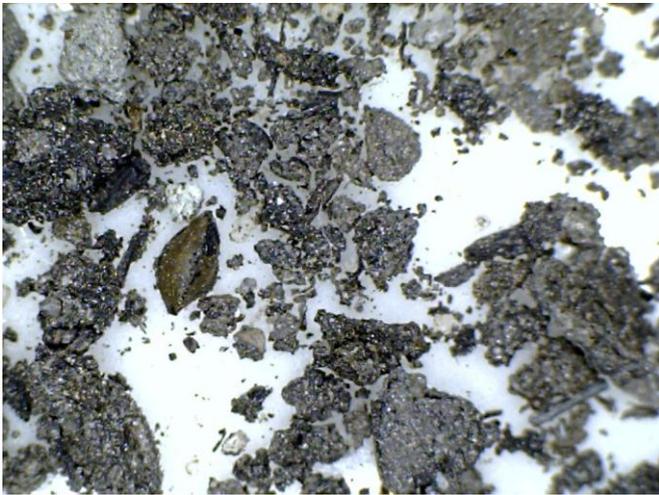


Archaeobotany

Waterlogged plant remains can be preserved if the conditions are suitable.

Apart from the excellent preservation of the leather in the well material, plant remains, such as seeds, and insects were also preserved. The following seed information was obtained from a sample taken from a depth of six metres. This material was allowed to almost dry and was then broken down into small particles; these in turn were scanned under a digital microscope. The results are shown in this report.

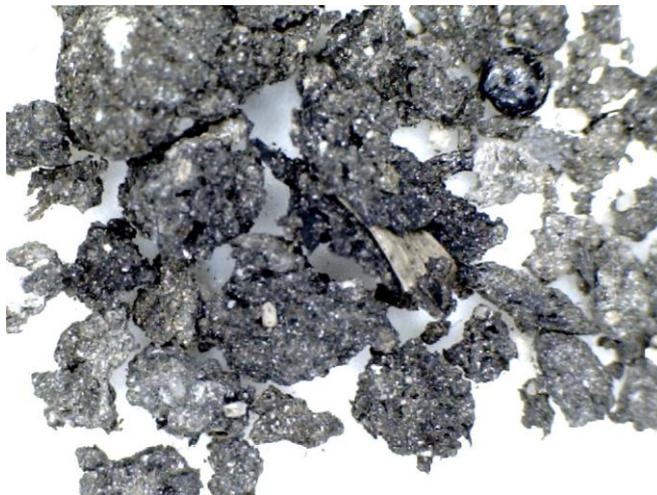


Dock (*Rumex*).



Buttercup (*Ranunculus*).

Examples showing seeds under the microscope



Orache (*Atriplex*)

TOLLGATE FARM

Seeds from the well



Seed information

1a-b Orache (*Atriplex* sp.) seed (Chenopodiaceae).

The common orache is a native annual weed with a procumbent habit, found on disturbed ground throughout the UK.

2. Persicaria (*Polygonum persicaria*) nutlet.. Redshank.

Redshank is a native summer annual.

3. Charred oat grain.

4. Elderberry (*Sambucus nigra*) seed.

A common find on Roman sites, widely used in wine making.

5. A species of *Potentilla* probably tormentil, *P. erecta*.

The rhizomes of this plant have a high tannin content. The disadvantage for tanning leather is that it is not very large, and therefore many rhizomes are needed to tan a single hide. The roots contain more tannin, weight for weight, than oak bark. A red dye is also obtained from the roots.

6. Charred barley grain (*Hordeum*).

7. Charred barley grain.

8. Raspberry (*Rubus idaeus*).

9. Dock (*Rumex*) nutlet

Docks and sorrels (genus *Rumex*) are nuisance weeds (called dockweed), but some are grown for their edible leaves. Each seed is a three-angled nutlet (achene). These plants have many uses: *Rumex hymenosepalus*, a species from N and C America, has been cultivated as a source of tannin (roots contain up to 25% tannin) while leaves and stems are used for a mustard-coloured dye. In Western Europe, dock is used as a traditional remedy for stinging nettle stings.

10a-c Sedge (*Carex*), family Cyperaceae.

There are many different species of this sedge; most are found in wetlands, marshes, calcareous fens, bogs and peatlands.

11a-b Knotgrass (*Polygonum aviculare*)

Knotgrass is a weed found on waste ground, common in much of Britain except in the far north.

12. Pale persicaria (*Polygonum lapathifolium*), dock family.

This plant is a native annual found throughout Britain in waste places, especially on damp soils.

13. Part of spikelet of barley.

This is a nice fragment of cereal, part of a spikelet of barley. Break up an ear of barley and you get lots of these little stalks, with the grain attached within their spikelets.

14a-b Charred grass grain (probably cereal).

15a-b Spikelets with husks.

These well-preserved spikelets are, again, grains with husks, showing excellent preservation. It is unclear whether they are oats or barley.

16. A whole barley grain.

This shows a whole barley grain with its husk; it shows excellent preservation.

17. Hazel nut (*Corylus avellana*)

18. Buttercup (*Ranunculus*)

Plant remains.

Some of the plant remains found in the sample were of moss; the preservation was excellent as you can see from the photographs below.

Size 5.5 mm



Tollgate Farm 2009 Pit/well Context 131

14mm



Tollgate farm Well context 131

This thorn could be blackthorn or hawthorn or even something like wild apple, very difficult to identify.

Size 3.5 mm



Tollgate Farm 2009 Pit/well Context 131



I'm not an archaeobotanist. I'm more used to excavating and taking photographs on our sites as well as photographing the artefacts found, but this has been an amazing insight into the almost invisible side of archaeology. Each seed, in its own way, is a form of art: so small and yet amazing in shape. I must thank Dr Allan Hall of the University of York for his help and encouragement. Any queries about the seeds, please contact me, Dave Thomas, at daveandmaureen@hotmail.com

Dry weight of sample : 1.85 kg.

Date of material by associated finds : Late 2nd century AD