

**BRITISH MUSEUM NATURAL RADIOCARBON
MEASUREMENTS VIII**

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The following list consists entirely of dates for archaeological 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 ¹⁴C 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

**5730 ± 150
3780 BC**

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.

553420). Assoc with Mesolithic flints and Ebbsfleet pottery (Money, 1960; 1962). Coll 1956 and subm by J H Money. *Comment*: date omitted in error from previous lists; see also BM-40, 5660 ± 150 , 3710 BC (R, 1959, v 1, p 85).

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 **3738 ± 55**
1788 BC

Carbonized wood from Amesbury Bell Barrow (G.51) near Amesbury, Wiltshire, England (51° 10' N, 01° 47' W, Natl Grid Ref SU 115428). Sample from remains of tapered wooden board covering a contracted adult human burial under crown of barrow assoc with "A" necked beaker and other artifacts (Annable, 1961). Coll 1960 and subm by P Ashbee, Univ East Anglia. *Comment* (PA): date accords well with series of indirect radiocarbon dates for this beaker group (Clarke, 1970, v 1, p 223; v 2, p 382, 501).

Minepit Wood series, Sussex

Charcoal from early iron working site at Minepit Wood (Orznash), Withyham, Sussex, England (51° 06' N, 0° 10' E, Natl Grid Ref TQ 523338). Coll 1966 and 1967 and subm by J H Money.

BM-362. Minepit Wood, Sussex **492 ± 48**
AD 1458

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

BM-367. Minepit Wood, Sussex **534 ± 61**
AD 1416

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 Simmons, Dept Geog, Univ Durham; subm by G W Dimpleby, Inst Archaeol, Univ London. Samples date clearance phases and anthropogenic changes (Dimpleby, 1961; 1962).

6316 ± 55
4366 BC

BM-425. North Gill, Westerdale
Peat from 215 to 217cm. Dates an early (Mesolithic) clearance phase and establishment of local peat formation.

4754 ± 49
2804 BC

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

5504 ± 108
3554 BC

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

3915 ± 53
1965 BC

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.

4923 ± 75
2973 BC

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

3224 ± 81
1274 BC

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

3257 ± 80
1307 BC

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

3353 ± 60
1403 BC

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.

442 ± 66

BM-468. Galley Hill, Bedfordshire **AD 1508**

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

BM-469. Cannington, Somerset **AD 616**

Collagen separated from human femur from Burial 87 in Dark age cemetery at Castle Hill Quarry, 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 Archaeol, Univ College, Cardiff. Samples date episodes of forest clearance, pre-barrow occupation, and barrow construction.

4893 ± 70

BM-491b. Ascott-u-Wychwood, Oxfordshire **2943 BC**

Charcoal (AW/68/X, Pit 7) sealed below turf line of buried soil beneath barrow. *Comment* (DB): dates pre-barrow phase of Neolithic occupation represented by small pits, hearths, pottery, and domestic refuse and provides *terminus ante quem* for episode of forest clearance evidenced by land snail analysis (*cf* Evans and Burleigh, 1969; R, 1971, v 13, p 171-172).

4735 ± 70

BM-492. Ascott-u-Wychwood, Oxfordshire **2785 BC**

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

4942 ± 74

BM-832. Ascott-u-Wychwood, Oxfordshire **2992 BC**

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

5020 ± 92

BM-833. Ascott-u-Wychwood, Oxfordshire **3070 BC**

Charcoal (AW 739) from burnt structural elements within long barrow mound.

- 5198 ± 225**
3248 BC
- BM-835. Ascott-u-Wychwood, Oxfordshire**
Charcoal (AW 1037) from primary coarse limestone rubble of ditch fill.
- 4445 ± 61**
2495 BC
- BM-836. Ascott-u-Wychwood, Oxfordshire**
Charcoal (AW 1005) from soil horizons in upper levels of ditch, overlying BM-837.
- 4714 ± 166**
2764 BC
- BM-837. Ascott-u-Wychwood, Oxfordshire**
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.
- +2713**
38,684
-2024
- BM-499. Coygan Cave, Dyfed** **36,734 BC**
Collagen separated from reindeer antler from Coygan Cave, Llan-sadyrnin, 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).
- 3938 ± 48**
1998 BC
- BM-557. Marden, Wiltshire**
Charcoal from base of enclosure ditch sealed by 2m ditch silts.

BM-558. Marden, Wiltshire **3526 ± 99**
1576 BC

Collagen separated from animal bone from base of enclosure ditch. Same location as BM-557.

BM-559. Marden, Wiltshire **3626 ± 81**
1676 BC

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

BM-560. Marden, Wiltshire **4604 ± 59**
2654 BC

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 comparable with dates for similar assemblages at Knaphill, Wiltshire and South St, Wiltshire (R, 1971, v 13, p 169, 171-172; Burleigh, 1971).

BM-583. Chalton, Hampshire **3193 ± 69**
1243 BC

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 assemblage of mid-Bronze age metal types, pottery, and domestic structures.

BM-585. Turners Green, Sussex **1383 ± 45**
AD 567

Charcoal (ref Smelter Plot 1, Sample A) from iron smelting area of bloomery site at Turners Green, Heathfield, Sussex, England (50° 57' N, 0° 20' E, Natl Grid Ref TQ 642196). Coll 1969 and subm by W R Beswick. Furnace thought to be Romano-British from few assoc sherds.

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 **>40,000**

Charcoal from Layer B/A. *Comment (JBC):* samples probably derived from immediately underlying Layer A as thin Layer B/A contained Late Upper Palaeolithic (Creswellian) assemblage; Layer A contained Middle Palaeolithic assemblage (Campbell, 1970).

+1600

28,500

-1300

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).

10,390 ± 90

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).

10,590 ± 90

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).

1427 ± 45

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).

1256 ± 45

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

Charcoal (*Quercus robur*, id by G C Morgan), antler (red deer) and domestic animal bone samples from Late Neolithic henge monument at Mount Pleasant, Dorchester, Dorset, England (50° 42' N, 02° 24' W, Natl Grid Ref SY 710900). Coll 1970-71 and subm by G J Wainwright, Dept Environment. Samples date construction and occupation phases of enclosure (*cf* dates for Marden, Wiltshire, and Woodhenge, Wiltshire, this list, above, and for Durrington Walls, Wiltshire, R, 1971, v 13, p 172-173).

	4072 ± 73
BM-644. Mt Pleasant, Dorset	2122 BC
Charcoal from pre-enclosure settlement.	
	3734 ± 41
BM-645. Mt Pleasant, Dorset	1784 BC
Collagen separated from antler from W entrance of enclosure (bottom of ditch).	
	3728 ± 59
BM-646. Mt Pleasant, Dorset	1778 BC
Collagen separated from antler from W entrance of enclosure (bottom of ditch).	
	3637 ± 63
BM-662. Mt Pleasant, Dorset	1687 BC
Collagen separated from antler from palisade trench (packing material from trench base).	
	3911 ± 89
BM-663. Mt Pleasant, Dorset	1961 BC
Charcoal from ditch surrounding timber structure.	
	3410 ± 131
BM-664. Mt Pleasant, Dorset	1460 BC
Charcoal from hearth stratified on top of primary silts of enclosure ditch.	
	3645 ± 43
BM-665. Mt Pleasant, Dorset	1695 BC
Charcoal from layer of ash in palisade trench.	
	3941 ± 72
BM-666. Mt Pleasant, Dorset	1991 BC
Collagen separated from antler from pit in bottom of ditch surrounding timber structure.	
	3988 ± 84
BM-667. Mt Pleasant, Dorset	2038 BC
Collagen separated from animal bone from primary silts of ditch surrounding timber structure.	
	3630 ± 60
BM-668. Mt Pleasant, Dorset	1680 BC
Charcoal from secondary silts of ditch surrounding timber structure.	

- 3274 ± 51**
1324 BC
- BM-669. Mt Pleasant, Dorset**
Charcoal from upper silts of ditch surrounding timber structure.
- 3506 ± 55**
1556 BC
- BM-788. Mt Pleasant, Dorset**
Charcoal from top of slow silts of enclosure ditch (N entrance).
- 3459 ± 53**
1509 BC
- BM-789. Mt Pleasant, Dorset**
Charcoal from middle of slow silts of enclosure ditch (N entrance).
- 3619 ± 55**
1669 BC
- BM-790. Mt Pleasant, Dorset**
Charcoal from lower part of slow silts of enclosure ditch (N entrance).
- 3891 ± 66**
1941 BC
- BM-791. Mt Pleasant, Dorset**
Charcoal from between rapid and slow silts of enclosure ditch (N entrance).
- 4058 ± 71**
2108 BC
- BM-792. Mt Pleasant, Dorset**
Charcoal from rapid silts of enclosure ditch (N entrance).
- 4048 ± 54**
2098 BC
- BM-793. Mt Pleasant, Dorset**
Charcoal from base of enclosure ditch (N entrance).
- 3956 ± 45**
2006 BC
- BM-794. Mt Pleasant, Dorset**
Collagen separated from domestic animal bone from palisade trench (Pit XVIII).
- 4077 ± 52**
2127 BC
- BM-795. Mt Pleasant, Dorset**
Collagen separated from antler from Conquer Barrow ditch.
- General Comment (RB):* in general these dates agree well with archaeological evidence (Burleigh *et al.*, 1972). Detailed analysis of this complex series is fully interpreted elsewhere (Wainwright *et al.*, in press).
- 627 ± 40**
AD 1323
- BM-656. Merton College, Oxford**
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).

Coll 1970. BM-660, -661, and -715 subm by Valerie Fenwick, Natl Maritime Mus; BM-956 and -957 (dendrochronology samples) subm by J M Fletcher.

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

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

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

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

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

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 **5426 ± 159**
3476 BC
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).

BM-676. Langdale, Cumberland **4474 ± 52**
2524 BC
Charcoal from layer of axe chippings representing a working site of Langdale (Group VI) Neolithic axe industry at Langdale Pikes, Cumberland, England (54° 28' N, 03° 07' W, Natl Grid Ref NY 274081). Coll 1970 and subm by T H McK Clough, Castle Mus, Norwich. Sample provides check on BM-281, 4680 ± 135 BP (R, 1969, v 11, p 288). *Comment* (THMcKC): date fits well with other dates from sites with Langdale products assoc and agrees reasonably with BM-281 (Clough, 1973).

Woodhenge series, Wiltshire

Animal bone and antler from base of an enclosure ditch comparable with those at Durrington Walls, Wiltshire and Marden, Wiltshire (BM-557-560, above), at Woodhenge, Amesbury, Wiltshire, England (51° 11' N, 01° 47' W, Natl Grid Ref SU 151434). Coll 1970 and subm by G J Wainwright and J G Evans, Dept Archaeol, Univ College, Cardiff. Sam-

ples 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).

3817 ± 74
1867 BC

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

3755 ± 54
1805 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

Charcoal samples from a Neolithic enclosure at Broome Heath, Ditchingham, Norfolk, England (52° 27' N, 01° 28' E, Natl Grid Ref TM 344912). Coll 1970-71 and subm by G J Wainwright. Samples date construction of Neolithic earthwork and assoc artifacts (Wainwright, 1972).

5424 ± 117
3474 BC

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

4167 ± 78
2217 BC

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

4523 ± 67
2573 BC

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

4579 ± 65
2629 BC

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

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 **3169 ± 51**
1219 BC
 Sample 3, from pre-barrow surface.

BM-681. Earls Barton, Northamptonshire **3214 ± 64**
1269 BC
 Sample 5, from pre-barrow surface.

BM-682. Hove, Sussex **3189 ± 36**
1239 BC

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 **1562 ± 55**
AD 388

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 **1647 ± 60**
AD 303

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 **8739 ± 86**
6789 BC
 Sample J104, 740. Carbonized nutshells (*Corylus* sp).

BM-822. Rhuddlan, Clwyd **8528 ± 73**
6578 BC

Sample M90, 973 (RH 71). Carbonized nutshells (*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

Wood charcoal from urnfield burials at Simons Ground, Wimborne, Dorset, England (50° 48' N, 01° 55' W, Natl Grid Ref SU 000065). Coll 1968-69 and subm by D A White, for Dept Environment. Samples date series of Bronze age sepulchral urns of Deverell-Rimbury culture.

	2554 ± 47
BM-692. Simons Ground, Dorset	604 BC
Charcoal (CS/G42) from inside primary urn of Barrow G.	
	2021 ± 50
BM-693. Simons Ground, Dorset	71 BC
Charcoal (CS/F91) from Urn F91 in linear urnfield near Barrow E.	
	2867 ± 55
BM-694. Simons Ground, Dorset	917 BC
Charcoal (CS/C, central) from center of mound of Barrow C.	
	2884 ± 63
BM-695. Simons Ground, Dorset	904 BC
Charcoal (CS/F47) from Urn F47 in 2nd group of F urnfield.	
	2691 ± 58
BM-696. Simons Ground, Dorset	741 BC
Charcoal (CS/C42 and CS/C47) from deep pits in W part of Barrow C.	
	2439 ± 55
BM-697. Simons Ground, Dorset	489 BC
Charcoal (CS/B104) from Urn B104 in B urnfield.	
	2795 ± 61
BM-698. Simons Ground, Dorset	845 BC
Charcoal (CS/F18) from Urn F18 in F urnfield.	
	2419 ± 67
BM-699. Simons Ground, Dorset	469 BC
Charcoal (CS/G32) from Urn G32 in G urnfield.	

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.

	3597 ± 76
BM-702. Durrington, Wiltshire	1647 BC
Collagen separated from antler.	

BM-703. Durrington, Wiltshire **3473 ± 72**
1523 BC

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 **3686 ± 63**
1736 BC

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 **4411 ± 79**
2461 BC

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

BM-706. Northton, Outer Hebrides **3604 ± 70**
1654 BC

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

BM-707. Northton, Outer Hebrides **3481 ± 54**
1531 BC

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

Bone and charcoal from Bell Barrow at Edmondsham, Dorset, England (50° 54' N, 01° 56' W, Natl Grid Ref SU 046116). Coll 1959 by Edwina Proudfoot. Barrow contained grave group of Wessex culture (Piggott, 1938; Proudfoot, 1963).

3069 ± 45
1119 BC

BM-708. Edmondsham, Dorset
Charred human bone from grave adjacent to funeral pyre beneath barrow and directly assoc with grave goods.

3477 ± 52
1527 BC

BM-709. Edmondsham, Dorset
Charcoal (mainly *Quercus* sp) from remains of funeral pyre, from old land surface beneath barrow.

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).

2677 ± 123
727 BC

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.

3079 ± 99
1129 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).

2673 ± 54
723 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.

18,213 ± 310
16,263 BC

BM-725. Clifford Hill, Northampton
Collagen separated from post-cranial bones of musk ox (*Ovibos moschatus*) from deposits at Clifford Hill gravel pit, Northampton, England (ca 52° 14' N, 0° 56' W). Coll 1970 by P Smith; subm by A J Sutcliffe (British Mus [Nat History] ref M29159).

9074 ± 72

BM-727. Kirkcudbrightshire

7124 BC

Collagen separated from post-cranial bone of giant ox (*Bos primigenius*) from Kirkcudbrightshire, 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

Charcoal from Mesolithic sites at Wawcott, Newbury, Berkshire, England (51° 25' N, 01° 25' W, Natl Grid Ref SU 400680). Coll 1970-71 and subm by F R Froom, Kenett Valley Research Comm.

6120 ± 134

BM-767. Wawcott III, Berkshire

4170 BC

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.

6079 ± 113

BM-826. Wawcott XXIII, Berkshire

4129 BC

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 Greegen; 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.

4225 ± 67

BM-768. Ballaharra, Isle of Man

2275 BC

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

4233 ± 59

BM-769. Ballaharra, Isle of Man

2283 BC

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

Eaton Heath series, Norfolk

Charcoal from Neolithic site at Eaton Heath, Norwich, Norfolk, England (52° 37' N, 01° 16' E, Natl Grid Ref TG 212060). Coll 1971 and subm by G J Wainwright. Samples intended to date group of shafts and assoc Late Neolithic pottery (Wainwright, 1973).

- 5095 ± 49**
3145 BC
- BM-770. Eaton Heath, Norfolk**
Charcoal (*Corylus avellana* and *Betulus* sp) from 3 shallow pits (80, 81, 118) assoc with Mildenhall type pottery.
- 6256 ± 59**
4306 BC
- BM-771. Eaton Heath, Norfolk**
Charcoal (*Quercus* sp) from near base (5m) of Shaft 108 assoc with Late Neolithic potsherds.
- 4444 ± 103**
2494 BC
- BM-772. Eaton Heath, Norfolk**
Charcoal (*Quercus* sp) from base (5m) of Shaft 97A assoc with Late Neolithic potsherds.
- 3981 ± 55**
2031 BC
- BM-773. Eaton Heath, Norfolk**
Charcoal (*Quercus* sp) from 1.5 to 3m in fill of Shaft 97A.
- 4903 ± 56**
2953 BC
- 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.
- 3815 ± 60**
1865 BC
- BM-775. Grimes Graves, Norfolk**
Charcoal (Sample 229) from Gallery 3. Intended to date backfilling of Gallery 3 (*cf* BM-945, below).
- 3789 ± 60**
1839 BC
- 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).
- 3764 ± 60**
1814 BC
- BM-777. Grimes Graves, Norfolk**
Charcoal (Sample 183) from entrance of Gallery 1 (*cf* BM-944, below).

BM-778. Grimes Graves, Norfolk **3781 ± 67**
1831 BC
Charcoal (Sample 133) assoc with Grooved Ware sherds immediately overlying 1st stage of shaft filling.

BM-779. Grimes Graves, Norfolk **313 ± 200**
AD 1637
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 **2465 ± 230**
515 BC
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 **4104 ± 55**
2154 BC
Collagen separated from antler (Sample 602) found beside hearth in center of pit floor (*cf* BM-776, above).

BM-944. Grimes Graves, Norfolk **4153 ± 64**
2203 BC
Collagen separated from antler (Sample 647) from floor of Gallery 1 (*cf* BM-777, above).

BM-945. Grimes Graves, Norfolk **4034 ± 88**
2084 BC
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 **4158 ± 126**
2008 BC
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 **3185 ± 255**
1235 BC
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.

- 4852 ± 71**
2902 BC
- 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.
- 4399 ± 67**
2449 BC
- 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**
Charcoal from phases and structures at Breiddin hillfort, Powys, Wales (52° 35' N, 03° 02' W, Natl Grid Ref SJ 292144). Coll 1970-1972 and subm by C R Musson, Rescue Archaeol Group, for Dept Environment. Samples date Late Bronze age and Iron age occupations (O'Neil, 1937; Musson, 1970; 1972).
- 2704 ± 50**
754 BC
- BM-798. Breiddin, Powys**
Charcoal (*Salix* sp) from *in situ* remains of haft of Late Bronze age socketed axe.
- 2750 ± 41**
800 BC
- BM-878. Breiddin, Powys**
Charcoal from paired postholes from early phase of hillfort defense.
- 2778 ± 71**
828 BC
- BM-879. Breiddin, Powys**
Charcoal from postholes in continuous foundation trench from early phase of hillfort defense.
- 2818 ± 64**
868 BC
- BM-880. Breiddin, Powys**
Charcoal from occupation deposit behind early phase of hillfort defense.
- 2429 ± 55**
479 BC
- BM-881. Breiddin, Powys**
Charcoal from roundhouse wall behind later phase of hillfort defense.
- 3826 ± 106**
1876 BC
- 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.

- 2059 ± 105**
109 BC
- 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.
- 2188 ± 70**
238 BC
- 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).
- 3024 ± 62**
1074 BC
- 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.
- 2325 ± 63**
375 BC
- BM-963. Breiddin, Powys**
Charcoal from pit assoc with roundhouse assigned to same phase as BM-881, above.
- 2244 ± 40**
294 BC
- BM-964. Breiddin, Powys**
Charcoal from posthole of 4-post structure (*cf* BM-884, comment, above).
- 2122 ± 45**
172 BC
- 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

Charcoal from ramparts of 2 Iron age hillforts at Castle Hill, Tonbridge, Kent, England (51° 10' N, 0° 18' E, Natl Grid Refs TQ 607438, TQ 608439). Coll 1969-70 and subm by J H Money (1971b).

- 2178 ± 61**
228 BC
- 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 993613). Coll 1972 by G W Meates and subm by Lord Fletcher (Fletcher & Meates, 1969; R, 1971, v 13, p 181-182).

BM-818. Faversham, Kent **832 ± 68**
AD 1118

Collagen separated from human long bones from burial inserted in Nave after destruction of original W wall.

BM-819. Faversham, Kent **918 ± 40**
AD 1032

Collagen separated from human long bones from a burial stratified beneath foundation of original S wall of Nave. Possible date for earliest Nave.

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

Charcoal samples from Neolithic settlement site at Carn Brea, Redruth, Cornwall, England (50° 10' N, 05° 08' W, Natl Grid Ref SW 684407). Coll 1971 and subm by R J Mercer, Dept Environment. Samples date Neolithic occupation phases at Carn Brea (Mercer, 1970; 1972).

4561 ± 47

BM-823. Carn Brea, Cornwall **2611 BC**

Charcoal (Sample 47/1971) from hearth also containing Neolithic sherds (CB 71, Site A, Trench 8, Feature 6).

4697 ± 60

BM-824. Carn Brea, Cornwall **2747 BC**

Charcoal (Samples 70, 82, 95, 104, 113/1971) from beneath collapsed stones (CB 71, Site E).

4999 ± 64

BM-825. Carn Brea, Cornwall **3049 BC**

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

Charcoal and decayed wood from cremation cemetery of "Ronaldsway" Neolithic culture at Killeaba, Ramsey, Isle of Man (54° 19' N, 04° 23' W, Natl Grid Ref SC 452937). Coll 1961-1969 and subm by A M Cubbon, Manx Mus, Douglas. Samples date cremation burials and Ronaldsway type pottery (Bersu, 1947).

6310 ± 72

BM-838. Killeaba, Isle of Man **4360 BC**

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

BM-839. Killeaba, Isle of Man **2431 BC**

Decayed timber (Sample TI) from pit lining containing cremated bone and assoc with Ronaldsway secondary Neolithic cemetery.

4300 ± 52

BM-840. Killeaba, Isle of Man **2350 BC**

Decayed timber (Sample TII) from pit lining and assoc with Ronaldsway secondary Neolithic pot and nearby cremation burials.

General Comment: see also dates for Ballaharra, Isle of Man (BM-768, -769) this list above.

Silbury, Wiltshire

Collagen separated from antler (*Cervus elaphus*) from Silbury Hill, Avebury, Wiltshire, England (51° 25' N, 01° 51' W, Natl Grid Ref SU 100685). Coll 1969 by Hester Atkinson; subm by J G Evans. Samples dated to confirm previous date for plant debris (I-4136: 4095 ± 95 BP; Atkinson, 1969) and to date phase of open downland suggested by snail fauna (Atkinson, 1968; 1970).

3752 ± 50

BM-841. Silbury, Wiltshire
1802 BC

Collagen separated from red deer antler from bottom of ditch.

3849 ± 43

BM-842. Silbury, Wiltshire
1899 BC

Collagen separated from red deer antler from bottom of ditch.

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.

3155 ± 49

BM-870. Knighton Heath, Dorset
1205 BC

Charcoal (Sample C49) from sand core of barrow mound.

3073 ± 49

BM-871. Knighton Heath, Dorset
1123 BC

Charcoal (Sample C170) assoc with small lugged bowl in pit in old ground surface and sealed beneath sand core of barrow mound.

3128 ± 52

BM-872. Knighton Heath, Dorset
1178 BC

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.

3139 ± 50

BM-873. Knighton Heath, Dorset
1189 BC

Charcoal (Sample C183) assoc with plain Globular Urn in pit in old ground surface and sealed beneath sand core of barrow mound.

3052 ± 40

BM-874. Knighton Heath, Dorset
1102 BC

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.

- 3134 ± 34**
1184 BC
- 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.
- 3118 ± 52**
1168 BC
- 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.
- 3339 ± 56**
1389 BC
- 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.
- 3489 ± 59**
1539 BC
- 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).
- 7101 ± 97**
5151 BC
- BM-960. Culverwell, Dorset**
Charcoal from a Mesolithic site at Culverwell, Portland Bill, Isle of Portland, Dorset, England (50° 31' N, 02° 26' W, Natl Grid Ref SY 685694). Coll 1971 and subm by Susann Palmer for Dorset Nat Hist and Archaeol Soc, Co Mus, Dorchester. Sample from hearth within shell midden (Trench I, Layer 2, Spit 4) was stratigraphically close to previously dated sample (BM-473: 7150 ± 135 BP; R, 1971, v 13, 169). BM-473 and -960 probably date earliest part of occupation of site (Palmer, 1970).
- 346 ± 54**
AD 1604
- 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.

766 ± 41

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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