

Ancient Monuments Laboratory  
Report 44/90

CHARRED PLANT MACROFOSSILS FROM  
ROMAN DEPOSITS AT REAWLA, CORNWALL.

V Straker

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Summary

Small amounts of cereals, chaff and weeds were recovered from hearths, layers, pits, postholes and a gully of 3rd and 4th century date. Crops represented were emmer and spelt wheats and hulled barley. Other taxa include arable weeds and scrub or hedgerow plants as well as *Sieglingia decumbens* (heath bent grass); *Calluna vulgaris* (ling) and *Ulex* sp. (gorse) which characterise acid heathland conditions today. Heath bent grass may also have grown as an arable weed in the past.

Author's address :-

V Straker

Department of Geography  
University of Bristol  
Senate House  
Bristol  
BS8 1TH

## CHARRED PLANT MACROFOSSILS FROM ROMAN DEPOSITS AT REAWLA, CORNWALL.

by Vanessa Straker

### 1.0 INTRODUCTION

The survey of palaeoenvironmental work in South West England published by Bell in 1984 emphasised how virtually no studies had been made of the history of crop plants in Cornwall from their macroscopic remains. Since Bell's review was published, the picture has not altered for sites of Roman date and therefore any information from well stratified and dated deposits is an important contribution.

The soils at Reawla are of the Manod series which are generally of a well drained fine loamy or silty nature developed over Devonian slates, mudstones or siltstones. They are intermediate between brown earths and podzols and are often strongly leached showing iron accumulation in the subsoil (Curtis *et al*, 1976, 66). A sample from the soil buried beneath the outer bank was examined for its pollen content, but unfortunately no pollen was preserved which is most probably because conditions were not sufficiently acid.

Bulk samples from hearths, layers, pits, postholes and a gully were collected from third and fourth century contexts at Reawla in 1987. The samples were sieved on site, the residues being retained on a 500 micron nylon mesh and the floats collected in a 250 micron sieve. All the floats were examined and all but two of the residues were sorted to check on the efficiency of the flotation. No charred plant remains other than small charcoal fragments were found in the residues. The macrofossils were identified with the aid of a binocular microscope and reference collection housed at the Department of Geography, University of Bristol. Appendix 1 gives general details of the contexts processed for plant remains and the identification of the plant macrofossils is given in Tables 1-4. Taxonomy is according to Clapham *et al* (1975).

### 2.0 RESULTS

#### The cereals and weeds

Grains of hulled barley (*Hordeum sativum*) and wheat (*Triticum*) sp. were recorded in low numbers. A few oats were also present, but in the absence of the floret bases it is not possible to say whether they were wild or cultivated. A number of cereal grains could not be identified to genus level. The closer identification of the wheat relies upon the glume bases which constitute the vast majority of the cereal chaff. Emmer (*T.dicoccum*) and spelt (*T.spelta*) are present in roughly equal quantities (20.5% and 18.5%) and the rest (61%) cannot be identified to species level. In practise, they are most probably either emmer or spelt. Barley chaff is usually less frequent than that of hulled wheat and is not present at all at Reawla, but with such small samples it would be unwise to comment on the relative importance of wheat and barley. The weed flora was very limited and of this *Bromus* (brome) possibly *Sieglingia* (heath grass) and *Chenopodium/Atriplex*

(goosefoot/orache) are most likely to have been arable weeds. *Prunus spinosa* (sloe); *Corylus avellana* (hazel) and *Rubus fruticosus* (blackberry) are all scrub or hedgerow species with edible fruits or nuts.

An unexpected find was the charred remains of gorse spines (*Ulex* sp.) and fruits of heather (*Calluna vulgaris*) in pit fill 352 and hearth 333. These plants are typical of acid heaths. Heath grass (*Sieglingia*) is today often associated with acid heaths but has been found associated with arable assemblages in other archaeological contexts such as at Cefn Graeanog where Hillman (1981) considered that it continued as an arable weed as a result of using an ard rather than a mouldboard plough which would have favoured annual rather than perennial weeds. Heath grass also grows, though more rarely, on more basic soils (Etherington, 1981, 284). The *Carex* (sedge) could have also have been a component of the relatively poor nitrogen depleted heath vegetation, but sedges grow in a variety of habitats including wet grassland or even poorly drained arable land. The sorrel (*Rumex*) and clover/medick (*Medicago/Trifolium*) could also have grown in a variety of habitats.

### 3.0 DISCUSSION

The crops are all common on Roman sites, though Jones (1981) noted that moving from east to west in Britain, an increase in emmer in relation to spelt is discernible on Iron Age sites. This statement has not yet been put to the test as very few Iron Age and Roman sites have been excavated in the South West in the last 10 years. However, despite the small assemblage from Reawla it is of interest that the wheat does indeed include a high concentration of emmer.

Unfortunately as the samples are so small is not possible to make any definite statements about where the crops were grown. However, the ratio of wheat grains to glume bases (1:16 for the layers; 1:26 for the pits and 1:9 for the hearths) and generally low numbers of grain suggests that the charred remains are mainly those of crop cleaning waste. The weeds are all small and this combined with the presence of glume bases, lack of large chaff such as culm nodes and bases and only occasional presence of grains is consistent with the cleaning waste from a late stage in the processing of hulled wheats (Hillman 1981).

There are no important differences between the assemblages in the different types of features (layers, pits, hearths and postholes). Layers usually contain only low concentrations of plants remains apart from in exceptional circumstances. The richest sample is one of the pit fills (context 352) and is composed of crop cleaning waste mixed with what is most probably ash and fine charcoal from a hearth.

The heathland taxa are of interest as the soils at the site are unlikely to have been acid enough to support this type of vegetation and these plants may have been brought in as fuel or perhaps as animal bedding from more acid soils such as those on the edge of the granite uplands.

### 4.0 ACKNOWLEDGEMENT

I am grateful to Nic Appleton for arranging for the samples to be processed.

## 5.0 REFERENCES

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TABLE 1. REANLA: CHARRED PLANT MACROFOSSILS FROM LAYERS

TAXON		CONTEXTS						
		148	151	158	216	251	254	274
<i>Triticum spelta</i>	spelt, glume base	7			1		2	
<i>T. dicoccum/spelta</i>	emmer/spelt	1						
<i>T. dicoccum/spelta</i>	emmer/spelt, glume base	2					1	
<i>Triticum</i> sp.	wheat	1	1					
<i>Triticum</i> sp.	wheat spikelet fork	3					1	
<i>Triticum</i> sp.	wheat, glume base	7					2	
cf. <i>Triticum</i> sp.	wheat		+					
<i>Hordeum sativum</i>	barley	2	1				2	
<i>Hordeum sativum</i>	barley, hulled, straight		1					
<i>Hordeum/Triticum</i> sp.	barley or wheat							1
<i>Avena</i> sp.	oats		1		+	+	2	
Cerealia	ind. cereal	+		2		2+		
<i>Chenopodium/Atriplex</i> sp.	goosefoots/graches					1		
<i>Medicago/Trifolium</i> sp.	medick/clover	1						
<i>Corylus avellana</i> L.	hazel	+						
<i>Sieglingia decumbens</i> (L.) Bernh.	heath grass			1				
<i>Bromus</i> s. <i>Eubromus</i>	brome	1+				4	+	
cf. <i>Bromus</i> sp.	brome	1						
unidentified seeds			2		1			
unidentified buds, charred			2		1			1
TOTAL		26+	8+	3	3+	7+	10+	2
LITRES SOIL		20	10	15	5	15	10	10
ITEMS/LITRE		1.3	.8	.2	.6	.47	1	.2

TABLE 2. REAWLA: CHARRED PLANT MACROFOSSILS FROM PITS

TAXON		CONTEXTS					
		233	240	262	277	305	319
Triticum dicoccum	emmer, glume base			1			
Triticum spelta	spelt, glume base	1					
T. cf. spelta	spelt						
T. dicoccum/spelta	emmer/spelt spikelet fork						
T.dicoccum/spelta	emmer/spelt, glume base			1			
Triticum sp.	wheat			1			
Triticum sp.	wheat, glume base						
Triticum sp.	wheat, brittle rachis internode						
Hordeum sativum	barley						1
cf. Hordeum sativum	barley						
Hordeum/Triticum sp.	barley or wheat					1	
Cerealia	ind. cereal		2+				
Cerealia	cf. ind. cereal				1		
Rumex sp.	dock				1		
Calluna vulgaris (L.) Hull	ling, heather, fruit						
Carex sp.	sedge						
Cyperaceae					1		
Gramineae	ind. grasses						
unidentified seeds				+	1	1	1
unidentified buds, charred			1				
Ulex sp.	furze, spines, charred						
TOTAL		1	3+	3+	3	2	2
LITRES SOIL		5	10	5	5	5	5
ITEMS/LITRE		.2	.3	.6	.6	.4	.4
		320	352	364	393		
Triticum dicoccum	emmer, glume base		17				
Triticum spelta	spelt, glume base		6				
T. cf. spelta	spelt		1	1			
T. dicoccum/spelta	emmer/spelt spikelet fork		1				
T.dicoccum/spelta	emmer/spelt, glume base		30				
Triticum sp.	wheat			1			
Triticum sp.	wheat, glume base		36				
Triticum sp.	wheat, brittle rachis internode		9				
Hordeum sativum	barley		1				
cf. Hordeum sativum	barley	1					
Hordeum/Triticum sp.	barley or wheat		1		1		
Cerealia	ind. cereal						
Cerealia	cf. ind. cereal						
Rumex sp.	dock						
Calluna vulgaris (L.) Hull	ling, heather, fruit		1				
Carex sp.	sedge		3				
Cyperaceae							
Gramineae	ind. grasses		1				
unidentified seeds					1		
unidentified buds, charred							
Ulex sp.	furze, spines, charred		16				
TOTAL		1	123	2	2		
LITRES SOIL		10	10	5	5		
ITEMS/LITRE		.1	12.3	.4	.4		

TABLE 3. REAWLA; CHARRED PLANT MACROFOSSILS FROM HEARTH5

TAXON		CONTEXTS				
		208	285	317	333	335
<i>Triticum dicoccum</i>	emmer, glume base				2	
<i>Triticum spelta</i>	spelt, glume base					
<i>T. cf. spelta</i>	spelt					
<i>T. dicoccum/spelta</i>	emmer/spelt, glume base		2			1
<i>Triticum sp.</i>	wheat, glume base				3	
<i>Hordeum sativum</i>	barley		1			
cf. <i>Hordeum sativum</i>	barley			1		
<i>Avena sp.</i>	oats		2			
<i>Avena sp.</i>	oats, awn		(2+)			
Cerealia	ind. cereal		+		4+	
<i>Rubus fruticosus</i> agg.	blackberry				2	
<i>Calluna vulgaris</i> (L.) Hull	ling, heather, fruit				1	
<i>Carex sp.</i>	sedge				1	
<i>Sieglingia decumbens</i> (L.) Bernh.	heath grass				1	
<i>Bromus S. Eubromus</i>	brome		2			
cf. <i>Bromus sp.</i>	brome			1	2+	
cf. Gramineae indet.	ind. grasses	1				
unidentified seeds			1			
cf. <i>Prunus sp.</i>	bud, charred				1	
<i>Ulex sp.</i>	gorse, spines, charred		1		3+	
TOTAL		1	11+	2	20+	1
LITRES SOIL		5	10	10	5	5
ITEMS/LITRE		.2	1.1	.2	4	.2
		367	371	372		
<i>Triticum dicoccum</i>	emmer, glume base					
<i>Triticum spelta</i>	spelt, glume base				1	
<i>T. cf. spelta</i>	spelt				1	
<i>T. dicoccum/spelta</i>	emmer/spelt, glume base					
<i>Triticum sp.</i>	wheat, glume base					
<i>Hordeum sativum</i>	barley		1			
cf. <i>Hordeum sativum</i>	barley					
<i>Avena sp.</i>	oats					
<i>Avena sp.</i>	oats, awn					
Cerealia	ind. cereal					
<i>Rubus fruticosus</i> agg.	blackberry					
<i>Calluna vulgaris</i> (L.) Hull	ling, heather, fruit					
<i>Carex sp.</i>	sedge					
<i>Sieglingia decumbens</i> (L.) Bernh.	heath grass					
<i>Bromus S. Eubromus</i>	brome				1	
cf. <i>Bromus sp.</i>	brome					
cf. Gramineae indet.	ind. grasses					
unidentified seeds		1				
cf. <i>Prunus sp.</i>	bud, charred					
<i>Ulex sp.</i>	gorse, spines, charred					
TOTAL		1	1	3		
LITRES SOIL		5	5	5		
ITEMS/LITRE		.2	.2	.6		

TABLE 4. REAWLA: CHARRED PLANT MACROFOSSILS FROM POSTHOLES

TAXON		CONTEXT 450
Prunus spinosa L.	sloe, blackthorn	+
unidentified seed		1
TOTAL		1+
LITRES SOIL		5
ITEMS/LITRE		.2

APPENDIX 1

	CONTEXTS WITH MACROFOSSILS	CONTEXTS W/OUT NO. OF MACROFOSSILS	NO. OF MACROFOSSILS	TOTAL LITRES SOIL (approx)	LITRES SOIL FOR CONTEXTS WITH MACROS.
PITS	10	3	141	85	65
HEARTHES	8	1	40	60	55
LAYERS	7	3	56	105	85
POSTHOLE	1	2	2	15	5
GULLY	0	1	0	10	0