strictly authentic, since the original structure was dismantled and rebuilt in concrete in the 1960s. It is curious to reflect that even here, at this Pacific frontier of the USA, neoclassical design—derived ultimately from the Roman Mediterranean—was chosen to convey messages of authority, dignity and power.

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