

The Yew Avenue in the Churchyard at Bentley, Hampshire.

Analysis of records, assessment and aging of *Taxus baccata* L. specimens

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Identifying the individual yews 2011- view from the church door.



Previous measurements and 2011 notes

Yew/ orientation	Reference Stream Girth/at height/year/researcher	Sex	Short name	Notes AYG: Girth of largest 4 yews 12'6, 12'4, 10'2, 8' 2002 @?1.1m-Russell Cleaver
Bentley Lych SW1	2'8"@3'1996TH 3'9"@3'2011TH	F	HaBe1	Lych gate SW new F. Bent bole @3'. Planted before 1988, after 1955 no original evident. 13" in 15 years
Bentley SW2	9'7"@2'6"1955AM 10'7"@1m1963Amit 11'0"@1m1982Amit 10'8"@3'1996TH 11'3"@3'2003TH 12'0"@2'6"2011TH 11'6"@3'2011TH 11'6"@1m2011TH	F	HaBe2	Internal stems. Hollow. 10' bole has been truncated topped long ago. Bushy head. 29" in 56 years. Buttress at 2'6" and below. Need to check exact year of ?2003 TH measures
Bentley SW3	10'3"@2'6"1955AM 7'8"@3'1996TH 7'10"@3'2003TH 8'0"@?2003RC (?@1.1m) 8'3"@3'2011TH 8'3"@1m2011TH	M	HaBe3	Broken and rotted out since 1955, section gone. Tall horseshoe hollow all the way up the tapered bole remnant. 1m=3' on this tree (see 2011) 7" in 15 years @3'
Bentley SW4	2'9"@3'1996TH 3'11"@3'2011TH	F	HaBe4	Nearest church door, ?planted since 1955 14" in 15 years @ 3'
<i>Bentley SW5+ Lost</i>	Stump by church door	M	HaBe5	Lost before 1955, "threat to church fabric"
Bentley Lych SE1	1'2"@3'1996TH 2'6.5"@3'2011TH	F	HaBe6	Planted 1988 ref: pers. comm. Churchwarden Good upright tapered to top. 16.5" in 15 years @ 3'
<i>Bentley Lych SE+ Lost</i>	11'6"@3'6"1955AM Gone, lost in 1987 hurricane ref: churchwarden pers. com	M	HaBe7	Replaced 1988 by SE1.
Bentley SE2	9'9"@3'6"1955AM 10'11"@1m1963Amit 11'0"@1m1982Amit 11'8"@3'1996TH 11'8"@3'2003TH 12'2"@3'2011TH 12'3"@nail2'2011TH 12'5"@3'6"2011TH 12'5"@1m2011TH	M	HaBe8	23" in 41 years This is the yew with the sideways spread and supported canopy 32" in 56 years @3'6" 18" in 48 years @1m 6" in 15 years @3'
Bentley SE3	10'10"@4'1955AM 12'1"1963 12'6"1982 12'4"@3'1996TH 12'8"@3'2003TH 13'2"@3'2011TH 13'4"@nail hole2'9"2011TH 12'11"@4'(nail)2011TH 13'1"@1m2011TH	F	HaBe9	Topped. Bole 10' high, regenerated leader approx 6' girth at 10' from ground 25"@4' in 56 years 12"@1m in 48 years 10" @3' in 15 years
Bentley SE4	3'10"@3'1996TH 4'4"@3'2003TH 5'0"@3'(inc branch)2011TH 4'9"@2'6"(under branch)2011TH 3'9"@5'2011TH	M	HaBe10	Nearest church door, ?new since 1955 14" in 15 yrs @3'
<i>Bentley SE5+ Lost</i>	Stump by church door	?	HaBe11	Felled before 1955, threat to church fabric
Bentley N1	10'9"@3'1996TH 11'8"@3'2011TH	M	HaBe12	Not in avenue, far side of churchyard. N. Boundary. 2011 poor condition, thin browning canopy, small saw cuts on bole. Strangely Leylanii like bark, although clearly Taxus. 11"@3' in 15 years. Nearby, 3 multi stem Victorian planted yews within 9 feet of each other.

Yew SE2 2011 Low growing. A huge spreading horizontal canopy.



Yew SW3 in 2011.

A tall horseshoe shaped hollow, continuous to the upper leader.

The girth is now 8'3" at 3 feet from ground.
Note the dead part of the bole cut away at the base.

The yew girthed 10'3" at 2'6" from the ground in 1955. Judging by the recent growth of the three other remaining large yews, SW3 would now be about 12 feet in girth had it remained intact.

The upper re-growth on SW3 consists entirely of post topping growth, and the entire remaining lower bole depends on and flows from this new canopy which is estimated to have grown since 1850.

Little of the original structure remains.

Yew SW2 in 2011.



Topped, bushy head, hollow.

The yew has grown internal stems, which continue to increase in girth.

Interestingly two seedling yews are growing on the solid but rotten wood that makes up part of the base.

Note the height at which the yew has been topped: (3m/10 feet). All four yews have been taken down to this height, which accounts for the degree of rot and the death of bole sections in all of them. The topping seems, judging by the re-growth on all four, to have been carried out around 1850.

All four original yews are hollow or hollowing. The four replacements are all sound with complete leaders, except SW1 which is developing a bushy form.

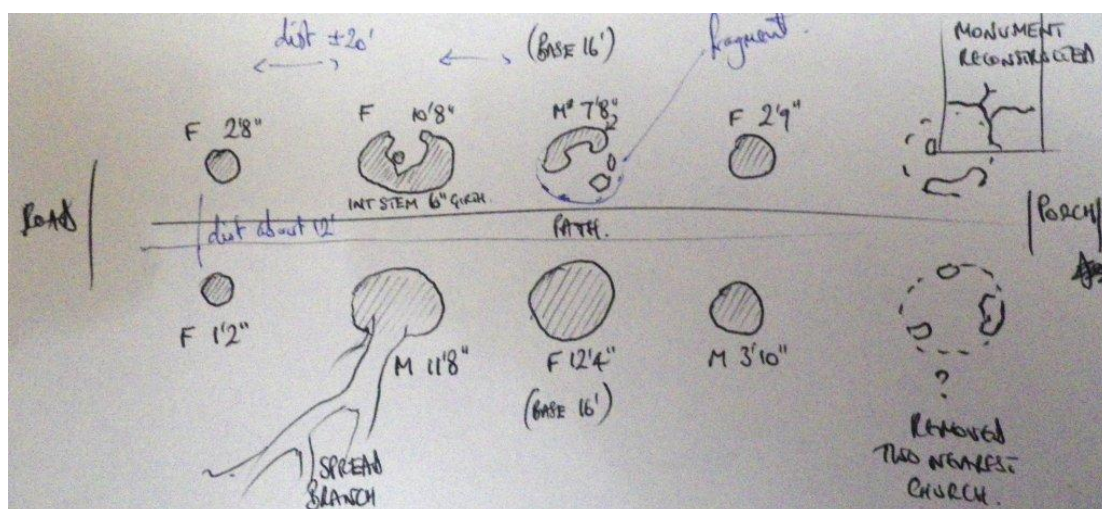


Yew N1 with thin browning canopy on the North boundary.

Not in the avenue but on the far side of the churchyard. 2011: canopy in poor condition, thin and browning, small chain saw cuts on bole. Strangely Leylandii like bark, although clearly *Taxus baccata*.

11" @ 3' in 15 years.

Nearby, 3 multi stem Victorian planted yews within 9 feet of each other, also near the North boundary.



Aging the avenue

A timeline, calculating backwards in time considering treatment, known growth history and local ring count evidence from Alice Holt*.

2011	Yews typically 12' in girth, hollowing stress, fast bole increase
1955	Yews typically 10' in girth- effect of hollowing: fast girth increase kicks in.
1911	Yews in recovery from topping 1855-1911: typically 8' after 1' increase.
1855	Topped around this time- solid to this period, hollowing thereafter. 7' in 1855.
1811	Tall, complete leader full canopy: Alice Holt 6'+ girth mean= c150 yrs (ring counts*)
1755	Slowing, due to proximity, as per dense avenue/ mixed woodland
1655	Planting- fast growth

An approximate planting date: 1655. The oldest yews here are about 350 years old.

Triangulation of evidence threads

On the far side of the valley at Alice Holt a yew was felled in 1996 showing 335 annual rings on a complete bole. It had a girth of 10 feet, and from the ring density had evidently been growing much more slowly than the Bentley yews since 1955, probably because it was not hollowing but was intact. The Alice Holt yew started growing in 1661 and seems comparable with the Bentley specimens.

It is worth testing a previously calculated rough rule of thumb: 1cm girth increase for each year for *Taxus baccata* L., with a wide margin for variation. The rule was arrived at independently by both A.Moir before 2011 and T.Hindson for the AYG.

The oldest unbroken yews in cm at 3 feet are: 351+371+366. Mean = 363 cm/years

The projected planting date is therefore 1648 which compares favourably with the timeline generated planting date of 1655 and the largest felled Alice Holt yew seeded in about 1661.