

Radiocarbon dating archaeobotanical remains from Bishopstone

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Between 2002 and 2005, research excavations were undertaken on the village green at Bishopstone, East Sussex, led by Gabor Thomas and under the auspices of the Sussex Archaeological Society and subsequently the University of Kent (Thomas 2010). The project aimed to investigate the origins of the medieval village, and discovered a Mid/Late Saxon cemetery and Late Saxon settlement comprising a timber hall complex plus ancillary buildings and a ‘zoned concentration of pits filled with large volumes of domestic rubbish, cess, and burnt structural remains’ (Thomas 2010, xv). The rich archaeobotanical contents of these pits made them of particular interest to the Feeding Anglo-Saxon England (FeedSax) project, which aimed to use charred plant remains to investigate developments in early medieval farming practices.

Phasing of the site proved problematic because ground truncation resulted in ‘disconnected islands of stratigraphy’ which were difficult to relate to one another, although it proved clear that the settlement ultimately succeeded the cemetery (Thomas 2010, 203). A large number of radiocarbon dates, supplementing ceramic evidence, demonstrated that the cemetery was in use from the late seventh or early eighth century until the late ninth or early tenth century, when the settlement encroached upon it (Thomas 2010, xvi, 203–4; Marshall *et al.* 2010).

In order to explore whether the dating of the archaeobotanical material could be at all refined, the FeedSax project submitted charred grains from six samples to the Oxford Radiocarbon Accelerator Unit for radiocarbon dating. The archaeobotanical remains were originally analysed by Rachel Ballantyne, but not all of the material was taxonomically sorted in the archive (Ballantyne 2010). The cereal grains to be dated were identified, selected and photographed by the author at the University of Oxford; the photographs are included in the FeedSax photographic archive (see McKerracher *et al.* in prep.).

The radiocarbon determinations obtained for these samples have been calibrated using IntCal20 (Reimer *et al.* 2020) and OxCal 4.4.2 (Bronk Ramsey 2009) as shown in the table below and figures at the end of this report.

Results

sample	context	grains	laboratory no.	original phase	age BP	calibrated dates AD (confidence)
538	516	3 x barley	OxA-38514	late C9–10	1103±20	892–994 (95.4%)
632	2885	3 x oat	OxA-38653	late C9–10	1121±21	888–990 (95.4%)
685	2969	3 x rye	OxA-38654	late C9–10	1128±21	883–991 (95.4%)
703	3003	3 x barley	OxA-38515	late C9–10	1117±20	890–990 (95.4%)
660	2364	2 x spelt	OxA-39902	mid-C8–9	1198±17	774–885 (95.4%)
662	2920	2 x spelt	OxA-39903	mid-C8–9	1231±17	785–878 (72.3%)

The new radiocarbon date ranges obtained from the barley, rye, and oat grains are all very similar, and consistent with the published chronology for settlement activity, centred on the late ninth to late tenth centuries.

It was anticipated that a different result might be obtained from the spelt grains, since spelt chaff from pit 2363 had been radiocarbon-dated in the original post-excavation programme to between the mid-eighth and late ninth centuries, making the contents of that pit almost certainly earlier than the others that have been dated (Ballantyne 2010, 170).

context	material	laboratory no.	age BP	calibrated dates AD (confidence)
Pit 2363, basal layer	spelt wheat chaff	Beta-256960	1210±40	759–896 (75.0%)

All of Bishopstone's spelt-rich samples derive from contexts within pit 2363, and appear to represent a period of cereal processing distinct from that represented in the other dated contexts at the settlement. All three samples have returned mutually consistent radiocarbon date ranges, spanning the late eighth to late ninth centuries. Hence, it appears likely that there was an earlier period of spelt cultivation prior to the late ninth century, which was succeeded – perhaps around the same time that the cemetery was encroached upon by the settlement, between the late ninth and early tenth centuries – by a period of cultivation focused upon free-threshing cereals, which is more typical of Anglo-Saxon agriculture in general.

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References

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Calibration of radiocarbon determinations







