Fenstanton has always been on or next to a major road: its High Street follows the approximate route of the Via Devana, which linked the Roman towns at Cambridge and Godmanchester, and until recent changes, was followed more or less by the A14. Extensive cropmarks of probable Roman date surround the village, and hints of a Roman villa have been found on its northern edge. However, the southern part of Fenstanton was largely untested by archaeological excavation when in 2016 Albion Archaeology evaluated the proposed site of a new housing development by Tilia Homes (previously known as Kier Living) on Cambridge Road.

Our evaluation trenches quickly made it clear that a Roman settlement was present – perhaps slightly larger than average, judging by the number of coins and the volume of pottery and animal bone. The trenches at the western end were particularly productive, showing some of the best preservation seen on rural sites in Cambridgeshire outside the Fens, with buried soils and metallic surfaces surviving beneath the level reached by medieval ploughing. In recognition of this, Tilia Homes worked with the County Council’s planning archaeologists to revise their development and ensure that the best-preserved Roman remains could continue to survive in situ.

We excavated the remaining 2.3ha in 2017. As this work was coming to an end, however, we began evaluating the location of a separate housing development by Morris Homes across the road. Expectations were initially low: rather than being a green field largely untouched by modern works, as was true at Cambridge...
Road, the Dairy Crest site housed a redundant bottling plant and was brownfield land in its entirety. It quickly became apparent, however, not only that archaeological remains had survived away from the dairy buildings themselves, but also that these represented a continuation of what we had found at Cambridge Road. So in 2018 we were back in Fenstanton, excavating 1.1ha in the eastern half of the Dairy Crest site, finding Roman remains throughout. These continued to the west, albeit at perhaps a lower density, but extensive modern disturbance and widespread areas of contaminated ground meant that archaeological work in this area was not viable.

Below: Excavations at Fenstanton revealed a Roman settlement with five small cemeteries; the pierced heel was in Cemetery D

Above: The better preserved of only two such finds from the Roman world, a heel bone and nail from Fenstanton, Cambridgeshire, is best explained as a case of crucifixion.
A roadside settlement

Once we had identified the remains of a crucified man, known now as Skeleton 4926, they naturally drew much of our research attention. The settlement in which they were found, however, as well as providing a context for what is one of many burials, is of considerable interest in its own right. Initial evaluation of the Cambridge Road site had suggested origins in the Late Iron Age (150 BC – AD 50), but remains of this date were subsequently identified only at Dairy Crest, and then to the extent of just a small cluster of pits, postholes and ditches. The Roman settlement appears to have been a new venture formed in the late first or early second century AD, growing up alongside the road and continuing throughout Romano-British times.

Characterising this settlement is complicated by the fact that its presumed core lies unexcavated between our two sites. Aside from metalled surfaces identified in the evaluation, which may have been streets or yards, the density of archaeological features increased greatly at the western end of the Cambridge Road area, as did the recovery of pottery and other artefacts. Distribution at Dairy Crest was more even, but tended to increase towards the east. The presence of cemeteries on both sites further suggests that the areas in which they were situated were peripheral to the settlement, as the Romans usually located cemeteries away from habitation areas.

At a conservative estimate, the enclosed settlement in the western half of the Cambridge Road site and at Dairy Crest covered an area of at least 6ha. This is appreciably above the level of an ordinary farmstead, making it more likely to have been a nucleated roadside village. If the Via Devana lay to the north, however, then the configuration of the enclosures and distribution of artefacts suggest that the settlement was focused on a north-south road, not an east-west one (the only Roman building we identified, standing at Cambridge Road in the fourth century, faced west not north). Did the settlement lie south of a crossroads on the Via Devana? If so, and it extended as far north as the Via Devana (wherever exactly that may have been) and also included the enclosures at the eastern end of Cambridge Road, then its overall extent may have been twice as large.

Support for the concept of a nucleated roadside settlement comes from an unexpected source: cattle bones, particularly those from...
Cambridge Road. Butchery marks were recorded on 39% of the cattle assemblage from Cambridge Road and 18% from Dairy Crest, with the former figure inflated by the presence of large numbers of heavily butchered upper limb bones – humeri, femora, radii and tibiae. Many of the marks were scoops made when a heavy blade was run along the bone during filleting: this method was common in Roman Britain but seems to have been practised mostly by professional butchers operating in military sites and larger conurbations.

Many of these scoop marks were found on bones that had been split longitudinally. Such splitting would have released large amounts of marrow and grease, and it seems that previously filleted upper limb bones were sometimes collected and processed in bulk. At least 229 (34%) of those from Cambridge Road were recorded as split, but only ten (6%) from Dairy Crest.

Similar concentrations of scoop-marked bones have been found quite commonly in major urban centres such as Winchester and Gloucester, but very rarely on small rural settlements. They are sometimes found, however,
on smaller nucleated sites, such as three roadside settlements elsewhere in Cambridgeshire: Tort Hill East; the Camp Ground site in Earith; and at Grandford, March. These accumulations are often interpreted as waste resulting from large-scale soup production, but the marrow and grease obtained could have been used in a variety of ways, such as the manufacture of cosmetics, soap, and possibly tallow for candles.

This large-scale systematic processing seems to have been concentrated at the very western end of the Cambridge Road site. Many of the bones may have been obtained from cattle slaughtered and processed by butchers elsewhere within the overall settlement, but the import of some filleted upper limb bones is perhaps more likely. After meat had been stripped by specialist butchers operating in a major town, the bones could have been transported to sites like Fenstanton for further processing of the marrow products. It is increasingly apparent from isotope studies that cattle were regularly moved within and between regions in Roman Britain, and their products are also likely to have been redistributed widely, as can be inferred from writing tablets from Vindolanda Roman fort on Hadrian’s Wall.

A collection of small copper-alloy pieces from the Cambridge Road site includes an enamelled horse-and-rider brooch, an avian figurine and a votive stand, suggesting there may have been a temple or shrine nearby. If so, its remains lie in an unexcavated part of the settlement.

**A Roman community**

We identified five small, discrete cemeteries and a few isolated burials, with a total count of 48 individuals. More than that are almost certain to have been buried within the excavation areas originally, however: despite the unexpectedly good survival of remains at Dairy Crest, building foundations may have destroyed some, while additional burials were undoubtedly lost to widespread topsoil and subsoil stripping during construction of the dairy. Some of the burials identified were represented by no more than a few bones, while conversely some largely complete skeletons were found in graves that survived only a few inches deep.

Excavation of the graves was challenging. The few isolated burials at Cambridge Road were discovered during the summer, but November had arrived by the time that the two cemeteries were excavated. Dairy Crest was even worse: these were all excavated in March and April, and a major water leak on site did nothing to help matters.

The combined evidence from radiocarbon dating, physical relationships with enclosure ditches,
rare and exotic species imbued with a special status deemed appropriate for funerary contexts.

Aside from the people whose remains were inhumed, we also found a comparatively rare *bustum* burial at the eastern end of Cambridge Road. This is a type of burial in which a body is cremated on a pyre over a shallow pit, after which the remains of the pyre as well as the person are left in the pit and buried. It was particularly unusual in that the base of the pit was covered with charred bundles of reeds; these are unlikely to be unburnt fuel for the pyre, perhaps representing instead a bed of reeds laid in the base of the pit for the pyre to collapse into. They may have survived by being damp at the time and not combusting fully. However, the amount of calcined bone recovered from the *bustum* was also unusually small, and the overall processes that led to the formation of what we found remain a bit of a mystery.

The condition of the bones varied greatly, but was generally poor, and nearly a quarter were too badly preserved to allow us to determine age or sex. There are only five immature individuals in this population, those that could be aged being a full-term foetus, a newborn, and children of around 4 and 8 years of age. There are close to equal numbers of females and males, and where specimens were examined for ancient DNA (aDNA), there was no discrepancy between the osteological sex assessment and the DNA results – reassuringly for the osteologist (but see below!). No trend could be found in the ages at death, with adult deaths from 18 years up to at least the 50s or 60s.

and a small number of grave goods and accessory pottery vessels recovered alongside the burials, is that the cemeteries date to the fourth century AD. A lone burial at the very western end of the Cambridge Road site is older, from the first or second century AD, whereas Skeleton 4348 (on which more below) was either very late Roman or more likely post-Roman.

We found chicken bones in five of the Dairy Crest graves. Chickens are found relatively often in human burials in Roman Britain, yet their bones are otherwise rarely encountered while excavating settlements. They would appear to have been highly regarded, perhaps being seen as a comparatively

Left: Evidence for a rare *bustum* burial, where a pit was dug under a pyre to take all the remains, includes a puzzling amount of charred reeds; a near-complete third-century Nene Valley colour-coated beaker had been placed in the pit (scale 1m)

Above: A copper-alloy bracelet is among few personal items found in graves; Skeleton 1516 (Cemetery A) was among many remains truncated by later disturbances

Left: Four enamelled copper-alloy plate brooches; decoration of no 3 is closely paralleled with a brooch from Wroxeter bath basilica
Six of the women had changes on their hip bones that some interpret as a sign of a pregnancy that lasted until at least late stage. While this change in women strongly suggests that they have given birth, its absence does not mean the opposite: conversely, it very occasionally occurs in men. As all our cases are adult females, we conclude that each is likely to have had at least one pregnancy and that the population included family groups.

Stature calculation was possible in only 13 cases, unfortunately, due to breakage. Females were on average 158cm tall (5' 2", with a range of around 151–166cm), and males 168cm (5' 6", 152–173cm). Among these, one man stood out from his male compatriots. As an older man, at least 55 years of age and probably older, he would have lost some height since young adulthood, but he is unlikely to have been more than 154.5cm at most, close to the height of the shortest woman. If he is a representative of shorter men who have not been found, the male average is low for local populations of the time; if he is an outlier, the male average height rises to 170cm, which makes male and female heights very close to the local average.

Along with grouped burials, epigenetic traits were considered as ways of identifying relatedness. A type of congenital fusion of the neck vertebrae, Klippel-Feil syndrome, was present in three individuals (above), so these were among skeletons we submitted for aDNA analysis to Christiana Scheib, a University of Cambridge research fellow who leads the Ancient DNA research group at the University of Tartu, Estonia.

Unfortunately, she showed that the epigenetic traits were not indicators of relatedness, even those traits regarded as having a strong heritable tendency – a salutary and disheartening message to the osteologist! However, Scheib found that an adult female and male who were buried next to each other in Cemetery D (Skeletons 4859 and 4923) are first-degree relatives with the same mtDNA haplogroup (H1). That means that they are either mother-son or siblings. Two men in adjacent graves in Cemetery A are second-degree relatives, so could be either half-siblings, uncle-nephew or grandfather-grandson, also buried in side-by-side graves.

**Malaria, bad teeth & injuries**

The population would have had a great deal of morbidity due to the common problems of dental disease and osteoarthritic/degenerative arthritis and related disorders. Just over two-thirds of the adults with surviving jaws or teeth had at least one dental disorder, and most had more than one – up to five. Unsurprisingly, instances of dental disease increase with age. The half of the population that had caries and abscesses overlap a little with the luckier half that had already shed teeth and might have therefore got some relief from their inflamed gums, toothaches and general debility from infections in the mouth.

Arthritis was found in nearly half of the skeletons that could be assessed, almost equally between women and men. All the affected individuals bar one have changes in the spine, often severe, even when other areas are also affected, and nine have changes in the shoulder and arm. Men and women are both affected, so if this were due to an activity, it was not gender-based; on the other hand, the instances of the most severe degenerative arthritis of the spine are all in men.

Half of the population had *cribra orbitalia* (below, an indicator of conditions severely restricting or removing iron from the body), which is a high level for Britain. All but one case are healed, showing that affected individuals were developing *cribra* in childhood and then recovering. This pattern fits several of the numerous causes of anaemia, and we suggest here that malaria is the most likely, due to...
the high prevalence, the distribution in the population, and the site’s location on the fen edge. Conversely, however, the nearby Knobb’s Farm site at Somersham does not have this high prevalence despite also being on the fen edge.

This is a population with a great deal of physical trauma. Cases likely due to the usual misfortunes of life include two damaged vertebrae, a fractured rib, and the congenital conditions Osgood-Schlatter’s disease and Perthes’ disease. These diseases cause damage on the knee and hip joints respectively; the latter leads to very severe osteoarthritis on the misplaced head of the femur and within the hip socket, no longer articulating smoothly with it (opposite).

Three people had spiral fractures of both lower leg bones. All had healed with severe loss of length and angulation, showing that if setting were done, it was barely adequate and did not include traction. One unfortunate older woman, Skeleton 1084, had broken both legs, apparently at the same time (top right), and the stresses on her subsequent walking were shown by the severe arthritis in her feet.

These kinds of fracture tend to be produced by high-energy events – nowadays contact sports are common causes. We can only speculate as to what might have happened to three of the same population: coincidence; falls from height (unlikely in the flat Fens); a sport or occupation involving both men and women; perhaps large and intractable domestic animals were involved?

One of those individuals with leg fractures – plus a suite of other traumas – is Skeleton 4348, the remains of a middle-aged man found prone in a ditch and probably the latest of the burials, perhaps Early Anglo-Saxon in date (a radiocarbon sample gave AD480–540 at 68% probability, 280–550 at 95%). It is tempting to think that he may have lived in the grubenhaus identified at Cambridge Road, but this is only conjecture. He had a row of fractures on six ribs, the form of which indicate that a blow from an edged object – a sword, perhaps – is more likely than a fall (see overleaf). The fractures are just beginning to heal or have reached a stage of non-union in which they would be prevented from healing due to constant movement. He also had a possible cut on one rib; loss
of part of a wrist bone on each hand, which might be congenital but is probably also due to trauma because of the disorganised new bone that has formed in the area; what might be impact damage to the fingers; and arthritis in his shoulders, arms and hands. This indicates at least two episodes of trauma – one long enough in the past to have fully healed and one close to the time of death – and activity that placed considerable stress on the muscles of the upper body.

**Immobilised by trauma**

Skeleton 4926 did not immediately stand out. The grave was one of seven within Cemetery D, all closely spaced but on a variety of alignments, with one of the other graves dug partly through an earlier one. Radiocarbon dating, carried out by SUERC, places 4926 at AD210–340 at 1σ (68.2% probability), or 130–360 at 2σ (95.4% probability).

The body had been laid extended on its back, and orientated north-west/south-east with arms folded at the elbow so that the hands crossed over the pelvis. Twelve iron nails surrounded the skeleton in the grave: one at the head, one at the foot, five forming a straight line on the north side, four forming a curved line on the south side, and one between the ankles. It is possible to imagine that the latter had been displaced and was once part of the south-side line, but even allowing for some other displacement the nails do not form the clearly rectangular, three-dimensional shape of a coffin. Traces of oak on four of them, however, show that some wooden structure, perhaps a bier, had been present.

Bone preservation in this grave was reasonable for the site, with a skull, much of the spine and ribs – albeit badly crushed – limb bones and about half of the bones of the extremities.
present. The skeleton is male, as confirmed by the aDNA. Dental disease had removed and damaged many of his teeth, but based on the level of wear on his molars he falls in the 25–35-year age group. The slight changes of degenerative arthritis on the vertebrae support this age range, but other methods of assessing age were unavailable due to damage and bone loss. Unfortunately his limb bones could not be measured to calculate stature, but he appears average in height and build for his community.

Like many of his fellows, life would have been painful for this man just because of his poor dental health. Three teeth were badly decayed, there were three dental abscess cavities, very severe recession of the bony gum, teeth lost in earlier years and recently, plus a pitted palate that might indicate infection or inflammation in the mouth. He was one of those mentioned above who had healed *cribra orbitalia*, showing some problem with iron intake or absorption during childhood, and was developing arthritis in his spine.

In addition, this is one of a number of skeletons with a variety of changes that are probably traumatic: an indentation in the left fibula (the smaller bone of the lower leg) could well be an old fracture or have been caused by extremely tight binding. Thinned fibulae imply non-use of the lower legs; new bone on the tibial and fibular shafts suggests infection or inflammation caused by a systemic disorder or by local irritation such as binding or shackles. All combine to create a complex picture of illness or injury, of someone immobilised by trauma, disease or possibly punishment.

**Crucifixion?**

It was only while the skeleton was being washed back in the lab that a 13th nail was found, penetrating the right heel bone (calcaneum) horizontally, exiting below the protrusion called the *sustentaculum tali* (see overleaf). The entrance hole (lateral, nailhead side) is almost circular, and at its anterior edge is a small indentation which barely penetrates into the bone. The exit (medial, nail-point side) is also circular but smaller, fitting the size of the nail. The entrance is roughened and slightly crushed but, contrary to most penetrating wounds, is bevelled outwards, while the exit shows little damage other than a little crumbling of the edge. It is assumed that the entrance is larger than the exit because the head of the nail was driven into the bone, and that the smaller indentation is a “misfire”.

This case will be discussed in detail in a forthcoming publication, but we suggest that it is likely to be an instance of crucifixion, the only one known from the British Isles and the fourth reported worldwide – and the best preserved. Although crucifixion was common in the Roman empire (and is seen intermittently worldwide), osteological evidence for the practice is unlikely to be found because nails were not always used – the victim was normally simply tied to the crossbar – and bodies might not appear in formal burial settings.

In only one other example is the physical evidence unequivocal. A skeleton from La Larda, Gavello, Italy has a pierced calcaneum, but no nail is present and the hole resembles root damage. A similar example from Mendes in Egypt is unpublished; a visiting anthropologist again sees root damage as the cause. But in a burial found at Giv‘at ha-Mivtar in north Jerusalem during building work in 1968, a right calcaneum retained a nail which was in exactly the same position as in our case.

A stone box or ossuary had been placed in a rock-cut tomb in the first century AD. On the side was inscribed
the name Yehohanan ben Hagqol, and it contained com mingled and incomplete human remains. It was usual practice to remove any nails after crucifixion for re-use, discard or as amulets, but in this case the nail had bent and become fixed in the bone. The man’s legs are thought to have been positioned on either side of the cross’s upright post, the feet fastened by horizontal nails through the heels. This was probably the most common method, differing from Christian iconography which shows feet fastened to the front of the cross (discussed by Granger Cook, see endnote for this and other references).

We consider our specimen was positioned similarly to that from Giv’at ha-Mivtar, due to the position and angle of the hole. Nailing was not primarily for affixing the body, but for preventing victims from using their feet to ease the position during the hours or days leading to death — which was usually due to asphyxia as the chest muscles became exhausted, combined perhaps with blood loss and dehydration. The short length of nail that emerged from the bone in the Fenstanton specimen is not therefore inadequate for its purpose, since it would have contributed to disabling the individual.

Trying to resist the dramatic interpretation of crucifixion, and desperately using Occam’s razor, we considered damage during coffining or burial. If there had been a wooden structure it is extremely unlikely that it would have been built around the body, and, even if it had been, that the foot would not simply have been pushed out of position by the impact of a nail. There is again only a remote possibility that a nail could have entered the foot, let alone penetrated the whole thickness of the calcaneum, without the foot moving or the operators stopping. Just possibly the nailing was
ritual anchoring of the corpse to prevent “walking”, but a more efficient anchoring might be expected than this single nail inefficiently placed.

In light of the numerous signs of this man’s ante-mortem pathology, particularly in the legs, and the exact parallel from Giv’at ha-Mivtar, we consider that he had been subject to punitive injuries and/or immobilisation, probably before and around the time of death, as during crucifixion. That leads us to wonder about his other injuries and what position in society he had. Was he a slave? The punishment was banned for citizens in AD212, but slaves could still be crucified and there were also many exceptions to the ban (several crimes, including treason, are cited in texts) – or perhaps the practice persisted in this wild land at the edge of empire. And yet, his body went to someone who gave him a standard burial within one of the community’s cemeteries.

Fenstanton was once a Roman roadside village, now revealed thanks to housing developments. There was a prominent industrial element to the settlement, which may have processed materials imported from larger towns. Families and all ages are represented among the remains, with high incidences of illness and injury. In only one of the graves in small cemeteries around the edge, however, is there reason to suspect an unusual death. A man around 30 years old had been respectfully buried, possibly with a bier, but a nail through one of his heels is difficult to explain as anything other than evidence that he had been crucified. We will never know his name or the perceived offence for which he was apparently killed, but his story will be pondered by many more today than ever knew of him at the time he died.

See “Anthropological observations on the skeletal remains from Giv’at ha-Mivtar”, by N Haas, Israel Exploration Journal 20 (1970), 38–59. “The crucified man from Giv’at ha-Mivtar: a reappraisal”, by J Zias & E Sekeles, Israel Exploration Journal 35 (1985), 22–27, and Crucifixion in the Mediterranean World, by JG Cook (Mohr Siebeck, 2019). The full results of these excavations are in the final stages of analysis and will be published in specialist journals and as a separate monograph, with the archive deposited in the Cambridgeshire County Council Archaeological Archive Facility. Ingham is grateful to Mark Malby, Bournemouth University, for his analysis of the cattle and chicken bones, to Dana Challinor for her thoughts on the bustem burial, and to Tilla Home for funding an outreach programme on the excavations.

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