Archaeological Services
University of Durham

Mellor, near Stockport, Greater Manchester

pollen analysis

by:
Archaeological Services
University of Durham

on behalf of:
Manchester University Archaeological Unit

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ASUD Report 1090

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Contents

1.   Summary

The project background

1.1   A series of archaeological works have been carried out at Mellor since 1998 and have confirmed the presence of an Iron Age Hillfort. In August 2003, trench 22 was excavated over the line of the enclosure ditch which surrounds the hilltop. It was found that the ditch was cut through a band of boulder clay. Plant macrofossil assessment was carried out on contexts 414, 419, 442, 447, 448, 449, 452 from trench 22 in December 2003, however limited botanical evidence was found. Pollen assessment of contexts 442 and 449 revealed moderate concentrations. This report presents the results of full pollen analysis on contexts 442 and 449.

Methods

1.2   Material from each sample was processed using standard techniques including heavy liquid separation to concentrate the pollen. The residues were scanned for pollen and spores which were identified by comparison with modern reference material.

Results

1.3   The pollen assemblages from both contexts were relatively similar, though preservation in context 442 was better than 449. The pollen indicates woodland dominated by hazel, with lime, oak, alder, birch and holly also present. Cereal type pollen (including wheat) and pollen of weeds associated with farming suggest a mixture of arable and pastoral farming was being carried out. The results also point to the presence of a wet meadow and nearby waterbody.

2.   Project background

Location

2.1   Trench 22 was located in a large field to the north of the Old Vicarage at Mellor, near Stockport, Greater Manchester (NGR SJ 9818 8890).

Objective

2.2   The objective was to carry out pollen analysis of contexts 442 and 449 in order to reconstruct the palaeo-environment and to provide information about the economics and agricultural practices in the area.

Dates

2.3   Pollen analysis was carried out between February - March 2004. This report was prepared on 30th March 2004.

Personnel

2.4   Pollen preparation, analysis and interpretation was carried out by Dr. Tim Mighall (Coventry University), and the report was compiled by Dr Charlotte O'Brien (ASUD).

Archive

2.5   The project/site code is OVM03, for Old Vicarage Mellor 2003.

3.   Methods

3.1   One ml of sediment from each of contexts 442 and 449 was analysed. The samples were prepared using standard procedures (Barber, 1976), which included density floatation (Moore *et al*, 1991) in order to concentrate the pollen. Identification of pollen and spores was undertaken by comparison with modern reference material. Plant taxonomic nomenclature follows Stace (1997).

4.   Results

4.1   Although the majority of the pollen in both samples was degraded, the pollen content of the sample 442 was adequate and a count of 500 land pollen grains was achieved. The pollen content of sample 449 was sparse and a count of 100 total land pollen grains was achieved. Aquatic pollen and spores were also recorded from each level. The results, showing absolute numbers, are shown in Table 1.

Table 1 – Pollen and Spore assemblages from the Mellor Sediments (absolute numbers).

Taxa	442	449
Taxus	1	
Quercus	13	
Betula	1	1
Tilia	1	
Alnus	42	10
Corylus avellana-type	262	51
Salix		1
Ilex	12	
Calluna	5	2
Ranunculaceae	3	3
Caryophyllaceae	2	
Rumex spp.	1	
Polygonum aviculare-type	14	5
Persicaria maculosa-type	1	
Brassicaceae	1	
Rosaceae	1	
Filipendula	4	1
Apiaceae	4	
Plantago lanceolata	11	10
Pedicularis	6	2
Asteraceae	4	1
Anthemis-type	32	
Lactuceae	1	
Succisa	3	
Poaceae	52	12
Triticum-type	1	
Cereal-type	1	1
Cyperaceae	20	4
Typha/Sparganium-type	2	1
Potamogeton		1
Nymphaea	1	
Polypodium	146	44
Filicales	247	229
Sphagnum	7	1

5.   Discussion

5.1   Sample 442

The pollen assemblage of 442 is dominated by arboreal pollen. A hazel dominated woodland is suggested by the abundance of *Corylus avellana*-type, with some *Alnus* (alder), *Quercus* (oak). *Betula* (birch) *Ilex* (holly) and *Tilia* (lime). *Alnus* was probably established close to a local river bank or lake and occupies wetter substrates on a floodplain whilst oak, birch and lime were established on drier soils. Poaceae and Cyperaceae are the dominant non-arboreal (NAP) pollen taxa but a suite of herbaceous pollen is also well represented including *Anthemis*-type

(Chamomiles), *Polygonum aviculare*-type and *Plantago lanceolata.* However, other NAP taxa and spores are present. These include Asteraceae, *Calluna* (heather), Ranunculaceae, Rosaceae, *Filipendula*, *Succisa*, *Polypodium* and Filicales. The occurrence of Cereal-type pollen, including on *Triticum* (wheat) grain provides evidence of cultivation. *Plantago lanceolata* (ribwort plantain), *Polygonum aviculare*-type, Ranunculaceae, Brassicaceae, Lactuceae and *Pteridium* (bracken) have been associated with agricultural ecosystems and suggest that a mixed farming economy - cereal cultivation combined with pasture – was practised. Both *Persicaria maculosa*-type and *Polygonum aviculare*-type are associated with summer cereals and root crops or fallow land by Behre (1986) whilst species of the genus *Anthemis* are often found on arable or rough ground (Stace, 1997). Cyperaceae, Apiaceae, *Filipendula* and *Succisa* are all indicative of wet meadows and grassland whilst the presence of *Typha/Sparganium*-type and *Nymphaea* are possibly established in a nearby water body.

5.2   Sample 449
        This sample contains less pollen but the assemblage is comparable to sample 442. Woodland is also represented by *Corylus avellana*-type is most abundant, with some *Alnus* (alder) and *Betula* (birch). One grain of *Salix* (willow) is also recorded. It could be under-represented as both *Salix* and *Tilia* (in sample 449) are entomophilous (insect pollinated) and low pollen producers, whilst the other arboreal pollen taxa, such as *Alnus* and *Quercus*, are anemophilous (wind pollinated) and therefore produce more pollen. A mixed farming economy is also suggested by the occurrence of cereal-type pollen and other non-arboreal taxa with cultural affinities including Ranunculaceae, *Plantago lanceolata* and *Polygonum aviculare*-type.

6.   Conclusions

6.1   The pollen indicates the presence of mixed deciduous woodland dominated by hazel. There also appears to have been a nearby wet meadow and open body of water. The cereal-type pollen and associated weeds indicate a mixed farming economy.

7.   References

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