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THE FEN DYKE SURVEY: POLLEN ANALYSIS OF CROWTREE FARM AND OAKHURST FARM, CAMBRIDGESHIRE.

Robert G Scaife PhD BSc FRGS

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Summary

During the Fen Dyke Survey, a number of archaeological sites were discovered on sandy islands lying within the fen clay series. Two pollen sequences have been analysed from buried, truncated soils of late Atlantic/early Sub-Boreal date at Oakhurst and Crowtree Farms. The vegetation of these sites was dominated by Tilia (lime) woodland. Quercus (oak) woodland with Corylus (hazel) was also in evidence. Although both sites have late Mesolithic/early Neolithic archaeology, it is only at Crowtree Farm that this may be recorded in the pollen record. This evidence takes the form of woodland depletion and the presence of ruderal herbs indicative of open ground. Because substantial truncation of the soils has taken place, it is certain that evidence of later (middle/late Neolithic and early Bronze Age) is missing.

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INTRODUCTION.

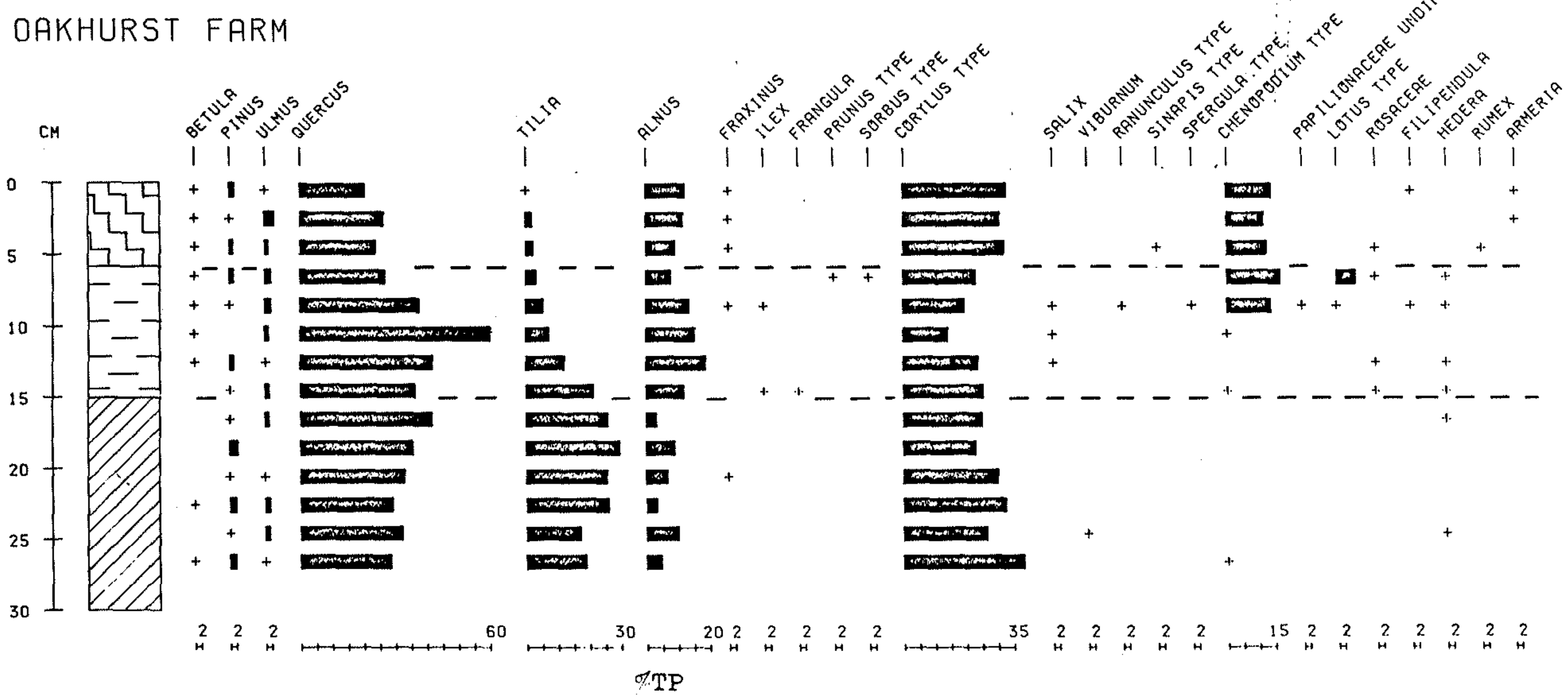
This report presents the results of the pollen analyses of two buried soil profiles and their overlying peat and/or marine fen clay stratigraphy. This study forms part of the fen dyke survey in which some 26 km of dyke have been investigated for their archaeology (French forthcoming) during periods of dyke cleaning and cutting. The two sites analysed for pollen lie within the parish of Newborough and are approximately 2km apart. The sites were chosen for pollen analysis because of their broadly comparable archaeological assemblages of late Mesolithic to early Neolithic date.

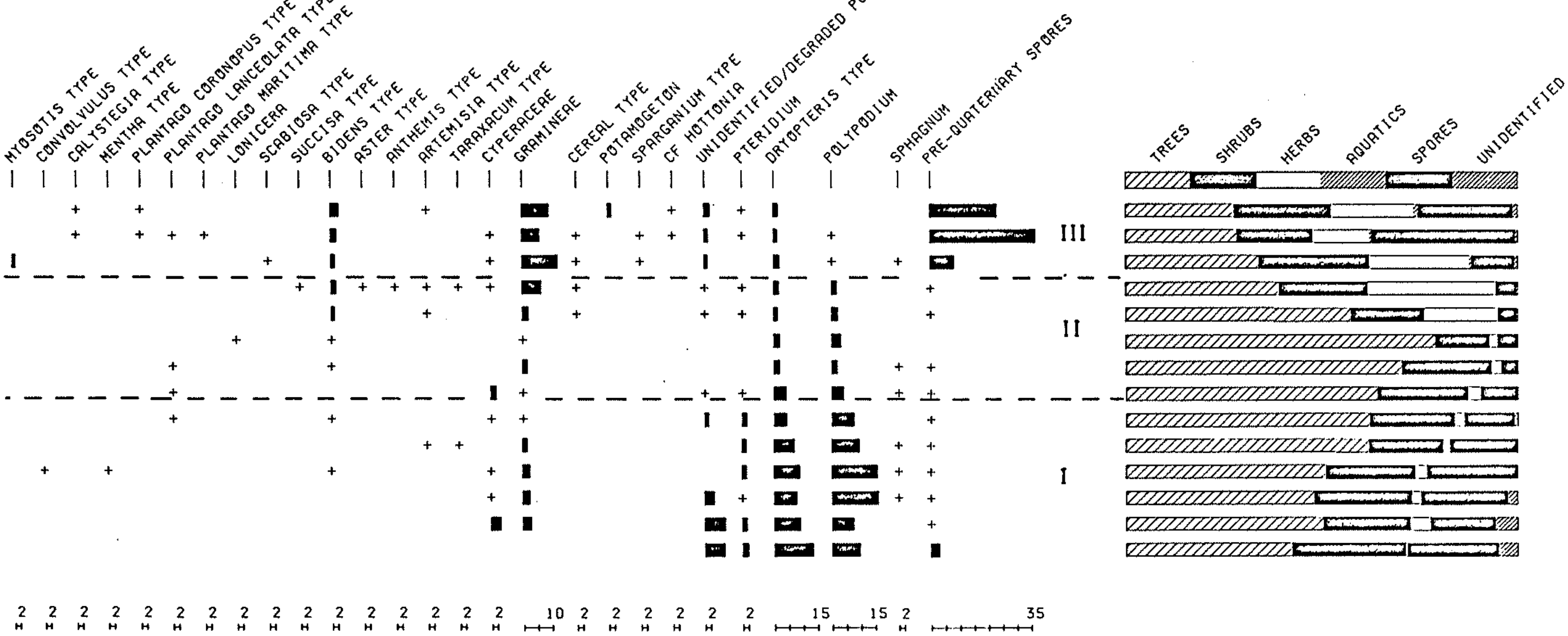
METHODOLOGY

Samples for pollen analysis were obtained directly from open sections. Standard techniques were used for extracting the sub-fossil pollen and spores (Moore and Webb 1978). A micro-mesh (10u) sieve was, however, used to remove the fine clay fraction which remained even after hydrofluoric acid treatment for digestion of silica. The extract was stained with safranin and mounted in glycerol jelly. Pollen counts of between 300 and 600 grains were made (excluding spores). These pollen sums have been calculated as a percentage of total pollen and extant spores as a percentage of the taxon plus the total pollen sum (thus making all pollen percentages <100%). The results are presented in Figures 1-4.

1) OAKHURST FARM

The site of Oakhurst Farm is on a small fen sand island (TF 5235 3049) which is approximately 100 metres wide running west to east. A well defined buried soil was present at a depth of c.-0.20m OD. Dr. French has carried out a micromorphological investigaton of the this soil profile (French forthcoming). and has shown that this is a truncated arillic brown earth. Three possible phases of clay illuviation were noted, the first representing a period of little disturbed woodland. The second and third phases resulted from tree clearance and consequent soil disturbance. Dr French has attributed this evidence of possible tree clearance with the use of the Oakhurst Farm sand island by Mesolithic/early Neolithic communities. Importantly, subsequent to the phases of illuviation, severe soil erosion apparently took place. This had the effect of removing the A horizon and possibly part of the Eb horizon. This of course means that any pollen investigation of the


OAKHURST FARM
CM
0
5
10
15
20
25
30
BETULA
PINUS
ULMUS
QUERCUS
TILIA
ALNUS
FRAXINUS
ILEX
FRANGULA
PRUNUS TYPE
SORBUS TYPE
CORYLUS TYPE
SALIX
VIBURNUM
RANUNCULUS TYPE
SINAPIS TYPE
SPERGULA TYPE
CHENOPODIUM TYPE
PAPILIONACEAE UNDIFF.
LOTUS TYPE
ROSACEAE
FILIPENDULA
HEDERA
RUMEX
ARMERIA
60
30
20
35
15
%TP



Oakhurst Farm cont.

soil profile would also give an incomplete picture of vegetation developent with a major unconformity between the top of the soil profile and the overlying peats. It was hoped that pollen analysis of the buried soil might provide evidence for the vegetation of the sand island prior to forest clearance and to assess the nature and extent of prehistoric clearance. The former of these postulates has at least been achieved in the analyses of both Oakhurst and Crowtree Farm soil profiles. This soil is overlain by a thin layer of 'lower peat' which is in turn overlain by Fen Clay (Barrow Way Drove Sequence). Pollen analyses are carried out on these three stratigraphical units. These are from the base at 27cm upwards;

27-15 cm; Pollen Zone I; The buried soil profile is an apedal light yellowish brown sandy loam developed in the the fine gravel substrate (see French forthcoming). As noted above, this is truncated and only the 'B' horizons remain. This is represented in the pollen record by relatively poorly preserved pollen. Pollen sampling was carried out to a much greater depth but plant microfossils were absent below 27 cm. The spectra are characterised by dominant ***Quercus, Tilia and*** ***Corylus*** type. Some ***Alnus*** is also present. Herb pollen are few with only Gramineae and Cyperaceae consistently present. Spores are numerous (***Dryopteris*** type, ***Polypodium*** and ***Pteridium***) and which with the substantial numbers of unidentifiable (degraded) pollen are indicative of strong differential preservation.

15-6 cm; Pollen Zone II; Lower fen peats. The fen peats comprise humified detrital monocotyledonous peats with little visible structure apart from root debris. These grade into the overlying fen clay above but rest cleanly on the truncated old land surface. Palynologically the zone is characterised by the dominance of tree pollen. Quercus and Alnus are dominant, the latter increasing to 20% of total pollen in this zone. ***Corylus*** type remains important. Few herbs are present although Chenopodium type becomes important in the upper levels of this zone.

6-0 cm; Pollen Zone III; Grey Fen clay (Barrow Way Drove Series). The depth of 0 cm represents the top of the pollen profile which is at an approximate OD of .05m. The zone is delimited stratigraphically and palynologically by the dominance of ***Chenopodium*** type (goosefoots and oraches), increasing percentages of Gramineae (grasses) and ***Bidens*** type (daisy types). Pre-Quaternary (Upper Jurassic) spores are frequent and correlate clearly with the change from peat to marine/brackish water sediments (fen clay series). Tree and shrub pollen are dominated by ***Quercus*** (oak), ***Alnus*** (alder) and ***Corylus*** type (hazel but which may also include sweet gale). Small numbers of ***Ulmus*** (elm), *Tilia* (lime), *Betula* (birch) and *Fraxinus* (ash) are also present.

DISCUSSION

It is clear that three major phases are present with pollen being deposited in widely different environments. It is unfortunate that the buried soil profile is truncated with the uppermost 'A' horizon absent. This means therefore that it is not possible to ascertain the character of the vegetation immediately prior to inundation by the lower peat accumulation. Furthermore, it is not possible at present to provide an accurate date for the pollen represented in pollen zone I. However, information can be provided on the nature of the dominant woodland growing on the sand island prior to forest clearance. This therefore complements the information obtained by Dr French from his soil micromorphological studies. From the high values of *Tilia* which are recorded it is cear that lime was the dominant woodland element growing on the island. *Tilia* is entomophilous (insect polinated), produces relatively few pollen grains and which are not widely dispersed. Thus, this taxon is usually under-represented in pollen spectra and where found in high frequencies such as are recorded here, indicates its 'on-site' dominance. This in itself is not unusual in southern and eastern England where its middle to later Flandrian dominance has been widely demonstrated (eg. Baker, Moxey and Oxford 1979, Scaife 1980,1987; Greig 1982). Locally its importance has also been demonstrated by Godwin and Vishnu-Mittre (1975) and recently by Waller (1986-7). *Quercus* and *Corylus* were also dominant elements in the landscape. It is difficult to ascertain whether these elements formed part of a community dominated by *Tilia* or were growing in different areas. It is most likely that *Tilia* was growing on the well drained sandy soils which it favours whereas *Quercus* with a *Corylus* understory were important on the thicker and moister soils fringing the island and on larger areas of land at some distance. Herb pollen is notably sparse in pollen zone I and there is little evidence therefore for any major anthropogenic impact from this phase of pollen deposition. This is not surprising since the evidence of soil erosion/truncation, perhaps resulting from anthropogenic activity, has removed the upper levels of the soil and soil pollen profile. Because of this, it is not clear what date can be placed on this Tilia dominated woodland. A late Atlantic (Godwins' pollen Zone VIIa) or early Sub-boreal (Godwins' pollen zone VIIb) date would seem appropriate. This is perhaps substantiated by the relatively low values of *Ulmus* present indicating a post ' *Ulmus*-decline date'.

The subsequent pollen zone II rests directly on the truncated old land surface. Stratigraphically zone II represents the thin lower peat sequence which tapers in thickness onto the sand island. This formation represents the first indications of waterlogging of the area by 'ponding back' due to rising sea levels. This waterlogging is illustrated by the increasing importance of *Alnus*. Whilst *Quercus* and *Corylus* remain important, *Tilia* declines sharply indicating the inability of lime to grow in waterlogged situations. Whilst

Tilia remained important on the remaining areas of the sand island, it was undoubtedly forced away from areas fringing the island where it had been previously dominant. The poor transport mechanisms of *Tilia* pollen would also result in such a dramatic decline as its nearest growth became farther away.

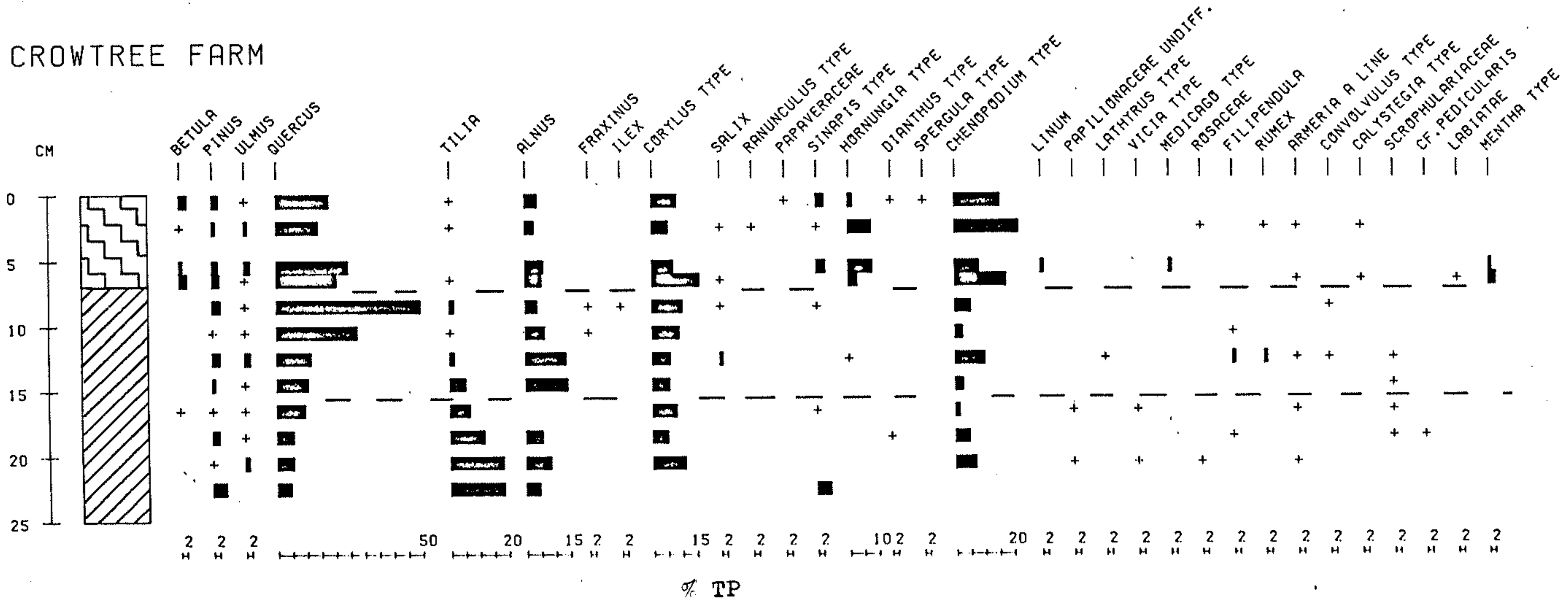
The imminent encroachment of marine/brackish water influence is indicated in the upper levels of pollen zone II by the rapid increase in percentages of *Chenopodium* type pollen. This taxon is highly characteristic of saline environments where halophytic elements of the Chenopodiaceae thrive (eg the oraches and glassworts- *Salicornia* sp.) The final inundation of marine or brackish water is seen in pollen zone III. In this zone, peat deposits give way to fine grained sediments which are again dominated by Chenopodiaceae. The high percentages of Jurassic spores are derived from the Oxford Clay and were eroded from this basement lithology, transported in the fluvial system and deposited in this near-shore marine environment. This is, however, interesting because it illustrates that a substantial degree of erosion of the adjacent land was taking place and that the sediments derived from not only marine transport but from the local river basins. The incursion of the fen clay in this area is dated to c.1600 bc. The regional vegetation of this period is also represented. The dry land less than 0.5 km to the south of the Eye Peninsula was dominated by oak and hazel with alder being important and growing in wetter valleys and areas fringing the island and the peninsula.

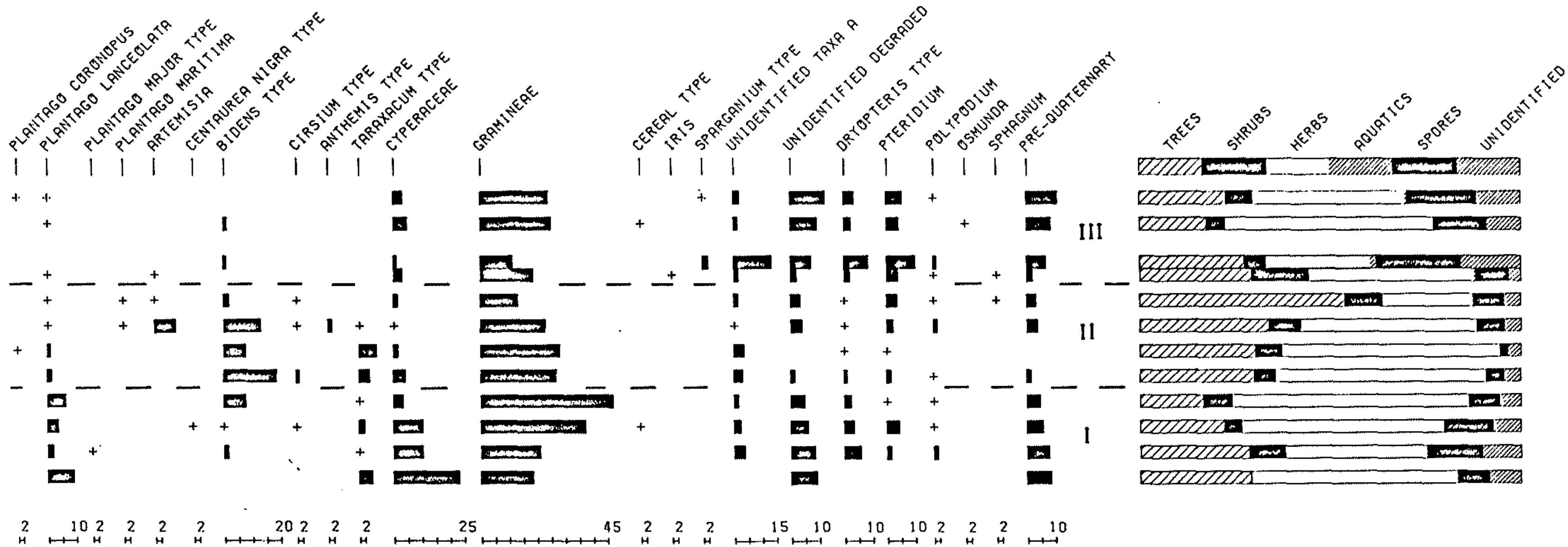
2) CROWTREE FARM

INTRODUCTION

Crowtree Farm lies within Borough/Newborough Fen and 2km distant from the pollen site of Oakhurst Farm (TF 5213 3061 Dyke 14). The site at Crowtree Farm was excavated in 1985 on account of the very substantial archaeological artifactual (Mesolithic/early Neolithic flints) material obtained during trial survey. Here, as at Oakhurst Farm, a small sandy island c 500m wide is present. The site at Crowtree Farm has many similarities with Oakhurst Farm, both from the soil micromorphological (French forthcoming) and pollen characteristics. A well defined buried soil profile/old land surface was found and was associated with the late-Mesolithic/early Neolithic artifactual material. Two trenches were excavated which revealed the stratigraphy on/and close to the Eye Peninsula. A thicker soil profile was recovered from the second trench II. This was overlain directly at the point of sampling by the Fen Clay (Barrow Way Drove) sequence. Pollen obtained from Trench I was badly degraded and sparse. This may have been due to oxidation caused by the drying out of the fen. Pollen recovered from the Trench II sequence was, however, better preserved and allowed a full analysis to be carried out. The results of this analysis are given diagrammatically in Figures 3 and 4. Three pollen assemblage zones have been recognised and are described here from their base (23 cm) upwards. Pollen was absent below 23cm, that is, in the lower part of the soil profile.

CROWTREE FARM





Crowtree Farm cont.

23-16cm; Pollen Zone I; The buried soil 'B' horizon developed in the underlying Oxford Clay. This pollen zone is characterised by high *Tilia* values with some *Quercus, Alnus* and *Corylus* type. Herb pollen is dominated by *Chenopodium* type, *Plantago lanceolata* (ribwort plantain) Gramineae and Cyperaceae (sedges). A substantial number of unidentifiable (degraded) pollen grains from this basal zone strongly indicate that differential preservation took place. Pre-Quaternary (Jurassic) spores and pollen grains were also present and are undoubtedly derived from the basal Oxford Clay lithology.

16-7 cm; Pollen Zone II; The upper part of the truncated soil profile ('B' horizon). *Tilia* declines from the previous zone (I), but *Quercus* and *Corylus* remain important. *Alnus* expands. *Plantago lanceolata* declines. Herbs are dominated by *Bidens* type and Gramineae. A greater diversity of herbs is also noted with peaks in *Chenopodium* type, *Filipendula* (meadow sweet), *Rumex* (docks), *Artemisia* (mugworts) and *Taraxacum* type (dandelion group).

7-0cm; Pollen Zone III; The base of the Fen Clay (

Barrow Way Drove) sequence. This zone is characterised by increasing percentages of Cruciferae (charlocks- *Sinapis* type and *Hornungia* type) and *Chenopodium* type. Tree pollen are dominated by *Quercus* with some *Alnus* and *Corylus*. Pre-Quaternary spores also expand in this zone.

DISCUSSION

As with the pollen sequence obtained from Oakhurst Farm (see above), the soil profile and therefore the pollen stratigraphy is truncated. Thus, only a basal sequence is present and not that representing the period immediately prior to marine inundation. It is likely therefore that the major phase of anthropogenic activity on this site is not represented in the pollen spectra. This is, however, not surprising since it is likely that such intense anthropogenic activity might itself have resulted in the subsequent soil truncation noted by French (forthcoming). However, it does appear that unlike Oakhurst Farm there is some evidence for opening of the vegetation which is perhaps due to human activity. The vegetation of zone I was dominant *Tilia* woodland on the site. Some *Quercus*, *Corylus* and *Alnus* may also have been present in the region. The latter was growing in damper areas of river valleys or marshy areas forming fen carr woodland. Higher values of Cyperaceae in this zone also attest to areas of marsh/fen vegetation. Dr French in his soil micromorphological studies, has noted in the first phase of clay illuviation/translocation that this may have occurred during the Atlantic and Sub-Boreal periods. This view is commensurate with the character of the woodland which the pollen evidence shows to have been growing on this sand island.

It is notable that *Tilia* does decline from the base of zone I into zone II. This occurrence and the substantial presence of ruderals (*Plantago lanceolata, Chenopodium* type (non-halopytes) and the lesser presence of *Plantago major* type and Compositae spp.) and Gramineae also indicate some degree of disturbance and alteration of the woodland. Such disturbance may be the result of periodic encampment by Mesolithic communities at this site. In pollen zone II, Gramineae and Compositae spp. increase sharply whilst *Tilia* continues to decline. This zone may represent the continued pressure on these soils with the demise of *Tilia* woodland through clearance or through increase soil degradation. Little evidence of arable activity was found and although early cereal types had poor pollen dispersion characteristics, it seems likely that cereal cultivation was not being carried out at this time. This may also indicate that the dating of this profile falls within the later Mesolithic (late Atlantic).

Pollen zone III illustrates the effects of the marine transgression with fine grained sediments being deposited directly on the truncated old land surface. The pollen spectra reflect this with increases in halophytic vegetation which include *Chenopodium* type (oraches and glassworts) and Crucifers typical of salt marsh communities (eg *Beta, Crambe* etc). As has been noted at Oakhurst Farm, pre-Quaternary

(Jurassic) spores become more frequent. These are derived from the underlying Oxford Clay, transported fluvially and deposited along with allochthonous sediments. At least one phase of drying out of this salt marsh vegetation is indicated at 4-5 cm where pollen was absent or very badly preserved. Fungal spores were, however, abundant at this level. As at Oakhurst Farm, the base of the fen clay dates to 1800-1600 bc (Waller forthcoming) and the regional vegetation contained *Quercus* and *Corylus*. It is likely that some components of the vegetation may not be represented due to the differential transport of different taxa. *Quercus* and *Corylus* are high pollen producers and are thus well represented whereas, for example, *Fraxinus* (ash), *Acer campestre* (field maple) and *Tilia* are less likely to be present.

3) A BRIEF COMPARISON OF OAKHURST AND CROWTREE FARMS.

Two pollen sequences analysed from Oakhurst Farm and Crowtree Farm, are broadly similar, being truncated soils of late Atlantic/early Sub-Boreal date. These profiles are separated geographically by c. 2km and are on the same sub-strate. Consequently, it is not surprising that the natural vegetation of these sites prior to extensive anthropogenic impact should have been similar. This was shown to be one of dominant *Tilia* woodland with evidence for *Quercus*/hazel woodland also in the region. The stronger archaeological evidence for occupation at Crowtree Farm is perhaps indicated in the pollen record with greater quantities and diversity of herbs present. These include ruderals such as *Plantago lanceolata* but with little evidence of cereal cultivation. At both sites, it is unfortunate that the 'A' horizon of the soil has been truncated with the consequence that later evidence for anthropogenic (perhaps early Neolithic) activity may be missing from both pollen records. However, it is plausible that a cause and effect situation may be in operation with such activities in themselves being responsible for soil depletion. At both sites, the Fen Clay (Barrow Way Drove) sequence represents marine inundation. At Oakhurst Farm, the thin basal peat sequence illustrates the 'ponding back effect' of such marine transgression giving rise to waterlogging and accretion of fen peats. At Crowtree Farm, the marine sequence rests directly upon the soil of the sand island effectively sealing this surface. Both pollen profiles from the fen clay show that the allochthonous sediments were derived not only from distant sources but also from the local river catchments providing sediments and derived palynomorphs from the Jurassic, Oxford Clay.

SUMMARY

During the Fen Dyke Survey, a number of archaeological sites were discovered on sandy islands lying within the fen clay series. Two pollen sequences have been analysed from buried, truncated soils of late Atlantic/early Sub-Boreal date at Oakhurst and Crowtree Farms. The vegetation of these sites was dominated by *Tilia* (lime) woodland. *Quercus* (oak) woodland with *Corylus* (hazel) was also in

evidence. Although both sites have late Mesolithic/early Neolithic archaeology, it is only at Crowtree Farm that this may be recorded in the pollen record. This evidence takes the form of woodland depletion and the presence of ruderal herbs indicative of open ground. Because substantial truncation of the soils has taken place, it is certain that evidence of later (middle/late Neolithic and early Bronze Age) is missing.

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CM	1.0	3.0	5.0	7.0	9.0	11.0	13.0	15.0	17.0	19.0	21.0	23.0	25.0	27.0
BETULA	3.0	2.0	2.0	2.0	2.0	2.0	2.0	.0	.0	.0	.0	2.0	.0	1.0
PINUS	5.0	2.0	3.0	4.0	2.0	.0	5.0	4.0	2.0	5.0	2.0	4.0	1.0	2.0
ULMUS	3.0	10.0	3.0	6.0	6.0	3.0	1.0	5.0	3.0	.0	2.0	3.0	3.0	1.0
QUERCUS	66.0	85.0	70.0	79.0	111.0	148.0	165.0	143.0	103.0	71.0	68.0	60.0	69.0	30.0
TILIA	2.0	7.0	7.0	10.0	16.0	18.0	46.0	84.0	64.0	59.0	53.0	54.0	37.0	20.0
ALNUS	40.0	36.0	27.0	23.0	40.0	38.0	74.0	47.0	8.0	18.0	14.0	7.0	22.0	5.0
FRAXINUS	1.0	3.0	2.0	.0	2.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0
ILEX	.0	.0	.0	.0	1.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0
FRANGULA	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0
PRUNUS T	.0	.0	.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
SORBUS T	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
CORYLUS	106.0	99.0	94.0	68.0	57.0	35.0	93.0	100.0	62.0	46.0	62.0	67.0	57.0	40.0
SALIX	.0	.0	.0	.0	1.0	1.0	2.0	.0	.0	.0	.0	.0	.0	.0
VIBURNUM	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0
RANUNCUL	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
SINAPIS	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
SPERGULA	.0	.0	.0	.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
CHENOPOD	46.0	36.0	37.0	50.0	41.0	2.0	.0	1.0	.0	.0	.0	.0	.0	1.0
PAPILION	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
LOTUS TY	.0	.0	.0	18.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
ROSACEAE	.0	.0	1.0	2.0	.0	.0	1.0	1.0	.0	.0	.0	.0	.0	.0
FILIPEND	1.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
HEDERA	.0	.0	.0	1.0	1.0	.0	2.0	4.0	2.0	.0	.0	.0	1.0	.0
RUMEX	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
ARMERIA	1.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
MYOSOTIS	.0	.0	3.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
CONVOLVU	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0
CALYSTEG	1.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
MENTHA T	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0
PLANTAGO c.	1.0	3.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
PLANTAGO l.	.0	2.0	.0	.0	.0	.0	1.0	1.0	1.0	.0	.0	.0	.0	.0
PLANTAGO m.	.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
LONICERA	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0
SCABIOSA	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
SUCCISA	.0	.0	.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
BIDENS T	9.0	6.0	4.0	5.0	3.0	1.0	1.0	.0	1.0	.0	1.0	.0	.0	.0
ASTER TY	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
ANTHEMIS	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
ARTEMISI	3.0	.0	.0	2.0	1.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0
TARAXACU	.0	.0	.0	1.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0
CYPERACE	.0	3.0	1.0	1.0	.0	.0	.0	7.0	2.0	.0	1.0	2.0	7.0	.0
GRAMINEA	30.0	19.0	36.0	19.0	6.0	2.0	6.0	2.0	2.0	3.0	5.0	5.0	6.0	.0
CEREAL T	.0	1.0	1.0	1.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
POTAMOGE	4.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
SPARGANI	.0	1.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
CF HOTTO	1.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
UNIDENTI	6.0	4.0	3.0	1.0	1.0	.0	.0	1.0	3.0	.0	.0	7.0	15.0	7.0
PTERIDIU	2.0	1.0	.0	3.0	2.0	.0	.0	1.0	4.0	3.0	3.0	1.0	3.0	2.0
DRYOPTER	5.0	4.0	6.0	5.0	4.0	5.0	8.0	17.0	11.0	15.0	20.0	17.0	21.0	16.0
POLYPODI	.0	1.0	3.0	5.0	6.0	8.0	7.0	16.0	20.0	21.0	38.0	39.0	17.0	11.0
SPHAGNUM	.0	.0	1.0	.0	.0	.0	1.0	2.0	.0	2.0	1.0	1.0	.0	.0
PRE-QUAT	96.0	182.0	26.0	3.0	2.0	.0	1.0	4.0	1.0	1.0	1.0	1.0	2.0	3.0

Oakhurst Farm; pollen data

cm.	1.0	3.0	6.0	7.0	9.0	11.0	13.0	15.0	17.0	19.0	21.0	23.0
BETULA	5.0	2.0	1.0	5.0	.0	.0	.0	.0	1.0	.0	.0	.0
PINUS	4.0	3.0	2.0	5.0	6.0	2.0	5.0	2.0	2.0	5.0	1.0	1.0
ULMUS	1.0	3.0	2.0	2.0	2.0	2.0	4.0	1.0	1.0	1.0	3.0	.0
QUERCUS	34.0	42.0	24.0	41.0	101.0	64.0	23.0	20.0	20.0	12.0	12.0	1.0
TILIA	1.0	2.0	.0	1.0	3.0	2.0	3.0	10.0	14.0	25.0	39.0	4.0
ALNUS	8.0	9.0	6.0	11.0	8.0	15.0	27.0	27.0	.0	12.0	18.0	1.0
FRAXINUS	.0	.0	.0	.0	1.0	1.0	.0	.0	.0	.0	.0	.0
ILEX	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0
CORYLUS	16.0	16.0	7.0	32.0	21.0	21.0	12.0	11.0	17.0	11.0	24.0	.0
SALIX	.0	1.0	.0	1.0	1.0	.0	2.0	.0	.0	.0	.0	.0
RANUNCUL	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
PAPAVERA	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
SINAPIS	5.0	2.0	3.0	.0	1.0	.0	.0	.0	1.0	.0	.0	1.0
HORNUNGI	3.0	23.0	6.0	6.0	.0	.0	1.0	.0	.0	.0	.0	.0
DIANTHUS	1.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0
SPERGULA	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
CHENOPOD	29.0	64.0	8.0	35.0	11.0	6.0	20.0	5.0	3.0	10.0	15.0	.0
LINUM	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
PAPILION	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	1.0	.0
LATHYRUS	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0
VICIA TY	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	1.0	.0
MEDICAGO	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
ROSACEAE	.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0
FILIPEND	.0	.0	.0	.0	.0	1.0	2.0	.0	.0	2.0	.0	.0
RUMEX	.0	1.0	.0	.0	.0	.0	2.0	.0	.0	.0	.0	.0
ARMERIA	.0	1.0	.0	1.0	.0	.0	1.0	.0	1.0	.0	1.0	.0
CONVOLVU	.0	.0	.0	.0	1.0	.0	1.0	.0	.0	.0	.0	.0
CALYSTEG	.0	2.0	.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0
SCROPHUL	.0	.0	.0	.0	.0	.0	1.0	1.0	1.0	1.0	.0	.0
CF.PEDIC	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0
LABIATAE	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0
MENTHA T	.0	.0	1.0	5.0	.0	.0	.0	.0	.0	.0	.0	.0
PLANTAGO	1.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0
PLANTAGO c.	1.0	2.0	.0	1.0	2.0	2.0	2.0	3.0	13.0	8.0	4.0	2.0
PLANTAGO l.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0
PLANTAGO ma	.0	.0	.0	.0	2.0	1.0	.0	.0	.0	.0	.0	.0
ARTEMISI m.	.0	.0	.0	2.0	2.0	17.0	.0	.0	.0	.0	.0	.0
CENTAURE	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0
BIDENS T	.0	3.0	1.0	.0	4.0	30.0	15.0	35.0	16.0	1.0	3.0	.0
CIRSIUM	.0	.0	.0	.0	1.0	1.0	.0	2.0	.0	1.0	.0	.0
ANTHEMIS	.0	.0	.0	.0	.0	3.0	.0	.0	.0	.0	.0	.0
TARAXACU	.0	.0	.0	.0	.0	1.0	12.0	7.0	2.0	4.0	1.0	1.0
CYPERACE	6.0	14.0	1.0	6.0	3.0	2.0	3.0	8.0	7.0	22.0	22.0	5.0
GRAMINEA	45.0	73.0	11.0	37.0	27.0	53.0	55.0	50.0	97.0	79.0	45.0	4.0
CEREAL T	.0	1.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0
IRIS	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0
SPARGANI	1.0	.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
UNIDENTI A	4.0	4.0	13.0	3.0	3.0	2.0	7.0	6.0	3.0	5.0	8.0	.0
UNIDENTI	23.0	27.0	7.0	4.0	7.0	9.0	.0	3.0	10.0	13.0	18.0	2.0
DRYOPTER	7.0	7.0	9.0	4.0	1.0	1.0	2.0	2.0	5.0	8.0	13.0	.0
PTERIDIU	11.0	13.0	11.0	8.0	8.0	5.0	2.0	3.0	1.0	10.0	3.0	.0
POLYPODI	1.0	.0	1.0	1.0	1.0	3.0	.0	1.0	2.0	1.0	3.0	.0
OSMUNDA	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
SPHAGNUM	.0	.0	.0	2.0	1.0	.0	.0	.0	.0	.0	.0	.0
PRE-QUAT	23.0	27.0	7.0	4.0	7.0	9.0	.0	3.0	10.0	13.0	18.0	2.0

Crowtree Farm; pollen data