

Radiocarbon dating archaeobotanical remains from Lyminge

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Between 2008 and 2015, Dr Gabor Thomas of the University of Reading led a campaign of research excavations in the village of Lyminge, Kent, the site of a historically-recorded Anglo-Saxon royal minster (Thomas 2017). The 2008–09 excavations revealed evidence of the documented monastic community, dating from between the late seventh and ninth centuries. Further excavations between 2012 and 2015, on the Tayne Field site to the north, discovered an undocumented precursor to the minster, in the form of a ‘great hall complex’ dated to the seventh century, which was itself preceded by a sixth-century period of activity. Pits and ditches assigned to a ‘Saxo-Norman’ phase were also discovered in the Tayne Field excavations: an interim report states that ‘ceramic dating indicates the core period for this occupation is *c.* AD 1080–1175, but may stretch back into the 10th century’ (Thomas and Knox 2013, 14).

Among the abundant finds from these excavations were assemblages of charred plant remains, from contexts spanning the Anglo-Saxon and Saxo-Norman periods of occupation. The Feeding Anglo-Saxon England project (FeedSax), in collaboration with Dr Thomas, sought directly to date a subset of archaeobotanical samples from different phases, to help determine their chronological spread and thus their potential to elucidate changes in farming practices over time. The twelve selected samples were those which, according to prior assessments, are among the richest in charred plant remains and therefore potentially the most informative with regard to early medieval crop husbandry (Campbell 2012; Ballantyne 2014; McKerracher 2015).

The FeedSax project submitted charred grains from these twelve samples to the Oxford Radiocarbon Accelerator Unit for radiocarbon dating. According to the original phasing, one was of sixth-century date, three belonged to the late seventh- to ninth-century monastic phase, and eight to the eleventh- to twelfth-century Saxo-Norman phase. The cereal grains selected for dating were identified and photographed by the author at the University of Oxford, and include free-threshing wheat (*Triticum* L. free-threshing type), barley (*Hordeum* L.), oats (*Avena* L.) and rye (*Secale cereale* L.). The photographs are included in the project’s photographic archive (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), with the results shown in the table below and figures at the end of this report.

Results

sample	grains	laboratory no.	original phase	age BP	calibrated dates AD (confidence)
LYM13 <43>	3 x barley	OxA-37812	C6	1531±27	528–602 (71.9%)
LYM08 <05>	3 x oat	OxA-40412	Late C7–9	1227±18	784–879 (78.3%)
LYM08 <24>	3 x oat	OxA-37814	Late C7–9	1226±27	771–885 (74.0%)
LYM08 <30>	3 x rye	OxA-37815	Late C7–9	1242±26	680–746 (43.6%), 785–878 (46.8%)
LYM12 <38>	3 x wheat	OxA-37817	C11–12	1109±26	885–995 (95.4%)
LYM12 <40>	3 x wheat	OxA-40413	C11–12	1126±18	886–989 (95.4%)
LYM12 <42>	3 x wheat	OxA-37818	C11–12	1112±26	885–995 (95.4%)
LYM13 <24>	3 x wheat	OxA-37820	C11–12	950±27	1030–1160 (95.4%)
LYM13 <27>	3 x barley	OxA-37819	C11–12	972±27	1022–1158 (95.4%)
LYM14 <31>	3 x wheat	OxA-38029	C11–12	972±24	1022–1054 (27.1%), 1073–1158 (67.6%)
LYM14 <42>	3 x wheat	OxA-37816	C11–12	883±26	1126–1224 (78.3%)
LYM14 <44>	3 x wheat	OxA-37813	C11–12	929±27	1033–1176 (95.4%)

The new radiocarbon determinations reinforce and refine the original phasing of these samples. The result returned for sample LYM13 <43> is highly compatible with the sixth-century date proposed by the excavator. Likewise, samples LYM08 <05>, <24> and <30> produced date ranges spanning the late seventh to late ninth centuries, as assigned by the original phasing, with a greater probability (particularly for <05> and <24>) in the latter part of this span, i.e. between the late eighth and late ninth centuries.

Four of the remaining samples have returned date ranges spanning the early/mid-eleventh century to the mid-/late twelfth century, in broad agreement with their original ‘Saxo-Norman’ phasing. LYM14 <42> returned a rather later (though still partly overlapping) date range, spanning the early twelfth to early thirteenth centuries. Three other samples have produced more surprising, near-identical results: LYM12 <38>, <40> and <42> all date from between AD 885 and 995, with 95.4% confidence. It is notable that all three of these samples come from the 2012 excavation campaign, whereas the ‘Saxo-Norman’ samples from the 2013 and 2014 excavations returned later (eleventh- to twelfth-century) dates. The three earlier dates thus support the idea, proposed in the interim report, that there was indeed tenth-century activity on the Tayne Field site (Thomas and Knox 2013, 14), perhaps especially or exclusively in the area excavated in the 2012 campaign.

Acknowledgements

With thanks to Gabor Thomas for providing access to the archive material, and for permitting its analysis.

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Calibration of radiocarbon determinations











