Radiocarbon dating archaeobotanical remains from Mytton Oak Road, Shrewsbury

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In 2015, development-led excavations by Worcestershire Archaeology on land south of Mytton Oak Road, Shrewsbury (Shrops), discovered the remains of medieval occupation: 'probably representing the remains of a small farmstead dating from at least the 12th century onwards, if not earlier', until the thirteenth or fourteenth century (Bradley 2016, 1). Various ditches were dated to the medieval period, but the most significant features of this date were described as 'a sandstone and clay corn drier associated with a post-built sunken-featured building' – both containing rich deposits of charred plant remains, in which oat grains were particularly abundant (Bradley 2016, 10). These deposits offer a rare archaeobotanical insight into medieval agriculture in Shropshire, a county in which medieval charred plant remains are relatively scarce, compared with regions further east (McKerracher 2016).

The original post-excavation programme radiocarbon-dated charred oat grains from two contexts: one from the fill of the 'corn-dryer' 2095 (SUERC-64312); and one from the fill of 2021, the construction cut for the 'sunken-featured building' (SUERC-64313). In 2020, as part of the Feeding Anglo-Saxon England (FeedSax) project, charred oat grains from one additional context were submitted to the Oxford Radiocarbon Accelerator Unit for radiocarbon dating, with the objective of refining the chronology for these features and their important assemblage of charred plant remains. These grains, originally analysed by Liz Pearson (Pearson in Bradley 2016), were subsampled by the author whilst visiting Worcestershire Archaeology and then photographed at the University of Oxford's Institute of Archaeology; the photograph is included in the project's photographic archive (McKerracher *et al.* in prep.).

In the table below and the figures at the end of this report, all three radiocarbon dates have been calibrated using IntCal20 (Reimer *et al.* 2020) and OxCal 4.4.3 (Bronk Ramsey 2009). This recalibration has resulted in a slight revision of the date ranges used in the original post-excavation report, which were based on the IntCal13 calibration curve (Bradley 2016).

Results

sample	context	grains	lab no.	age BP	calibrated years AD (confidence)
16	2093, fill of construction cut 2092/2104	3 x oat	OxA-40418	805±18	1220–1269 (95.4%)
19	2118, fill of corn-dryer 2095	1 x oat	SUERC-64312	849±38	1152–1272 (88.9%)
9	2025, fill of construction cut 2021	1 x oat	SUERC-64313	907±38	1040–1216 (95.4%)

Sample 19 (SUERC-64312) represents the charred deposit from the base of the corn-dryer, interpreted as the results of its last firing (Bradley 2016, 10). The calibrated radiocarbon date range obtained from this sample using IntCal20 spans cal. AD 1152–1272 with 88.9% probability (or cal. AD 1164–1229 with 61.9% probability), a strengthening of the likelihood of a mid-twelfth to mid-thirteenth century date, as compared with the original calibrated results.

The 'sunken-featured building' is directly associated with the corn-dryer (broadly speaking, they occupy the same sunken space, though not the same construction cut), and it is thought to have served a crop-processing function in association with the dryer (Bradley 2016, 10). Sample 9 represents a charred deposit from a non-basal fill of the building's construction cut. The radiocarbon date range from this sample (SUERC-64313), calibrated using IntCal20, spans cal. AD 1040–1216 with 95.4% probability (or cal. AD 1047–1210 with 68.3% probability), a very similar result to that originally obtained with IntCal13. The original report (Bradley 2016, 10) suggested that sample 9 could represent disturbed material from an earlier firing of the oven, whether entirely earlier than the date range of sample 19, or from the intersecting period of the two date ranges (chiefly spanning the mid-twelfth to early thirteenth century).

Sample 16 represents a charred deposit from a basal layer in the oven's construction cut. The radiocarbon date range obtained from this sample (OxA-40418), calibrated using IntCal20, is much narrower than those obtained from the other two samples, spanning cal. AD 1220–1269 with 95.4% probability (or cal. AD 1225–1260 with 68.3% probability). Hence, if sample 19 does indeed represent the dryer's last firing, then the radiocarbon date range for the (earlier) sample 16 shows that this last firing cannot have been any earlier than the 1220s, and must therefore be dated to the early to mid-thirteenth century. This being so – and considering that all three samples have a similar botanical composition, being comparably abundant in charred oat grains and corn marigold seeds – it seems most likely that sample 9 dates from the later end of its calibrated radiocarbon date range, i.e. to the very late twelfth or early thirteenth century. In other words, all three radiocarbon dates would be consistent with a relatively short chronology for the dryer and its associated structure, centred on the first half of the thirteenth century. This proposed chronology is compatible with the ceramic evidence from the site, as the majority of the medieval pottery dates from the thirteenth to fourteenth centuries (Evans in Bradley 2016, 18). A relatively short use-life for a corn-dryer is not inherently unlikely: the FeedSax radiocarbon-dating programme has also suggested that a drying kiln at Wharram Percy may have been used for only a short period centred on the 990s (McKerracher *et al.* 2021).

Acknowledgements

I would like to thank Liz Pearson for facilitating access to the archive and permitting these analyses.

References

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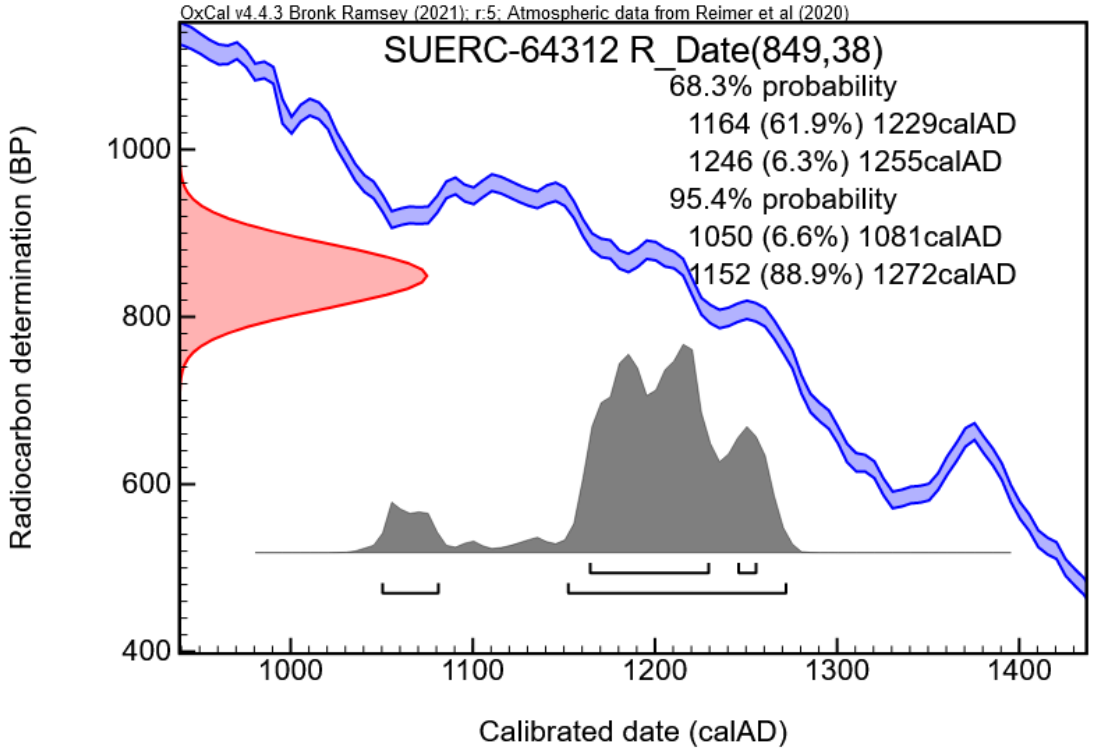
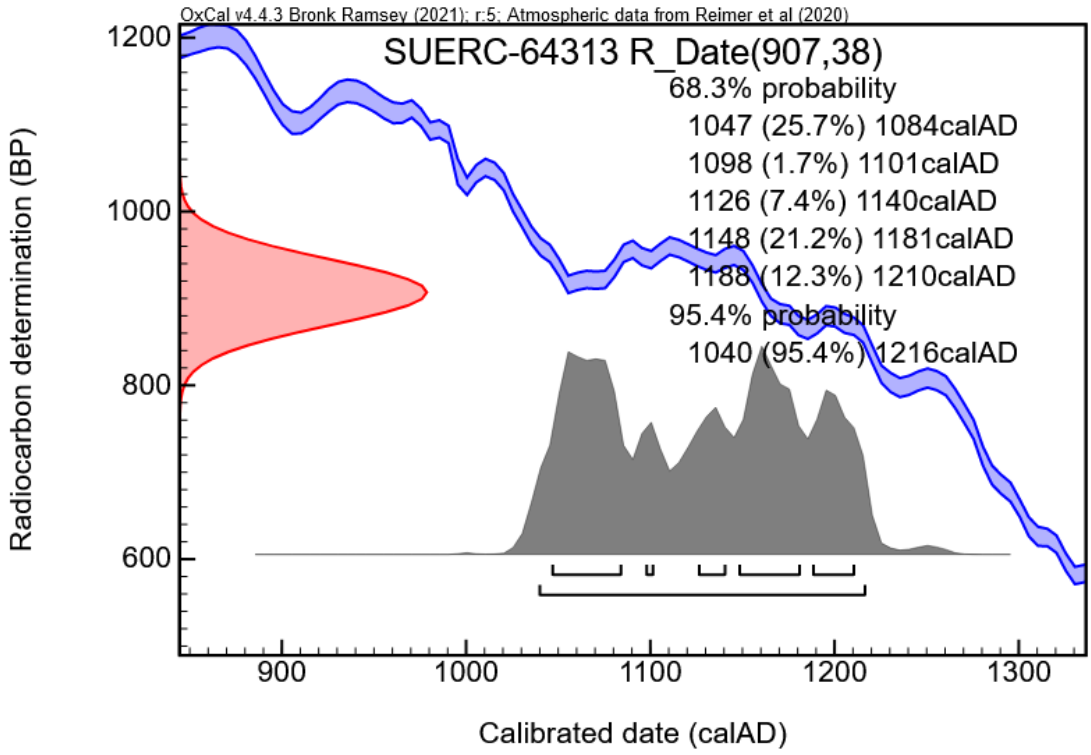
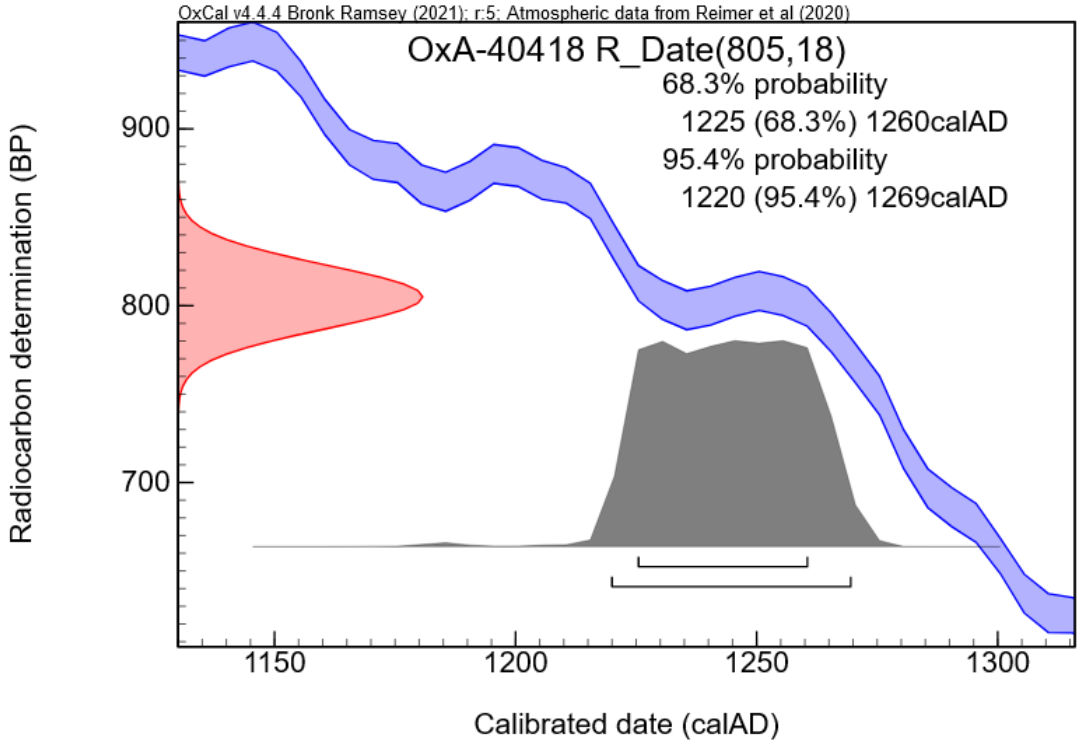
Calibration of radiocarbon determinations






OxCal v4.4.4 Bronk Ramsey (2021); r:5; Atmospheric data from Reimer et al (2020)
OxA-40418 R_Date(805,18)
68.3% probability
1225 (68.3%) 1260calAD
95.4% probability
1220 (95.4%) 1269calAD
Radiocarbon determination (BP)
900
800
700
1150
1200
1250
1300
Calibrated date (calAD)