

The Charred Plant Remains from excavations at Tintagel (TTG03)

ENV/BOT/REP/01/04

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March 2004

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N.B. The information contained within this report is preliminary assessment data, and may be modified in the light of detailed analytical work

Introduction

During excavations at Tintagel Castle, bulk environmental soil samples were collected for the potential recovery of charred plant remains and information on human activities at the site.

Sampling, recovery and identification methods

Eight samples were collected from 5th to 6th century fills, with six samples from the fill [102] of a revetment and two samples from fills [201] and [202], associated with the south terrace. The sizes of the individual samples ranged from 3kg to 13kg and were processed by a combination of flotation and wet-sieving using sieve sizes of 0.25mm and 1mm respectively (CHECK).

The flots were dried and presented to the author for sorting and analysis. The flots were sorted using a binocular microscope and charred plant remains (except charcoal)

extracted and identified using modern and charred reference material housed at the Environmental Laboratory of the Museum of London Specialist Services. No information was available to the author on any biological remains or other finds that may have been sorted from the sample residues.

Results

The results are tabulated in Figure 1. All eight samples produced charred botanical remains consisting mainly of very fragmented charcoal and smaller assemblages of cereal grains totalling 214 grains. No charred weed seeds or chaff fragments were recovered from the samples.

The flots also contained variable quantities of rootlets and uncharred seeds mainly from disturbed ground plants, eg. nettles (*Urtica* spp.), thistles (*Carduus/Cirsium* spp.), chickweeds/stitchworts (*Stellaria/Silene* spp.), elder (*Sambucus nigra*), brambles (*Rubus* spp.). This material is likely to be intrusive given the aerobic nature of the soils at the site.

The cereals

The best-represented cereal grain in the samples was barley (*Hordeum sativum*), which accounted for 77% of the 95 identifiable grains; the well-preserved material including both twisted and hulled grains, which shows the presence of six-row hulled barley. Other cereals in the samples consisted of considerably smaller amounts of grains; oat (*Avena* spp.) was the second best represented cereal although ten of the 13 grains were only tentative identifications while the absence of diagnostic floret bases meant that it was not possible to establish whether they were wild or cultivated oats. Just seven wheat (*Triticum* spp.) grains were identified with several belonging to a form of free-threshing wheat (*T. aestivum* s.l.). Two rye (*Secale cereale*) grains were sorted although only one of the grains was a definite identification. Just over 55% of all the grains were too poorly preserved and fragmentary to be identified.

Discussion

The bulk of the cereal remains were recovered from the sampled revetment fill [102] with little variability between the different samples with barley being the dominant identifiable grain in all six flots. The two samples from the south terrace fills [201] and [202] produced just 11 grains, which were mainly unidentifiable except for tentative identifications of barley and oat.

The concentration of charred plant remains (excluding charcoal) in the samples was low, which is similar to previous archaeobotanical investigations at the site (Straker *et al*, 1997; in prep.). Figure 1 shows a density of between 0.8 and 3.1 grains per kilogram of processed soil. The paucity of plant remains suggests that they were not deliberately dumped as food refuse but probably represent debris blowing around the site. The grains may have been accidentally burnt while being dried before storage or milling or possibly while being cooked as whole grains, for example, in soups, over open fires.

Barley may have been used for human consumption in the form of bread, soup, pottage, and also for beer; no germinated barley grains, however, were found to suggest brewing activities. Barley was also used for animal fodder. The oats may also have been used as animal feed and possibly as part of mixes in bread or in soups/pottage; however,

as noted above, it is not possible to determine whether these grains are from cultivated cereals or simply represent weeds. Wheat and rye would have probably been used exclusively for human food, for bread and possibly soup/pottage.

The absence of crop-processing debris (chaff fragments and weed seeds) means that it is not possible to make significant comments on crop husbandry. Barley is a hardy crop and can grow in a wide range of both heavy and light soils except for poorly drained areas or where the Ph is below 6, while oats can grow in acidic soils and can tolerate low levels of sunshine and a high rainfall. Thus, oats and barley (to a lesser extent) would have been well suited to the generally poor acidic soils of the area and the fairly wet and windy climatic conditions of the north Cornish coast. Rye grows well on sandy acidic soils but was only definitely represented by a single grain. On the other hand, free-threshing wheat is normally associated with deep clay loams.

Previous archaeobotanical work from similar dated deposits at Tintagel has shown a fairly similar picture regarding the range and proportion of different cereals represented at the site. Charred plant remains from the Lower Terrace, Tintagel Island, showed oats to be the most common grain, with moderate quantities of barley and only occasional wheat grains including a compact form of hexaploid wheat; there were no definite rye grains (Straker *et al* 1997). More recent excavations at Site T showed the presence of a small number of oat grains, a few barley grains and single wheat and rye grains (Straker, in press). In both cases, the oats could not be definitely identified as cultivated cereals because of the absence of floret bases.

Conclusions

The plant remains from the site show that barley was an important cereal at the site; oats may have been used while there was only limited evidence for the use of wheat and rye. The paucity of charred plant remains and the absence of crop-processing debris means that it is not possible to establish whether the site was producing its own crops or importing cereals from other areas (it is possible that crop-processing debris is present in an unexcavated area of the settlement). Oats in particular, rye and to a lesser extent, barley, could have been grown in the acidic soils around the site. Further excavation and sampling at the site may resolve the question of local crop-production or grain importation.

Bibliography

Straker, V. 1997 The Ecofactual assemblage: charred plant macrofossils. in R. Harry and C. Morris, Excavations on the Lower Terrace, Site C, Tintagel Island 1990-94, *The Antiquaries Journal* 77, 83-101

Straker, V. Gale, R., Robinson M, Tinsley, H. in prep. Plant macrofossils, charcoal, pollen and molluscs from Tintagel Site T: some limited further evidence for the local environment and economy

Figure 1: The charred plant remains from Tintagel Castle (TTG03)

	Period	----- 5th-6th Century -----								total
		South terrace		Revetment-----						
Feature										
Context		202	201	102	102	102	102	102	102	
Sample		-	-	A	B	C	D	E	F	

	vol.soil (kg)	3	9	10	13	11.25	10	11	12	
	flot vol (ml)	15	200	10	10	10	10	10	15	
species										
Cereal grains										
<i>Triticum aestivum</i> s.l.	free-threshing wheat					1			1	2
cf. <i>T. aestivum</i> s.l.	?free-threshing wheat								2	2
<i>Triticum</i> sp(p).	wheat						1		2	3
<i>Secale cereale</i> L.	rye						1			1
cf. <i>S. cereale</i>	?rye							1		1
<i>Hordeum sativum</i> L.	barley			6	11	14	6	7	7	51
cf. <i>H. sativum</i>	?barley		1		10	2		4	5	22
<i>Avena</i> sp.	oat	1			1				1	3
cf. <i>Avena</i> sp(p).	?oat		2	1	2	3	1	1		10
indeterminate cereals	Indet grains (est.)	2	5	16	22	17	17	21	19	119
charcoal fragments		+++	+++	+++	+++	+++	+++	+++	+++	
total number plant items		3	8	23	46	37	26	34	37	214
Item density (per litre of soil)		1.0	0.8	2.3	3.5	3.3	2.6	3.1	3.1	-

Key: + = 1-10 items; ++ = 11-50 items; +++ = 50+ items