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HARWELL RADIOCARBON MEASUREMENTS VIII

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INTRODUCTION

Following Harwell Measurements VI (Walker & Otlet 1988) this is the second of the series of lists of English archaeological dates commissioned for measurement by the Historic Buildings and Monuments Commission for England and Wales within prescribed contractual periods. This list, containing 176 dates, refers to the period, April 1986 to March 1987, and results are reported irrespective of whether the associated projects are completed or ongoing.

Measurement procedures were essentially as reported earlier, with all three measuring systems of the Isotope Measurements laboratory having been used as appropriate to the sample size and requirements for measurement precision - standard liquid scintillation counting (Otlet & Warchal 1978) to a precision of ± 1%, miniature gas proportional counting (Otlet *et al* 1983; Otlet, Huxtable & Sanderson 1986) for the smaller samples and the higher precision (±0.5%) liquid scintillation counting system brought into operation in 1985. In all cases, the error term quoted is the 1σ standard deviation estimate of the full replicate sample reproducibility (Otlet 1979). Following further software developments, the basic text of the reports is now routinely prepared from database entries using an in-house microcomputer. National Grid References are abbreviated to NGR.

Calculations are based on the Libby half-life of 5568 years, using NBS oxalic acid standard (x0.95) as 'modern', both values treated as constants with AD 1950 as the reference year. All results are adjusted for fractionation according to the quoted $\delta^{13}C$ (wrt PDB) values measured in the laboratory.

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ARCHAEOLOGIC SAMPLES

HAR-1313. SCILLY01 — **2260 ± 90**; $\delta^{13}C = -24.1‰$

Charcoal, with soil, AML 753220, from possible entrance to stone-built hut exposed in the seacliff and beneath a fossil sand dune at Halangy Porth, St Mary's, Isles of Scilly. Coll March and subm May 1975 by P Ashbee.

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Milton Keynes series

2460 ± 90

HAR-854. MK223K-1 $\delta^{13}C = -27.5‰$

Charcoal, AML 748093, from large Iron Age pit in which both artifactual and organic remains were preserved at Hartigan's Gravel Pit, Site MK 223, Milton Keynes. Coll Aug 1974 by T Schadla-Hall and subm Sept 1974 by H S Green, Natl Mus of Wales.

Comment (HSG): pit contained large and extremely important assemblage of decorated pottery including a Hunsbury bowl. This ceramic assemblage is of key importance in dating Iron Age pottery traditions.

Beeston Castle series

Three charcoal and one soil sample from Beeston Castle, Bunbury, Cheshire (53°7′43″N, 2°41′26″ W, NGR SJ538593).

2380 ± 100

HAR-4402. BCOGRC03 $\delta^{13}C = -28.0‰$

Charcoal from fill of cylindrical posthole at top of ditch of outer ward. The posthole is 1 of 3 forming part of a tentative palisade with ambiguous relationship with supposed bank deposit. Coll Aug and subm Oct 1980 by P Hough.

1890 ± 120

HAR-5610. BCOGRC07 $\delta^{13}C = -26.4‰$

Charcoal from context BCO375A, timber *in situ* in stone rampart below foundation level of Medieval castle. Subm June 1983 by P H.

2430 ± 70

HAR-6465. BC0624AA $\delta^{13}C = -25.0‰$

Charcoal, identified as *Fraxinus* sp, ash, AML 834980. Subm Aug 1984 by P H.

1230 ± 90

HAR-8101. BEEBAH $\delta^{13}C = -27.9‰$

Soil, AML 841464, from humic A horizon, formed *in situ*. Coll Oct 1983 and subm Nov 1984 by R I McPhail, Inst Archaeol, London.

Comment (IMcP): Pollen profile taken through bank and ditch fill which include stable phase leading to organic matter deposition and old landsurface phase. Sample dates standstill phase in pollen sequence.

Hambledon Hill series

Charcoal samples from Hambledon Hill (Stepleton site), Iwerne Courtney, Blandford, Dorset (NGR ST847121). Coll and subm by R J Mercer, Univ Edinburgh.

HAR-6038. HN82C13 **4530 + 110**
$\delta^{13}C = -25.7‰$

From Ditch 3, Unit 6, Layer 5c, burned layer in butt end overlying natural chalk. Coll Sept 1982 and subm Nov 1983 by R J M.

Comment (RJM): suggests contemporaneity of whole ditch system tested so far.

HAR-4438. ST8080 **4770 ± 80**
$\delta^{13}C = -25.3‰$

Identified as *Quercus* sp, from Feature no. 601. Subm Jan 1981 by RJM.

Comment (RJM): large timber *in situ* in gateway, apparently heartwood, relating to date of rampart construction.

Ribchester series

Charcoal from Ribchester, Lancashire. Coll and subm by A C H Olivier, Univ Lancaster.

HAR-4445. RB80-057 **2860 ± 90**
$\delta^{13}C = -27.5‰$

Identified as hazel/alder (*Corylus/Alnus* sp) from mature timbers. Subm Feb 1981.

HAR-4446. RB80068B **3820 ± 120**
$\delta^{13}C = -26.9‰$

Identified as oak (*Quercus* sp) from secondary vessel; fill from internal vessel.

Mingie's Ditch series

Samples from Mingie's Ditch, floodplain of River Windrush, Hardwick-with-Yelford, Oxon (51°45′0″ N, 1°26′1″ W, NGR SP391059). Coll and subm by M A Robinson, Univ Museum, Oxford.

HAR-8354. HYMDW **7590 ± 80**
$\delta^{13}C = -26.2‰$

Charcoal (identified as *Corylus* and *Salix/Populus*) twigs and young branchwood, from organic river sediments overlying Pleistocene gravels and sealed by river gravel.

Comment (MAR): sample was well stratified, sealed beneath layer of gravel, peat, then clays; assoc with floral and faunal assemblage of late Flandrian Zone I.

HAR-8355. HYMDO **6540 ± 80**
$\delta^{13}C = -27.6‰$

Wood (identified as young branchwood of *Alnus*, *Quercus* and *Fraxinus* sp) AML 8650015, from hollow filled with organic river sediments on former bed of River Windrush.

Comment (MAR): deposit yielded faunal and floral assemblage of Flandrian Zone II.

HAR-8356. HYMDG **10,860 ± 130**
$\delta^{13}C = -30.3‰$

Wood (identified as *Betula* and *Salix/Populus* sp) twigs, AML 8650012, from organic deposit in base of small channel sealed beneath uppermost Pleistocene gravels.

Comment (MAR): deposit yielded faunal and floral assemblage of Late Devensian.

HAR-8366. HYMD/TS2 **9530 ± 110**
$\delta^{13}C = -31.0‰$

Highly organic silt, AML 8650013, from base of channel cutting Pleistocene gravels.

Comment (MAR): sampled deposit was sealed beneath alluvial clays and yielded faunal and floral assemblage of early Flandrian Zone I. Stratigraphically later than HYMDG (HAR-8356).

General Comment: four latest samples in this series (HAR-8354 to -8355 and -8366) were studied for plant and invertebrate remains and provided sequence from Late Devensian to Flandrian Zone II. They provide first dated pre-Neolithic paleoecologic sequence for Upper Thames valley. Dates also relate latest Paleolithic flints from site to vegetational sequence.

Trelan series

HAR-4538. 41-041 **3040 ± 90**
$\delta^{13}C = -24.2‰$

Charcoal, AML 8110722, from backfill layer near top of Phase 2 ditch of round barrow at Trelan 2. Coll June 1981 by G Smith and subm Aug 1981 by N D Balaam, Central Excavation Unit.

Rowden series

Charcoal from Rowden, Dorset. Coll Sept 1981 by P J Woodward, Trust for Wessex Archaeol, and subm Oct 1982 by D Haddon-Reece, Historic Buildings and Monuments Comm, (Woodward 1981).

HAR-5246. RD82523 **5250 ± 140**

AML 822636, from Layer 523. $\delta^{13}C = -26.3‰$

Comment (PJW): closely conforms to dates of HAR-5248 (4860 ± 70 BP) and HAR-5247 (4940 ± 70 BP), from base of same pit. Plain Early Neolithic Hembury-type wares were recovered from pit infill.

HAR-5249. RD82837 **2920 ± 80**

AML 822639, from entrance posthole (841) of Middle Bronze Age hut. $\delta^{13}C = -26.8‰$

Comment (PJW): date is compatible with those of carbonized grain in storage pit (HAR-5698, 2920 ± 80 BP).

Caldecotte series

HAR 5616. MK117/04 **1750 ± 100**
$\delta^{13}C = -27.6‰$

Charcoal (identified as *Quercus* sp) AML 824007, from MK117, context 100, primary silt of ditch 4 in sect F, dark blue/gray black clayey silt with much organic material at Caldecotte, Mill Field site. Subm June 1983 by M Petchey, Bradwell Abbey Field Centre.

Cowleaze series

HAR-5618. 838 **3110 + 80**
$\delta^{13}C = -24.5‰$

Charcoal (identified as *Quercus* sp and *Pomoideae*) AML 831128, from soil (Sample 90) at top of accumulated soil profile in barrow ditch at Cowleaze, Winterbourne Stepleton, Dorset. Coll and subm June 1983 by P J Woodward.

Comment (PJW): this sample, at top of soil profile provided date 280 yr later than that at base of profile (HAR-5617, 3390 ± 100 BP) (Woodward 1982).

Oxford St Aldate's series

Samples from 89, St Aldates, Oxford (51°44′53″ N, 1°15′25″ W, NGR SP513058) (Durham 1977; 1984). HAR-5344 coll and subm Oct 1982 by B G Durham, Oxford Archaeol Unit; all other samples coll June and subm Dec 1985 by B G D.

HAR-5344. OXTMS32 **920 ± 100**

Charcoal, AML 826489, from mid-late Saxon gully. $\delta^{13}C = -29.8‰$

HAR-8360. OXTMS713 **1020 ± 70**
$\delta^{13}C = -27.4‰$

Leather, offcuts, apparently new rather than scrap, AML 872547, from within thick gravel feature, evidently causeway across flooded mill stream.

Comment (BGD): result confirms date of causeway construction due to flooding.

HAR-8361. OXTMS626 **2280 ± 100**
$\delta^{13}C = -31.6‰$

Peat, marsh deposit with phragmites rhizomes, AML 872546, from extensive deposit of fine clay cut by mill stream.

Comment (BGD): causeway had apparently been constructed from this deposit.

HAR-8362. OXTMS615 **1080 ± 80**

Wood (identified as *Alnus/Corylus*) twig, AML 872543, from mill stream.

Comment (BGD): results for samples HAR-8362 to -8364 confirm date of mid- or late-Saxon Thames causeway assumed to be constructed from upcast of mill stream.

HAR-8363. OXTMS623 **1180 ± 70**

Wood (identified as *Corylus* sp) AML 872544. $\delta^{13}C = -25.9‰$

HAR-8364. OXTMS625 **1210 ± 70**

Wood, identified as *Alnus/Corylus* twig, AML 872545. $\delta^{13}C = -26.2‰$

Easton Lane series

Antler and bone samples from Easton Lane Interchange, Winchester, Hampshire (51°4′16″ N, 1°17′26″ W, NGR SU 497305). Coll by and subm Sept 1983 by P J Fasham, Trust for Wessex Archaeol.

HAR-6115. ELI217 **3350 ± 100**
$\delta^{13}C = -20.4‰$

Antler, AML 833178, from upper fill of late Neolithic pit. Coll Aug 1982.

Comment (PJF): dated to confirm contemporaneity of apparently related features of late Neolithic complex and to help date ceramic sequence.

HAR-6118. ELI222 **2260 ± 100**
$\delta^{13}C = -22.3‰$

Animal bone, AML 833181, from posthole ca 40cm deep of small, oval structure with large, closely-spaced postholes. This unusual feature is isolated at junction of two Bronze Age linear ditches. Coll Oct 1982.

Comment (PJF): dated to place oval structure, reminiscent of Late Neolithic or Early Bronze Age, into its chronologic position at site.

HAR-6120. ELI 1193 **2530 ± 100**
$\delta^{13}C = -22.4‰$

Bone, AML 833183, from basal Layer 687, of infilling of Bronze Age house terraced into N-facing slope. Coll Nov 1982.

Comment (PJF): houses and assoc pits form discrete part of prehistoric landscape 275m from nearest Bronze Age structure but with potentially contemporary cemetery only 75m N. Dates assoc cultural material in fill of house and general ceramics sequence of site.

HAR-6122. ELI 459 **2740 ± 70**
$\delta^{13}C = -22.1‰$

Bone, human limb, AML 833185, from inhumation assoc with shale and amber beads. Coll Oct 1982.

Comment (PJF): result will help establish date of unusual mixed cremation and inhumation open cemetery.

Kynnersley series

HAR-6392. 257-115 **2110 ± 90**
$\delta^{13}C = -25.1‰$

Charcoal (identified as *Quercus* sp and *Salix/Populus*) mature wood, AML 8314022, from lower levels of gully surrounding excavated round house at Wall Fort Kynnersley (52°45′30″ N, 2°28′27″ W, NGR SJ 682179). Coll June 1983 and subm Sept 1984 by N D Balaam.

Chester series

HAR-6625. HSS8169 **1490 ± 70**
$\delta^{13}C = -21.7‰$

Animal bone, from extensive layer of dark brown soil and rubble over Roman fortress buildings, containing Roman, late Saxon and some Medieval pottery. Late Saxon building was found on adjacent site and undatable, sunken-featured building was found nearby at Hunter St School, Chester. Coll 1981 and subm April 1984 by P Carrington, Grosvenor Mus, Chester.

Heslerton Parish series

Human bone from Heslerton Parish Proj, Vale of Pickering (54°10′40″ N, 0°35′36″ W, NGR SE 918767). Subm Oct 1984 by D J Powlesland.

HAR-6631. HP00017C **3510 ± 80**
$\delta^{13}C = -21.9‰$

Juvenile 13-14 yr old, AML 841217, from Context IR304 in Early Bronze Age (EBA) barrow.

Comment (DJP): secondary burial with Beaker and inserted into grave of Skeleton IR340 (HAR-6630), whose bones were stacked at foot of grave.

HAR-6907. HP00006C **1840 ± 90**

AML 841206, from grave, Context 2B00084.

Comment (DJP): one of group of burials with weapons, situated at supposed center of burial.

HAR-8241. HP00013C **3510 ± 40**

AML 841213, Context 1L00110, EBA Barrow Cemetery 1. $\delta^{13}C = -21.0‰$

Comment (DJP): secondary burial inserted through mound within year of mound construction, probably some time after primary burials.

HAR-8242. HP00004C **1510 ± 40**

AML 841204, from Context 2F00012, Anglian cemetery. $\delta^{13}C = -20.6‰$

Comment (DJP): burial included bent spear and cut Grave 2F00013.

HAR-8243. HP00005C **1610 ± 40**
$\delta^{13}C = -20.3‰$

AML 841205, from Context 2F00013, Anglian cemetery, cut by Grave 2F00012.

Comment (DJP): burial included cruciform brooch with runic inscription.

HAR-8325. HP00020C **3640 ± 40**

Juvenile 7-9 yr old, AML 841220, from Context IR101, Iron Age burial inserted into EBA burial.

Comment (DJP): buried with Arras-type pot.

HAR-8326. HP00014C **3440 ± 40**

AML 841214, from context 1100131, EBA Barrow Cemetery 1. $\delta^{13}C = -21.8‰$

Comment (DJP): tertiary burial cut through entirely filled barrow ditch.

Cairn 38 series

Charcoal samples from Chysauster, CEU site 267, Carnaquidden Farm, Ludgvan, Cornwall (50°9′50″ N, 5°32′25″ W, NGR SW472354). Coll March 1984 by G Smith and subm by N D Balaam, Feb and May 1985.

3740 ± 90

HAR-6652. 8410216 $\delta^{13}C = -25.5‰$

Identified as *Quercus* sp, AML 8410216, from fill of pot containing cremation burial; pot was in pit near center and below cairn.

Comment (GHS): HAR-6652 and -6654 date both burial and decorated pot containing it and will help sequencing Bronze Age pottery in S W, which is, at present, hypothetical.

3110 ± 70

HAR-6654. 8410210 $\delta^{13}C = -24.5‰$

Identified as *Quercus* sp, AML 8410210, from fill of pot containing cremation burial. Pot was in pit outside kerb of cairn.

4570 ± 120

HAR-6925. 8410168 $\delta^{13}C = -26.5‰$

Identified as mainly *Quercus* sp with some *Corylus avellana*, AML 8410168, from buried soil in positive lynchet which is one element of widespread field system physically continuous with Romano-British settlement but probably of Bronze Age origin.

Comment (GHS): dates phase of agricultural activity for which there is abundant physical evidence but no assoc cultural material, although field system may well have Bronze Age origins.

3150 ± 90

HAR-6926. 8410157 $\delta^{13}C = -25.7‰$

Quercus sp, AML 8410157, from fill of pit containing cremation, outside the kerb of the cairn. One of six pits with probable cremations found around cairn but without burial pots.

Comment (GHS): date acts as sample of six unaccompanied burials and comparison with dates for burials containing pots.

HAR-6927. 8410178 **3280 ± 120**
$\delta^{13}C = -26.3‰$

Quercus sp, AML 8410178, from fill of pit containing cremation and rimsherd of decorated pottery. Pit was close to but outside rim of cairn containing burial pots.

Comment (GHS): needed to date burial and assoc potsherd because whole sequence of Bronze Age pottery in the SW is, at present, hypothetical.

Ham Hill series

HAR-6653. 252/84 **2160 ± 90**

Charcoal (identified as *Alnus* sp) AML 8312852, from lens of charcoal and carbonized grain in Iron Age pit at Ham Hill. Coll 1983 by GHS and subm April 1985 by NDB.

Comment (NDB): compares with earlier sample (HAR-6222) from site, dated to 1640 ± 80 BP.

Greyhound Yard series

Charcoal identified as oak (*Quercus* sp) from large timbers at Greyhound Yard, Dorchester, Dorset (50°42′50″ N, 2°26′3″ W, NGR SY69359064). Coll May 1984 by C J S Green and subm Aug 1984 by P J Woodward.

HAR-6686. W67.1648 **4020 ± 80**
$\delta^{13}C = -27.0‰$

AML 845009, from infill on outer edge of postpipe, Late Neolithic Postpit 1647/1635.

HAR-6687. W67.1649 **4090 ± 70**
$\delta^{13}C = -25.9‰$

AML 845010, from 'festoons' along edge of inner postpipe, Late Neolithic Postpit 1647/1635.

HAR-6688. W67.1653 **4080 ± 70**
$\delta^{13}C = -26.5‰$

AML 845009, from 'festoons' in lower postpipe fill, Late Neolithic Postpit 1639/1631.

HAR-6689. W67.1642 **4140 ± 90**
$\delta^{13}C = -26.3‰$

AML 845009, from fill of postpipe, Late Neolithic Postpit 1639/1631.

General Comment (PJW): results establish dates of postpits which are otherwise dated on form and flint assemblages alone to Late Neolithic (Woodward, Davies & Graham 1984). This is series of postpits in linear arrangement structurally similar to postpits at Mt Pleasant/Durrington Walls.

Honeygore Complex series

Wood samples from Honeygore Complex, Westhay Level, Somerset (51°9′50″ N, 2°50′12″ W, NGR ST415409). Coll and subm June 1985 by J M Coles, Somerset Levels Proj (Coles & Hibbert 1975; Coles *et al* 1985; Coles, Caseldine & Morgan 1988).

4720 ± 70

HAR-6698. SLP8503 $\delta^{13}C = -29.6‰$

Identified as birch and hazel, AML 852742, from previously unknown Neolithic track in complex of at least five such tracks.

Comment (JMC): series of tracks in close proximity suggests Neolithic interest in immediate area. Dating relates track to immediate complex.

4640 ± 70

HAR-6699. SLP8504 $\delta^{13}C = -27.8‰$

Identified as birch, AML 852743, from 1 of 5 Neolithic structures in Honeygore complex, Site no. Hdew 85.29.

Comment (JMC): Neolithic trackways in this area of Levels have been known for several decades, but until recently were lost from view. Renewed cutting in area is now intensive, and this site was destroyed within one day of its excavation. Date relates the track to adjacent ones.

Dalton Parlours series

Bones from multi-phase Iron Age occupation site (Hedges 1980) at Dalton Parlours, Collingham Parish, Wetherby, W Yorkshire (53°53′42″ N, 1°23′18″ W, NGR SE402445). Subm March 1985 by J D Hedges, Archaeol Unit, Wakefield, W Yorkshire.

HAR-6715. DP602 **2140 ± 70**

AML 852639. Coll May 1977 by A B Sumpter.

HAR-6725. DP764SS3 **2320 ± 90**

AML 852637. Coll March 1985 by JDH. $\delta^{13}C = -23.7‰$

HAR-6726. DPO201 **2950 ± 100**

AML 852638. Coll May 1977 by ABS. $\delta^{13}C = -23.3‰$

HAR-6727. DP0062 **2320 ± 120**

AML 852639. Coll March 1985 by JDH.

Comment: larger than normal error term reflects smaller than optimum size for liquid scintillation counting.

General Comment (JDH): Dalton Parlours has several acres of linked irregular single-ditched enclosures within which were round houses and other typical Iron Age structures. A large Roman villa was built after a break in occupation and thereafter some Anglo-Saxon activity is suspected. Few datable artifacts were retrieved from either Iron Age or Anglo-Saxon periods; thus, ^{14}C samples are of considerable importance in interpreting the site.

Fiskerton series

Wood from Fiskerton (Field 1986) (53°13′51″ N, 0°25′37″ W, NGR TF050716). Coll 1981 by N Field and subm 1984 by J Hillam, Univ Sheffield.

HAR-6728. FISK116 **2450 ± 70**

Tree rings sampled date to 436-405 BC. $\delta^{13}C = -23.9‰$

HAR-6729. FISK149 **2630 ± 70**

Tree rings sampled date to 433-405 BC.

HAR-6730. FISK253 **2480 ± 70**

Tree rings sampled date to 500-455 BC. $\delta^{13}C = -24.9‰$

General Comment (JH): chronology of Fiskerton Iron Age causeway has now been determined by dendrochronology (Hillam 1987).

Fulham Palace Moated Site series

From Fulham Palace moated site, Greater London, (51°28′15″ N, 0°12′36″ W, NGR TQ24327624). Coll Feb 1984 and subm by K R Whitehouse.

HAR-6807. FPMS10 **1450 ± 70**
$\delta^{13}C = -26.1‰$

Silt with organic content, AML 840133 and submitter's ref MTIII, from moat, prior to relining. Subm March 1985.

HAR-6841. FPMS17 **1710 ± 110**
$\delta^{13}C = -27.7‰$

Wood, AML 840181, from what appears to be moat lining. Subm Feb 1985.

Comment (KRW): sample taken to date moat's construction.

Manor Farm series

Human bones from Manor Farm, Borwick, Lancashire (54°8′45″ N, 2°44′44″ W, NGR SD513725) (Olivier 1983).

HAR-6857. MF82SF73 **3440 ± 70**
$\delta^{13}C = -22.3‰$

AML 837244, from part of *in situ* primary inhumation, inside cell in limestone boulder enclosure, lying directly on truncated subsoil, underlying main body of cairn material. Coll Oct 1982 and subm Feb 1985 by A C H Olivier, Univ Lancaster.

Comment (ACHO): central burial included Early Bronze Age flat axe and dagger as did second *in situ* burial. Although a direct relationship between these two burials cannot definitely be proven, they are both in a primary stratigraphic position and likely to be broadly contemporary.

HAR-7012. MF82SF44 **1530 ± 90**

AML 867676. $\delta^{13}C = -21.7‰$

HAR-7013. MF82SF46 **1220 ± 90**

AML 867677. $\delta^{13}C = -23.0‰$

HAR-7014. MF82SFBB **2690 ± 100**

AML 867678. $\delta^{13}C = -23.0‰$

General Comment: HAR-7012, -7013, -7014 come from scatter of human bone recovered during removal of main body of cairn (002), which overlay limestone enclosure (008). Coll 1982 and subm April 1986 by ACHO. Samples were dated to establish extent of possible Iron Age re-use (HAR 5659: 480 BC) of Bronze Age Burial Monument (HAR-5626, -5658, -5661: 1680 BC, 1320 BC, 1430 BC). Samples could result from later intrusion into main part of cairn.

Milton Lilbourne series

3530 ± 110

HAR-6921. CO69MLB4 $\delta^{13}C = -25.2‰$

Charcoal (*Prunus* sp) AML 850047, from occupation soil added to loam core of high bell-barrow. Sample taken from base of barrow 4 at Milton Hill Farm, Milton Lilbourne, Wiltshire (51°19′8″ N, 1°42′47″ W, NGR SU19995784). Coll Aug 1958 and subm Oct 1984 by P Ashbee.

Comment (PA): date is useful *terminus post quem* for charcoal element of occupation earth additive, which could be older than barrow, although pottery content suggests contemporaneity (Annable 1958).

Potterne series

Charcoal samples from Potterne, near Devizes, Wiltshire (51°19′50″ N, 2°0′21″ W, NGR ST996591). Coll Aug 1984 and subm Dec 1985 by C Gingell and A J Lawson, Trust for Wessex Archaeol. All samples come from two middens and were intended to date sequence of midden and underlying deposits (Gingell & Lawson 1984; Gingell & Lawson 1985).

2590 ± 80

HAR-6978. POTT1 $\delta^{13}C = -26.6‰$

Identified as *Quercus* sp, *Pomoideae* (hawthorn type), *Corylus avellana*, *Ulmus* sp, *Prunus* sp and *cf spinosa* (sloe), AML 858590, from midden, Context 1617, Column 88.

2490 ± 70

HAR-6979. POTT2 $\delta^{13}C = -26.7‰$

Identified as *Quercus* sp, *Pomoideae* (hawthorn type), *Corylus avellana*, *Ulmus* sp, *Prunus* sp, *Fraxinus excelsior*, *Acer campestre* and *Ilex aquifolium*, AML 858591, from midden, Context 1608, Column 89.

2650 ± 80

HAR-6980. POTT3 $\delta^{13}C = -24.0‰$

Identified as *Quercus* sp, *Pomoideae* (hawthorn type), *Ulmus* sp, *Prunus* sp (cherry/sloe), *Prunus spinosa*, *Fraxinus excelsior*, *cf Tilia* sp, AML 858592, from Context 2209, Column 88.

HAR-6981. POTT4 **2630 ± 70**
$\delta^{13}C = -26.6‰$

Identified as *Quercus* sp, *Pomoideae* (hawthorn type), *Corylus avellana* (hazel), *Ulmus* sp, *Prunus* sp, *Prunus spinosa, Acer campestre cf Tilia* sp, AML 858593, from midden, Context 2208, Column 89.

HAR-6982. POTT5 **3130 ± 100**
$\delta^{13}C = -25‰.$

Identified as *Quercus* sp, *Pomoideae* (hawthorn type), *Corylus avellana, Prunus* sp (cherry/sloe), *Prunus cf spinosa*, fragments of twigs and larger wood, AML 858594, from Context 2988, Column 88.

HAR-6983. POTT6 **3430 ± 110**
$\delta^{13}C = -26.8‰$

Fragments of twigs and larger wood, identified as *Quercus* sp, *Pomoideae, Corylus avellana, Prunus* sp, *Prunus spinosa, Tilia* sp, AML 858595, from Context 2984, Column 89.

Hasholme series

Peat from Hasholme Farm, Holme-on-Spalding Moor, N Humberside, (53°46′59″ N, 0°45′8″ W, NGR SE822326). HAR-7005 to -7007, coll Aug 1984 and subm April 1986 by M Millett, Univ Durham.

HAR-7005. HAS174 **2530 ± 70**
$\delta^{13}C = -30.3‰$

AML 865982, from top of sequence, immediately prior to marine transgression.

HAR-7006 HAS214 **2830 ± 70**

AML 865981, from lime decline in middle of sequence. $\delta^{13}C = -30.8‰$

HAR-7007. HAS430 **5710 ± 100**
$\delta^{13}C = -26.7‰$

AML 865983, from lime decline at base of sequence, dating marine regression.

General Comment (MM): dates help establish chronology of pollen record and marine transgression in relation to logboat (McGrail & Millett 1985; Millett & McGrail 1987).

HAR-7024. HAS118 **323[illegible] ± 90**
$\delta^{13}C = -26.7‰$

Wood, identified as oak, AML 865800, from near Hasholme logboat, rings 120 to 139 of bog oak, one of group at Hasholme. Coll 1984 by MM and subm March 1986 by J Hillam, Univ Sheffield.

Comment (JH): dated to find out whether bog oaks are roughly contemporary with logboat. Timber for boat felled 322-277 BC, so bog oak 118 is considerably older. Other bog oaks still to be dendrodated.

North Down, Margate series

Charcoal from North Down Park Estate, Margate, Kent (51°22′56″ N, 1°25′41″ E, NGR TR38507045). Coll Aug 1984 by GHS and subm Dec 1985 by N D Balaam (Smith 1988).

HAR-7010. 274-1327 **3020 ± 80** $\delta^{13}C = -25.4‰$

Identified as mostly *Pomoideae*, some *cf Prunus spinosa*, AML 841327, immediately underlying layer of Late Bronze Age rubbish in ring ditch of 'saucer' barrow.

Comment (GHS): dates *terminus post quem* for deposition of Late Bronze Age (LBA) rubbish layer.

HAR-7011. 274-1298 **2910 ± 70** $\delta^{13}C = -25.6‰$

Identified as mostly *Pomoideae* with some *Quercus* sp and *Corylus* sp, AML 841298, from small cremation pit within 'saucer' barrow.

Comment (GHS): dates one phase of barrow use.

Brean Down series

Charcoal from Brean Down Sandcliff, Brean, near Burnham-on-Sea, Somerset (51°19′21″ N, 3°0′43″ W, NGR ST295587) (Bell 1986; ApSimon, Donovan & Taylor 1961). Subm Nov 1985 by M Bell, St David's Univ Coll, Lampeter.

HAR-7016. BD5801-1 **3420 ± 100** $\delta^{13}C = -26.5‰$

Twigs and fragments, AML 865783, from feature, Context 103, sealed by compacted clay floor, Context 60, of stone roundhouse of probable Middle Bronze Age (MBA) date. Coll Sept 1985 by Helen Smith.

Comment (MB): Context 103 is cut into base of terrace occupied by building. Dates initial activity in this occupation horizon and compares with overlying floor (HAR-7017). Two dates provide information on duration of occupation in Unit 56 of sandcliff sequence.

HAR-7017. BD5749-2 **2730 ± 100** $\delta^{13}C = -25.5‰$

AML 865784, from hard-packed clay floor of stone roundhouse of probable MBA. Coll Sept 1985 by HS.

Comment (MB): Context 60 is floor of Bronze Age Structure 59. Dates structure and compares with underlying pit (HAR-7016) and two other Bronze Age structures, one broadly contemporary, Structure 95, HAR-7019, one, Structure 57, HAR- 7020, clearly earlier on stratigraphic grounds, being separated from the other two by sand.

HAR-7018. BD5803-3 **2870 ± 100** $\delta^{13}C = -25.1‰$

AML 865786, from area of burning, Context 93, assoc with clay hearth in center of floor of

well preserved Bronze Age roundhouse, Structure 95. Coll Sept 1985 by K Watson.

Comment (MB): dates final phases of use of Structure 95. Can be compared with BD 6013-4 (HAR-7019) from wall of same structure and other Bronze Age structures on site.

HAR-7019. BD6013-4 **2940 ± 100**
$\delta^{13}C = -25.4‰$

AML 865788, from stone wall, Context 131, of Bronze Age roundhouse Structure 95. Coll Sept 1985 by MB.

Comment (MB): dates construction of Structure 95. Can be compared with HAR-7018, hearth charcoal from floor of this structure and with dates from two other Bronze Age structures at site.

HAR-7020. 6153-5 **3310 ± 80**

AML 865789, from floor, Context 163, of oval stone-built Bronze Age Structure 57, separated from overlying Bronze Age occupation horizon by blown sand. Coll Sept 1985 by MB.

Comment (MB): dates Structure 57 and can be compared with dates from two overlying structures and underlying colluvial deposit, 6 and 7.

HAR-7021. BD5886-6 **2600 ± 90**
$\delta^{13}C = -27.1‰$

AML 865790, from lenses of burned material representing occupation activity in gleyed colluvium that abuts or antedates Structure 57; separated from Structures 59 and 95 by blown sand. Coll Sept 1985 by B Muir.

Comment (MB): measured to date occupation activity assoc with colluvium and relationship of this layer to Structure 57 and underlying ungleyed colluvium (HAR-7022).

HAR-7022. BD6062-7 **3890 ± 130**
$\delta^{13}C = -26.0‰$

AML 865791, from ungleyed colluvium underlying the gleyed colluvium from which BD 5886-6 (HAR-7021) was taken. Coll Sept 1985 by BM.

Comment (MB): dates colluviation which interrupted sand blow and relationship to underlying blown sand with Beaker artifacts and overlying structural evidence.

HAR-7023. BD6171-8 **4720 ± 140**
$\delta^{13}C = -24.6‰$

AML 865792, from paleosol representing basal layer of postglacial sequence. Coll Sept 1985 by BM.

Comment (MB): layer from which sample was taken had previously produced Grooved ware and Beaker burial. During this excavation it produced an (?earlier Neolithic) leaf-shaped arrowhead. Dated for time of initial activity on site.

Spong Hill series

Charcoal samples from Spong Hill, near North Elmham, Norfolk (52°41′32″ N, 2°24′39″ E, NGR TG980197).

8250 ± 90

HAR-7025. 10123645 $\delta^{13}C = -26.2‰$

AML 865776, from Neolithic pit with Mildenhall Ware. Coll 1984 by A Rogerson and subm March 1986 by P Murphy, Univ East Anglia.

Comment (PM): it is unclear how far Early/Middle Neolithic occupation of site was single-period and how far it was multicomponent. Stylistic features of some of the Neolithic pottery suggest that occupation was continuous through third millennium BC, but this is not clear from the other ^{14}C results.

8280 ± 80

HAR-7063. SPON3408 $\delta^{13}C = -24.6‰$

AML 858566, from layer of burned sand and gravel, Context 3408=3594, in feature, Context 3367, containing struck flint of later Mesolithic character throughout its fills. Coll autumn 1985 by A Rogerson and subm Oct 1985 by P Murphy.

Crane Wharf series

Wood from W112, Crane Wharf, Reading, Berkshire (51°27′15″ N, 0°57′55″ W, NGR SU71897335). Coll Nov 1985 and subm April 1986 by John Terry, Trust for Wessex Archaeol.

HAR-7026. W112187 **1970 ± 70**

AML 865793, from layer of brown organic rich silt, similar to peat. $\delta^{13}C = -30.1‰$

4990 ± 60

HAR-7027. W112188 $\delta^{13}C = -32.4‰$

Large fragments from mixture of species, AML 865794, from layer of gravel/sand beneath brown organic-rich silt.

4950 ± 80

HAR-7028. W112195 $\delta^{13}C = -27.5‰$

Identified as *Alnus glutinosa*, large timber, AML 865795, from Layer 188, gravel sand overlying laminated sands and gravels.

Comment (JT): measured for prehistoric date of assoc deposits.

East Heslerton Long Barrow series

Charcoal from post in facade bedding trench at E end of long barrow at East Heslerton Wold, near Malton, North Yorkshire (54°9′53″ N, 0°33′47″ W, NGR SE938753). Coll 1962 by F de M Vatcher and subm Jan 1986 by T G Manby, Doncaster Mus and Art Gallery (Vatcher 1965).

HAR-7029. EHLB1 **4920 ± 90**

AML 865779. $\delta^{13}C = -24.5‰$

HAR-7030. EHLB2 **5020 ± 70**

AML 865780. $\delta^{13}C = -25.9‰$

HAR-7031. EHLB3 **5020 ± 110**

AML 865781. $\delta^{13}C = -26.0‰$

HAR-7032. EHLB4 **4640 ± 70**

AML 865782. $\delta^{13}C = -25.0‰$

General Comment (TGM): result should date facade structure. This is most developed facade structure known from Yorkshire Long Barrow groups.

Ferring series

Charcoal from Ferring, near Littlehampton, West Sussex (50°48′37″ N, 0°27′15″ W, NGR TQ089024). Coll 1984 by P L Drewett and subm 1985 by C Cartwright, Inst Archaeol, London.

HAR-7033. FRA16 **2800 ± 70**
$\delta^{13}C = -26.6‰$

AML 858587, from Trench A, Context 16, layer of dark brown clay and silt containing organic material and burned flint, on coastal plain adjacent to the Ferring Rife.

HAR-7034. FRA43 **3040 ± 70**
$\delta^{13}C = -24.8‰$

AML 858588, from Trench A, Context 43, layer of charcoal and burned flint.

HAR-7035. FRB42 **2360 ± 70**
$\delta^{13}C = -26.0‰$

AML 858589, from Trench B, Context 42, dark brown, organic-rich humic layer with charcoal.

General Comment (CC): Trenches A and B at Ferring are adjacent to marine inlet which later became freshwater stream. Apart from burned flint and small assemblage of knapped flint, bulk of deposit was organic. A late Bronze Age hoard of metalwork was discovered in 1983 near site of 1984 excavations (Aldsworth & Kelly 1983).

West Heath Common series

Charcoal from West Heath Common, Sussex (50°59′49″ N, 0°52′47″ W, NGR SU786226). Coll 1984 by P L Drewett and subm 1985 by CRC.

HAR-7036. 49883E99 **8770 ± 80**
$\delta^{13}C = -26.8‰$

AML 858585, from Trench 3E, Context 99, in very thin layer of dark brown sand containing charcoal, on Lower Greensand ridge.

Comment (CC): 1984 excavations were adjacent to barrows excavated in 1973-1975 to isolate sequences of environmental change and land use around barrow foci.

9040 ± 90

HAR-7037. 49883103 $\delta^{13}C = -27.3‰$

AML 858586, from Context 103, Trench 3E, which is small lens of brown sand with many charcoal fragments.

Yapton series

2600 ± 70

HAR-7038. 19841944 $\delta^{13}C = -26.4‰$

Charcoal (identified as *Quercus* sp, *Crataegus* sp, *Leguminosae, Salix/Populus, Corylus* sp) AML 858567, from Context 4, one of pit fills of Pit no. 2 at Yapton, W Sussex (50°48′47″ N, 0°37′46″ W, NGR SU96540245). Coll Aug 1984 by David Rudling and subm Sept 1985 by CRC.

Comment (CC): this is only Iron Age site on coastal plain that provides material suitable for dating in close assoc with pottery. By dating pit fill and pottery many valuable comparisons can be made from other coastal plain sites.

Stafford ST29 series

Charcoal and unidentified grain and plant remains, from well-defined deposit in chamber of grain-drying kiln at ST 29, St Mary's Grove, Stafford. Coll Sept 1983 and subm Oct 1985 by J H Cane, Stafford Archaeol Proj.

HAR-7039. 29224701 **1270 ± 70**

AML 859568. $\delta^{13}C = -25.9‰$

HAR-7040. 29224702 **1120 ± 70**

AML 859569. $\delta^{13}C = -26.3‰$

HAR-7041. 29224703 1310 ± 90

AML 859570. $\delta^{13}C = -25.6‰$

General Comment (JHC): samples came from series of four similar and probably contemporary structures and were probably last firing of feature. Structures represent major Late Saxon activity at site but their position within 150 yr of pre-Conquest Stafford is unknown.

2290 ± 70

HAR-7042. 29225301 $\delta^{13}C = -24.2‰$

Burned wood and grain mixed with other organic remains, AML 858571, from fill of posthole. Coll Oct 1983 and subm Oct 1985 by JHC.

Comment (JHC): posthole forms part of 4-post structure sealed by layer containing Romano-British pottery. It is one of two such structures that antedate main activity period, 10th century. Sealing layer is cultivation-derived and may be post-Roman.

Stafford ST32 series

Charcoal from ST 32, Tipping Street, Stafford (53°2′52″ N, 2°6′48″ W, NGR SJ924501). Coll

July 1983 by M D Taylor and subm Oct 1985 by JHC.

HAR-8237. 32151601 **1150 ± 40**
$\delta^{13}C = -25.5‰$

AML 858572, from remains of last firing of kiln producing 'Stafford Ware' pottery.

Comment (JHC): this sample and HAR-8238 were recovered from just inside stokehole of kiln sealed by fragments of clay superstructure. Archaeomagnetic sampling gave range of AD 900 - AD 1100.

HAR-8238. 32151602 **1140 ± 40**

AML 858573, from remains of last firing of kiln producing 'Stafford Ware' pottery.

HAR-8239. 32175301 **1140 ± 40**
$\delta^{13}C = -26.0‰$

AML 858575, from Context 1753, deposit of burned material and ash just inside stokehole of 'Stafford Ware'-producing pottery kiln, F 238, (*cf* HAR-8240). These two deposits were directly assoc with several pits containing very large amounts of 'Stafford Ware'.

HAR-8240. 32175302 **1120 ± 40**

AML 858576. $\delta^{13}C = -26.0‰$

General Comment (JHC): kiln fairly intact and well-defined although its stratigraphic position was uncertain. It was visible in horizon tentatively dated to late 12th century though not in use at this time.

Glastonbury series

Two samples of wood (probably *Thelycrania sanguinea* dogwood), small branch, from ca 9cm above base of large, silt-filled ditch, some 4m deep but of unknown width, since it is under street at Magdalen St Ditch, Glastonbury, Somerset (Ellis 1982). Coll March 1985 and subm by V Straker, Univ Bristol.

HAR-7044. GLMS1 **950 ± 70**

AML 858569. $\delta^{13}C = -28.9‰$

HAR-7045. GLMS2 **1080 ± 80**

AML 858596. $\delta^{13}C = -28.2‰$

General Comment (VS): dating determines whether ditch is W boundary of early monastic precinct. E side has already been dated.

HAR-7046. CATF22 **1200 ± 70**
$\delta^{13}C = -20.2‰$

Bone, AML 858549, from Trench F, at W end of former N wall of nave in wall foundations. Foundations cut series of soily deposits one of which, Context F 22, was grave containing human

bones at Carlisle Cathedral, Carlisle, Cumbria (54°53′39″ N, 2°56′14″ W, NGR NY399559). Coll and subm Sept 1985 by M R McCarthy.

Comment (MRMcC): date confirms 7th - 11th centuries for this context and establishes for first time presence of ecclesiastical building below present cathedral.

Watkins Farm series

Samples from Watkins Farm, Northmoor, Oxfordshire (51°43′45″ N, 1°23′4″ W, NGR SP425 036). Coll and subm by T G Allen, Oxford Archaeol Unit.

HAR-7051. NMWFMED1 **2290 ± 100**

Bone subm May 1986.

HAR-7053. NMWF60 **2160 ± 70**
$\delta^{13}C = -28.4‰$

Wood, AML 858556, from large triangular waterlogged feature directly outside entrance to central roundhouse; 0.5m of peat were sealed by clay, silt and clay and gravel backfill. Coll Oct 1983 and subm Nov 1985.

Comment (TGA): this feature produced only assemblage of fish bones from site and may have been well serving Iron Age inhabitants of site.

HAR-8253. NMWF498 **3060 ± 70**
$\delta^{13}C = -28.9‰$

Wood from burial in waterlogged pit. Coll Dec 1984 and subm Nov 1985.

Comment (TGA): burial extended around side of large deep pit or well, assoc with layers of burned limestones and several wooden and leather objects. This lay within penannular Iron Age gully, but produced very little pottery. Burial appears to be very unusual.

HAR-8254. NMWF151 **2190 ± 70**
$\delta^{13}C = -25.2‰$

Charcoal from ditch immediately outside central roundhouse. Coll Oct 1983 and subm Oct 1986.

Comment (TGA): dates latest stages of occupation.

HAR-8255. NMWF5531 **2060 ± 80**
$\delta^{13}C = -27.7‰$

Charcoal from hearth in enclosures attached to main settlement. Coll Oct 1983 and subm Oct 1986.

Blackwater series

Six wood samples and 1 charcoal from several Blackwater sites at Bradwell in Essex. All coll summer and subm Oct 1985 by P Murphy, Univ East Anglia.

2350 ± 70

HAR-7054. BRA/79 $\delta^{13}C = -26.0‰$

Wood (identified as *Quercus* sp) AML 858557, from one of series of wooden stakes (not fully planned) driven into submerged land surface at site of Middle Neolithic settlement, on intertidal flats close to nuclear power station at Blackwater Site 8, Bradwell, Essex (51°44′48″ N, 0°54′43″ E, NGR TM01000940).

Comment (PM): although assoc with Middle Neolithic settlement, there was no stratigraphic evidence to determine if stakes were contemporary with it.

2790 ± 80

HAR-7055. B18/86 $\delta^{13}C = -29.5‰$

Wood, AML 858559, from brushwood structure exposed on foreshore by marine erosion, on intertidal flats at Blackwater Site 18, Tollesbury, Essex (51°44′14″ N, 0°48′45″ E, NGR TL94180809).

Comment (PM): this structure was assoc with no artifacts, but its stratigraphic position suggested Late Bronze Age date.

4030 ± 80

HAR-7056. B18/91 $\delta^{13}C = -28.4‰$

Wood, AML 858561, from tree roots on land surface, sealed by estuarine sediments, Blackwater Site 18, Tollesbury, Essex (51°44′14″ N, 0°48′45″ E, NGR TL94180809). Sample assoc with Neolithic settlement.

Comment (PM): provides a *terminus post quem* for estuarine sedimentation and thus dates local marine transgression.

2360 ± 70

HAR-7057. B28/96 $\delta^{13}C = -28.6‰$

Wood, AML 858562, from wooden hurdle structure (3.5m x 0.8m) exposed by marine erosion on intertidal flats, Blackwater Site 28, Goldhanger, Essex (51°43′52″ N, 0°45′13″ E, NGR TL90140725). Structure consists of eight longitudinal poles with well-preserved smaller rods probably part of a trackway over mud flats.

Comment (PM): this impressive structure has no datable artifacts, but position suggests Late Bronze Age.

1020 ± 80

HAR-7058. B28/98 $\delta^{13}C = -30.1‰$

Wood, AML 858563, from brushwood structure, probably hurdle, on intertidal flats, Blackwater Site 28, Goldhanger, Essex (51°43′52″ N, 0°45′13″ E, NGR TL90140725). Structure is close to B28/96 (HAR-7057), and assoc with fired clay.

Comment (PM): structure was only superficially examined to avoid further erosion. It was thought to be Late Bronze Age from its elev; it was not overlain by later deposits.

HAR-7059 B17/69 **Modern**
$\delta^{13}C = -26.4‰$

Wood, AML 858558, from double, sometimes triple, line of stakes extending for some 20m near low water mark, Blackwater Site 17, East Mersea, Essex (51°49′3″ N, 0°27′1″ W, NGR TL06801440). Line is parallel to coast and thought to be part of Medieval fish trap.

Comment (PM): structure had no datable artifacts; as it was not sealed by overlying strata late ^{14}C date is acceptable.

HAR-7060. B18/90 **4180 ± 70**
$\delta^{13}C = -23.7‰$

Charcoal, AML 858560, from charcoal spread on submerged land surface on intertidal flats sealed beneath estuarine sediments at Blackwater Site 18, Tollesbury, Essex (NGR: TL94180809).

Comment (PM): sampled from submerged land surface 100m to SE of Neolithic Site 18 which yielded abundant Middle Neolithic pottery.

Fishergate series

HAR-7061. 732/113 **1150 ± 80**

AML 858564, top surface, at 113cm. $\delta^{13}C = -28.0‰$

HAR-7062. 732/195 **9410 ± 110**
$\delta^{13}C = -31.4‰$

Phragmites peat, AML 858565, from base, at 190 - 195cm, from deposit just over 80cm thick underlying Late Saxon occupation deposits at Fishergate, Norwich, Norfolk (52°37′59″ N, 1°17′ 59″ E, NGR TG 23270907). Coll summer 1985 by B S Ayres and subm Oct 1985 by PM, Univ East Anglia.

Comment (PM): peat was also examined for pollen, plant macrofossils and insects to study pre-urban land use and vegetation. Middle Saxon pottery came from top of peat (*in situ* or pressed in) but base was completely undated.

MVE 82 series

From Meare Village East, Meare, Somerset (51°10′31″ N, 2°47′30″ W, NGR ST44664214). Coll April 1982 and subm Nov 1985 by A E Caseldine, Somerset Levels Project.

HAR-7064. SLP8505 **5270 ± 70**
$\delta^{13}C = -30.0‰$

Peat, AML 857488, from end of local pollen assemblage boundary MVE.1/MVE.2. This sample (MVE82.188) is 1.88 - 1.89m below top of monolith.

HAR-7065. SLP8506 **4160 ± 70**
$\delta^{13}C = -29.1‰$

Peat, AML 857489, from boundary of local pollen assemblage zones MVE.3/MVE.4. This sample (MVE82.114) is 1.14 - 1.15m below top of monolith.

HAR-7066. SLP8507 **2660 ± 70**
$\delta^{13}C = -31.8‰$

Soil, AML 857490, from 0.54 - 0.55m below top of monolith. This sample (MVE82.54) is 20cm below top of organic deposits and approx middle of local pollen assemblage zone MVE.6.

General Comment (AEC): basic stratigraphic sequence at Meare East Iron Age site consists of detritus peats and muds (ca 2m) overlain by alluvial clay (Beckett 1979; Beckett & Hibbert 1979; Orme, Coles & Silvester 1983). The three ^{14}C dates enable local pollen assemblage zones to be delimited and correlated with regional pollen zonation already established at Levels.

Beverley Eastgate series

From Beverley Eastgate, Beverley, Humberside, (53°50′23″ N, 0°25′20″ W, NGR TA 03803935). Coll Nov 1984 by D G Tomlinson and subm Nov 1985 by P Armstrong, Humberside Co Council.

HAR-7067. BE84/752 **1280 ± 70**
$\delta^{13}C = -28.9‰$

Wood, AML 858073, from scatter of wood and twigs overlying an apparently natural silt and peat formation and sealed by further peat deposit.

HAR-7068. BE84751 **1200 ± 70**
$\delta^{13}C = -30.5‰$

Peat, AML 858074, from deposit of compact peat up to 35cm thick which formed over thin primary silt in natural hollow. This sample underlies HAR-7069 and overlies -7067.

HAR-7069. BE841621 **1470 ± 70**
$\delta^{13}C = -28.0‰$

Wood, AML 858075, from bundle of wattles lying at base of ditch cutting peaty deposit assumed to be natural.

Comment (PA): ditch was used for drainage reclamation and thus represents early settlement period.

HAR-7070. BE841526 **1000 ± 70**
$\delta^{13}C = -28.4‰$

Wood, AML 858076, from curving hurdlework fence representing first enclosing feature at site in what remained heavily organic soil with high water table. This sample is from top of sequence and overlies HAR-7069.

General Comment (PA): four samples establish chronology for site where no artifactual chronology is possible and also *terminus post quem* for occupation and settlement of site.

Ewanrigg series

Charcoal from Ewanrigg, Maryport, Cumbria (54°42′2″ N, 3°29′51″ W, NGR NY035350). Coll Aug and subm Oct 1985 by R H Bewley, Hist Buildings and Monument Comm.

HAR-7071. EWR85052 **3400 ± 70**

AML 858542, from a cremation pit cut into subsoil. $\delta^{13}C = -27.7‰$

Comment (RHB): only 3 of 29 cremation pits at this site have been dated.

HAR-7072. EWR85037 **3570 ± 80**

AML 858543, from cremation pit containing fragments of coarse pottery. $\delta^{13}C = -26.2‰$

Comment (RHB): of 29 cremation pits at this site few have good charcoal and even fewer have pottery. This has both and is very important for dating site.

HAR-7073. EWR85072 **1260 ± 100** $\delta^{13}C = -26.5‰$

AML 858544, from Context 72 which is tunnel-like 'entrance' to dry stone-walled circular pit.

Comment (RHB): this feature, along with stone chamber, was part of corn-drying kiln.

HAR-7074. EWR85074 **1040 ± 80** $\delta^{13}C = -27.9‰$

AML 858545, from Context 74, which is within stone-lined circular pit, with funnel like entrance way. Context 74 is primary silting layer of this chamber-like feature.

Comment (RHB): seed assemblage indicates this feature was corn-drying kiln.

HAR-7075. EWR85059 **1250 ± 100**

AML 858546, from primary silt of chamber feature. $\delta^{13}C = -25.4‰$

Comment (RHB): period of chamber is unknown, so date determines final use of chamber.

HAR-7076. EWR85068 **810 ± 80** $\delta^{13}C = -24.6‰$

AML 858547, from dark stains, probably stake holes; part of super-structure or resulting from use of chamber.

Comment (RHB): measured to date final use of stone chamber.

HAR-7077. EWR85055 **3700 ± 120** $\delta^{13}C = -27.1‰$

AML 858548, from cremation pit with enlarged food vessel (Longworth 1984).

Comment (RHB): measured to date enlarged food vessel.

Cannington series

Human bone, from grave in group in NE corner of cemetery, discrete and well-defined row of graves at Cannington, Somerset. Coll 1962-1963 by P A Rahtz and subm Aug 1984 by P A Rahtz, S Hirst and S Wright.

HAR-8049. 401 **1390 ± 40**

Immature. $\delta^{13}C = -20.2‰$

HAR-8050. 419 **1460 ± 40**

Adult. $\delta^{13}C = -20.5‰$

Comment (SMH): Roman and prehistoric finds in grave.

HAR-8051. 404 **1370 ± 40**

Adult. $\delta^{13}C = -20.2‰$

Comment (SMH): prehistoric and Roman finds in grave; pathological specimen - may have been leper.

HAR-8052. 421 **1560 ± 40**

Adult. $\delta^{13}C = -21.5‰$

HAR-8053. 422 **1360 ± 40**

Immature. $\delta^{13}C = -20.3‰$

Comment (SMH): prehistoric finds in grave.

General Comment (SMH): graves yielding these five samples (HAR-8049 to -8053) are broadly contemporary and may be family group. They are possibly assoc with summit structure FT43 which is thought to be early feature in cemetery.

Albany Road series

Wood, from silted-up former channel of River Exe, Albany Road, St Thomas, Exeter, Devon (50°42′55″ N, 3°32′3″ W, NGR SX 917918). Channel is 1.5m deep, filled with blue clay, with darker horizontal laminations containing wood, twigs and leaves. Coll May 1984 by V Straker and C Henderson and subm Sept 1985 by V Straker, Univ Bristol.

HAR-8054. ALB2 **1240 ± 70**

Alnus sp (alder) and *Corylus avellana* (hazel), AML 858579, from 36 - 44cm above base.

970 ± 80

HAR-8055. ALB3 $\delta^{13}C = -28.2‰$

Salix/Populus (willow/poplar), AML 858580, from 112 - 116cm above base.

General Comment (VS): dating helps with palynology from lowland Devon and investigation of saline/freshwater conditions of Exe River.

Cowage Farm series

1220 ± 70

HAR-8082. 245-172 $\delta^{13}C = -25.4‰$

Charcoal (*Quercus* sp) AML 8317536, from posthole in what is thought to be Middle Saxon

hall at Cowage Farm, Foxley (51°34′ 27″ N, 2°8′8″ W, NGR ST 906862). Coll Aug 1983 by J Hinchliffe and subm March 1984 by N D Balaam, Central Excavation Unit.

HAR-8083. 241-24 **4070 ± 80**
$\delta^{13}C = -21.4‰$

Adult human bone, 5th metatarsal, AML 8312200, from mound rubble of possible long barrow at Druids Hill, Stoke Bishop. Coll 1982 by G H Smith and subm Dec 1983 by NDB.

HAR-8097. NKS2 **3550 ± 80**
$\delta^{13}C = -25.8‰$

Charcoal, AML 837116, from fire on old land surface at Nancekuke barrow, Cornwall (NGR SW67654627). Coll Aug 1940 by C Croft Andrew and subm July 1983 by P M Christie, Inst of Archaeol, London.

Comment (PMC): primary date for barrow (Christie 1985).

HAR-8098. DM1652 **3440 ± 100**
$\delta^{13}C = -26.3‰$

Charcoal, AML 837122, from central deposit at Davidstow Moor, Barrow 16, Cornwall (NGR SW67654627). Coll June 1942 by CCA and subm July 1983 by PMC.

Comment (PMC): primary date for barrow (Christie 1985).

HAR-8089. CAT54 **3510 ± 70**
$\delta^{13}C = -25.9‰$

Charcoal, AML 837113, from central fire area under cairn at Cataclews Barrow 1, Cornwall (NGR SX142584610). Coll 1944 by CCA and subm July 1983 by PMC.

Comment (PMC): primary date for cairn (Christie 1985).

HAR-8100. TR254 **3380 ± 80**
$\delta^{13}C = -25.3‰$

Charcoal, AML 837119, from Burial 3 under slate kerb at Treligga Barrow 2, Cornwall (NGR SX04508559). Coll 1941 by CCA and subm July 1983 by PMC.

Comment (PMC): dates secondary burial in barrow (Christie 1985).

Wasperton series

Peat, leaves, twigs, plant material and charcoal from E bank of River Avon, Wasperton, Warwickshire (52°13′25″ N, 1°36′43″ W, NGR SP265585). Coll July 1985 by M Halliday and subm Feb 1986 by C Bowker and G Crawford, Birmingham Univ Field Archaeol Unit. Wasperton was a large gravel complex with little organic material surviving. Samples came from peat deposit adjacent to site (Bowker 1983; Crawford 1983; 1984).

HAR-8103. WNPEAT1 **710 ± 80**

AML 8650603, from base of column (0 - 6cm). $\delta^{13}C = -31.9‰$

HAR-8104. WNPEAT2 **550 ± 80**

AML 8650604, from 6 - 15cm above base of column. $\delta^{13}C = -32.0‰$

HAR-8105. WNPEAT3 **500 ± 100**

AML 8650605, from 15 - 23cm above base of column. $\delta^{13}C = -31.5‰$

HAR-8106. 6644 **2940 ± 70** $\delta^{13}C = -25.7‰$

Charcoal, AML 8650606, from lower fill of post pit. Context below 6644 comprised redeposited natural gravel. Sample 6644 was initial fill following withdrawing of post and indicates first phase of disuse. Coll Sept 1983 and subm Feb 1986.

Comment (GC): post pit was part of structure, possibly dwelling, different in character from adjacent Iron Age features. Some nearby postholes contained Neolithic 'Peterborough' pottery.

HAR-8107. 5098 **2210 ± 80** $\delta^{13}C = -26.0‰$

AML 8650607, from dense lens of charcoal close to base and just above cleaning slot of defensive ditch surrounding putative Iron Age settlement. Coll Feb 1985 and subm Nov 1985.

Comment (GC): defensive ditch from which sample came appeared to have been regularly cleaned but with short lifespan overall.

Jaywick series

Samples from gray clay fill of small pit exposed on foreshore at Clacton site 1 (Jaywick), Hullbridge Proj (51°46′29″ N, 01°07′35″ E, NGR: 15631312) (Wilkinson & Murphy 1984). Coll June 1984 and subm 1985 by P Murphy.

HAR-8154. JAYSIC5 **3830 ± 80**

Charcoal. $\delta^{13}C = -24.9‰$

Comment (PM): large fragments of Beaker (Lanting & van der Waals Step 3) from pit fill support this date.

HAR-8368. JAYS1C2 **1420 ± 80**

Wood.

HAR-8369. JAYSIC3 **380 ± 90**

Wood. $\delta^{13}C = -25.4‰$

HAR-8180. BH864526 **2200 ± 80** $\delta^{13}C = -27.2‰$

Wood, identified as possibly alder, AML 8650144, from early raft or causeway, connecting former island to mainland, Butley Thrift, Burrow Hill, East Suffolk (52°4′57″ N, 1°29′19″ E, NGR TM 390485) (Fenwick 1984). Principal periods of island's occupation are Iron Age (Little Waltham

Period II) and Middle Saxon (ca 680-840). Coll Sept 1986 by Mrs V Fenwick and subm Sept 1986 by D Sherlock, Ancient Monuments Lab.

Comment (DS): sample is from wooden piles beneath 1m clay plus 85cm sand and humus. Wooden piles underlay marsh clay and causeway at -1.95m OD.

Hallshill series

Charcoal, part of a series of six from cutting A at excavated round house (Gates 1983) at Hallshill, Elsdon, Northumberland (55°11′33″ N, 2°8′46″ W, NGR NY907887). Coll Sept 1986 by S Hedley and subm Sept 1986 by T Gates, Univ Newcastle.

HAR-8183. HAL-23 **2960 ± 60**
$\delta^{13}C = -27.2‰$

Identified as *Alnus* sp, AML 8650178, from small pit, Context 23, containing carbonized plant material, burned bone, burned stones and one undecorated pottery sherd.

Comment (TG): pit could be either cremation burial or rubbish deposit and antedates timber building.

HAR-8184. HAL-21 **3130 ± 60**
$\delta^{13}C = -27.0‰$

Identified as *Corylus avellana*, AML 8650179, from 1 of 9 postholes constituting inner ring of roof supports of excavated round house.

Comment (TG): previous sample from this building yielded a date of 2780 ± 80 BP (HAR-4800). Charcoal from this and other postholes antedates construction of building, perhaps by several centuries and should be assoc with one or more episodes of forest clearance and evidence for cereal cultivation, including emmer wheat and six-row barley (Davies & Turner 1979).

HAR-8185. HAL-25 **2710 ± 70**
$\delta^{13}C = -26.6‰$

Identified as *Alnus* sp, AML 8650180, from small pit, Context 25, containing burned stones, carbonized plant material and some burned bone.

Comment (TG): no datable artifacts were in pit which could be rubbish deposit or cremation. Stratigraphic relationship between pit and occupation of building could not be determined in excavation.

General Comment: ^{14}C dates indicate more complicated sequence of activity than could have been deduced from either structural or stratigraphic evidence. Results for two postholes, HAR-8184 and -4800, and pits, HAR- 8183 and -8185, imply that site witnessed more than one phase of Bronze Age agriculture before construction of timber building. This accords well with palynology and ^{14}C dating at nearby site at Steng Moss.

Hemington Fields series

Wood from Hemington Fields (Salisbury 1981), Donington, Leicestershire (52°52′1″ N, 1°19′13″ W, NGR SK 45753020). Coll March and subm April 1986 by C R Salisbury.

HAR-8223. PL6BRW86 **5240 ± 80**
$\delta^{13}C = -28.6‰$

Ash, AML 868088, from bed of ancient course of river Trent which was abandoned and rapidly filled with gravel.

Comment (CRS): this sample was thought to be assoc with Norman mill dam or late Bronze Age post alignment. Its Neolithic date was a surprise. Sample may have come from a clast of peat derived from another abandoned channel and redeposited here.

HAR-8224. PL1WAT85 **910 ± 70**
$\delta^{13}C = -27.6‰$

Hazel, average 11 rings, AML 868087, from wattle panel in floodplain gravel below water table, probably part of fish weir.

Comment (CRS): main structure is Norman mill dam made of squared oak posts and timbers. Between double row of posts is parallel row of small birch posts with bark, two of which were dated to 800 cal BC. Result confirms that weir is assoc with Norman dam, dated dendrochronologically to AD 1140 and allows E Midland master curve to be extended back 50 yr more.

HAR-8256. AP86-1 **700 ± 40**
$\delta^{13}C = -25.4‰$

Wood, identified as oak (*Quercus* sp), AML 8650143, Abington Pigotts, Downhall Gatehouse (52°4′33″ N, 0°5′49″ W, NGR TL304437). Sample from West Gable tie beam from late Medieval gatehouse (14th or 15th century). Coll and subm Sept 1986 by D Sherlock.

Comment (DS): beam was taken down ca 1980 when new tie beam was inserted.

Tintagel Castle series

From Tintagel Castle, Lower Ward, Tintagel, Cornwall (50°40′2″ N, 4°45′27″ W, NGR SX 05158897). Coll Jan and subm May 1986 by S Hartgroves, Cornwall Archaeol Unit.

HAR-8273. TCD/43 **2740 ± 100**

Charcoal and soil, AML 8650069, from Stakehole 43. $\delta^{13}C = -27.8‰$

HAR-8276. TCD253 **2110 ± 120**

Charcoal, burned wood and soil, AML 8650068, from Layer D 25. $\delta^{13}C = -29.0‰$

HAR-8277. TCD/7 **1850 ± 80**

Charcoal and soil, AML 8650070, from Stakehole 71. $\delta^{13}C = -27.9‰$

HAR-8278. TCD/102 **1850 ± 70**

Charcoal and soil, AML 8650071, from Stakehole 102. $\delta^{13}C = -27.5‰$

General Comment (SH): these results help provide upper and lower limits to use of imported Mediterranean pottery and date newly discovered timber phase.

Hazleton Long Cairn series

Antlers, identified as red deer, from Hazleton North Long Cairn, near Northleach, Hazleton parish, Glos (51°52′5″ N, 1°53′38″ W, NGR SP073189) (Saville 1984).

HAR-8349. 13926 **4830 ± 60**
$\delta^{13}C = -23.5‰$

AML 8650031, from Context 463, incorporated in early phase of cairn's construction, from base of cairn infill adjacent to S and N. Coll July 1982 by A Hearne and A Saville and subm Aug 1986 by A Saville, Cheltenham Mus and Art Gallery.

HAR-8350. 3129 **4950 ± 60**
$\delta^{13}C = -23.4$

AML 8650032, from Context 85, primary infill of N quarry flanking long cairn, 160mm above quarry floor. Coll Nov 1980 and subm Aug 1986 by A Saville.

Comment (AS): dated for quarrying activity in N quarry. Antler is part of discarded tool used in quarrying limestone for cairn.

St Oswald's Priory series

Human bone samples from St Oswald's Priory, Gloucester (51°52′8″ N, 2°14′49″ W, NGR SO 830190). Coll Aug 1978 and subm April 1986 by C M Heighway.

HAR-8357. 4175B507 **1070 ± 70**

AML 8650017, above B518 in stack of six Saxon burials. $\delta^{13}C = -21.0‰$

Comment (CMH): second earliest sample in sequence of 6 burials, is subsequent to B518 (HAR-8358).

HAR-8358. 4175B518 **1100 ± 70**

AML 8650016, from second lowest of stack of six Saxon burials. $\delta^{13}C = -21.0‰$

Comment (CMH): earliest sample in sequence of 6 burials, is under B507 (HAR-8357).

General Comment (CMH): samples date foundation of church, which is pre-1086 on architectural grounds and which is said by William of Malmesbury to date from time of Alfred. Burials began when church was built. The two samples appear to confirm late 9th century date for church's construction (Heighway 1980; 1984).

HAR-8365. DMG83196 **3350 ± 70**
$\delta^{13}C = -29.3‰$

Soil, waterlogged organic deposit (wood, seeds etc), AML 865022, Durham Milburnegate, Durham City, (54°46′40″ N, 1°34′39″ W, NGR NZ 27184264). Sample from organic deposit, sealed by 13th century occupation, at lowest level on site and overlying natural woodland. Coll July 1983 and subm March 1986 by M van der Veen, Archaeol Dept, Univ Durham.

Comment (MvdV): result indicates truncated soil profile, unrecognized during excavation.

Woodland represented in sample must be of early prehistoric date (van der Veen 1985) and therefore has no bearing on Medieval Durham.

Buckskin II series

HAR-8370. 1BS7 **3590 ± 100**
$\delta^{13}C = -27.1‰$

Charcoal, AML 8650023, from F7 posthole beneath core of mound at Buckskin site I (Bell Barrow), Basingstoke, Hampshire (50°18′40″ N, 5°21′55″ W, NGR SW 60435118). Coll 1967-8 by B Applin and subm by M Morris, Winchester Archaeol Office.

Comment (MM): series of pits, postholes and stakeholes, survived in central area of mound. Results help date mound construction. There is no other dating evidence from these features.

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