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# ANCIENT MONUMENTS LABORATORY

## REPORT

3279

<b>SERIES/No</b>	CONTRACTOR
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<b>TITLE</b>	Pollen analysis; Moulsham Street, Chelmsford

SITE DESCRIPTION

Sediments of Romano-British age laid down in the base of a ditch in the flood-plain of the River Chelmer. The sediments consisted of silt and clay containing some organic ( monocotyledonous ) material.

SITE EXCAVATOR

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POLLEN ANALYSIS

Two samples from 80 cm and 90 cm were supplied for pollen analysis in order to elucidate the nature of the local environment of the site. Standard techniques were used for concentrating the contained pollen and spores. Preservation was moderately good although some exine degradation was apparent in some grains. This might therefore indicate some pollen of secondary/derived origin. Differential preservation of pollen types was not thought to be a problem . A sum of 400 pollen grains was counted for each of the two levels analysed. The taxa present are given in Table I , where types have been calculated as a percentage of total pollen.

INTERPRETATION

The two spectra are dominated by herbaceous types with arboreal pollen being less than 1 % of total pollen. Openness of the environment might therefore be constued from this relative absence of tree pollen and dominance of herbaceous types. The herb types may be divided into four categories. These are:

1) Cereal pollen and associated arable weeds. Cereal pollen ( pollen of Gramineae with size greater than 50 $\mu$  and large pore and annulus ) was present in both levels, being slightly higher in the basal sample ( 3,3 % of total pollen ). Other weeds of arable habitats may include Cruciferae ( Sinapis type and

Hornungia type , Spergula type Polygonum aviculare and Compositae spp. These are not, however, present in notable frequencies and it seems likely therefore that arable agriculture was not important locally to the site. These pollen types may in fact be dispersed from crop processing in, or adjacent to the Roman settlement.

ii) Ruderals are, as might be expected present. These include Chenopodium type, Rumex, Urtica type, Plantago lanceolata , Malvaceae and Compositae spp. This group is similarly not dominant and possibly derives from areas away from the river's flood-plain in or adjacent to the urban area.

.iii) Meadow taxa. This is the dominant group represented by a diverse group of pollen types. Gramineae in both levels attain high percentages of total pollen ( 69 % at 80 cm and 59 % at 90 cm ). This along with the following types indicates that this pollen group is derived from plants growing on the site of pollen sampling.

Lychnis type  
Trifolium type  
Filipendula  
Succisa  
Plantago lanceolata  
Cyperaceae

The topographical / geomorphological setting of the flood-plain environment would provide an ideal habitat for the growth of pasture.

iv) Enigmatic types. Many of the pollen taxa presented in Table I and mentioned above may relate to an origin in one or more different plant communities and/or environments. The limitations of pollen differentiation prevent identification to species or even generic level in many cases. Consequently such groups as Compositae ( including here Anthemis type, Bidens type, Taraxacum type and Centaurea nigra type) may be representative of any of the above niches.

CONCLUSION.

On the basis of the two pollen samples only, it can be postulated that the site was, at the time of sediment deposition, predominantly meadow in an open landscape with few trees. The presence of cereal cropping on a small scale locally, or on a larger scale at some distance may be suggested. It is likely, however, that grain processing in this important Roman town may have been responsible for the dispersion of small quantities of cereal pollen and pollen of arable weeds.

Rob Scaife

13 January 1981.

TABLE I . Pollen from Moulsham. MTC 80.

	<u>80 cm.</u>	<u>90 cm.</u>
Betula		0.5
Quercus	*	*
Alnus	*	
Fraxinus	0.5	
Corylus type		0.8
Ranunculus type	2.8	3.0
Sinapis type		*
Hornungia type	*	
Dianthus type		*
cf. Lychnis type	*	
Spergula type	*	
Chenopodium type	*	*
Malvaceae	*	
Papilionaceae undiff.	0.5	1.3
Ononis type	*	
Trifolium type	1.3	1.3
Lotus type		*
Vicia cracca type		*
Lathyrus type	*	
Rosaceae undiff.	0.5	
Filipendula	0.8	0.5
Umbelliferae		0.5
Polygonum aviculare type	0.8	0.5
Rumex	0.8	1.5
R. obtusifolius type	0.5	*
Urtica type	0.5	0.8
Calluna	0.5	0.5
Plantago lanceolata	4.3	6.0
Succisa	*	0.5
Bidens type		0.5
Anthemis type	3.0	3.5
Artemisia	0.8	*

Table I Continued.

	<u>80 cm.</u>	<u>90 cm.</u>
Cirsium type	*	
Centaurea nigra type	1.3	0.8
Taraxacum type	7.5	11.3
Gramineae	69.0	59.0
Cereal type	1.5	3.3
Cyperaceae	0.5	1.8
Pteridium	0.5	
Dryopteris type		*
Polypodium	*	*

Pollen calculated as a percentage of total pollen.

( Pollen sum = 400 )

Spores calculated as a percentage of total pollen plus spores.

\* occurrence of single grains.