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**LATTON LANDS,
WILTSHIRE**

Palynological Assessment Report

Latton Lands,
Wiltshire

Palynological Assessment Report

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SUMMARY

A palynological assessment of sediments from a Bronze Age waterhole at Latton Lands, Wiltshire has been carried out by Lancaster University Archaeological Unit (LUAU). The work was commissioned by Oxford Archaeological Unit on behalf of the client, Cotswolds Aggregated Limited.

A monolith (0.50m) was obtained from the fills of the waterhole during the excavation of the site in May 2000. This was sub-sampled in the laboratory at LUAU and six samples were prepared for pollen assessment and any future analysis; these were examined microscopically and the pollen types and their numbers were recorded. The data were calculated as percentages and the results are presented in Table 1.

The pollen data demonstrated that the landscape around Latton Lands was cleared of trees at the time the waterhole was silting up. There is some evidence of cereal production but it is more likely that a pastoral landscape dominated. An earlier suggestion that the settlement on the site was bordered by trees on two sides (D Challinor pers comm) is not supported by the present data.

The assessment demonstrated that pollen preservation was good and that further palynological analysis would be capable of supplying additional information about the settlement site whilst the waterhole was silting up.

ACKNOWLEDGEMENTS

Lancaster University Archaeological Unit (LUAU) would like to thank Oxford Archaeological Unit for commissioning the work on behalf of the client, Cotswolds Aggregated Limited, and to Dana Challinor in particular for her assistance with the project.

The pollen analysis and report writing were undertaken by Elizabeth Huckerby and the report was edited by Jamie Quartermaine and Rachel Newman. The project was managed by Jamie Quartermaine.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF PROJECT

- 1.1.1 Six samples, from a 0.50m monolith, derived from a waterhole [421] at Latton Lands, Wiltshire, were assessed palynologically by Lancaster University Archaeological Unit (LUAU) at the request of Dana Challinor, Palaeoenvironmental Co-ordinator at the Oxford Archaeological Unit. The waterhole was part of an enclosure seen as a cropmark (Wilts Co Council SMR PRN 626) which was excavated by Oxford Archaeological Unit. The excavation revealed two ditches at right angles to each other, the waterhole, pits, postholes, tree-throw pits and some linear ditches. The features ranged in date from the Bronze Age to the post-medieval period. The waterhole, which was the subject of the present study, lies in the right angle between two ditches. The remit of the present study was to assess the potential for pollen analysis of the fills of the waterhole and to examine whether the rectilinear enclosure, which had ditches on two sides, was bounded on the other two by trees (D Challinor pers comm).

2. METHODOLOGY

2.1 LABORATORY PROCESSING

- 2.1.1 A monolith (0.50m) was taken from a waterhole [421] by Oxford Archaeological Unit through part of fill [419] and the entire depths of fills [480] and [481] during the excavation of the settlement at Latton Lands, Wiltshire in May 2000. The top of the monolith was 0.66m below the present surface.
- 2.1.2 In the laboratory the monolith was examined and the type of sediments recorded. It was then subsampled and six samples were taken for pollen analysis from the following depths below the present surface: 0.66-0.665m, 0.855-0.86m, 0.955-0.96m, 1.055-1.06m and 1.13-1.135m. These were prepared chemically using the standard techniques of hydrochloric acid, sodium hydroxide followed by sieving, hydrofluoric acid and acetolysis (Faegri and Iversen 1989). The samples were then mounted in silicone oil and examined with an Olympus BH-2 microscope using x400 magnification routinely and x1000 for critical grains. Counting continued until a sum of at least 100 grains of land pollen had been reached on two or more slides. This was done to reduce the possible effects of differential dispersal under the coverslips (Brooks and Thomas 1967). Pollen identification was carried out using the standard keys of Faegri and Iversen (1989) and Moore *et al* (1991) and a limited reference collection held at LUAU. Because the samples were only being assessed, pollen grains not identified rapidly were recorded in either larger categories, eg Caryophyllaceae and Liguliflorae, or as undifferentiated ones. Cereal-type grains were defined using the criteria of Andersen (1979); indeterminate grains were recorded using groups based on those of Birks (1973). Charcoal particles greater than 5µm were also recorded following the procedures of Peglar (1993). The material remaining on the sieves during the chemical preparation of the samples was examined microscopically with a Wild Leitz stereozoom to provide additional information about the type of sediments.

2.2 PRESENTATION OF RESULTS

- 2.2.1 The pollen data are presented in Table 1 as percentage values of total land pollen and bracken spores recorded. Charcoal values are calculated as a percentage of the pollen sum plus charcoal.

3. RESULTS

3.1 STRATIGRAPHY

3.1.1 The sediment was predominantly a silty clay with bone fragments above 0.96m, pebbles between 0.82m and 1.02m, and wood fragments below 1.13m. The sediments from 1.135m to 1.16m were very crumbly and as a consequence were lost when the monolith was unwrapped. All the samples were calcareous and needed an initial treatment of heating with 10% hydrochloric acid. Microscopic examination of the residues on the sieves indicated that the three lower samples contained charcoal fragments and more evidence of plant and insect macrofossils, including wood fragments, bryophytes, sedge nutlets (*Carex*), insect remains and undifferentiated plant material than the upper two.

3.2 POLLEN ANALYSIS AND INTERPRETATION

3.2.1 **Pollen preservation:** the pollen preservation was good in the four lower samples but more mixed in the two upper ones. Pollen concentration was generally good throughout and was abundant in some samples, again making further analysis possible. Overall the pollen preservation and concentration would be sufficient for detailed pollen analysis if required.

3.2.2 **Tree pollen:** the percentages of the pollen taxa identified are shown in Table 1. Whilst the waterhole was silting up, tree pollen was recorded at very low values (23%-<11%) suggesting that no trees were growing nearby.

3.2.3 **Herb pollen:** the herb pollen (86%-74%) contains a variety of taxa of which the major component is grass pollen (30-40%) together with high percentages of ribwort plantain (*Plantago lanceolata*) and dandelion-type (Tubuliflorae) pollen. Values of cereal-type pollen are low but some are recorded. Most of the taxa recorded are those characteristic of wet meadow, pastures, footpaths and ruderal communities, although some are also found in arable situations (Behre 1981).

3.2.4 **Aquatic pollen:** aquatic pollen is represented by occasional grains of pondweed (*Potamogeton*) but no others.

3.2.5 **Reedswamp pollen:** there is some evidence of reedswamp vegetation, shown by the record of Common reed (*Phragmites australis*) and sedge pollen (Cyperaceae), possibly suggesting the development of reedswamp around the waterhole and ditches.

Depth From Surface	0.66- 0.665m	0.755- 0.76m	0.855- 0.86m	0.955- 0.96m	1.055- 1.06m	1.13- 1.135m

Fill number		419	480	480	480	481	481
Trees and shrubs		23.1	12	10.8	15.2	15	15.2
Herbs		74.4	86.2	87.5	83.5	84	77.3
Bracken		2.6	1.8	1.7	1.3	1	7.6
<i>Alnus</i>	Alder	11.1	4.8	4.2	5.1	6	3.8
<i>Corylus avellana</i> -type	Hazel	5.1	2.4	4.2	3.8	1	7.6
<i>Quercus</i>	Oak	0	2.4	0	5.1	1	3
<i>Betula</i>	Birch	2.6	1.2	1.7	1.3	2	0
<i>Fraxinus</i>	Ash	0	0.6	0.8	0	3	0.8
<i>Tilia</i>	Lime	0	0.6	0	0	0	0
<i>Pinus</i>	Pine	0.9	0	0	0	0	0
<i>Salix</i>	Willow	3.4	0	0.8	0	2	0
Gramineae undiff	Grasses	34.2	33.7	40	34.2	34	30
Cerealia	Cereals	0	0.6	0.8	1.3	3	0
<i>Phragmites</i>	Common Reed	6	8.4	5	7.6	1	3
Cyperaceae	Sedges	0	1.2	4.2	1.3	2	1.5
<i>Plantago lanceolata</i>	Ribwort Plantain	6	6.6	6.7	8.9	13	16.7
<i>Plantago Major/media</i>	Greater/hairy plantain	0	0	1.7	0.6	2	0.8
<i>Plantago</i> sp	Plantain undiff	1.7	0	0.8	0	0	0
<i>Urtica</i>	Nettles	1.7	6	5	7	5	6.8
<i>Filipendula</i>	Meadowsweet	1.7	1.8	0.8	1.3	0	0
<i>Rumex acetosa</i> -type	Sorrels	1.7	1.8	2.5	0.6	3	0
Liguliflorae	Dandelion-type	13.7	5.4	10	4.4	7	9.1
Tubuliflorae	Daisy-type	0.9	3	0.8	2.5	1	2.3
<i>Ranunculus</i> sp	Buttercups	1.7	0.6	2.5	3.8	4	7.6
Caryophyllaceae	Stitchwort family	0.9	3.6	0.8	2.5	0	0.8
Chenopodiaceae	Fat Hen family	0.9	3.6	1.7	0.6	1	3
Umbelliferae	Cow parsley family	0	0.6	0	1.3	1	0.8
Rosaceae	Rose family	0.9	1.2	1.7	1.9	3	0.8
<i>Potentilla</i>	Cinquefoil	0.9	0	0	0.6	0	0
<i>Hypericum</i>	St Johns Wort	0	2.4	0	1.3	0	0
<i>Onobrychis</i> -type	Sainfoin	1.7	4.2	0	1.3	0	0
<i>Lotus</i> -type	Trefoil	0	0	0.8	0	1	0
Leguminosae undiff	Pea family	0	0	0	0	0	1.5
Cruciferae	Brassica family	0	0	0.8	0	1	0
<i>Pedicularis</i>	Lousewort	0	0.6	0	0	0	0
<i>Stachys</i> -type	Woundwort	0	0	0.8	0	0	0
<i>Melampyrum</i>	Cow-wheat	0	0	0	0.6	0	0.8
<i>Rhinaanthus</i>	Yellow-rattle	0	0	0	0	2	0
Undifferentiated		0.9	0.6	0.8	0.6	1	1.5
<i>Pteridium aquilinum</i>	Bracken	2.6	1.8	1.7	1.3	1	7.6
<i>Polypodium vulgare</i>	Polyploidy ferns	0.9	0	0	0	0	0
Ferns undiff		3.4	0.6	2.5	2.5	3	1.5
<i>Sphagnum</i>	Bog moss	0.9	0	0	0	0	0
Bryophytes undiff	Moss undiff	0	0	0	0	2	0
<i>Potamogeton</i>	Pondweed	0	0.6	0	0	1	0
Corroded grains	Poor preservation	25.6	7.2	1.7	5.1	1	2.3
Crumpled grains	Poor preservation	15.4	114	13.3	5.7	13	3.8
Broken grains	Poor preservation	0		0.8	0.6	1	0
Concealed grains	Concealed by debris	2.6	1.2	5	0.6	6	8.3
Pollen sum		117	166	120	158	100	132
Charcoal		25	60	54.2	76.2	90.6	74

Table 1: Results of pollen analysis from Latton Lands (percentages of total land pollen and bracken)

4. CONCLUSIONS AND RECOMMENDATIONS

4.1 INTERPRETATION OF THE POLLEN DATA

- 4.1.1 **Land pollen:** the evidence from the initial assessment of the pollen from the Latton Lands waterhole [421], which is known to have been part of a settlement, suggests that the landscape had been cleared of trees. The low values of tree pollen indicate that few if any trees were growing close to the site and it is unlikely that the enclosure was bounded on two sides by trees. The limited results from this assessment suggest that the landscape was probably used for pastoral purposes with only a few cereal crops being grown close to the waterhole. However, cereal-type pollen is known to be under-represented in any palynological record and investigations from a known field system in North Germany suggest that cereal pollen may not be recorded in deposits at distances greater than 1km from a site, and even from distances of 500m little cereal pollen is recorded (Behre and Kucan 1981).
- 4.1.2 **Aquatic plants:** the absence of any substantial evidence of aquatic plants or organisms in the pollen record suggests that, at the time when the sediments were forming, the waterhole was kept clean of vegetation or utilised in such a way as to prevent the water becoming stagnant.
- 4.1.3 **Later use of the waterhole:** the high percentage of pollen grains recorded as crumpled or badly corroded in the sample, from 0.66m to 0.665m depth, precluded identification. There was also a high percentage of dandelion-type pollen, which is very resistant to corrosion and easily identified, even within poorly preserved contexts. This suggests some of the pollen may be derived from secondary deposition, ie washed in or thrown into the waterhole, and may suggest that the fill, [419], was resultant from the waterhole being used for the disposal of rubbish.

4.2 RECOMMENDATIONS

- 4.2.1 Waterlogged deposits with the potential for pollen analysis are scarce in Southern England, and it is therefore recommended that the material from the waterhole be subjected to more detailed palynological analysis. It is also recommended that at least two samples of material from the feature should be radiocarbon-dated in order to provide a chronological framework for the sequence; this is particularly important as there is a possibility that the sediments reflect a vegetational record that is more recent than the original waterhole.

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