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Ancient Monuments Laboratory
Report 20/90

HOLME PIERREPONT SITE 5 (GREAT BRIGGS RING-DITCH); SOME PROBLEMS IN FLOTATION RECOVERY AT A BRONZE AGE RING-DITCH IN THE TRENT VALLEY, NOTTINGHAMSHIRE.

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Summary

Sampling a Bronze Age ring-ditch for the recovery of charred plant remains brought to light some problems in flotation recovery. The charred remains were heavily impregnated with soluble iron salts which impeded recovery by preventing the charred material from floating. Although the samples from this site yielded very little in the way of charred plant remains, it is not possible to determine how much this was due to a real scarcity of charred remains and how much to poor recovery.

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by Lisa Moffett

The excavation of the Bronze Age ring ditch at Holme Pierrepont included a programme of sampling for charred plant remains. Archaeobotanical evidence for the Bronze Age in this region is rare. It was hoped that evidence from charred plant remains would add to what very little is known about prehistoric use of plant resources in the Trent valley area.

A total of thirty-three samples was taken. Twenty-two of these were floated by archaeology students at Sheffield University who also sorted the flots under the supervision of Dr. G. Jones. The flots from these samples were collected on 1mm and 250 micron mesh sieves. The other samples were floated by the archaeologists at the Trent and Peak Archaeological Trust, and the resulting flots sorted by the author. Some of these samples were also floated using 1mm and 250 micron sieves, but the last six samples to be floated were processed using a York sieving machine with a 500 micron mesh sieve. The flots from these latter samples were dry-sieved in the lab with a 1mm mesh sieve to facilitate the process of sorting by separating the different size fractions. All of the few charred plant remains recovered from the site were found in the fraction retained on the 1mm sieve regardless of how they were processed, so for practical purposes the difference in recovery between the two smaller mesh sizes was nil. Portions, or in some cases the whole, of the mineral residues were kept.

It was clear from examination of the mineral residues that the process of flotation had been ineffective in recovering much of the charred material (Gulbert pers. comm.). Pieces of wood charcoal, though no seeds, were spotted in the residues. Microscopic examination of the charred material showed that the remains which had not floated, and even those which had, were impregnated with iron salts. This made the charred material in many cases too dense to float and it could not therefore be separated from the mineral matrix. The possibility of trying to recover the charred material by wet sieving was considered but the mineral residues consisted of large amounts of coarse sandy material which was mostly too coarse to wash through a 1mm mesh sieve.

A considerably larger mesh size (at least 1.8mm) would have been required to reduce the amount of mineral material to a manageable volume for sorting and this would have resulted in an unacceptably high risk of losing the charred seeds. There seems to be no known cost-effective way of dissolving the iron salts (Limbrey pers. comm.) and so thorough is the impregnation that it seems likely that dissolving out the iron salts would destroy the charred material in any case. It is possible that a higher level of recovery would have resulted from flotation in a liquid with a substantially higher density than water (Wagner 1988). This, however, would have required time for experimentation which the author did not have available. The problem is one which must be addressed, however, as Holme Pierrepont is not the only site affected. Preliminary results from the prehistoric site at Potlock, also in the Trent valley, show that at least some of the charred material there is similarly impregnated with soluble iron salts (Moffett, in prep.).

It will be obvious that the results of the charred material found in the flots (presented in the table below) will be highly suspect regarding any representation of the charred material originally present in the archaeological features. It was not expected that the ring ditch or its associated features would be highly productive of charred plant remains, as these are usually found more in features associated with domestic activity or occasionally in areas of industrial activity. Ceremonial features, with a few exceptions, are notoriously poor in charred seeds but are often the only prehistoric features available for sampling. It seems likely, however, that more charred plant remains were present than were recovered.

The plant remains which were recovered consisted of barley Hordeum vulgare), unidentified cereal fragments, hazel (Corylus avellana), some fragments of seeds which may have belonged to the Leguminosae, dock (Rumex sp.) and an unidentified grass. There is little interpretation which can be derived from these remains. The presence of one barley grain and a few cereal fragments hardly constitutes evidence of local cereal cultivation although this could possibly have been taking place. Fragments of hazel nut shell are ubiquitous on early prehistoric sites. Hazel nuts were an important food source in the early prehistoric period and it is possible that collection of wild foods such as hazel may have been at some sites as important as cereal farming or even more so (Moffett, Robinson and Straker 1989). Docks will grow on most types

of disturbed ground, including gardens and arable fields, but also in grassy areas and open woods. The other taxa are too imprecisely identified for discussion.

The plant remains recovered from the ring ditch add little to our knowledge of early prehistoric human association with, and use of, plants. The problem of the possible plant remains which were not recovered from the samples, however, brings to light new difficulties in flotation recovery not previously experienced by the author but which demand the attempt to find an solution.

Acknowledgements

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References

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Table of charred plant remains recovered in flots

Context:	1.C 0.55	2.A 0.45	2.B 0.65	4.C 0.70	5.C 0.48	1110 west	1110 east	1112	1119
Sample size:	25lt	25lt	25lt	25lt	25lt	20lt	40lt	10lt	63lt
Flot size:	<1ml	1ml	<1ml	<1ml	1ml	30ml	70ml	2ml	2ml
Hordeum vulgare	-	-	-	-	-	-	-	-	1
Cereal indet.	1	1	-	-	-	1	-	-	1
? Legume frags.	-	-	-	1	1	-	-	-	-
Rumex sp.	-	-	-	-	-	-	1	-	-
Corylus avellana frags.	-	-	-	-	-	2	-	2	-
Gramineae indet.	-	1	-	-	-	-	-	-	-
Gramineae culm frags.	-	-	1	-	-	-	-	-	-
Unidentified	-	-	-	-	-	-	3	-	-

Flots which produced no charred remains other than wood charcoal:

Context	Flot size	Sample size
1.B 0.90	<1ml	25 litres
1.C 0.90	<1ml	25 litres
1.D 0.50	<1ml	25 litres
1.D 0.90	<1ml	25 litres
2.C 0.60	<1ml	25 litres
2.C 0.90	<1ml	25 litres
3.A 0.60	<1ml	25 litres
3.B 0.80	<1ml	25 litres
3.D 0.90	<1ml	25 litres
4.A 0.65	<1ml	12 litres
4.B 0.75	<1ml	25 litres
4.D 0.85	<1ml	25 litres
5.A 0.50	<1ml	25 litres
5.B 0.85	<1ml	25 litres
5.D 0.75	<1ml	25 litres
5.D 1.05	<1ml	25 litres
1110 east half 21.30-21.40	50ml	25 litres
1110 east half 21.20-21.30	9ml	10 litres
1114	3ml	25 litres
1115	3ml	50 litres
1116	<1ml	8 litres
1117	1ml	25 litres
1118 lower	<1ml	50 litres
1118 upper	1ml	50 litres