

The Archaeology of the A30 Bodmin to Indian Queens Road Scheme Specialist Report Archive

The Charred Plant Remains

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Introduction and methodology

An initial assessment was made of some 170 samples (Thompson *et al*, OA Report 2007) from a total of 258 taken from the various sites excavated. The samples, which ranged between 10 litres and 60 litres in volume (depending on the size of the sampled feature), were processed using a modified Siraf flotation machine, the flots being collected onto a 250µm mesh, air-dried, and examined under a binocular microscope. During the assessment the presence of any cereal grains, cereal chaff, weed seeds, and snails was quantified, and other material such as coal and slag was noted. The presence of any modern contaminants, such as roots, insect eggs, and seeds, was also noted. This indicated that, on the whole, the charred plant assemblages were limited, and that only three samples contained sufficient material to justify full analysis.

Three analysed samples came from the ditch of The Belowda Roundhouse (Site B), from which seeds and other recognisable plant remains were extracted and identified with the aid of modern reference material. The results are shown in Table I where actual counts are given except in the case of very abundant remains, which were broadly quantified. The data are divided into several groups, including cereal grain, cereal chaff, other Poaceae (grass family) remains and weed seeds. The weed seed species are prefixed with a letter, which refers to its broad ecological category where: A=arable; C=cultivated; D=disturbed/waste ground; G=grassland; H=heathland; M=marsh/bog; P=ponds/ditches/stream-sides; X=wide ranging; o=open; s=sandy, and w=wet/damp soil. Plant nomenclature follows Stace (1997).

During the assessment low values of cereal grains and chaff were recorded in a further 11 samples, of which the majority came from the Lower Trenoweth roundhouse (Site A) (Thompson *et al*, OA Report 2007). These samples were not assessed as suitable for analysis but in the absence of an extensive archaeobotanical record from Cornish sites (Carruthers forthcoming; Jones forthcoming), a decision was taken to include and extend the data from this site. A similar situation occurs in the North West of England, where grain-rich deposits are also rare. It is unclear, however, whether this reflects a real trend, or whether it is due to post-depositional processes affecting its preservation (E. Huckerby pers comm).

Each sample was checked for CPR to confirm or add to the information obtained during the assessment stage (Thompson *et al*, OA Report 2007). The results are shown in Table II where the CPR remains are quantified on a scale of 1-4. Based on the material evidence this feature was believed to be Iron Age in date, however following the radiocarbon dating of charred material from two of its features, it became apparent that it is likely to be much later in date or contain intrusive material.

Results

The Belowda Roundhouse (Site B) (Table I)

Context 4143, upper fill of ditch section 4145

This context, which produced charcoal dated to 360-40 cal BC (2131±35 BP; NZA 25410) contained the richest CPR assemblage, and cereal grains, cereal chaff and very abundant weed seeds (>2000) were recorded. Cereal grains represented a relatively minor component of the assemblage (cereal grain:weed seed ratio being 1:11) and consisted of limited *Triticum* sp. (wheat) grains and abundant *Avena* sp. (wild/cultivated oat) grains. The morphological overlap of *Triticum* sp. grains makes identification to species level difficult, however, some distinguishing characteristics, such as their size and shape can be used to suggest the dominant type at a site. The *Triticum* grains in the Dartmoor samples were interesting in that

they were often 'short and plump' which is a criteria often used for identifying free-threshing *Triticum aestivum* (bread wheat), however, they exhibited impressions often found on glume wheat such as *Triticum spelta* (spelt wheat). Some of the cereal chaff, which is more often used for wheat species identification, was also atypical. Although some of the glume bases and spikelet forks could be confidently identified as *Triticum spelta*, some of the glume and rachis fragments were unusual in their form and breakage. It is acknowledged that there are many cereals that are now extinct or extremely rare, which cannot be identified using our standard methods of identification (Hillman *et al* 1996), and it is possible that the *Triticum* remains from Bodmin Moor fall into this category (W. Smith pers comm).

Avena sp. grain dominated the cereal assemblage, and although it is not possible to distinguish between the cultivated and wild variety based on the grains, the presence of several *Avena fatua* floret bases suggests that at least some of the grains were wild oat. The abundant *Avena* sp. awn fragments, the presence of possible *Triticum* sp. awn fragments, plus the very abundant and varied Poaceae (grass family) remains such as small culm nodes and bases suggest that the material may represent whole plants rather than exclusively crop processing waste. The presence of Poaceae/Cyperaceae culm bases with the rhizomes attached, plus the abundant Poaceae/Cyperaceae? rhizome fragments corroborates this and indicates that at least part of the assemblage may represent wild grasses or sedges, which had been pulled out of the ground.

Seeds from weeds of disturbed/waste or open cultivated ground dominated the sample. In particular, high numbers of *Stellaria media* (common chickweed), a ubiquitous weed of cultivated land, *Spergula arvensis* (corn spurry), *Chenopodium* sp./*Atriplex* sp. (goosefoots/oraches), *Galeopsis* spp. (hemp-nettles), *Galium aparine* (cleavers), *Persicaria lapathifolia* (pale persicaria), *Polygonum aviculare*/*Fallopia convolvulus* (knotgrass/black bindweed) and *Tripleurospermum inodorum* (scentless mayweed), although common on disturbed/waste ground and grassland, strongly suggest the presence of areas under (or once under) cultivation. Ruderals such as *Prunella vulgaris* (selfheal), *Plantago lanceolata* (Ribwort plantain), *Rumex acetosa* (common sorrel) and *Galium verum*/mollugo-type (which includes lady's/hedge straw), alongside the very abundant small Poaceae seeds, indicate a strong grassland component also. Some wet ground and heathland is indicated by the presence of *Eleocharis palustris* (common spike-rush), *Carex* sp. (sedge) seeds and *Erica* sp./*Calluna vulgaris* seeds and leaf shoots. However, these represent a minor part of the plant macrofossil assemblage.

Although many of the weed species present in the assemblage are often associated with cereal processing waste, their sheer volume in this case suggest that much of the assemblage is made up of material other than crop waste. It is possible for example that it originates from flooring/bedding, thatch, fodder, or even land clearance, which, in this case, consisted of uprooted plants. Along with the abundant Poaceae/Cyperaceae remains and rhizomes, the abundant seeds of scrambling weeds, such as *Galium aparine*, *Polygonum aviculare*, *Fallopia convolvulus* and *Vicia hirsuta*-type (vetches), may corroborated the evidence for uprooting (Hillman 1981). In this instance, the very limited *Triticum* sp. grains may represent relic crops growing in the fields or the waste from very limited crop processing activity at the site (although I suspect the former).

Context 4144, upper fill of ditch section 4145

A charred cereal grain from this context produced an almost exact date to context 4143. Dated to 352-45 cal BC (2131±40 BP; NZA 29341), the two place the assemblages from the feature firmly in the Iron Age. This context contained a much smaller CPR assemblage, however, like context 4143, seeds of species associated with disturbed/waste or cultivated ground and grassland, such as *Stellaria media*, *Chenopodium* sp./*Atriplex* sp., and *Persicaria lapathifolia* were the dominant taxa. A few cereal grains of *Triticum* sp. and *Avena* sp. were recorded again, as were a few *Triticum spelta* glume bases/spikelet forks and rachis nodes. One

noticeable addition, however, were the numerous detached coleoptiles. The presence of these in the absence of any sprouted grains is quite interesting as in many CPR assemblages the two are often found together in the same sample (Druce 2007). It is possible that these remains represent, in part, the waste from a crop that had just started to germinate, but which was perhaps too valuable to dispose of fully. Alternatively, it may originate from wild grasses that germinated whilst in use at the site, which were subsequently burnt.

Context 4377, ditch section 4378

This sample produced a very limited assemblage, however the CPR was similar in content with just a few *Avena* sp./indeterminate grains and a number of the same weed seeds recorded in the other two contexts. The most abundant remains were Poaceae/Cyperaceae stem fragments, small culm nodes and rhizome fragments, which, like that in context 4143, may represent the remains of whole grasses which were used as functional material, or represent clearance waste, which was subsequently burnt.

The Lower Trenoweth Roundhouse (Site A) and the 'Romano British' ditch, CH 4000 (Table II)

Based on the pottery evidence, and the nature of the feature itself, The Lower Trenoweth Roundhouse was believed to be Iron Age in date, however, following the radiocarbon dating of charred material from two of its features, it became apparent that it is likely to contain intrusive material. Charred seeds and charcoal from its ditch fills provided much later radiocarbon dates of cal AD 897-1151 (1027±40 BP; NZA 29326) from the outer ditch and cal AD 1470-1648 (322±40 BP; NZA 29325) from the inner ditch. This fact coupled with the very small assemblages it produced means that any interpretation regarding this feature would be tenuous. However, the limited data does suggest that *Hordeum vulgare* (barley) was being cultivated by the post-medieval period. The ditch feature at CH 4000 contained very limited remains, including a few *Avena* sp. grains and awn fragments and a few weed seeds. Consequently little interpretation can be made about the nature of the Romano British period at the site.

Discussion and Conclusion

Although the CPR from the A30 Bodmin Moor excavations were very limited, the exceptionally abundant remains in the ditch of The Belowda Roundhouse has provided detailed information regarding the nature of not only the remains themselves, but also the surrounding environment. Dominated by weed seeds and Poaceae/Cyperaceae remains, the assemblages possibly represent burnt waste of thatch, bedding or fodder, or may even represent burnt clearance waste. Although there is very little direct evidence for cereal remains, the presence of a few wheat grains and spelt wheat chaff fragments, combined with the abundant weeds associated with disturbed/waste and cultivated ground, suggests that cultivation had taken place fairly nearby. It is possible that oat was also being cultivated, and there is evidence for its cultivation at the Late Iron Age/Romano British site at Scarcewater (Jones forthcoming), however the lack of *Avena sativa* floret bases from the Belowda Roundhouse means that this can not be proven. It appears plausible that the wild oat, grasses and herbs of disturbed/waste and cultivated ground represents material growing in the fields surrounding the site, which consisted of areas that had once been under cultivation. A strikingly similar assemblage of weed seeds was recorded at Scarcewater, where the grassland component was interpreted as representing either ungrazed grassland or neglected agricultural habitats (Jones forthcoming).

Given the evidence for stock enclosures near to the site (OA Report 2007), plus the almost complete absence of any material remains, it is tempting to suggest that the roundhouse represents a temporary shelter, be it for animals or humans, as part of a system of transhumance. This is in agreement with Macphail and Crowther (this report) who, based on the micromorphological evidence, suggest that The Belowda Roundhouse may represent a

structure associated with livestock. Given the nature of some of the charred remains, it is possible that cereal cultivation had been taking place nearby at some stage.

Pollen evidence from the palaeochannel deposits (Druce this report) suggest a relatively long period of settlement or farming activity from the early/middle Bronze Age, with a mixed economy of relatively non-intensive pastoralism and possible small-scale arable cultivation. In addition, Gearey *et al* (2000) suggest that a peak of activity occurred on Bodmin Moor during the Bronze Age, after which, a subsequent reduction in land-use pressure occurred during the Late Iron Age/Romano British. It is possible that the Belowda Roundhouse was constructed in a former arable landscape, which had subsequently reverted to disturbed grassland and pasture during its occupation.

The absence of *Hordeum* sp. from The Belowda Roundhouse is interesting as barley has been recorded at the few other Bronze Age, Iron Age and Romano British sites in Cornwall that have produced charred assemblages (Jones forthcoming). Its absence in these samples is difficult to interpret, however it may lend support to the idea that the material represents a non-arable assemblage. The limited material from Site A most certainly suggests the cultivation of barley by the post-medieval period.

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