

## DUNADD ARCHIVE

### SECTION 3: ANALYSIS AND SPECIALIST REPORTS

#### 3.3 Charcoal

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Twenty eight samples of charcoal were submitted for identification, and of each of the samples, the largest fragments were examined, following standard methods. Full details of the results are presented in Tables 2 and 3 and are summarised in Table 1.

#### Methods

A minimum of 12 fragments per sample were examined, this generally representing all the large (greater than c 5 x 5 x 5 mm) fragments. Identification of wood species followed examination of the specimens under low- and high-power magnification (to x25 and to x250). Reference was made to keys in Godwin (1956, Table 1) and Schweingruber (1982), to illustrations in Greguss (1959) and Schweingruber (1982), and to a collection of reference material held in the Department of Botany, University of Glasgow. The results of these identifications are presented in Table 2. In addition to identification, values of the original branch fragment diameter and number of tree rings measures (although most of these data represent minimum estimates) are given in (Table 3).

#### Identifications

The wood identified as *Alnus*, *Corylus* and *Ilex* each represent the only British species, viz. *A. glutinosa* (L.) Gaertner (alder), *C. avellana* L. (hazel) and *I. aquifolium* L. (holly). The woods of *Betula* and *Quercus* cannot be distinguished at species level and each represents one or both of two native species in their respective genus; *B. pendula* Roth and *B. pubescens* Ehrh. (birches) and *Q. robur* L. and *Q. petraea* (Mattuschka) Liebl. (oaks). The wood of *Sorbus* species, as with that of many of the Rosaceous trees, is difficult to differentiate with certainty, especially at species level. However, *S. aucuparia* L. (rowan) is the predominant *Sorbus* species in west Scotland, and thus on this phytogeographical basis, is probably represented by the carbonized wood at Dunadd.

#### Discussion

The range of species is relatively limited, and appears to reflect the availability of wood in the area surrounding the site rather than the preferred use of certain species. This area is in a region which is typified by a predominance of oak- and birch-rich forest (Birks 1977). A pollen diagram, at a site c30 km to the south, indicates that during the Iron Age/early medieval period woodland contained birch, alder, hazel, and, to a lesser extent, oak and ash (Peglar in Birks 1980, fig. 3).

The fragment size data (Table 3), composed mainly of minimum values for branch fragment diameters and ring numbers, is of limited use. Much of the wood is composed of, at least, medium-sized branch fragments but in a few samples moderately large wood is probably represented. The outer surfaces of the original wood are, in general, absent, and thus by the nature of the charcoal remains, it is difficult to assess whether trunk wood (i.e. timber) or branch wood was utilised. Much of the smaller-diameter wood probably represents branch wood, although some may represent the remaining innermost parts of burnt timbers.

The wide range of species within many of the samples suggests that the charcoal represents one of several possibilities (cf. Boyd 1984): hearth waste; destroyed structures, such as wicker fencing, in which different components are made with different types of wood (cf. for example, Coles & Orme 1976, 16); or a mixture of woods from unrelated structures.

**Table 1: Summary of Dunadd charcoal analysis**

<u>Site</u>	1	2	3	4
<u>Species</u>				
<i>Alnus glutinosa</i> (alder)	++	+	++	+
<i>Betula pubescens</i> and/or <i>pendula</i> (birch)	+++	+++	+++	+++
<i>Corylus avellana</i> (hazel)	+		+	
<i>Fraxinus excelsior</i> (ash)	+	++	+	
<i>Ilex aquifolium</i> (holly)	+			
<i>Quercus robur</i> and/or <i>petraea</i> (oak)	+++	+++	+++	+++
<i>Sorbus sp.</i> , probably <i>S. aucuparia</i> (rowan)			++	
<b>No. of samples</b>	14	3	8	3

+ to +++ denotes presence in a few samples to presence in most or all samples. See above for details of identification

**Table 2: Dunadd charcoal identification data**

No.	Context	Size data	<i>Aln.</i>	<i>Bet.</i>	<i>Cor</i>	<i>Frax</i>	<i>Ilex</i>	<i>Quer</i>	<i>Sor</i>
<u>Site 1</u>									
1055	25	x	x	x		x			
1155	25	x	x	x				x	
1253	25	x	x	x				x	
1687	43	x		x	x		x	x	
2085	57	x	x	x					
2125	57	x		x				x	
2128	70		x	x				x	
2138	62	x		x				x	
2140	35	x	x	x	x		x	x	
2146	68			x	x			x	
2147	43	x	x	x				x	
2149	46	x	x	x	x			x	
2153	37a	x		x				x	
2155	60	x	x	x				x	
<u>Site 2</u>									
489	11	x		x		x		x	
502	11	x	x	x		x		x	
518	16			x				x	
<u>Site 3</u>									
521	50	x	x	x		x		x	
1529	95	x		x		x		x	
1703	95	x	x	x				x	x
2135	88		x	x				x	x
2161	68	x	x	x				x	x
2184	113	x	x	x				x	
2202	97	x		x				x	
2206	106	x	x					x	
<u>Site 4</u>									
1898	12		x	x				x	
1968	13	x		x				x	
2151	15	x		x				x	

**Table 3: Dunadd charcoal, branch fragment data**

<u>Site</u>	No.	Species	Diam.	Rings
1	1055	Betula	15+	
		Fraxinus	13+	
			c20	
1	1155	Betula	22+	
		"	32+	
		"	20+	
		"	30+	
1	1253	Betula	90+	
		"	20+	
1	1687	Ilex	14+	
1	2085	Betula	36+	5+
		"	56+	10+
		"	36+	
		"	c100	
		"	88+	
		"	14+	
1	2125	Betula	16+	
			22+	5+
		Quercus	30+	3+
1	2138	Betula	20+	
		"	38+	
1	2140	Betula	30+	
1	2147	Betula	36+	
		"	20+	
		"	22+	
1	2149	Betula	26+	
1	2153	Betula	40+	
		"	60+	
		"	18+	
		Quercus	12+	
		"	12+	
1	2155	Betula	30+	
		Quercus	30+	
2	489	Betula	14+	
		"	36+	
		"	38+	
		"	26+	
		Fraxinus	30	
		Quercus	26+	
2	502	Betula	16	
		"	16+	
		"	10	
		Fraxinus	38+	
3	521	Betula	30+	
3	1529	Betula	12	12
		Corylus	20+	10+
		"	20+	18+
3	1703	Sorbus	30+	5+
3	2161	Betula	30+	
3	2184	Betula	24+	
3	2202	Quercus	18+	
3	2206	Betula	12+	
		Quercus	7	2
4	1968	Betula	50+	
		"	11	

		"	20+	
		Quercus	60+	
4	2151	Betula	16+	
		"	16+	
		"	6+	9
		Quercus	20+	

Diameter is given in mm.