

Environmental and domestic animal evidence from animal marks on Roman ceramic tiles and building material from The Aylsham Roman Project at Woodgate, Aylsham. Julie Curl. May 2017.



Introduction

Following an archaeological excavation in 2016 and regular collection of Roman material over 40 years, a large amount of Roman ceramic building material from Aylsham has been examined and shown to include a relatively large number of animal marks. The non-skeletal animal evidence was left around 1,700 years ago when a new Roman villa was under construction in northeast Norfolk. The tiles are likely to have been made on or close to the site of the villa. Pottery was also made on the site to supply the villa, which is confirmed by the discovery of two kilns. The marks were made when the tiles were freshly made and left out to dry on the ground before they were fired for use in the building. The evidence shows that while the tiles were drying a range of creatures were venturing out, mainly at night, and wandering, exploring, feeding and hunting over the drying tiles leaving a variety of paw prints and tail marks over the exposed surfaces.



Methodology

The tiles and ceramic building material pieces were scanned for clear or reasonably clear animal marks. These marks examined by eye, with magnifiers and a hand-lens. A series of scaled digital photographs were taken in different light settings to show shadows and contrast to enable prints to be identified. Prints of the digital photographs were sometimes examined on a light box to further clarify the marks or by using graphics packages to adjust settings and improve clarity. Shrinkage of the tile after drying and firing of about 10% was taken into account when identifying prints and trails. Measurements were taken of clear prints to aid identification of species.

Prints and trails were identified using a variety of sources, primarily using a Hamlyn Guide for animal tracks and trails (Brown, *et al*, 2004) and a variety of other wildlife publications, as well as comparing with known foot prints from a variety of sources including reliable modern animal tracks, photographs and diagrams.



Reasons for the examination of the ceramic building material for animal evidence.

Most sites where there are large collections of ceramic building material, and in particular tiles, produce occasional clear dog or hoof prints and infrequent human finger prints or graffiti. The initial potential with the tiles had been obvious dog marks and human finger marks seen during the collection of the tiles and during the first excavation in 2016. The Villa site at Woodgate in Aylsham produced a tile with a possible rodent track, which included a

possible tail drag, which was examined in detail. The results from this single tile, which produced evidence for more than one species, showed great potential to recover environmental evidence from a site where bone preservation is not good due to sandy soils and acidic conditions



Completeness of prints

Most prints on these tile are incomplete and many factors can affect the completeness of surviving prints. Some marks may be obscured by other tracks. Others might be affected by vegetation around the drying tile and if an animal steps partly on a leaf, then only part of the print is left.

Dampness and rain can damage prints while the tile is drying. The presence of any slugs and snails on the tile while it is drying might also affect prints. Adverse soil conditions and weathering can further erode the surfaces of the tile. Many incomplete prints indicate the activity and speed of movement of the animal at the time the prints were made, with some running and leaping animals leaving only some toe prints.

Animal information retrieved from Villa Site tiles so far



Plate 1. Roman roof tile with a newt drag from the centre right and fox cub prints from the centre left. Random, often partial, rodent prints also present.



The tile with the possible tail drag (Plate 1)

On examination and comparison with known tracks this, the initial tile is most likely to show the trail of a newt, the size suggesting a Great Crested Newt. There are deep furrows where the body and tail have dragged through the wet clay. Accompanying the drag marks are small foot prints, many light, blurred or worn; some of the foot prints have clear toes and there are some that show webbing, which distinguishes these prints from a lizard. The newt had been walking across the centre of the tile in one direction and

covers approximately two thirds of the length of the tile and stops without any evidence for the trail continuing in any direction.

In the opposite direction is one clear fox cub print and several partial prints, some with claw marks visible. The main print can be distinguished from cat by the shape of the pads and presence of claws. The features that identify the prints as fox rather than dog are that the two central toes that point inwards, a feature of fox, while a dog print would show outward pointing central toe pads. The size suggests a fox cub. The main fox cub print, clearest as it might have been put down with some force, joins with the trail left by the newt, appearing to stop the newt. It is most likely that the fox cub had seen or heard the newt and was probably play hunting with it. In addition to the fox and newt on this tile, there are a variety of rodent prints.

Results so far from other Villa site tiles examined

A range of species have so far been identified from the scan of the Villa site tiles, which are summarised in the following groups: rodents, larger mammals, herpetofauna and birds.

Rodents

A range of rodents have been noted, including mice, voles and Water Shrew. Such creatures would be expected to be frequent as most would find access to drying tiles easy and they would be attracted to the range of invertebrates and plant material around the tiles.

Larger mammals (Plates 2 and 3)

Canid prints are the most frequent, which include dogs and foxes. Dogs would have been companions, guard and hunting dogs that would have accompanied tile makers, wood workers, builders, potters and others involved in the setting up of a new villa.

Smaller mammals include Stoat and Weasel, with these small mustelids hunting other fauna around the site. Prints of either pig or Wild Boar were recorded and these include a large print and small print on one tile, which would suggest an adult or older juvenile and a small piglet. A possible Hare was also recorded.

The mammal prints have included some notable species. One Otter was clearly identified from the arrangement of the pad and toes with the webbing in between. Tile and pottery production would have required a water supply, with wetland, a river and spring in close proximity, this environment would support otters, which would have been more widespread in the Roman period.

Two cat prints have been identified so far (Plates 2 and 3), but neither compare with the domestic cat prints normally seen around urban sites. One matches the toe arrangement of the European Wild Cat, which differ from domestic cats.



Plate 2. European Wildcat on the left with a small dog print on the right.

The second cat print seen is represented by three toes marks, which do not show any claw marks. The estimated size of the whole print would probably exceed 6cm. The size would suggest Lynx, but the toe pads are more oval and slightly pointed and does not compare well enough for Lynx for a certain identification. Comparisons are being made with some smaller species of large cat, including the African species of Serval and Caracal, both species known to have been kept as pets by Egyptians and Romans and may be possible pets kept by more wealthy Romans. So far the print compares very well both in size and shape with the Caracal.



Plate 3. Large cat (partial) print.

Herpetofauna

There have been tracks of newts and lizards – the newt dragging its body and the lizard walking with its body higher. Some prints compare well to frogs and toads. There are some marks that may be evidence of snake, but these need further examination and comparison.

Birds

Foot prints of two sizes of birds have been seen. Birds are likely on drying tiles as, like with many other creatures, they might be attracted by invertebrates and plant material.



The 2016 Excavation Ceramic Material (Plate 4)

To date, approximately 10% of the excavation material has been examined, with most of this consisting of material from the kilns.

Canids have been identified, most probably dogs, but wolf cannot be ruled out without further comparison. One deer hoof was recorded, with this comparing well with Red Deer. A range of rodents have also been seen.

The most exciting identification from the 2016 excavation CBM so far has been that of a Pine Marten. The Marten print is a partial print, with just toes clearly visible. Such partial prints indicate a running and bounding animal, which is typical of the usual gait of this species, which may have been hunting the range of smaller species present on the drying clay.



Plate 4. Incomplete Pine Marten paw print.



Discussion

The drying tiles are clearly attracting a variety of creatures. Invertebrates (including snails, slugs, insects and woodlice) would have been attracted to the moisture, shade and cover. Invertebrates would have also been present on any vegetation used for separation of tiles during drying or underneath the tiles. The invertebrates would attract a range of rodents, birds and herpetofauna, even foxes. In turn, the rodents and herpetofauna would have attracted larger predators like the range mustelids, foxes and cats. Some animals, such as the deer, hare and pig/boar would have been foraging in the area and close to the waterside.

Dogs might be present at site as companions, guard dogs and hunting dogs with builders and crafts people who would have been involved in the construction of the new Villa at Woodgate. Foxes, Stoats and Weasels are likely to have been hunting the rodents and even invertebrates around the tiles and even just exploring the new features and activities in their environment. The Pine Marten can often be found in pine forest, but is equally at home in deciduous or mixed woodland. Martens might normally be discovered in archaeological assemblages when their paths with humans have sometimes crossed, for example, when they have been caught for fur use.

Otter would be expected in a wetland environment, in particular a river environment where fish could be caught, smaller bodies of water also attract Otter, including fish-stocked ponds or pools with frogs, toads or newts. Otter can stray from the waterside areas in search of birds nests for chicks and even eggs and they will take small mammals.

The size of the larger cat print might suggest the European Lynx, which was resident in Britain until at least the Roman period. However, most evidence for Lynx has been found in northern areas and in the west of the country, most often in caves; to date, no clear evidence of Lynx has been identified from Norfolk. However, the ARP tile print does not compare well with known Lynx reference material. Comparisons are being made with other smaller species of large cat, including the African species of Serval and Caracal, both species known to have been kept as pets by Egyptians and Romans and these may be possible pets kept by more wealthy Romans. So far the print compares well both in size and shape with the Caracal. Further research needs to be carried out with this print, but an escaped pet, status symbol or even a performing animal or curiosity from the Woodgate villa, another local villa or even from the local Roman town at Caister-by-Norwich has to be considered.

It is interesting that, to date, the only clear and certain domestic animal marks identified are those of dogs. The prints so far suggest a construction site surrounded by wildlife and not one of permanent habitation with the range of domestic stock such as goats and domestic cats and even children's foot or hand prints that are sometimes found at other more established sites of human habitation.



Potential of this assemblage for further work and future work plans

The value of examining the tiles from sites such as Aylsham is enormous. The soil conditions are not ideal for good preservation of bone and most skeletal material at this site is likely to have been lost. Wild species may be just fleeting visitors to the area and their bone remains would not be recovered unless they had been utilised by the inhabitants of the site. The ceramics survive in areas where bone may be destroyed and the occasional foot print may be the only evidence that some species even existed here.

Full quantification of the villa site material has yet to be made in terms of counts and weight and the examination of the excavation material is still in progress. For the villa site, it is estimated that approximately a 30% of the material shows animal evidence, with much of this in the form of rodents and small fauna. Approximately 10% shows more clearly defined prints that are identifiable to species.

The examination of this assemblage has been extremely worthwhile as a method of providing additional environmental evidence. This assemblage has provided probably the first known post-Ice-Age large cat evidence for Norfolk, which is of great interest. If the larger cat is identified as Lynx, this British cat has not been recorded from post-glacial material in Norfolk. If the larger Aylsham Roman Project cat is finally identified as a species of African cat that might have been kept as a pet, then this exciting; as far as is known, such animals have not produced any evidence locally, either in terms of animal tracks or actual skeletal evidence. Although the European Wild Cat has been recorded, clear evidence is scarce as post-cranial skeletal material is difficult to distinguish, while the foot print has the notable feature of the positioning of the toes.

The 2016 excavation material has provided the first known record of Pine Marten in historic Norfolk, which was previously only recorded from more northern and western locations.

Of archaeological interest is the potential to estimate the month or season of tile production from species identified, as with the fox cub. Some species only breed once a year and have quite set times of breeding and juvenile development, while others hibernate.

Aside from providing environmental information for the Aylsham Roman Project and helping to build-up a picture of the site prior to and at the time of the construction of the new Villa, there is potential to contribute to current research projects, including re-introduction projects. Re-introduction projects take into account the archaeological evidence or lack of evidence for species when considering projects. Information from this and hopefully other projects will contribute to that research.

Research is continuing and full identifications are being sought using a variety of comparative material. A range of large cat specialists are being consulted for assistance with identification of the large cat print and wildlife specialists are being consulted for confirmation with the identifications of some wild species. Attempts will be made to identify as much as possible, although many prints are too incomplete or worn for identifications to be made.

As part of the study, it has been recognised that there can sometimes be difficulty in the identification of domestic dogs and other animals. As many reference collection specimens as possible are being sought, especially for the extensive range of domestic dogs and cats, many which were introduced by the Romans. The aim is to provide drawings of the paw marks of as wide a variety of breeds as possible along with actual size metrical data and the metrical information taking into account the average shrinking of the dried and fired clay. It is hoped that this reference material will help to estimate sizes and types of dog, which may be of particular use where there is canid skeletal material from the same site. It may be possible with this data to link distinctive paw marks with skeletal evidence.

Work is underway with comparing with a small Roman rural site and plans have been made to compare this rural and new construction site with a larger urban Roman site and comparing prints with other excavations around the country.



References

Brown, R.W., Lawrence, M.J. and Pope, J. 2004. *Animal Tracks, Trails and Signs*. Hamlyn Guides.



The lovely Sable – helping to understand about the paw marks on the tiles.