7.1 SNOXALL); (3) 1300–60 kdf04 (*t* = 7.9 SWANASQ03, 7.0 BOXLEY, 6.4 STACSQ04); (4) 1430–1500 kdf02 (*t* = 8.8 REIGPRY, 7.5 NEWINN, 7.4 EGRNSTD3). (b) Collar purlin 1341(h/s). *Site Master* 1280–1341 kdfP5 (*t* = 7.0 CROYDON, 6.8 HANTS02, 6.3 RIVRSDWN).

The roofs investigated were those of the large twelfth-century nave, a large thirteenth-century north aisle and the timber-framed west porch (thought to date from the early sixteenth century). Several timbers had had their sapwood removed. Other samples matched each other but did not date. The series of single dates for individual timbers restrict the interpretation of the roofs. The tiebeam and wallplate of the nave imply a late fourteenth-century roof, but none of the timbers above them could be dated, and the ashlar piece could have been added at any time. The single dated porch timber is much earlier than expected, but a single dated timber again makes interpretation difficult. M. Bridge, 'Church of St John the Baptist, Kirdford, West Sussex: Tree-ring analysis of timbers from the nave, north aisle and the porch', RDRS Report 47/2008.

LIST 208: BUILDINGS DATED BY TREE-RING SERVICES

Dr Andy Moir

Tree-Ring Services, Plough House, 49 High Street, Hungerford, Berkshire RG17 0NE (andymoir@tree-ring.co.uk)

This list covers most of the buildings dated in 2008–9. All the dates were commissioned by individual owners, except where otherwise noted. A sapwood estimate of 9–41 or 11–41 rings (depending on the area) applied as 95% confidence limits is used for the interpretation of oak in these buildings (D. H. Miles, 'The interpretation, presentation and use of tree-ring dates', VA **28** (1997), 40–56). Tree-Ring Services reports, which include raw data, may be ordered through **www.tree-ring.co.uk**.

HAMPSHIRE

 I.
 TUNWORTH, Hackwood Farm, Barn 3 (SU 6700 4975)
 Felling date: Winter 1535/6

 Posts (3/6) 1499(h/s), 1505(h/s), 1511(9); Tiebeam (1/2) 1535(21C); Wall plate 1522(h/s). Site Master 1430–1535 BASNG-HF (t = 7.7 FIDDLFD2; 7.6 GODAL-20; 7.2 GUILD-27).
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This is the southernmost barn in the Hackwood Farm Barns complex. It has five bays with door porches at the front and back in the middle bay. The posts are jowled and braced. The roof is of queen-strut construction, with clasped purlins and diminishing principal rafters; it has half hips at both ends. A. K. Moir, 'Dendrochronological analysis of oak timbers from Barn 3, Hackwood Farms Barns, Tunworth, Basingstoke, Hampshire', TRS Report BAHF/13/08.

KENT

HIGH HALDEN, Tanden Farm (TQ 9141 3817)
 Posts (2/4) 1525(12C), 1528(18C); Tiebeam 1514(h/s); Wall plates 1510(2), Rails (0/2); Rafter. Site Master 1429–1528 HALDN-TF (t = 7.1 CHARL-32; 6.6 STORR-P1; 5.8 GUILD-27).

The five remaining timber bays of this building (measuring $11.6m \times 5.7m$) run parallel to the main road between High Halden and Bethersden. The posts are jowled. The majority of the roof has been replaced. A. K. Moir, 'Dendrochronological analysis of oak timbers from Tanden Farm, High Halden, Kent', TRS Report HHTF/ 07/08.

SURREY

3. CHERTSEY, Hardwick Court Farm Barn (TQ 0275 6588)

Felling dates: **c. 1443; c. 1444; Winter 1443/4; Winter 1444/5; Spring 1445** Posts 1440(16C), 1430(4); Aisle posts 1435(h/s+7NM), 1438(10+6NMc) 1442(5+1NMc); Tiebeam 1429(h/s), 1430(h/s), 1443(17C); Wall plate 1437(22+7NM); Collar 1444(10C); Purlin 1444(17¹/₄C); Queen struts 1424(h/s), 1434(1); Principal rafters 1430(h/s), 1420 (h/s); Rafter 1436(18). *Site Master* 1351–1444 CHTSY-HC (*t* = 6.8 FULHAM1; 6.4 GODAL-20; 6.3 THEGREEN). The farm was a grange of Chertsey Abbey. The barn is big: six bays, half-aisled, $28m \times 8.5m$. The massive principal posts and aisle posts are jowled. It has arch braces in the walls and trusses, with some remaining below the mid rail. A particular feature is the complete set of 24 curved windbraces, four in each bay. The roof is half-hipped and of clasped-purlin construction with raking queen struts. This is the earliest example of a raking-queen-strut structure identified in Surrey and the date is of considerable archaeological interest. Furthermore, it is known that the Court Leet of the Godley Hundred was first held at Hardwick Court in 1446. It is possible that this rich structure, built just a year earlier, had a secondary purpose of housing the court. Seven timbers sampled from the farmhouse failed to date. A. K. Moir, 'Dendrochronological analysis of oak timbers from Hardwick Court Farmhouse and Barn, Chertsey, Surrey', TRS Report CZHC/04/08.

Felling date range: 1489–1521

Felling date: Winter 1536/7

- 4. CHIDDINGFOLD, Roppeleghs (SU 9360 3403)
- (a) Old wing
- (b) New house Felling dates: Winters 1589/90, 1592/3
 (c) Kitchen wing

 (a) Post (0/2); Tiebeams 1466(5), 1493(3); Wall plate; Principal rafter; Collar. (b) Posts 1414, 1516(h/s), 1564(8); Wall plate 1515(h/s); Headrail 1517(h/s); Studs 1565(h/s), 1592(24C); Collar 1589(26C); Purlin. (c) Wall plate 1992(26⁴/₂C); Rafters 1589(21C, 29C, 53C), 1592(29⁴/₄C). Site Master (a+b+c) 1388–1592 CHIDD-RO (t = 16.3 GODAL-20; 14.3 GUILD-27; 11.8 STORR-P1).

This is a complex house of three builds. The old wing is of two storeys and two bays and was probably the wing of a now-vanished hall. It is wide (6m) and heavily timbered. The posts are jowled. The roof has been replaced. The new house stands at right angles to it, presumably in the position of the previous hall. It is of three bays with two storeys and an integral attic. The ground floor had just one partition, giving a two-bay hearth room (now opened up to three). The room has a chimney on the rear wall, with a large inglenook. The roof is of clasped-purlin construction with straight windbraces. The posts are without jowls, and there are straight down braces in the framing. Extending behind the lateral chimney is the kitchen wing of one-and-a-half bays, puzzling because the roof is quite heavily sooted throughout. A late open-hearth service wing seems to be the most likely explanation. The posts are unjowled with straight braces, and the roof has clasped purlins, queen struts, and staggered tenoned purlins without windbraces. A. K. Moir, 'Dendrochronological analysis of oak timbers from Roppeleghs, Chiddingfold, Surrey', TRS Report CHRP/02/08.

5. DUNSFOLD, Chennells (TQ 0084 3711) Posts (0/2); Tiebeam; Wall plates (0/3), Head rail; Spine beams (1/2) 1575(17C); Bressumer; Bressumer posts (0/2). Site Master 1494–1575 DUCH01 (t = 10.1 STORR-P1; 10.1 CRANL-9; 8.3 EWHUR-WY).

This is a two-and-a-half bay central-chimney house, the 2m wide central bay housing back-to-back hearths. The posts are unjowled with straight down braces. The roof is half-hipped and of clasped-purlin construction with queen struts and straight windbraces. A. K. Moir, 'Dendrochronological analysis of oak timbers from Chennells, Dunsfold, Surrey', TRS Report DUCH/17/08.

6. ELSTEAD, The Gables (SU 903 434) *Felling dates*: *c*. 1430; Winters 1428/9, 1431/2 Posts 1408(h/s+11NM), 1414(15NM), 1416(h/s+14NMc), 1431(12C); Wall plate; Door head 1418(h/s+7NM); Door post 1428(35C). *Site Masters* 1337–1431 ELSTD-GB (*t* = 7.4 THURS-OP; 6.2 GODAL-20; 5.2 FARNH-10); 1294–1428 ELGB07 (*t* = 6.8 CAPEL-10; 5.6 NWDGATE1; 5.1 RIPLY-VA).

This finely-timbered, medieval open-hall house of four bays is set on the south side of Elstead Church which it faces. The roof is of crown-post construction. Both ends of the roof have been rebuilt, but there are indications that it was gabled, rather than hipped in the style that would be expected in this non-urban situation. The open-truss crown post is octagonal and has no braces — a very unusual feature. The other crown posts are braced two-up, two-down, in the usual way. The hall was of two bays, unequal in size, the narrower being towards the presumed service bay. There are heavy jowl posts and long arch braces in the framing. The very fine door into the service bay is arched and richly moulded. Later a large lateral chimney was inserted in the hall and a further building added behind, destroying some of the framing. A. K. Moir, 'Dendrochronological analysis of The Gables, Elstead, Surrey', TRS Report ELGB/05/08.

- 7. FARNHAM, Barlings (SU 8567 4898)
- (a) Older range
- (b) Parlour wing *Felling date*: Winter 1546/7 (a) Posts (0/2); Tiebeams (2/3) 1513(h/s), 1536(17C); Wall plates (1/3) 1519(h/s+17NM). (b) Posts 1516(h/s), 1545(23+1NMc); Tiebeams 1519(h/s), 1546(23C); Wall plates 1530(h/s), 1544(15+2NMc), 1546(18C); Rail 1513(h/s+19NM). *Site Masters* (a+b) 1394–1546 FARNH-BA (*t* = 13.0 GODAL-20; 11.1 GUILD-27; 9.7 HASLE-EG); 1476–1536 FABA01 (*t* = 5.2 EWHUR-WY; 5.2 CHARL-GB; 5.0 GODAL-20); 1448–1513 FABA05 (*t* = 7.3 WITLY-LB; 6.5 GUILD-27; 6.4 GODAL-20)

TREE-RING DATES

The building consists of a parlour wing set against an older range, the latter unusually set end-on to the road. The older range has two bays remaining but with evidence for at least a further sooted bay or half-bay, supposed to have been a smoke bay. The roof was half-hipped originally and is of clasped-purlin construction with queen struts and curved windbraces. The parlour wing has richer timbering with the outward-facing side wall closestudded (with much remaining), which is unusual in rural buildings in Surrey. The other walls have smaller square panels. The roof is of clasped-purlin construction with queen struts and straight windbraces. Both ranges have jowled posts with arch braces to the wallplates. A. K. Moir, 'Dendrochronological analysis of oak timbers from the Barlings, Farnham, Surrey', TRS Report FABA/03/08.

FARNHAM, Viners Mead (SU 8272 4510) 8.

Felling dates: Winter 1609/10; Spring 1610; Winters 1611/2, 1613/4 Post 1613(19C); Tiebeams 1606(17+1NM), 1610(22¹/₄C); Transverse beam 1592(h/s+1NM); Head rail 1609(28C); Rail; Stud 1572(h/s+23NMc); Rafter; Door post 1611(22C). Site Master 1515-1613 FARNH-VM (t = 8.0 GODAL-20; 7.8 LIMPS-T1; 7.3 FARNH-10).

This is a central-chimney house with two-and-a-half bays remaining. The numbering and direction of the joists indicate that it originally had three-and-a-half bays, possibly with an end jetty facing the street. In addition to the changes to the parlour end of the house facing the street, the service end was modified to make a hallway. The wall framing uses small, square panels with straight down braces. The posts are without jowls. The roof was half-hipped originally. It has clasped purlins with a three-queen-strut construction and straight windbraces. A bench faced the ground-floor fireplace in the central bay. A. K. Moir, 'Dendrochronological analysis of oak timbers from Viners Mead, Farnham, Surrey', TRS Report FAVM/06/08.

- 9. OXTED, Barrow Green Court (TQ 380 530)
- (a) South range
- (b) Short rear (west) wing

- Felling dates: Winters 1590/1, 1592/3, 1593/4 Felling dates: Winters 1591/2, 1593/4
- Felling date: Winter 1756/7 (c) Pine wing (a) Principal rafters (8/9) 1535, 1576(15),1586(19), 1592(13C, 13C, 19C, 26C), 1593(10C); Rafter 1590(23C). (b) Principal rafters 1591(20C), 1593(12C, 13C). (c) Principal rafters 1741(4), 1742(6), 1747(10), 1756(21C, 25C, 28C, 29C). Site Master (a+b) 1353-1593 OXTED-B1 (t = 14.1 CHARL-32; 11.1 GUILD-27; 10.0 CAPEL-TE). (c) 1671–1756 OXTED-B2 (t = 6.8 CRESS-OD; 6.3 STORR-P2; 5.7 OXON93).

This large mansion, previously thought of as being Jacobean, is a complex brick building based around three parallel adjoining ranges, the gables of which together form the east front. Two of these ranges are relatively short, but the south range is an impressive seven bays. Aesthetic features include the parapet gables, fine brickwork, and diamond-set chimneys. The roof of the south range is believed to belong to the main building phase. It has in-line tenoned-purlins without windbraces. Running backwards from the west end of the south range is a short rear wing which is of similar construction. Backwards again from the short rear wing, and roughly in line with it, is a 'pine wing', so named from its interior fittings. Its roof uses staggered tenoned purlins without windbraces. A. K. Moir, 'Dendrochronological analysis of oak timbers from Barrow Green Court, Oxted, Surrey', TRS Report OXBG/01/08.

- 10. WORPLESDON, Frosbury Farmhouse (SU 9697 5197)
- (a) Scullery
- *Felling dates:* Winter 1647/8; Spring 1648 (b) Smoke bay, inserted floor Felling dates: Springs 1621, 1622; Winter 1621/2 (a) Tiebeams (1/2) 1640(h/s); Wall plates 1647 (18C, 17¹/₄C); Spine beam 1643(18); Rafters 1646(22c), 1647(22C, 26C); Joists (3/5) 1642(13, 10+5c), 1647(21¹/₄C) (b) Joists (3/11) 1620(24¹/₄C), 1621(17¹/₄C, 27C). Site Masters (a) 1579-1647 WORPL-F3 (t = 6.2 OXON93; 5.2 BRIT3; 5.0 WORPL-F2). (b) 1502–1621 WORPL-F4 (t = 8.3 OCKHM-B2; 7.9 CHARL-32; 7.7 CAPEL-10).

A two-storey scullery bay at the end of the rear wing of the farmhouse is brick. The roof is gabled and of claspedpurlin construction with queen struts and no windbraces. The western end of the front range is a half bay thought to be the remaining part of an end smoke bay. The ground floor of this half-bay now has ceiling joists, presumably inserted when the smoke bay fell out of use. For the dating of other parts of the farmhouse see Lists 135 and 195. A. K. Moir, 'Dendrochronological analysis of oak timbers from the Scullery and Inserted Floors of Frosbury Farmhouse, Worplesdon, Surrey', TRS Report FRWO/16/08.

WORCESTERSHIRE

11. EVESHAM, Badsey, 4 High Street, (SP 0695 4342)

Post (2/4) 1586(31C, 34C); Tiebeam 1586(34C); Studs (2/3) 1487+63NM(h/s+36c), 1586(31C); Rails 1561(3+25NM), 1572(29¹/₄C); Bressumer 1585(21¹/₄C). *Site Masters* 1447–1586 EVAHM-HS (*t* = 7.1 OXON93; 6.1 CROWLES; 5.8 HASLE-EG); 1400–87 EVSH03 (*t* = 7.2 SENG18; 5.8 CHKSPQ01; 5.2 ENGLAND).

No. 4 High Street consists of three-and-a-half bays with a large lateral chimney, forming the northern half of the complete building, the rest of which was not examined. The posts are without jowls. The wall framing has small square panels and straight down braces. The front has elaborate decorative panelling. The roof has been modified. A. K. Moir, 'Dendrochronological analysis of oak timbers from 4 High Street, Badsey, Evesham, Worcestershire', TRS Report EVHS/08/08.

LIST 209: SURREY DENDROCHRONOLOGY PROJECT — CLUSTER 5

Introduction and notes by Andy Moir and Rod Wild

This list presents the results of a fifth cluster of the Surrey Dendrochronology Project, a joint venture between the Surrey Archaeological Society and the Domestic Buildings Research Group (Surrey) with support from Surrey Council. The cluster focused on Cranleigh and was funded by the DBRG (Surrey) and Surrey Archaeological Society with some owners' contributions.

1. CRANLEIGH, Bay Tree Cottage (TQ 0615 3905) Felling dates: **1552**; Winter **1553**/4 Posts 1540(5), 1549(14), 1553(12C); Tiebeams 1527(h/s), 1531(h/s); Wall plates 1533(h/s), 1550(18); Crossing beam 1553(19C); Principal rafters 1513(h/s), 1539(h/s), 1552(38c); Stud. Site Master 1418–1553 CRANL-BT (*t* = 12.3 GUILD-27; 11.8 GODAL-20; 11.7 CAPEL-CH).

Bay Tree Cottage is a two-bay house with an end smoke hood within one bay. The walls have jowled posts and arched braces in the framing. There were half-bay posts in the hall bay, one of which remains. The roof is of clasped-purlin construction with queen struts and curved windbraces. The timbers at the smoke-hood end are sooted. Two timbers dated from the smoke hood establish that it is coeval and not inserted later as previously thought. It is possible that the house was designed to have a smoke hood from the beginning but, in view of the differing standards of carpentry and construction methods, this is considered unlikely. This is therefore probably an example of an 'alteration from inception', where an open-hall house was adapted as it was being built. A. K. Moir, 'Dendrochronological analysis of oak timbers from Bay Tree Cottage, Cranleigh, Surrey', TRS Report CRBT/14/08.

2. CRANLEIGH, Barhatch Farmhouse (TQ 0687 4071) *Felling dates: c.* **1428; Winter 1428/9** Tiebeam 1379; Mid rail; Rafters (2/3) 1424(15+4NMc), 1428(15C); Bressumer. *Site Masters* 1377–1428 CRANL-M2 (*t* = 8.4 SHERE-RN; 8.2 GUILD-27; 5.9 GODAL-20); 1309–78 CRBF03 (*t* = 5.0 HARDHAM; 4.3 GODAL-20; 4.3 FARNH-10).

This is a medieval open-hall house of four bays with a Horsham stone roof. It is hipped and of crown-post construction. The open truss has a 45cm deep tiebeam and long arch braces of a similar size. The external walls are now largely brick, but massive principal posts remain. The high end of the hall has an internal jetty with a richly moulded jetty bressumer and an arched, hollow-chamfered doorway. A. K. Moir, 'Dendrochronological analysis of oak timbers from Barhatch Farmhouse, Cranleigh, Surrey', TRS Report CRBF/15/08.

3. CRANLEIGH, Cranleigh Village Hospital (TQ 0598 3903) *Felling dates*: Winter 1445/6 Post 1445(20C); Tiebeam 1422(h/s); Wall plates (0/2); Rafters (5/6) 1428(8), 1445(14C, 17C, 18C, 27C). *Site Masters* 1337-1445 CRANL-VH (*t* = 8.9 KINGSTON; 7.5 GODAL-20; 7.2 CAPEL-10); 1348–1422 CLVH06 (*t* = 5.1 CHIDD-RO; 5.1 GODAL-HC; 4.6 CHARL-RF).

This three-bay open-hall house has two open bays, with the third (eastern) bay being floored to give a room with a chamber over. This bay was partitioned off from the hall on both floors. The posts are jowled. Substantial arch braces are visible in the internal trusses. The steeply-sloping roof is hipped at each end with gablets. It has fine crown posts with braces up to the collar purlin only. A. K. Moir, 'Dendrochronological analysis of oak timbers from The Village Hospital, Cranleigh, Surrey', TRS Report CLVH/11/08.

4. CRANLEIGH, Coldharbour Farmhouse (TQ 0582 3844)

Felling dates: **c. 1582; c. 1681; Spring 1680 to Spring 1683** Post (2/3) 1682(18¹/₄C, 18C); Tiebeam (1/2) 1680(13¹/₄C); Transverse beam 1681(13c); Wall plate 1577(17+5NMc); Collar 1679(16¹/₄C); Principal rafter; Purlin. *Site Masters* 1631–82 CRANL-CH (*t* = 8.3 CHARL-32; 5.4 OXON93; 4.5 OCBW11); 1513–77 CLCH04 (*t* = 8.6 STORR-P1; 6.5 CAPEL-10; 6.4 CHARL-32).

TREE-RING DATES

The farmhouse was built as three-and-a-half bays with a substantial central chimney. The walls are of small square panels with down braces, but no jowls on the posts. The roof uses tenoned staggered purlins. Mortices for bench supports remain in the partition facing the main hearth. Externally, the farmhouse is now an impressive Jacobean-style building with tile-hung elevations under a Horsham stone roof. At the rear, a later outshot with a catslide roof runs the length of the house. A felling date of *c*. 1582 produced from a wallplate in the northern bay probably indicates a reused timber. A. K. Moir, 'Dendrochronological analysis of oak timbers from Coldharbour Farmhouse, Cranleigh, Surrey', TRS Report CLCH/12/08.

5. CRANLEIGH, Oliver House (TQ 0576 3920) Felling dates: c. 1559; Winter 1559/60 Tiebeams 1541(h/s), 1536(h/s); Wall plate; Purlins 1554(12), 1559(19C); Rafters (5/6) 1548(14+8), 1547(12+5NM), 1556(9+3NMc), 1559(21C, 21C). Site Master 1448–1559 CRANL-OV (t = 7.1 CAPEL-10; 6.9 GODAL-20; 6.8 EWHUR-WY).

This house has three-and-a-half bays with a central smoke bay. It is built of substantial scantling timbers, with jowled posts and curved down braces, one of which remains. The front was originally jettied, probably along its whole length. The roof is of clasped-purlin construction with three queen struts and curved windbraces. The tiled roof is half hipped at the western end and fully hipped at the eastern end. Only the rafters in the smoke bay and the internal faces of the partitions are sooted, confirming the house was a built with a smoke bay. A. K. Moir, 'Dendrochronological analysis of oak timbers from Oliver House, Cranleigh, Surrey', TRS Report LOH/09/08.

CRANLEIGH, Whitemeads (TQ 0566 3715) Felling dates: Spring 1540; Winter 1540/1 Posts (2/3) 1539(21¼C), 1540(12C); Tiebeam (1/2) 1540(18C); Wall plates 1540(14C, 22C); Purlin 1540(12C); Rafter 1540(19C); Joist 1540(17C). Site Masters 1451–1540 CRANL-WM (t = 9.3 CHARL-32; 8.7 GODAL-CS; 8.5 CAPEL-10); 1462–1540 CLWM05-M (t = 5.7 FALMER1; 5.1 HERE_FC; 4.9 CRANL-WM).

This four-bay open hall house has substantial arch braces visible on the exterior framing. The plan is of a central hall with the solar bedroom jettied into the hall. The entrance is in its original position and opens into a wide overshot cross entry allowing for a small but usable room above. There is evidence of a spere just to the left of the entrance door. The roof structure is of clasped-purlin construction with queen struts. There are no windbraces which is unusual for a house of this period. The tiled roof is hipped with gablets. Some time after the original build, framing for a smoke bay was added, later replaced by a substantial brick fireplace and chimney. A. K. Moir, 'Dendrochronological analysis of oak timbers from Whitemeads, Cranleigh, Surrey', TRS Report CLWM/10/08.

LIST 210. DENDROCHRONOLOGY DATES FROM NOTTINGHAM TREE-RING DATING LABORATORY

Alison Arnold, Robert Howard, and Dr Cliff Litton, Nottingham Tree-ring Dating Laboratory

Results of sampling and analysis undertaken by this laboratory are reported as English Heritage *Research Department Report Series* reports or as the Laboratory's own (NTRDL) reports. These should be referred to for further details on individual sites, analysis, site masters, and references. Unless stated otherwise the dating of all buildings reported below was commissioned by English Heritage, and special thanks are given to Alex Bayliss, John Meadows, and Isabelle Parsons of the Scientific Dating Team at English Heritage for their assistance. Additionally, thanks are given to those involved with individual buildings for advice and assistance. A sapwood estimate of 15–40 rings (95% confidence limits) has been used in all cases excepting numbers 2, 3 and 13 where 13–35 has been applied.

CORNWALL

- 1. MOUSEHALL, Keigwin Place (SW 469 263)
- (a) Little Keigwin, upper chamber roof
- (b) Keigwin, hall roof
- (c) Keigwin, parlour wing roof
- (d) Keigwin, rear wing
- (e) Keigwin, ground-floor ceiling beams
- (f) Old Standard

Felling date: 1612/13 Felling date range: 1552–77 Felling date range: 1598–1623 Felling date range: 1602–27 Felling date range: 1591–1616 Felling date range: 1601–26