

ANCIENT MONUMENTS LABORATORY

REPORT 2163

SERIES/No	CONTRACTOR
AUTHOR	Alison Donaldson
TITLE	Pollen identification. Appletrees Section, Hadrians Wall, Northumberland

APPLETREES SECTION, (50A/B), HADRIANS WALL, NORTHUMBRIA:

POLLEN IDENTIFICATION BY ALISON DONALDSON

A gas pipeline was to go through the turf wall near Appletrees but construction work was held up to enable a Rescue excavation by Dr Charles Daniels, University of Newcastle to be made.

The cut for the pipeline revealed the turf wall in section and also the adjoining ditch. In the bottom of this ditch up to 5cm of peat had developed, sealed in by clay and stones which presumably entered the site some time after the abandonment of the turf wall. More peat had developed over this but the present ground surface is simply a top soil with Juncus s p.

Although the ditch was flooded it was possible to drain it sufficiently to collect 3 pollen samples B1, B2, B3 from the lower peat and one, E, from the upper peat. Results of the analyses are shown on the accompanying sheets.

They show that during the period between the cutting of the ditch and its infilling with stones and clay, the area round the wall was being almost totally cleared of its natural vegetation, mixed oak forest. The very high percentages of grass pollen and the types of weed present suggest extensive pastures in the area. Only one cereal type pollen grain was found and few weeds normally associated with arable land. One gets the impression of a landscape probably as open as that of today with much grassland, some arable land and heathland but eventually very few trees and shrubs, those remaining tending to be of damp areas eg alder or those requiring fairly open, light conditions eg birch and hazel.

Evidence for extensive forest clearance and organised agriculture has been found in Upper Weardale in Iron Age/Romano British times (Roberts, Turner and Ward 1972) and in the Browney valley near Durham City (Donaldson, unpubl.)

However, before the upper peat began forming it would seem that the cleared land was abandoned and regeneration of trees occurred for the pollen spectrum of the upper peat shows a return to forested conditions with very low levels of open habitat species. So a secondary forest must have existed sometime between the Romano-British period and clearance for "modern" agriculture.

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2 pieces of wood (rod) from the lower peat were identified as Celtis (birch)

ROBERTS B.K., TURNER J., & WARD P.F. 1973.

Recent forest history and land use in Weardale, Northern England.
in H.J.B. Birks & R.G. West (eds.) Quaternary Plant Ecology. Blackwells.

DONALDSON A.M. 1975.

Palynological investigations at Hallowell Moss, near Witton Gilbert,
Durham. A history of man's impact on vegetation.
Unpublished MSc thesis, Univ. of Durham.

now published as ;

DONALDSON A.M. & TURNER J. 1976

A pollen diagram from Hallowell Moss near Durham
City.

Biogeoq. (in press)

April/May

SITE *Apple trees* DATE *1/11* LEVEL *B2 (RB)* SLIDE ANAL *Art*

TREATMENT: HCL reacn. + + + VE, + VE, - VE; H.F.; Hot HCl; NaOH; Acetol. (G.E.); Oxidn. (G.E.); St.; Glycer. J.

DEPOSIT ORG. INORG.

%	T	Counters	Σ A.P.	Σ N.A.P.
26	8	Travs.		
3	1	Betula	### III	
+	+	Pinus	I	
16	5	Ulmus	+	
		Quercus	###	
		Tilia cogl.		
		T. plat.		
48	15	Alnus	### III / ###	
		Fagus		
		Carpinus		
6	2	Fraxinus		
		Acer		
		Populus		
		Abies		
		Picea		
		Taxus		
	31	Total Tree		
42	13	Corylus	### III / III	Myrica (+) (-)
+	+	Salix	+	
		Buxus		
		Juniperus		
		Hippophae		
		Hedera		
		Ilex		
		Ephedra		
	13	Total Shrub		
512	159	Gramineae	### III / ### III	
		Cereals		
13	4	Cyperaceae	III	
838	260	Calluna		
		Empetrum		
		Ericales		
+	+	Compositae (tub.)	Bellis T. +	Plantago lanc. ### III / ### III
		Arctium T.		Plantago
+	+	Artemisia	+	Plantago
		Centaurea		Polemonium
		Cirsium T.		Polygonum
		Matricaria T.		Potentilla ### I
3	1	Compositae (Lig.)	I	Ranunculaceae +
		Arnica		Rosaceae
		Galtha		Rubaceae
+	+	Carophyllaceae	+	Rumex acet. I
		Campanulaceae		Rumex
+	+	Chenopodiaceae	+	Saxifragaceae
+	+	Skell. holotkea	+	Succisa
		Cruciferae		Thalictrum
		Epilobium		Umbelliferae +
+	+	Filipendula	+	Urtica
		Helianthemum		Valeriana
		Labiatae		
26	8	Leguminosae	### III	
				Total Herb.
		Alisma		Botrychium
		Hydrocotyle		Equisetum
		Menyanthes		Isoetes
		Myriophyllum		
		Myriophyllum		Lycopodium
		Nuphar		Lycopodium
		Nymphaea		Ophioglossum
		Potamogeton		Osmunda
		Triglochin		Polypodium II
		Sparganium		
		Typha ang.		Selaginella
		Typha lat.		Pteridium I
		Total Aquatic		
		Sphagnum	+	

67.0 EP

3%

53%

rest 40%

T 25% 81

6 19

1 3

+

2 6

1 3

+

2 6

April/May

SITE: *Appleton* DATE: _____ LEVEL: *E (post RS)* SLIDE: _____ ANAL: *7111*

TREATMENT: HCL reacr. + + + VE, + VE, - VE; H.F.; Hot HCl; NaOH; Acetol. (G.E.); Oxidn. (G.E.); Sl.; Glys. J.

DEPOSIT ORG. _____ INORG. _____

HP	T	Counters	Σ A.P.	Σ N.A.P.
24	87	Trapa		
5	2	Pistula	<i> / / / / / / / / / </i>	
		Pinus		
		Vincus		
20	74	Quercus	<i> / / / / / / / / / </i>	
		Ulm cord.		
		T. plat.		
55	202	Alnus	<i> / / / / / / / / / </i>	
+	+	Carpinus		
		Fraxinus		
		Acer		
		Populus		
		Abies		
		Picea		
		Taxus		
<i>737 EP</i>		Total Tree	<i>365</i>	
20	93	Corylus	<i> / / / / / / / / / </i>	
5	2	Salix	<i> </i>	
		Buxus		
		Juniperus		
		Hippophae		
		Hedera	<i>+</i>	
		Ilex	<i>+</i>	
		Ephedra		
		Lonicera	<i>+</i>	
<i>197 EP</i>		Total Shrub	<i>95</i>	
6	22	Gramineae	<i> / / / / </i>	
		Cereals		
		Cyperaceae		
3	1	Calluna	<i> </i>	
2	9	Empetrum		
		Ericales	<i>+</i>	
		Compositae (tub.)		
		Arctium T.		
		Artemisia		
		Centaurea		
		Cirsium T.		
		Matricaria T.		
		Compositae (Lig.)		
		Armeria		
		Caltha		
		Caryophyllaceae	<i>+</i>	
		Campanulaceae		
		Chenopodiaceae		
		Stell. Holott	<i>+</i>	
		Cruciferae		
		Epilobium		
		Filipendula		
		Helianthemum		
		Labiatae		
		Leguminosae	<i>Trif. +</i>	
		Plantago lanc.	<i>+</i>	<i>1 0 1</i>
		Plantago		
		Polygonum		
		Potentilla	<i> </i>	<i>2 5</i>
		Ranunculaceae	<i>+</i>	<i>+</i>
		Rosaceae		
		Rubiacae		
		Rumex acet.		
		Rumex		
		Saxifragaceae		
		Succisa	<i> </i>	<i>2 5</i>
		Thalictrum		
		Umbelliferae		
		Urtica		
		Valeriana		
		Anemone	<i>+</i>	<i>+</i>
Total Herb				<i>35</i>
		Alisma		
		Hydrocotyle		
		Menyanthes		
		Myriophyllum		
		Myriophyllum		
		Najas		
		Nymphaea		
		Potamogeton		
		Triglochin		
		Sparganium		
		Typha ang.		
		Typha lat.		
		Total Aquatic		
		Botrychium		
		Equisetum		
		Isoetes		
		Lycopodium	<i>+</i>	<i>+</i>
		Lycopodium		
		Ophioglossum		
		Osmunda		
		Polypodium	<i> / </i>	<i>15 4</i>
		Selaginella		
		Pteridium	<i> </i>	<i>2 5</i>
		Sphagnum	<i> </i>	<i>2 5</i>
			<i> </i>	<i>3 1</i>

737 EP

365

C

197 EP

95

Stell. Holott

ok 6/6

Anemone +

Trif. +

Total Herb

35