



*2011 excavations within the ruined gothic-style church of Nossa Senhora da Luz on Santiago, Cape Verde Islands (see Evans et al., 'Finding Alcatrazes', in August's Project Gallery; photograph: Christopher Evans).*



*The Mycenaean burial site at Voudeni, Achaia (Greece). South-east view overlooking the dromoi of several Mycenaean tombs (dromos: a rock-cut road leading to the entrance of a tomb) (see Brysbaert, 'SETinSTONE', in August's Project Gallery; photograph: Ann Brysbaert).*

# EDITORIAL

☞ Archaeologists, it must ruefully be admitted, are often the beneficiaries of past societies' disasters. How much more do we know of Pompeii and Herculaneum owing to the ash and pumice that engulfed them on that fatal day in AD 79? Yet the plaster casts of the victims remind us vividly of the cost in human lives, and recent analysis of the eruption has underlined what a terrifying experience that must have been. Similar evidence from other parts of the world is equally sobering: the iron-clad warrior who was overcome by pyroclastic flows at Kanai Higashiura in sixth-century Japan<sup>1</sup>, for example, or the victims of the 1815 Tambora eruption, excavated at Pancasila in Indonesia<sup>2</sup>.

The 'Pompeii effect' is well known and extends back far in time, to (for instance) the Laetoli footprints left by *Australopithecus afarensis* in wet volcanic ash in Tanzania, some 3.6 million years ago. It can include whole landscapes, and give remarkable insights into fields and farming: see the article about plants and crops at Joya de Cerén in El Salvador in this issue (pp. 980–97). One of the best-known volcanic eruptions in archaeology, however, was the massive explosion that blew apart the Aegean island of Santorini around 1600 BC, and this year marks the fiftieth anniversary of its discovery and first excavation. Spyros Marinatos, who began those excavations, had drawn attention to the eruption in a key *Antiquity* article some 30 years before. The widespread destruction of Minoan Crete, he argued, had only one plausible explanation: "a tremendous eruption of the volcano on the neighbouring island of Thera"<sup>3</sup>.

So far, no victims have been found at Akrotiri. The residents probably took heed of earthquakes that preceded the eruption and fled in good time. Indeed, the evidence suggests an initial evacuation, followed by a major earthquake that caused the houses to collapse. People then returned and had begun to repair them when the volcano erupted, but once again they must have escaped. Perhaps they made it to safety, or maybe their small ships—similar to those shown in the 'Ship Procession'—were engulfed by the massive tsunami that followed the collapse of the caldera.

Akrotiri ended its days entombed in ash, but it is not only volcanic eruptions that lead to the 'Pompeii effect'. Floods and earthquakes too can give a 'snapshot', where activities stopped abruptly and we get a glimpse of homes and workplaces frozen in time. An excellent example in this issue is the mosaic workshop discovered at Jerash in Jordan (pp. 998–1010). Jerash is one of the showcase classical cities of the region, with colonnaded streets, temples, houses and a spectacular Roman theatre. But life did not end with the Romans, and the

<sup>1</sup> Patel, S.S. 2013. Japan. *Archaeology*, 11 February 2013. Available at: <http://bit.ly/2ryuHBY> (accessed 2 June 2017).

<sup>2</sup> Popular Archaeology. 2012. Archaeologists excavate a lost kingdom buried beneath volcanic ash, 12 May 2012. Available at: <http://bit.ly/2rMIEOw> (accessed 2 June 2017).

<sup>3</sup> Marinatos, S. 1939. The volcanic destruction of Minoan Crete. *Antiquity* 13: 425–39. <https://doi.org/10.1017/S0003598X00028088>



*Remains of two-storey houses at Akrotiri, destroyed in an earthquake around 1600 BC. © Norbert Nagel, published under the CC BY-SA 3.0 license.*

city continued to thrive long after the arrival of Islam. That much is illustrated by the numerous later mosaics surviving at Jerash and at other early Islamic sites throughout the region, such as the famous ‘desert castles’, the pleasure palaces of the Umayyad elite. This was an unbroken craft tradition, handed down by the Byzantine mosaicists who, a couple of centuries earlier, had been laying spectacular church floors.

The results are plain to see, but how was the work organised? In AD 749 a major earthquake hit Jerash. No doubt it was a catastrophe for the city’s population, but for archaeologists today it has left invaluable clues in the shape of an abandoned mosaic workshop. Along one side of a ground-floor room was a stone trough containing thousands of pristine white tesserae, just waiting to be used. According to authors Achim Lichtenberger and Rubina Raja, however, this was not a central facility serving the whole of the city. Mosaics were heavy things and were made close to where they were laid. So in this case, the white mosaic floor was probably destined for one of the upper rooms in the same house. No doubt the trough would have been dismantled as soon as the work was complete. Temporary facilities such as this pose a real problem for archaeologists: they are much less likely to be found than a long-established pottery workshop or an elaborate smelting kiln. It is only when disaster strikes that the veil is lifted and we can glimpse mosaic production actually in progress.

## The last continent

**U** Prehistorians worldwide were intrigued earlier this year to read of stone tools associated with mastodon remains in southern California dating back 130 000 years<sup>4</sup>. The Cerutti

<sup>4</sup> Holen, S.R., T.A. Deméré, D.C. Fisher, R. Fullagar, J.B. Paces, G.T. Jefferson, J.M. Beeton, R.A. Cerutti, A.N. Rountrey, L. Vescera & K.A. Holen. 2017. A 130,000-year-old archaeological site in southern California, USA. *Nature* 544: 479–83. <https://doi.org/10.1038/nature22065>

Mastodon site, to give it its official title, is claimed to push back the first settlement of the Americas by over 100 000 years. The evidence has not convinced everybody; there seems little doubt about the date, but whether the mastodon was butchered by humans is not so clearly established.

This is the latest in a series of controversies surrounding the earliest settlement of the Americas. If colonisation was overland, then the presence of a Beringian landbridge and an ice-free corridor through North America sets the chronology. Only when conditions were right could Siberian communities have made the move. If the first people came by sea, travelling along the coast, then different chronologies are possible, but much of the relevant coastline has since been flooded by sea-level rise, making evidence difficult to find. The location of the best-documented early site at the southern tip of South America, Monte Verde, came as something of a surprise. It demonstrates just how much there is still to find, but certainly suggests that the earliest settlers may have expanded rapidly down the Pacific coast.

A new piece of that jigsaw has been added by Tom Dillehay and his team excavating at Huaca Prieta in Peru. They described the deep stratigraphy at the site in *Antiquity* back in 2012<sup>5</sup>. The team have now confirmed intermittent occupation at Huaca Prieta as early as 15 000 years ago, while the Monte Verde occupation has been pushed back a millennium and a half before that. A fascinating feature of the Huaca Prieta material is the presence of preserved 10 000-year-old basketry—a technology so familiar from later periods on the arid Pacific coast of Peru. The lithics may be relatively simple, but the organics might tell a different story<sup>6</sup>.

On the other side of South America, in Brazil, other field projects are continuing to explore the evidence from rockshelters that may indicate even earlier human activity. At one of these, Santa Elina, dates reported by Denis Vialou and his colleagues go back to around 27 000 BP (see pp. 865–84 in this issue). This is a stratified site with flaked lithics and remains of the extinct ground sloth *Glossotherium*. These dates will probably prove controversial, but we need, perhaps, to think carefully about what we expect. What kind of evidence will the earliest sites present? In our April issue, Thomas Leppard and Curtis Runnels raised a similar issue relating to Palaeolithic island colonisation in Southeast Asia and the Mediterranean<sup>7</sup>. Evidence of first contact may not always be easy to recognise. Small mobile groups of hunters and foragers may not always leave diagnostic traces. Should we dismiss all early sites as outliers? Or are they parts of a pattern that will steadily be filled

- <sup>5</sup> Dillehay, T.D., D. Bonavia, S. Goodbred, M. Pino, V. Vasquez, T. Rosales Tham, W. Conklin, J. Splitstoser, D. Piperno, J. Iriarte, A. Grobman, G. Levi-Lazzaris, D. Moreira, M. Lopez, T. Tung, A. Titelbaum, J. Verano, J. Adovasio, L. Scott Cummings, P. Bearéz, E. Dufour, O. Tombret, M. Ramirez, R. Beavins, L. DeSantis, I. Rey, P. Mink, G. Maggard & T. Franco. 2012. Chronology, mound-building and environment at Huaca Prieta, coastal Peru, from 13,700 to 4000 years ago. *Antiquity* 86: 48–70. <https://doi.org/10.1017/S0003598X00062451>
- <sup>6</sup> Dillehay, T.D., S. Goodbred, M. Pino, V.F. Vásquez Sánchez, T. Rosales Tham, J. Adovasio, M.B. Collins, P.J. Netherly, C.A. Hastorf, K.L. Chiou, D. Piperno, I. Rey & N. Velchoff. 2017. Simple technologies and diverse food strategies of the Late Pleistocene and Early Holocene at Huaca Prieta, coastal Peru. *Science Advances* 3: article no. e1602778. <https://doi.org/10.1126/sciadv.1602778>
- <sup>7</sup> Leppard, T.P. & C. Runnels. 2017. Maritime hominin dispersals in the Pleistocene: advancing the debate. *Antiquity* 91: 510–19. <https://doi.org/10.15184/aqy.2017.16>

out over the coming years? Whatever the final outcome, we should surely assess each case carefully on its merits.

## Antiquity prizes

Each year we award a prize for the best article published in *Antiquity* the previous year (the Antiquity Prize), with another prize (the Ben Cullen Prize) for the runner-up. The Editorial Advisory Board is asked to nominate a shortlist, from which the winners are chosen by the Antiquity Trust. I am delighted to announce here the winners for 2017.

In a tight contest, the Antiquity Prize 2017 was awarded to Sarah Parcak, David Gathings, Chase Childs, Greg Mumford and Eric Cline for their article ‘Satellite evidence of archaeological site looting in Egypt: 2002–2013’, published in our February 2016 issue. Using Google Earth, Parcak and her team were able to chart an upsurge in looting coincident with the economic crisis of 2009, growing still more acute following the subsequent ‘Arab Spring’. Their projections for the future, if looting were to continue unchecked, make for sobering reading, but the worst will hopefully be averted by new measures put in place by the Egyptian authorities.

Second place, and the Ben Cullen Prize, went to Mike Parker Pearson and his co-workers for ‘Beaker people in Britain: migration, mobility and diet’, from our June 2016 issue. Bell Beakers are international, and the ‘Beaker people’ are well established in the older archaeological literature. Stable isotope analysis of the Amesbury Archer—one of the very earliest Beaker burials in Britain—has revealed his Continental origins. That, however, was only a single individual. Parker Pearson’s study quantifies mobility at a much larger scale, showing that of 264 individuals who were analysed, over 40 per cent had moved during their lifetime, either from region to region within Britain, or from overseas. The actual figure could be much higher. It might even be in line with recent aDNA analysis that suggested that incoming Beaker users almost completely supplanted the indigenous Neolithic population of Britain<sup>8</sup>. Time will tell, but for now we offer our congratulations to Sarah Parcak and Mike Parker Pearson and their respective teams.

In signing off this editorial, I should like to draw readers’ attention once again to the Project Gallery, our online collection of shorter articles and field reports. These articles (typically around 1000 words) are now available as downloadable pdfs. They are typeset in the same format as the papers published in the printed journal, and are assigned permanent DOIs for improved citation and referencing purposes. They are hence an online-only supplement and, moreover, are free to view. They already receive wide attention (the study of the pet cats from Berenike<sup>9</sup> was one of our highest-scoring downloads in recent months), and we have plans to develop the Project Gallery further in the coming years.

Chris Scarre

Durham, 1 August 2017

<sup>8</sup> Olalde, I. *et al.* In preparation. The Beaker phenomenon and the genomic transformation of northwest Europe. <http://dx.doi.org/10.1101/135962>

<sup>9</sup> Osypińska, M. 2016. Pet cats at the Early Roman Red Sea port of Berenike, Egypt. *Antiquity* 90(354): Project Gallery. <https://doi.org/10.15184/aqy.2016.181>