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A murky medieval mystery

or – Are you sure you want to be an Archaeologist? read on . . .

In the Spring of 1997 archaeologists were digging in Beer Cart Lane in central Canterbury. They were hoping to find remains of the town's main Roman temple because they knew it was somewhere in this area... As they dug down they came across the floor of a Medieval building. It was made of chalk. Underneath this layer they found a big rectangular pit packed full with dark, solid soil. They kept digging down . . .

The site was quite near the River Stour and this far down the earth was waterlogged. This meant that any ancient organic things which had become buried in the earth had a good chance of survival. At first glance, apart from a few sherds of pottery, they couldn't see any obvious finds

amongst the soil. Then they found a piece of textile, a kind of linen used by people in the 11th or 12th centuries. They kept digging down . . .

At the bottom they found more of the same kind of pottery, this time half of a cooking pot They identified it as a type that was made at Tyler Hill (just outside the town) and used by Canterbury people in Norman times. But what was the pit used for? Were there any other hidden clues? Then Enid entered the story . . .

The pit was not far from the remains of an old building and Enid had her suspicions. Enid is an Environmental Archaeologist. She takes samples of soil from an excavation and carefully looks through them for small pieces of evidence which may otherwise be missed.

She searches for evidence of ancient plant and animal life. From fragments of bone, shell, fruit stones and seeds, grains, pollen and bugs found on an archaeological site Enid can build up a picture of the natural world or 'environment' as it was hundreds or thousands of years ago. She can discover what crops were cultivated and what animals were farmed, the kinds of fruit and veg people ate and the plants they used for medicines. Some plants and animals need to live in certain temperatures so the types that are found will give her an idea what the climate would have been like in past times. She may also find parasites which live in the human body and this can tell us about people's health, living conditions and personal hygiene.

So . . . what does Enid think this deep, damp pit was used for?

Here are some clues. See if you can work it out.

Clue 1

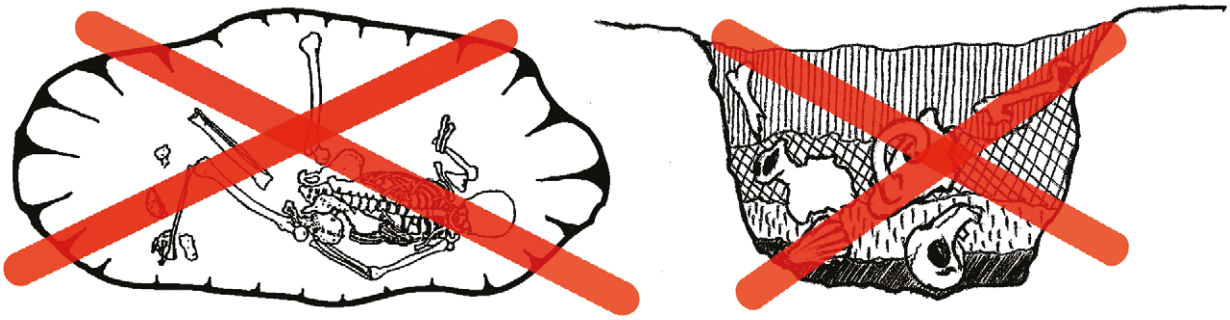
"This is what I found in the pit. The biggest were the plum stones!"

Small fish bones, mainly herring and eel (lots of chewed fragments) • Elderberry seeds • Plum stones (lots and different types) • Grape pips • Damson stones (lots) • Wild strawberry seeds • Sloe stones • Pollen • Bullace stones (type of damson) • Apple or pear pips (difficult to tell apart) • Crab apple pips • Weed seeds (various) • Beans and peas (very few) • Woodlice • Blackberry seeds • Eggs of intestinal worms • Dill, opium poppy, black mustard (small amounts) • Hazelnut shell • Wheat, barley and oat grains (very few) • Hawthorn seeds • Cherry stones • Cereal bran (MASSES! Looks like fine wholemeal flour) • Eggshell membrane • Lice • Fleas • Celery, cabbage, leek, onion (minute pieces, small amounts) • Beetles (including ones which infest peas and beans) • Wood fragments (a few).

"I was really lucky to find so much organic material. Most of it consisted of wild and cultivated fruits (79% of the sample) and 53% of these were plums. Kent has long been known as the 'Garden of England'. Its climate is generally warm and is good for growing fruit. I also found quite a lot of vole and mouse bones and a few frog bones. These small creatures probably died by accidentally falling into the pit . . . "

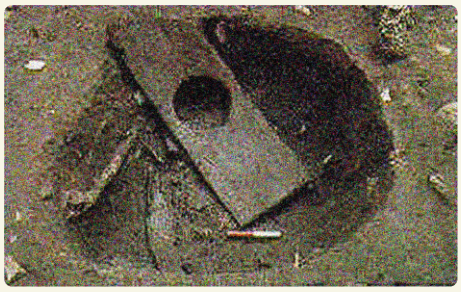
Clue 2

"I think I can safely say what the pit wasn't used for. There is no skeleton, so it's not a grave. If it was someone's rubbish pit, we would have found lots of different broken pottery, probably big animal bones from people's meals, bits of broken tools and things like that. But we didn't, so it isn't . . . "



Clue 3

"We can learn a lot about 'Medieval Meals' that people ate both from archaeological remains and documentary evidence (published recipes). We know that bread was a staple food for both rich and poor. One of the cheaper varieties was 'bran' bread."



This 12th century pit was found in York. It was waterlogged and a wooden plank had been preserved. It originally spanned the pit and had a central hole. Maybe people dropped or passed something through the hole... At Winchester a similar pit was found inside the ruins of a Medieval house. Medieval documents say that the house belonged to someone named John de Tyetyng.

"Various meats were available to everyone but fish was a very important part of the diet. For most of the Medieval period the Roman Catholic religion (to which everyone belonged) forbade the eating of meat on Fridays, Saturdays and Wednesdays. On other religious days you coudn't eat dairy foods. So for about half the days of the year people ate fish. Ordinary people ate mostly salted or pickled herring.

Medieval people preferred to cook their fruit and make pies, flans and puddings because they thought raw fruit brought on fevers and diarrhoea. Nevertheless, they did eat some uncooked, like wild cherries, plums and damsons."

Have you decided what the pit was used for?

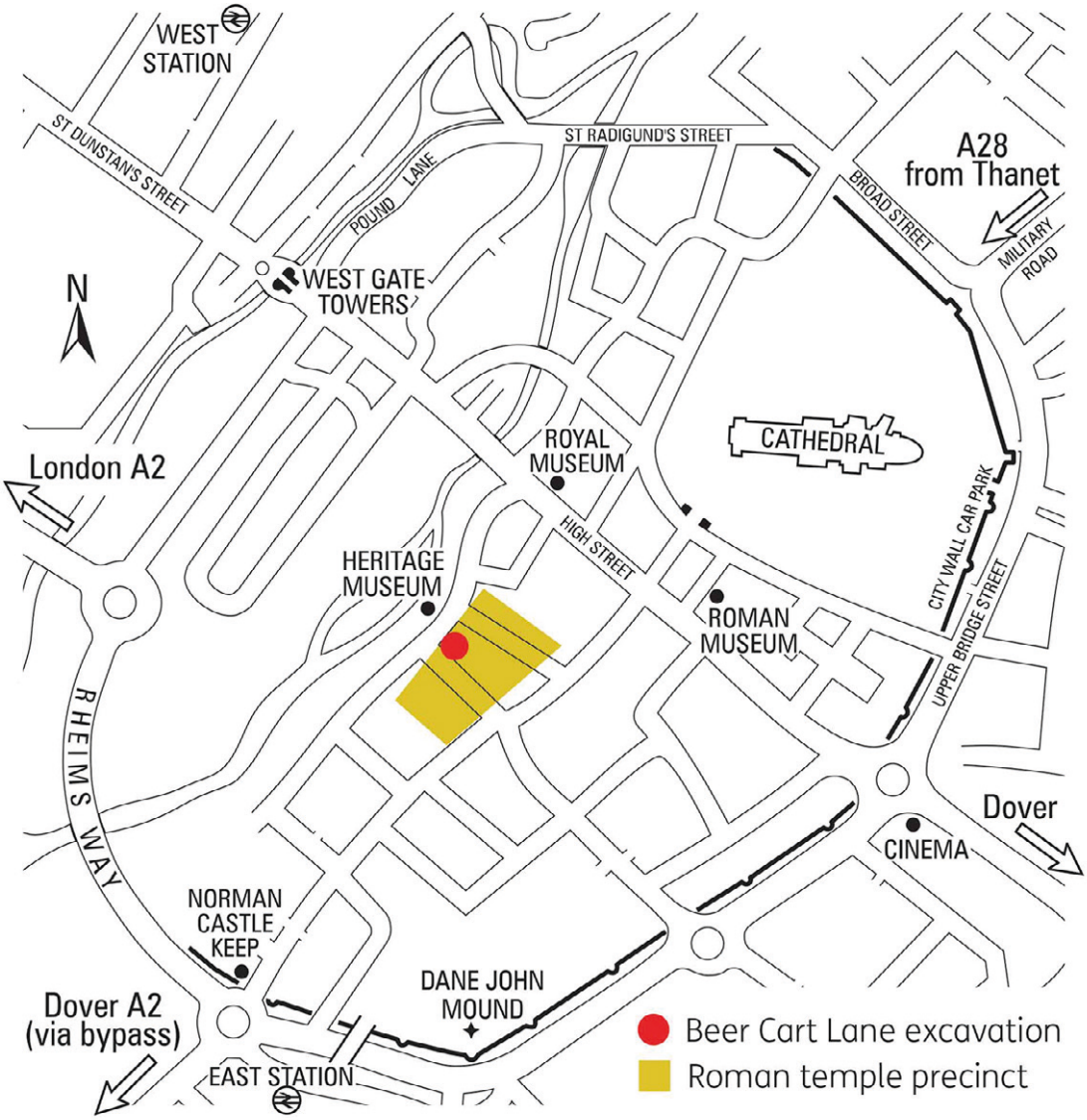
All types of Evidence

This kind of evidence gives us a certain picture of the lives of our ancestors and the environment in which they lived. When we put this together with other pieces of the historical "jigsaw" like remains of buildings and artefacts, we can build a more complete picture of what happened in the past.

Thinking like an archaeologist

At which historical period was the pit being used? What evidence is there to help me find out?
The pit was very wet. I know this can help preserve organic material. Perhaps I can find out how.
What do all these food remains tell me about people's diet in the past?
Do archaeologists find anything else that tells us what people ate?
Do the contents of the pit tell us anything about people' s general health and personal hygiene?
I know a lot of fruit is grown in Kent these days so the weather must be suitable. What was it like eight or nine hundred years ago?

I've seen Enid sorting through a pile of soil with a pair of tweezers. But how does she find tiny fleas and lice?!



Teachers notes

The Beer Cart Lane excavation, Canterbury, 1997

The dig took place in advance of re-development as is usually the case in British archaeology in the late 20th century. A wine bar (''O'Neill's'') now stands on the site of the excavation. The site is in an area where others were excavated by Canterbury Archaeological Trust in the late 1970's and early 1980's. These excavations produced considerable evidence for the town's main Roman temple (see plan). However, remains of the actual structure had never been located in situ. This then is principally what we were hoping to find. The area excavated was relatively small but indeed evidence of Roman foundations were located in one half of the trench.

The Norman pit

However, just as interesting as it turned out, was the discovery of a waterlogged pit of Norman date (broadly late 11th to early 12th centuries). It underlay an early Medieval chalk floor and had artefacts within it which are dated to the Norman period. The pottery sherds and cooking pot are an extremely common type found throughout the city. They are products of the extensive Medieval pottery industry at Tyler Hill which was located 3 km to the north of Canterbury and began sometime in the 10th century, continuing into at least the 15th century. Domestic pottery of all types, decorated floor tiles and other building materials were made at Tyler Hill. There was also a single piece of textile dated to the same period by the style of its weave.

The pit has been interpreted as a cess pit or latrine, containing a solid mass of human faeces, excrement, poo – whatever you want to call it! Even before the contents had been identified this interpretation had been suggested by the archaeologists, mainly because of the colour and homogenous nature of the material and the absence of the usual rubbish to be found in domestic rubbish pits of this date (broken pottery, remains of animal bones from cooking etc.). Another interpretation was that the pit was used specifically for dumping waste in some kind of food processing industry. This was because of the large quantity of plum stones present. However, the evidence in particular of chewed food remains (fish bones, fruit stones), masses of cereal bran and the intestinal parasites indicates that the pit contained huge quantities of human faeces.

Preservation of the material

The earth down at the level of the pit was waterlogged, the site being quite close to the River Stour (see plan). On most British sites the soils have three elements (air, moisture and warmth) which together form an ideal environment for bacteria to flourish and destroy any organic materials which may have become buried. This is why we rarely find the clothes, shoes, documents and so forth used by people in the past. When air is present we call it an aerobic environment. When soils are permanently waterlogged however, there can be no oxygen present and destructive bacteria cannot survive. We call this an anaerobic environment. So

archaeologists are always hopeful of finding objects of wood, leather and so on in waterlogged levels of an excavation.

Just passing through: Interpretation of the contents of the pit

The remains of a whole range of digested food had survived in the Beer Cart Lane cess pit. Fifty percent of the pit contents were removed for analysis. On initial examination (by trawling through the material using tweezers) it could be seen with the naked eye that a major component of the material was cereal bran. Also clearly visible were lots of fruit stones and seeds and lots of fragments of chewed fish bone. On further examination with a microscope eggs of worms which inhabit human intestines also appeared. These indicate a less than satisfactory level of personal hygiene. Parasite eggs are passed out of the body with the faeces. If the hands aren't then washed (the convenience of tapped water was not generally available in Norman times) after using the latrine and come into contact with food, the food then becomes a vehicle for passing eggs back into the digestive system. The human lice and fleas found were either picked off or more likely jumped off people while they sat meditating... Such small creatures can only be detected in a sample by using a microscope.

The list of contents shows you the variety of food remains found. As yet only the fruit stones and seeds have been analysed in detail. Some of the fruits were doubtless cultivated and others grew wild. The fruits in particular indicate that this part of the country had a very favourable climate in Norman and Medieval times, comparable to today's. We also know from documentary evidence that Canterbury had several vineyards at this time. All of this tells us quite a lot about the natural environment in the past and the foods which were available.

The beetles are interesting. The most common type identified was a bean weevil which infests beans and peas. It lays its eggs in the pods while they grow in the field. The larvae develop inside the seeds and hatch after the crop has been harvested. We think then that the beetles must have been eaten along with the peas or beans. So here it is the presence of the beetle which tells us about the food eaten. The pulses themselves do not preserve well even in waterlogged soils.

We have to realise that the remains found are those which have first of all survived chewing and the passage through the human digestive system, then have survived the conditions in the pit. While it gives us a considerable amount of information, it cannot be seen as a completely representative picture of the Norman diet. We know from other archaeological evidence and historical references that the Norman and Medieval diet was composed of much more than this. Bones of large animals like pig, goat and sheep found in rubbish pits show that meat was commonly available for example. There are recipes which have survived in print plus other documented sources for the diets of both rich and poor.

Cess pits, out and about

We did not find a lining for the pit but it probably had one originally which was later removed and possibly used elsewhere. We found a few twigs near the bottom which might have been

the remains of a wattle lining. A pit was found at the Coppergate site in York which was wicker-lined. Waterlogged conditions had preserved the wood. The Beer Cart Lane pit appears to have been outside a building. It possibly had a surrounding wattle fence. It probably had a wooden seat as is suggested by the evidence of the inside lav at Winchester. At Canterbury it looks like any seat there may have been, had been removed. Certainly in time the pit went out of use and eventually was built over, as is indicated by the chalk floor found directly above it. The use of cess pits in towns seems common throughout England during the Norman period. However there is an obvious scarcity on excavated sites of the Medieval period. It has been suggested that when plagues became a major health threat, human waste was taken out of the towns and dumped in an attempt to avoid contamination.