BRITISH MUSEUM NATURAL RADIOCARBON MEASUREMENTS VIII

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The following list consists entirely of dates for archaeologic samples from the British Isles measured since about mid-1970 up to June 1974*. The dates were obtained by liquid scintillation counting of benzene using a Model 3315 Packard Tricarb Liquid Scintillation Spectrometer. In general, procedures are as described in the previous date list (R, 1971, v 13, p 157; see also Burleigh, 1972). However, data processing was improved by means of a real-time link with a Hewlett Packard 2100A computer having 32K of core, which accepts readings from the counter at the end of each individual counting period. The computer monitors the accumulated sample counts and reports when the statistical error terms of these have reached previously chosen limits; final dates are then obtained on supplying the appropriate benzene sample weights and isotopic fractionation values. The system maintains a permanent record of all the data obtained from measurement of samples and reference standards and gives warning of any serious changes in counter performance. A full description of the capabilities of this system is given elsewhere (Hall and Hewson, in press). Finally, improvements were made to the bomb used for initial combustion of sample materials (Burleigh, 1974) and a new, stainless-steel, lithium reaction furnace (similar to that described by Polach and Stipp, 1967) was recently installed.

Raw sample materials are systematically pretreated with dilute acid and alkali; but only collagen is used for antler and bone. The dates, relative to AD 1950, are based on the Libby half-life of 5570 years, are corrected for isotopic fractionation (relative to the PDB standard), and are expressed in radiocarbon years uncorrected for natural $^{14}$C variations. NBS oxalic acid is used as the modern reference standard.

Descriptions, comments, and references to publications are based on information supplied by the persons who submitted the samples.

ACKNOWLEDGMENTS

We gratefully acknowledge the continued guidance and helpful criticism and advice of H Barker.

SAMPLE DESCRIPTIONS

ARCHAEOLOGIC SAMPLES

A. British Isles

BM-91. High Rocks, Kent

Charcoal from Layer 2 (Period III) of Site F at High Rocks, Tunbridge Wells, Kent, England (51° 07’ N, 0° 14’ E, Natl Grid Ref TQ

* Dates obtained over the same period for samples from other geographic regions form the next list, British Museum IX.

*General Comment* (JHM): BM-40 and -91 bracket 6 of the 7 hearths, most of the flints of Mesolithic type and the main concentration of pottery found at Site F, which appear to be components of a pottery-using Wealden culture of ca 3700 BC inhabiting rock shelters and characterized by hunting rather than agriculture.

BM-287.  *Amesbury Bell Barrow, Wiltshire*  


Minepit Wood series, Sussex


BM-362.  *Minepit Wood, Sussex*  

Charcoal (C. 101) assoc with layer of iron ore which had been prepared for firing.

BM-367.  *Minepit Wood, Sussex*  

Charcoal (C. 114) from an undisturbed occupation layer within a small stone structure. *General Comment*: BM-362 and -367 agree well with other dates in series (R, 1971, v 13, p 178) all of which are consistent with stratigraphic sequence and assoc archaeology at site. Dates were fully discussed elsewhere (Money, 1971a).

Westerdale series, Yorkshire

Four peat and wood samples from peat sections at North Gill and Collier Gill at head of valley of Westerdale, N Yorkshire Moors, England (54° 25’ N, 01° 01’ W, Natl Grid Ref NZ 639026). Coll 1966 by I Simmonds, Dept Geog, Univ Durham; subm by G W Dimbleby, Inst Archaeol, Univ London. Samples date clearance phases and anthropogenic changes (Dimbleby, 1961; 1962).
BM-425. **North Gill, Westerdale**
Peat from 215 to 217cm. Dates an early (Mesolithic) clearance phase and establishment of local peat formation.

BM-426. **North Gill, Westerdale**
Peat from 149 to 151cm. Dates a pronounced “elm decline” and beginning of deforestation.

BM-427. **Collier Gill, Westerdale**
Wood from 192 to 202cm. Dates beginning of peat formation (boundary of Pollen Zones VI/VIIa).

BM-428. **Collier Gill, Westerdale**
Peat from 89 to 91cm. Dates clearance phase with expansion of Calluna, Fraxinus, and bracken.

**Bedd Branwen series, Anglesey**
Charcoal assoc with Bronze age urns and other pottery from excavation of barrow at Bedd Branwen, Llanbabo parish, Anglesey, N Wales (53° 20' N, 04° 28' W, Natl Grid Ref SH 362850). Coll 1967 and subm by Frances Lynch, Dept Archaeol, Univ College N Wales, Bangor.

BM-452. **Bedd Branwen, Anglesey**
Sample B. From base of E hollow close to central stone, pre-dating barrow construction.

BM-453. **Bedd Branwen, Anglesey**
Sample D. Contents of pigmy cup overlying bones in Pot L. Sample dates primary burial.

BM-455. **Bedd Branwen, Anglesey**
Sample L. From cremation deposit on old ground surface. Secondary burial inserted after barrow complete.

BM-456. **Bedd Branwen, Anglesey**
Sample Q. From old ground surface. Dates barrow construction.

**General Comment:** though expected to pre-date barrow construction, BM-452 is much earlier and cannot easily be explained. BM-456 dates construction of barrow satisfactorily and BM-453 and -455 date separate burial phases which archaeol evidence suggests were close in time (Lynch, 1971). The 3 dates directly relating to barrow are not distinguishable statistically.
BM-468. **Galley Hill, Bedfordshire**

Collagen separated from human femur from Burial 2 in Barrow 3 at Galley Hill, Streatley, Bedfordshire, England (51° 56' N, 01° 26' W, Natl Grid Ref TL 092270). Coll 1959 by J Dyer; subm by D R Brothwell, British Mus (Nat Hist). Comment (DRB): human skeletons in Barrow 3 were assoc with Windmill Hill wares but date shows they are intrusive burials and are possibly gallows victims.

1334 ± 67
AD 616

BM-469. **Cannington, Somerset**

Collagen separated from human femur from Burial 87 in Dark age cemetery at Castle Hill Quary, Cannington, Somerset, England (51° 09' N, 03° 05' W, Natl Grid Ref ST 252406). Excavated 1962-63 by P A Rahtz; subm by D R Brothwell. Comment (DRB): BM-469 is from different part of cemetery from Skeleton 409, dated 1220 ± 110, AD 730 (Birm-70: R, 1969, v 11, p 268) and strongly indicates period of use, making large series of ca 450 skeletons biologically far more valuable.

Ascott-under-Wychwood series, Oxfordshire

Charcoal from Neolithic long barrow at Ascott-under-Wychwood, Oxfordshire, England (51° 51' N, 01° 34' W, Natl Grid Ref SP 299176). Coll 1968 and 1969 by D Benson, Oxford City and County Mus; subm by J G Evans, Dept Archael, Univ College, Cardiff. Samples date episodes of forest clearance, pre-barrow occupation, and barrow construction.

4893 ± 70
2943 BC

BM-191b. **Ascott-u-Wychwood, Oxfordshire**


4735 ± 70
2785 BC

BM-492. **Ascott-u-Wychwood, Oxfordshire**

Charcoal (AW/68/XI) from surface of buried soil beneath barrow. Dates construction of mound.

4942 ± 74
2992 BC

BM-832. **Ascott-u-Wychwood, Oxfordshire**

Charcoal (AW 736) from burnt structural elements within long barrow mound.

5020 ± 92
3070 BC

BM-833. **Ascott-u-Wychwood, Oxfordshire**

Charcoal (AW 739) from burnt structural elements within long barrow mound.
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BM-835. Ascott-u-Wychwood, Oxfordshire 3248 BC
Charcoal (AW 1037) from primary coarse limestone rubble of ditch fill.

BM-836. Ascott-u-Wychwood, Oxfordshire 2495 BC
Charcoal (AW 1005) from soil horizons in upper levels of ditch, overlying BM-837.

BM-837. Ascott-u-Wychwood, Oxfordshire 2764 BC
Charcoal (AW 1026) from soil horizons in upper levels of ditch. Stratigraphically earlier than BM-836.

General Comment (JGE): BM-832 and -833 are dates for young timber apparently used in mound construction and, thus, compare unfavorably with BM-492. Alternatively, these samples may represent charcoal from earlier occupation or land clearance episode incorporated in mound incidentally. The ditch dated by BM-835 may belong to earlier structure than barrow but BM-835, -837 fall into a very satisfactory sequence.

BM-499. Coygan Cave, Dyfed 36,734 BC

collagen separated from reindeer antler from Coygan Cave, Llandysyryn, Dyfed, S Wales (51° 44' N, 04° 30' W, Natl Grid Ref SN 284092). Coll 1963 by C B M McBurney, Dept Archaeol, Univ Cambridge; subm by G de G Sieveking, British Mus. Sample dates Mousterian of Acheulian Tradition industry (Grimes and Cowley, 1935). Comment (GdeGS): date carried out on sample assoc with Mousterian artifacts, including a characteristic hand-axe type resembling that from Kent's Cavern, from deposit sealed below calcrete (breccia) layer in cave. A carbonate date of 33,200 ± 310 BP obtained from calcite layer (GrN-4400: R, 1972, v 14, p 54) was considered too young for assoc Mousterian industry; BM-499 can be regarded as satisfactory in this respect.

Marden series, Wiltshire
Charcoal, animal bone, and antler from excavation of a Late Neolithic enclosure at Marden, Wiltshire, England (51° 19' N, 01° 52' W, Natl Grid Ref SU 090583). Coll 1969 and subm by G J Wainwright, Dept Environment. Samples date enclosure ditch of important monument of Durrington Walls type (Wainwright & Longworth, 1971) surrounding Late Neolithic timber structures, and a good assemblage of Late Neolithic pottery and stone tools comparable to those from Durrington Walls but undated elsewhere (Wainwright, 1971).

BM-557. Marden, Wiltshire 1998 BC
Charcoal from base of enclosure ditch sealed by 2m ditch silts.
BM-558. Marden, Wiltshire
Collagen separated from animal bone from base of enclosure ditch.
Same location as BM-557.

3526 ± 99
1576 BC

BM-559. Marden, Wiltshire
Collagen separated from red deer antler from base of enclosure ditch.
Same location as BM-557.

3626 ± 81
1676 BC

BM-560. Marden, Wiltshire
Charcoal from base of turf-line of fossil soil buried by building of
enclosure bank, assoc with Middle Neolithic sherds and flints.

General Comment (RB): BM-557 (charcoal) agrees closely with expected
age of ca 2000 BC and with dates for Durrington Walls enclosure, but
BM-558 and -559 (bone and antler) from same primary context are much
later than expected, probably due to contamination by younger humic
substances. BM-560 provides a date for Middle Neolithic pottery com-
parable with dates for similar assemblages at Knaphill, Wiltshire and
South St, Wiltshire (R, 1971, v 13, p 169, 171-172; Burleigh, 1971).

3193 ± 69
1243 BC

BM-583. Chalton, Hampshire
Charcoal from occupation layer on floor of a hut, sealed by ca 60cm
hill-wash deposit at Site 78, Chalton, Hampshire, England (50° 56' N, 0°
59' W, Natl Grid Ref SU 718181). Coll 1968 and subm by B W Cunliffe,
Dept Archaeol, Univ Southampton (Cunliffe, 1973). Sample dates assem-
blage of mid-Bronze age metal types, pottery, and domestic structures.

1383 ± 45
AD 567

Robin Hood's Cave series, Derbyshire
Charcoal and bone from stratified layers in Robin Hood's Cave,
Creswell Crags, Derbyshire, England (53° 16' N, 01° 12' W, Natl Grid
Ref SK 534742). Coll 1969 and subm by J B Campbell, Pitt Rivers Mus,
Oxford.

BM-601. Robin Hood's Cave, Derbyshire
Charcoal from Layer B/A. Comment (JBC): samples probably de-
vired from immediately underlying Layer A as thin Layer B/A contained
Late Upper Palaeolithic (Creswellian) assemblage; Layer A contained
Middle Palaeolithic assemblage (Campbell, 1970).
BM-602. Robin Hood’s Cave, Derbyshire 26,550 BC
Collagen separated from humerus fragment of Ursus arctos from Layer USB. Comment (JBC): date suggests sample intrusive from 19th century excavations. Otherwise Layer USB had late Creswellian assemblage. BM-602 might be considered indirect date for Early Upper Palaeolithic (Proto-Solutrean) leaf point assemblage found at Robin Hood’s Cave by Dawkins and Mello (Garrod, 1926), for which age would be reasonable (Campbell, 1970).

BM-603. Robin Hood’s Cave, Derbyshire 8440 BC
Collagen separated from left metacarpel of Equus przewalskii and antler of Megaloceros from Layer OB. Comment (JBC): dates Creswellian shouldered point assemblage (Campbell, 1970).

BM-604. Robin Hood’s Cave, Derbyshire 8640 BC
Collagen separated from left humerus of Equus przewalskii from Layer LSB. Comment (JBC): dates Creswellian point assemblage (Campbell, 1970); cf dates for similar Late Upper Palaeolithic assemblages at Anston Stones Cave (BM-439: 9850 ± 115 BP, BM-440a: 9940 ± 115 BP, BM-440b: 9750 ± 110 BP; R, 1971, v 13, p 167) and Sun Hole (BM-524: 12,378 ± 150 BP; R, 1971, v 13, p 168).

Sutton Hoo, Suffolk
Samples from Dark age ship-burial at Sutton Hoo, Woodbridge, Suffolk, England (52° 05’ N, 01° 20’ E, Natl Grid Ref TM 287487). Coll 1939; subm by R L S Bruce-Mitford, British Mus. Samples closely dated historically to ca AD 625-630 (Bruce-Mitford, 1972; Bruce-Mitford et al, in press).

BM-640. Sutton Hoo, Suffolk AD 523
Beeswax from the Iron Lamp. Comment: date is ca 100 yr earlier than historic date, which agrees with reported trend of radiocarbon variations in 1st millennium AD (Stuiver & Suess, 1966; Olsson, 1970).

BM-688. Sutton Hoo, Suffolk AD 694
Wood (Quercus sp) found lying on bottom of ship in burial-chamber area stratified above grave goods and presumed part of specially constructed burial-chamber. Comment: date disagrees with historic date of burial since, allowing for growth factor of wood and for natural radiocarbon variations, date, ca AD 500 would be expected (see BM-640, this list above). Difference appears to be due to contamination by younger humic material despite careful pretreatment.
Mount Pleasant series, Dorset

**BM-644.  Mt Pleasant, Dorset**
Charcoal from pre-enclosure settlement.  
4072 ± 73  
2122 BC

**BM-645.  Mt Pleasant, Dorset**
Collagen separated from antler from W entrance of enclosure (bottom of ditch).  
3734 ± 41  
1784 BC

**BM-646.  Mt Pleasant, Dorset**
Collagen separated from antler from W entrance of enclosure (bottom of ditch).  
3728 ± 59  
1778 BC

**BM-662.  Mt Pleasant, Dorset**
Collagen separated from antler from palisade trench (packing material from trench base).  
3637 ± 63  
1687 BC

**BM-663.  Mt Pleasant, Dorset**
Charcoal from ditch surrounding timber structure.  
3911 ± 89  
1961 BC

**BM-664.  Mt Pleasant, Dorset**
Charcoal from hearth stratified on top of primary silts of enclosure ditch.  
3645 ± 43  
1695 BC

**BM-665.  Mt Pleasant, Dorset**
Charcoal from layer of ash in palisade trench.  
3941 ± 72  
1991 BC

**BM-666.  Mt Pleasant, Dorset**
Collagen separated from antler from pit in bottom of ditch surrounding timber structure.  
3988 ± 84  
2038 BC

**BM-667.  Mt Pleasant, Dorset**
Collagen separated from animal bone from primary silts of ditch surrounding timber structure.  
3630 ± 60  
1680 BC

**BM-668.  Mt Pleasant, Dorset**
Charcoal from secondary silts of ditch surrounding timber structure.
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BM-669. Mt Pleasant, Dorset 3274 ± 51
Charcoal from upper silts of ditch surrounding timber structure.

BM-788. Mt Pleasant, Dorset 3506 ± 55
Charcoal from top of slow silts of enclosure ditch (N entrance).

BM-789. Mt Pleasant, Dorset 3459 ± 53
Charcoal from middle of slow silts of enclosure ditch (N entrance).

BM-790. Mt Pleasant, Dorset 3619 ± 55
Charcoal from lower part of slow silts of enclosure ditch (N entrance).

BM-791. Mt Pleasant, Dorset 3891 ± 66
Charcoal from between rapid and slow silts of enclosure ditch (N entrance).

BM-792. Mt Pleasant, Dorset 4058 ± 71
Charcoal from rapid silts of enclosure ditch (N entrance).

BM-793. Mt Pleasant, Dorset 4048 ± 54
Charcoal from base of enclosure ditch (N entrance).

BM-794. Mt Pleasant, Dorset 3956 ± 45
Collagen separated from domestic animal bone from palisade trench (Pit XVIII).

BM-795. Mt Pleasant, Dorset 4077 ± 52
Collagen separated from antler from Conquer Barrow ditch.

General Comment (RB): in general these dates agree well with archaeol evidence (Burleigh et al, 1972). Detailed analysis of this complex series is fully interpreted elsewhere (Wainwright et al, in press).

BM-656. Merton College, Oxford 627 ± 40
Sample (116-VI) from heartwood from floor joist of Merton College Libr, Oxford, England (51° 45’ N, 01° 13’ W). Coll 1970 and subm by J M Fletcher, Research Lab Archaeol, Univ Oxford, as part of dendrochronology program (R, 1971, v 13, p 180-181). With “growth allowance” (Fletcher, 1968) historic date of sample is ca AD 1250.

Graveney series, Kent
Wood samples from and assoc with ship found during cutting of drainage dyke by Kent River Board at Graveney marsh, 1.6km NW Graveney, Kent, England (51° 18’ N, 0° 58’ E, Natl Grid Ref TR 065638).

**BM-660. Graveney, Kent**  
Wood (oak) from timbers of ship.  
1080 ± 40  
AD 870

**BM-661. Graveney, Kent**  
Wood (oak) from timbers of ship.  
1064 ± 54  
AD 886

**BM-715. Graveney, Kent**  
Brushwood from beneath hull.  
1003 ± 40  
AD 947

**BM-956. Graveney, Kent**  
Wood (oak) from timbers of ship (Strake S6C).  
1283 ± 51  
AD 667

**BM-957. Graveney, Kent**  
Wood (oak) from timbers of ship (Strake P4D).  
1126 ± 76  
AD 824

*General Comment:* when dates for timbers are corrected for “growth allowance,” construction date of boat is ca AD 950; brushwood (BM-715) dates its abandonment, also close to this (see Evans & Fenwick, 1971; Fenwick, 1972a, b; and, for full discussion of Graveney boat, Fenwick, 1975, in press).

**BM-670. Cnoc Sligeach, Oronsay, Argyllshire**  
Charcoal from uppermost 7cm shell midden at Cnoc Sligeach, Oronsay, Inner Hebrides, Argyllshire, Scotland (56° 01' N, 06° 13' W, Natl Grid Ref NR 371889). Coll 1970 and subm by P A Mellars, Dept Ancient Hist, Univ Sheffield. Sample dates an Obanian type Mesolithic settlement (Bishop, 1914; Mellars and Payne, 1971).  
5426 ± 159  
3476 BC

**BM-676. Langdale, Cumberland**  
4474 ± 52  
2524 BC

**Woodhenge series, Wiltshire**  
pies intended to date construction of bank and ditch, timber structure recorded within enclosure, abundant Late Neolithic sherds (Grooved Ware) assoc with timber structure (Cunnington, 1929; Wainwright and Longworth, 1971) and to provide comparisons with dates for Durrington Walls (R, 1971, v 13, p 172-173).

**BM-677. Woodhenge, Wiltshire**
Collagen separated from red deer antler from ditch floor.

3817 ± 74 1867 BC

**BM-678. Woodhenge, Wiltshire**
Collagen separated from domestic animal bone from primary rubble silting of ditch.

General Comment (RB): though somewhat later than dates for comparable contexts at Durrington Walls, BM-677 and -678 are consistent with archaeol evidence. Detailed discussions appear elsewhere (Burleigh et al, 1972).

**Broome Heath series, Norfolk**

**BM-679. Broome Heath, Norfolk**
Charcoal (D4) from surface of fossil soil beneath enclosure bank.

5424 ± 117 3474 BC

**BM-755. Broome Heath, Norfolk**
Charcoal (LI4) from top of fossil soil beneath enclosure bank.

4167 ± 78 2217 BC

**BM-756. Broome Heath, Norfolk**
Charcoal (Pit 29, Layer 4).

4523 ± 67 2573 BC

**BM-757. Broome Heath, Norfolk**
Charcoal (Pit 40, Layer 6).

4579 ± 65 2629 BC

General Comment: dates agree well with archaeol evidence. Significance of dates in relation to Neolithic ceramic traditions in British Isles is discussed by Wainwright (op cit).

**Earls Barton, Northamptonshire**
Charcoal (Quercus robur) from barrow at Earls Barton, Northamptonshire, England (52° 15’ N, 0° 43’ W, Natl Grid Ref SP 870627). Coll 1969 and subm by D A Jackson, Dept Environment. Samples provide terminus post quem for Bronze age bell-barrow with Wessex affini-
ties, having an ogival dagger. See also dates for Hove (BM-682) and Edmondsham (BM-708 and -709) this list, below.

BM-680. Earls Barton, Northamptonshire
Sample 3, from pre-barrow surface.

BM-681. Earls Barton, Northamptonshire
Sample 5, from pre-barrow surface.

BM-682. Hove, Sussex
Wood knot (Quercus sp) from a barrow at Hove, Sussex, England (50° 49' N, 0° 10' W, Natl Grid Ref TQ 295047). Coll 1856 from coffin containing Hove Amber Cup and other Wessex culture objects (Curwen & Curwen, 1924). Subm 1970 by A Sheppard, Brighton Mus. Comment: see also dates for Earls Barton, this list above (BM-680 and -681) and for Edmondsham, this list below (BM-708 and -709).

BM-684. Holbeanwood, Sussex
Charcoal from iron working site at Holbeanwood, Ticehurst, Sussex, England (51° 03' N, 0° 22' E, Natl Grid Ref TQ 664305). Coll 1970 and subm by H F Cleere. Comment: date is later than expected since archaeol finds date site securely to not later than ca AD 250.

BM-685. Pippingford, Sussex
Charcoal (Sample A) from iron working site at Pippingford, Sussex, England (51° 03' N, 0° 03' E, Natl Grid Ref TQ 446313). Coll 1970 and subm by C F Tebbutt. Comment: potsherds from slag heap assoc with furnace where sample was found were dated to early decades of 1st century AD; date is, thus, much later than expected.

Rhuddlan, Clwyd
Charcoal samples from Mesolithic site at Rhuddlan, Clwyd, N Wales (53° 18' N, 03° 27' W, Natl Grid Ref SJ 025779). Coll 1970-71 by Henrietta Miles, Univ Exeter. Samples date blade industry containing non-geometric microliths, of type common around coast of Wales but not previously dated (Wainwright, 1963).

BM-691. Rhuddlan, Clwyd
Sample J104, 740. Carbonized nutshell shells (Corylus sp).

BM-822. Rhuddlan, Clwyd
Sample M90, 973 (RH 71). Carbonized nutshell shells (Corylus sp).

General Comment (HM): Mesolithic settlement at Rhuddlan covers some 8ha. The plentiful chert industry is Maglemosian type. Assoc, in different findspots, are 4 pebbles incised with patterns similar to those from continental Maglemosian artifacts. Industry assoc with BM-822 was
slightly more advanced than that assoc with BM-691; dates are as expected.

**Simons Ground series, Dorset**


<table>
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<tr>
<th>Sample No.</th>
<th>Site/Location</th>
<th>Date (BC) ± Error</th>
<th>Remarks</th>
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<tbody>
<tr>
<td>BM-692</td>
<td>Simons Ground, Dorset</td>
<td>2554 ± 47</td>
<td>Charcoal (CS/G42) from inside primary urn of Barrow G.</td>
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<tr>
<td>BM-693</td>
<td>Simons Ground, Dorset</td>
<td>2021 ± 50</td>
<td>Charcoal (CS/F91) from Urn F91 in linear urnfield near Barrow E.</td>
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<tr>
<td>BM-694</td>
<td>Simons Ground, Dorset</td>
<td>2867 ± 55</td>
<td>Charcoal (CS/C, central) from center of mound of Barrow C.</td>
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<tr>
<td>BM-695</td>
<td>Simons Ground, Dorset</td>
<td>2884 ± 63</td>
<td>Charcoal (CS/F47) from Urn F47 in 2nd group of F urnfield.</td>
</tr>
<tr>
<td>BM-696</td>
<td>Simons Ground, Dorset</td>
<td>2691 ± 58</td>
<td>Charcoal (CS/F12 and CS/C47) from deep pits in W part of Barrow C.</td>
</tr>
<tr>
<td>BM-697</td>
<td>Simons Ground, Dorset</td>
<td>2439 ± 55</td>
<td>Charcoal (CS/B104) from Urn B104 in B urnfield.</td>
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<tr>
<td>BM-698</td>
<td>Simons Ground, Dorset</td>
<td>2795 ± 61</td>
<td>Charcoal (CS/F18) from Urn F18 in F urnfield.</td>
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<tr>
<td>BM-699</td>
<td>Simons Ground, Dorset</td>
<td>2419 ± 67</td>
<td>Charcoal (CS/G32) from Urn G32 in G urnfield.</td>
</tr>
</tbody>
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**Durrington, Wiltshire**

Antler and bone from Durrington, Amesbury, Wiltshire, England (51° 11’ N, 01° 47’ W, Natl Grid Ref SU 145434). Coll 1970 and subm by G J Wainwright. Samples assoc with Late Neolithic pottery (Grooved Ware) in a pit.

<table>
<thead>
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<td>BM-702</td>
<td>Durrington, Wiltshire</td>
<td>3597 ± 76</td>
<td>Collagen separated from antler.</td>
</tr>
</tbody>
</table>
BM-703. **Durrington, Wiltshire**

Collagen separated from domestic animal bone.

*General Comment:* dates are somewhat later than expected, compared to nearby Durrington Walls enclosure (R, 1971, v 13, p 172-173) suggesting contamination with younger humic material (Burleigh et al, 1972).

BM-704. **Hunstanton, Norfolk**

Collagen separated from animal bone from pit in Late Neolithic settlement at Hunstanton, Norfolk, England (52° 55' N, 0° 30' E, Natl Grid Ref TF 677398). Coll 1970 and subm by G J Wainwright. Pit and others adjacent in settlement produced Grooved Ware type pottery in Clacton substyle not previously radiocarbon dated.

**Northton series, Outer Hebrides**

Animal bone from occupation horizons stratified within deposits of blown sand at Northton, SW tip of Isle of Harris, Outer Hebrides, Invernesshire, Scotland (57° 53' N, 06° 55' W, Natl Grid Ref NF 975913). Coll 1966 by D D A Simpson, Dept Archaeol, Univ Edinburgh; subm by J G Evans.

BM-705. **Northton, Outer Hebrides**

Collagen separated from domestic animal bone (mainly sheep-ovicaprid) from Neolithic II horizon.

BM-706. **Northton, Outer Hebrides**

Collagen separated from domestic animal bone (mainly sheep-ovicaprid) from Beaker I horizon.

BM-707. **Northton, Outer Hebrides**

Collagen separated from domestic animal bone (mainly sheep-ovicaprid) from Beaker II horizon.

*General Comment:* BM-705-707 date pottery and stone assemblages from occupation horizons (Simpson, 1966) and episodes of forest clearance assoc with Neolithic II and Beaker I occupations followed by forest regeneration in Beaker II, evidenced by land snail analysis (Burleigh et al, 1973).

**Edmondsham, Dorset**

**BM-708. Edmondsham, Dorset**

Charred human bone from grave adjacent to funeral pyre beneath barrow and directly assoc with grave goods.

3069 ± 45  
1119 BC

**BM-709. Edmondsham, Dorset**

Charcoal (mainly Quercus sp) from remains of funeral pyre, from old land surface beneath barrow.

3477 ± 52  
1527 BC

*General Comment: cf other dates for Wessex culture assemblages from Earls Barton (BM-680 and -681) and Hove (BM-682), this list above.*

**Extinction of late- and post-Pleistocene mammals in the British Isles**

Bone samples belonging to animal species now extinct in Britain forming part of program for estimating latest dates of survival of representatives of late-glacial and postglacial mammalian fauna in the British Isles. Samples are mainly from collns of British Mus (Nat History); subm by Juliet Jewell and A J Sutcliffe, British Mus (Nat History).

**BM-722. Burwell Fen, Cambridgeshire**

Collagen separated from post-cranial bones of beaver (Castor fiber L) from Burwell Fen, Cambridgeshire, England (52° 16' N, 0° 20' E; exact provenance unknown). Coll 1883 (Cambridge Univ Zool Mus, ref E1797); subm by Juliet Jewell. *Comment: brown coloration of original bones suggested possible humic contamination; age should be considered minimum.*

2677 ± 123  
727 BC

**BM-723. Cambridgeshire fens**

Collagen separated from beaver skull (Castor fiber L) from Cambridgeshire fenlands, England (52° 30’ N, 0° 10’ E; exact provenance unknown). Subm by Juliet Jewell (British Mus [Nat History] ref 1956.7.10.3).

3079 ± 99  
1129 BC

**BM-724. Inchnadamph, Sutherland**

Collagen separated from femur of brown bear (Ursus arctos) from “Bear Cave”, Allt Nan Uamh valley, Inchnadamph, Sutherland, Scotland (58° 09’ N, 04° 59’ W, Natl Grid Ref NC 275172) from surface of cave floor. Coll 1959 and subm by A J Sutcliffe from Royal Scottish Mus colln.

2673 ± 54  
723 BC

**BM-725. Clifford Hill, Northampton**


18,213 ± 310  
16,263 BC
BM-727. Kirkeudbrightshire

Collagen separated from post-cranial bone of giant ox (*Bos primigenius*) from Kirkleudbrightshire, Scotland (ca 54° 45' N, 04° 0' W; exact provenance unknown). Coll 1859 by Earl of Selkirk from peat deposits; subm by A J Sutcliffe (British Mus [Nat History] ref ARC.1972.5066).

*General Comment:* detailed analyses of samples and dates will be given elsewhere (AJS, JJ & RB, ms in preparation).

**Wawcott, Berkshire**


BM-767. Wawcott III, Berkshire

Charcoal from pit in deposits with numerous Mesolithic flints including microlithic points, triangles, crescents, and rectangles, distinct from Thatcham industries. Sample probably dates middle levels of deposit.

BM-826. Wawcott XXIII, Berkshire

Charcoal from hearth assoc with Mesolithic flint industry similar to that of Wawcott III.

**Ballaharra, Isle of Man**

Charcoal from Neolithic site at Ballaharra, 3km SE Peel, Isle of Man (54° 12' N, 04° 39' W, Natl Grid Ref SC 265824). Coll 1971 by K Corlett and Sheila Gregeen; subm by A M Cubbon, Manx Mus, Douglas. Samples assoc with cremation burial, miniature Neolithic vessel of “Ronaldsway” type (Bruce *et al*, 1947) and rhomboid flint arrowhead. See also dates from Killeaba, Isle of Man (BM-839 and -840) this list, below.

BM-768. Ballaharra, Isle of Man

Sample 1/1971 from circular pit containing burnt human bones and adjacent to miniature “Ronaldsway” type vessel.

BM-769. Ballaharra, Isle of Man

Sample 2/71 from same circular pit as Sample 1 (BM-768) and directly assoc with rhomboid flint arrowhead.

**Eaton Heath series, Norfolk**

Richard Burleigh, Andrew Hewson, and Nigel Meeks

BM-770. Eaton Heath, Norfolk
Charcoal (Corylus avellana and Betulus sp) from 3 shallow pits (80, 81, 118) assoc with Mildenhall type pottery.

BM-771. Eaton Heath, Norfolk
Charcoal (Quercus sp) from near base (5m) of Shaft 108 assoc with Late Neolithic potsherds.

BM-772. Eaton Heath, Norfolk
Charcoal (Quercus sp) from base (5m) Neolithic potsherds.

BM-773. Eaton Heath, Norfolk
Charcoal (Quercus sp) from 1.5 to 3m in fill of Shaft 97A.

BM-774. Eaton Heath, Norfolk
Charcoal (Quercus sp) from upper fill (0 to 1.5m) of Shaft 97A.

General Comment: BM-770 compares with date, 3230 ± 150 BC (BM-134), for Mildenhall type pot from Fussell’s Lodge long barrow, Wiltshire (R, 1968, v 10, p 2; Ashbee, 1966). BM-772 and -773 suggest a date for shafts and assoc pottery in 2nd half of 3rd millennium BC; whether infilling of Shaft 97A spanned difference between these dates is uncertain. BM-774 appears to have been older charcoal incorporated in final fill of Shaft 97A. BM-771 is much earlier than date expected for assoc pottery and may also represent earlier charcoal incorporated when Shaft 108 was dug (see Wainwright, 1973, p 9, 12-13, 19, & 21 for fuller discussion).

Grimes Graves series, Norfolk
Charcoal and antler samples from excavation of a Late Neolithic flint mine at Grimes Graves, Weeting, Norfolk, England (52° 29' N, 0° 41’ E, Natl Grid Ref TL 819898). Coll 1971 and subm by R J Mercer, Dept Environment. Shaft was excavated to replace deteriorated mine shafts presently open to the public.

BM-775. Grimes Graves, Norfolk
Charcoal (Sample 229) from Gallery 3. Intended to date backfilling of Gallery 3 (cf BM-945, below).

BM-776. Grimes Graves, Norfolk
Charcoal (Sample 165) from hearth in center of pit floor. First sample in pit filling sequence (cf BM-943, below).

BM-777. Grimes Graves, Norfolk
Charcoal (Sample 183) from entrance of Gallery 1 (cf BM-944, below).
**BM-778.** Grimes Graves, Norfolk
Charcoal (Sample 133) assoc with Grooved Ware sherds immediately overlying 1st stage of shaft filling.

**BM-779.** Grimes Graves, Norfolk
Charcoal (carbonized oak galls; Sample 55) from old land surface sealed by dump of spoil beside shaft. Comment: sample appears to be intrusive; date invalidated by misassoc despite apparently secure provenance.

**BM-780.** Grimes Graves, Norfolk
Charcoal (Sample 19) from top of shaft filling. Sample intended to provide *terminus ante quem* for filling of shaft and 2 burials in top of fill.

**BM-943.** Grimes Graves, Norfolk
Collagen separated from antler (Sample 602) found beside hearth in center of pit floor (*cf BM-776, above*).

**BM-944.** Grimes Graves, Norfolk
Collagen separated from antler (Sample 647) from floor of Gallery 1 (*cf BM-777, above*).

**BM-945.** Grimes Graves, Norfolk
Collagen separated from antler (Sample 756) from floor of Gallery 3 (*cf BM-775, above*).

**Knowth, Co Meath**
Charcoal samples from a Neolithic/Early Bronze age tomb and assoc structures at Knowth, in Boyne Valley, Co Meath, Ireland (53° 42’ N, 06° 29’ W, Grid Ref N 996732). Coll 1967-73 and subm by G Eogan, Dept Archaeol, Univ College, Dublin.

**BM-785.** Knowth, Co Meath
Charcoal (Sample 3/1967; Area III, Sq 136) from within mound of cruciform passage grave (Site 13). Sample intended to date construction of passage grave.

**BM-786.** Knowth, Co Meath
Charcoal (Sample 4/1967; Area III, Sq 109) from between kerbstones of passage grave and assoc with sherds of Beaker pottery. Comment: sample intended to date Beaker occupation and destruction of passage grave but date apparently invalidated by misassoc. Small sample size accounted for large statistical error term.
Richard Burleigh, Andrew Hewson, and Nigel Meeks

BM-1076.  Knowth, Co Meath
Charcoal (Sample 2/1970) from pit fill under Kerbstone 10 of “satellite” passage grave Site 8 and assoc with Neolithic potsherds. Sample dates Neolithic activity before construction of Site 8.

BM-1078.  Knowth, Co Meath
Charcoal (Sample 4/1973; Area IV, Sq 19) from within mound of “satellite” passage grave and predating construction of kerb of Site 1 (main mound).

Breiddin, Powys

BM-798.  Breiddin, Powys
Charcoal (Salix sp) from in situ remains of haft of Late Bronze age socketed axe.

BM-878.  Breiddin, Powys
Charcoal from paired postholes from early phase of hillfort defense.

BM-879.  Breiddin, Powys
Charcoal from postholes in continuous foundation trench from early phase of hillfort defense.

BM-880.  Breiddin, Powys
Charcoal from occupation deposit behind early phase of hillfort defense.

BM-881.  Breiddin, Powys
Charcoal from roundhouse wall behind later phase of hillfort defense.

BM-882.  Breiddin, Powys
Charcoal from pit or posthole originally considered to belong to 4-posted building in interior. Comment: sample apparently from Late Neolithic/early Bronze age occupation although no artifact is directly assoc.
BM-883. Breiddin, Powys
Charcoal from intrusion cutting tops of postholes interpreted as part of late Roman re-defense. Comment: sample possibly contaminated by material from earlier occupation phase.

BM-884. Breiddin, Powys
Charcoal from posthole originally interpreted as from late Roman occupation. Comment: sample actually appears to belong to Iron Age 4-post structure (cf BM-964, below).

BM-885. Breiddin, Powys
Charcoal from basal deposits below ramparts of hillfort. Comment: expected date late Neolithic/early Bronze age; possible contamination by later charcoal.

BM-963. Breiddin, Powys
Charcoal from pit assoc with roundhouse assigned to same phase as BM-881, above.

BM-964. Breiddin, Powys
Charcoal from posthole of 4-post structure (cf BM-884, comment, above).

BM-965. Breiddin, Powys
Charcoal from postholes tentatively allocated to late Roman re-defense. Comment: samples may belong to Iron age 4-post phase.

General Comment: dates indicate that complex sequence of occupations at Breiddin consist in successive phases in which the 1st hillfort phase (BM-798, -878-880) is preceded by earlier activity on the hilltop (BM-882 and perhaps -885). The roundhouse phase (BM-881 and -963) follows after a 2nd phase of rampart construction, followed by the 4-post structure phase (BM-884 and -964); the late Roman re-occupation of the site is not represented in this series. Excavation will be reported and dates fully discussed elsewhere (Musson, in press).

Tonbridge, Kent

BM-809. Castle Hill, Tonbridge, Kent
Charcoal from old land surface buried under rampart and presumed contemporary with building of smaller of 2 hillforts.
**BM-810. Castle Hill, Tonbridge, Kent**  
2265 ± 50  
315 BC

Charcoal from old land surface buried under rampart and assoc with construction of larger hillfort. Comment: archaeol evidence suggests that larger fort was slightly earlier than smaller fort to SW.

**Faversham series, Kent**

Two bone samples from excavation of a disused chapel at Stone, near Faversham, Kent, England (51° 19' N, 0° 52' E, Natl Grid Ref TQ 995613). Coll 1972 by G W Meates and subm by Lord Fletcher (Fletcher & Meates, 1969; R, 1971, v 13, p 181-182).

<table>
<thead>
<tr>
<th>Sample</th>
<th>Site</th>
<th>Date</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>BM-818</td>
<td>Faversham, Kent</td>
<td>AD 1118</td>
<td>Collagen separated from human long bones from burial inserted in Nave after destruction of original W wall.</td>
</tr>
<tr>
<td>BM-819</td>
<td>Faversham, Kent</td>
<td>AD 1032</td>
<td>Collagen separated from human long bones from a burial stratified beneath foundation of original S wall of Nave. Possible date for earliest Nave.</td>
</tr>
</tbody>
</table>

**BM-820. York Minster**  
1109 ± 47  
AD 841

Charcoal (Sample XB110) from area immediately adjoining York Minster, City of York, Yorkshire, England (53° 58' N, 01° 05' W, Natl Grid Ref SE 600520). Coll 1972 and subm by D Phillips, York Minster Archaeol Advisory Comm. Sample from between Roman (4th century AD) and Norman (11th century AD) levels. Historic records indicate several Saxon minsters on or near site but no clear Saxon stratification was found. BM-820 provides firmer dating evidence for supposed Saxon structures.

**BM-821. West Runton, Norfolk**  
>40,000

Wood (*Alnus* sp) excavated from coastal exposure in (Cromerian) deposits at West Runton, Norfolk, England (52° 56' N, 01° 16' E, Natl Grid Ref TG 190431). Coll 1971 and subm by N R Page, Hendon Coll Technol. Comment: dated in connection with attempted revised dating for Hoxnian interglacial (Page, 1972). Hoxnian is expected to be far beyond radiocarbon age range; supported by dates from relevant levels at Hoxne, Suffolk, England (Birm-365: >47,600; Birm-367: >48,500; Q-1100: >43,000; R, 1973, v 15, p 460-461, 540). Finite dates for samples of Hoxnian age appear to depend on method of pretreatment; when humic components are completely removed, sample ages are beyond radiocarbon range as expected from other evidence (Shotton, 1973). Using 4 σ criterion, probability that dates are older than figures quoted is 99.9%.
Carn Brea, Cornwall

4561 ± 47
2611 BC

BM-823. Carn Brea, Cornwall
Charcoal (Sample 47/1971) from hearth also containing Neolithic sherds (CB 71, Site A, Trench 8, Feature 6).

4697 ± 60
2747 BC

BM-824. Carn Brea, Cornwall
Charcoal (Samples 70, 82, 95, 104, 113/1971) from beneath collapsed stones (CB 71, Site E).

4999 ± 64
3049 BC

BM-825. Carn Brea, Cornwall
Charcoal (Sample 92/1971) from posthole of Neolithic structural complex (CB 71, Site D, Feature 50).

General Comment: BM-823 and -824 date pottery of Western Neolithic type from inside and outside enclosure walls; BM-824 also provides a terminus ante quem for enclosure wall and presumably for enclosed settlement structures. BM-825 gives terminus post quem for enclosure wall and settlement. Settlement period covers dates for all other causewayed camp sites in Britain, with which Carn Brea artifacts can also be compared.

Killeaba, Isle of Man

6310 ± 72
4360 BC

BM-838. Killeaba, Isle of Man
Charcoal (Sample BP) from burning pit assoc with Ronaldsway secondary Neolithic urn and nearby cremation burials. Comment: date is much earlier than ca 2000 BC, expected for assoc pottery and appears invalidated by misassoc.

4381 ± 58
2431 BC

BM-839. Killeaba, Isle of Man
Decayed timber (Sample T1) from pit lining containing cremated bone and assoc with Ronaldsway secondary Neolithic cemetery.

4300 ± 52
2350 BC

BM-840. Killeaba, Isle of Man
Decayed timber (Sample TII) from pit lining and assoc with Ronaldsway secondary Neolithic pot and nearby cremation burials.
Silbury, Wiltshire


<table>
<thead>
<tr>
<th>BM-841. Silbury, Wiltshire</th>
<th>3752 ± 50</th>
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<tbody>
<tr>
<td>Collagen separated from red deer antler from bottom of ditch.</td>
<td>1802 BC</td>
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</table>

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<tr>
<th>BM-842. Silbury, Wiltshire</th>
<th>3849 ± 43</th>
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<tbody>
<tr>
<td>Collagen separated from red deer antler from bottom of ditch.</td>
<td>1899 BC</td>
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</tbody>
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Knighton Heath, Dorset

Charcoal (*Quercus* sp with some *Alnus* sp) from Barrow G34 at Knighton Heath, Poole, Dorset, England (50° 47’ N, 01° 56’ W, Natl Grid Ref SZ 047959). Coll 1971 by F F Petersen, Dept Environment, and subm by Susan Limbrey, Ancient Monuments Lab. Samples assoc with construction and use of barrow and with specific types of Bronze age urns.

<table>
<thead>
<tr>
<th>BM-870. Knighton Heath, Dorset</th>
<th>3155 ± 49</th>
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<tbody>
<tr>
<td>Charcoal (Sample C49) from sand core of barrow mound.</td>
<td>1205 BC</td>
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<tr>
<th>BM-871. Knighton Heath, Dorset</th>
<th>3073 ± 49</th>
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</thead>
<tbody>
<tr>
<td>Charcoal (Sample C170) assoc with small lugged bowl in pit in old ground surface and sealed beneath sand core of barrow mound.</td>
<td>1123 BC</td>
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<tr>
<th>BM-872. Knighton Heath, Dorset</th>
<th>3128 ± 52</th>
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</thead>
<tbody>
<tr>
<td>Charcoal (Sample C171) assoc with Globular Urn (Calkin type II b) in pit in old ground surface and sealed beneath sand core of barrow mound.</td>
<td>1178 BC</td>
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<th>BM-873. Knighton Heath, Dorset</th>
<th>3139 ± 50</th>
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<tbody>
<tr>
<td>Charcoal (Sample C183) assoc with plain Globular Urn in pit in old ground surface and sealed beneath sand core of barrow mound.</td>
<td>1189 BC</td>
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<th>BM-874. Knighton Heath, Dorset</th>
<th>3052 ± 40</th>
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<tbody>
<tr>
<td>Charcoal (Sample C223) assoc with Bucket Urn in pit in old ground surface primary to gravel capping of barrow mound but outside limits of sand core.</td>
<td>1102 BC</td>
</tr>
</tbody>
</table>
BM-875. Knighton Heath, Dorset
Charcoal (Sample C226) assoc with Biconical Urn in pit in old ground surface and sealed beneath sand core of barrow mound.

BM-876. Knighton Heath, Dorset
Charcoal (Sample C369) assoc with Globular Urn (Calkin type I) in pit in old ground surface primary to gravel capping of barrow mound but outside limits of sand core.

BM-877. Weasenham, Norfolk
Charcoal (Quercus sp) from cremation burial at Weasenham Lyngs, Weasenham all Saints, Norfolk, England (52° 45' N, 0° 44' E, Natl Grid Ref TF 854197). Coll 1972 and subm by F F Petersen. Sample (ref W 72 S54) was from central grave in Barrow G 7 and assoc with many cremated human bones and with tripartite cord ornamented Collard Urn sherds, sealed by iron pan below base of plough soil. Sample dates primary use of barrow (now ploughed out completely) and assoc urn.

BM-935. Tregiffian, Cornwall
Charcoal from Tregiffian chambered tomb, St Buryan, Cornwall, England (50° 03' N, 05° 35' W, Natl Grid Ref SW 430244). Coll 1968 by Dorothy Dudley and subm by A M ApSimon, Dept Archaeol, Univ Southampton. Sample from contents of Collared Urn, also containing cremated bone, from pit dug in floor of tomb chamber. Sample provides later limit for construction of a presumed late Neolithic tomb in which the Bronze Age Urn burial appears intrusive. Few dates are available for Bronze age in Cornwall and none previously for Collared Urns in SW England (Longworth, 1961; ApSimon, 1969).

BM-960. Culverwell, Dorset

BM-961. Walthamstow, London
Wood from remains of boat found ca 1830 at Walthamstow, London, England (51° 35’ N, 0° 02’ W, Natl Grid Ref TQ 350890), now in Bruce Castle Mus, London. Subm by Valerie Fenwick, Natl Maritime Mus. Boat originally found during excavation of East London Company’s reservoirs
alongside E bank of R Lea; stratification unknown. Sample dated to locate boat in relation to Dark age/Migration period boats in Britain. Comment: date shows Walthamstow boat is much later than this and does not belong among early British boat finds.

BM-966. Newmarket, Suffolk

AD 1184

Collagen separated from human bone from mutilated burial in ditch silts of Devil’s Dyke, Newmarket, Suffolk, England (52° 14’ N, 0° 22’ E, Natl Grid Ref TL 610620). Coll 1973 and subm by B K Hope-Taylor, Dept Archaeol, Univ Cambridge. Sample obtained from shafts of long-bones of legs of skeleton of young man aged ca 19 yr. Devil’s Dyke is a defensive earthwork of Romano-British date (Fox, 1923); burial in the ditch was recognized as intrusive (Hope-Taylor, in press).

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