

# Harrow Hedgerow Survey

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HEDGEROW DATING has long been a controversial subject amongst historians and archaeologists. In the 1960s W. G. Hoskins suggested a method of dating hedges by the number of species present in a measured section<sup>1</sup>. This theory has been elaborated by work in Kent<sup>2</sup> and in Hampshire<sup>3</sup>, using sections of 100m (330ft) in length.

It has been inferred that this may be too long a section for the formula generally adopted of one species per hundred years, and continuing work at the Monk's Wood Experimental Station in East Anglia has done much to regularise the study. It has led to the universal adoption of 30m (100ft) lengths during fieldwork, with the formula for arriving at a date for hedges remaining at one species per hundred years<sup>4</sup>.

This system had been used throughout the country until the mid 1980s, when anomalies in the hedgerows of Hampshire threw doubt, not on the method itself, but on the formula used. It was shown that the old formula of one species per hundred years did not allow for the possibility of mixed hedges being planted from the beginning. Taking this into account, as well as the differing speeds of colonisation by some plants, a less rigid system was evolved that would allow hedges to be studied more realistically<sup>5</sup>. The present survey leans heavily on the techniques and researches undertaken for the earlier study and applies its findings to the hedgerows found in the London Borough of Harrow.

## Historic Hedge Construction

The construction of hedges in historic times has been shown to have changed very little since the first known treatise on the subject, by Sir Antony Fitzherbert, was written in 1523. The techniques then used were very much mirrored in later writings, and a number of myths concerning hedgerows appear to have been perpetuated by some more recent historic writers into the present day<sup>6</sup>.

The most popular of these myths must surely be

that hawthorn or 'quickset' hedges are largely a product of the Enclosure Acts. Evidence from surveys of hedgerows in Hampshire has disproved this, both from fieldwork and from documentary searches<sup>7</sup>. Hawthorn hedges can be dated back to the medieval period. In 1171-2 royal accounts during the voidance in the Bishopric of Winchester refer to 15s 6d paid for 'hawthorns' (*alierae*) for the bishop's manors<sup>8</sup>. Fitzherbert's account of hedgerow construction gives pride of place to the hawthorn, which, along with crab apple, he says are the 'beste' for 'quyckesettyng'<sup>9</sup>. The descriptions in this manual show that the quickset hedge, as hawthorn hedges are known, was a well-established technique for enclosing land.

Fitzherbert recommends hedging for pastures, indicating that the principal purpose of such work was to keep animals within a designated area. Presentments for straying animals ruining crops was a common offence in manorial court books, and enclosure was a sure way to keep such damage to a minimum. It was with this in mind that the work of hedging was undertaken.

Fitzherbert records that the newly planted young hedge is best supported by a line of oak stakes with a ditch dug to facilitate drainage and for protection from grazing animals. The upcast from the ditch was used to make a low bank about a foot high on which the young hedge was planted.

Once a hedge is established it is maintained by regular 'laying'. This requires the cutting back of the growing hedge at intervals to prevent it growing into young trees, which would cause gaps to form at the bottom, allowing animals to pass through. To do this the shoots are cut 'half-through' and then bent over as near parallel to the ground surface as possible and tied into position against oak stakes. This causes new shoots to grow vertically from the 'laid' trunk, thus eliminating gaps through which animals could escape<sup>10</sup>.

1. W. G. Hoskins *Fieldwork in Local History* (1967) 117-26.

2. G. P. Hewlett, undergraduate dissertation, University of Southampton, Dept. of Geography (1969); 'Reconstructing a Historical Landscape from field and documentary evidence' *Agr Hist Rev* 21(2) (1973) 94-110.

3. G. P. Hewlett and J. Hassell 'Bishop's Waltham Dikes' *Proc Hampshire Fld Club* 28 (1971) 29-40.

4. E. Pollard, M. D. Hooper and N. W. Moore *Hedges* (1974); E. Pollard 'Hedges VII: Woodland relic hedges in Huntingdon and Peterborough' *J Ecology* 61 (1973) 343-52; M. Hooper 'Hedgerows' in P. J. Fasham *M3 Archaeology* (1974) 11.

5. C. K. Currie and A. Scivier *Historic Hedgerow Survey in Hampshire* (1985) unpublished report to Hants County Planning Dept.

6. *Ibid.*, 1-2.

7. *Ibid.*

8. Pipe Rolls 18 Hen. II, 86.

9. W. W. Skeat (ed.) republished edition of 'Sir Antony Herbert: A book of husbandry (1534)' (1882) 78 (this book was written in 1523 and not published until eleven years later).

10. *Ibid.*, 80.

It appears that the young shoots were collected from nearby 'wood-countraye'. Such collections can be dated back to Domesday, where the occurrence of woodland for 'fences' is a commonplace entry, the terms 'hedge' and 'fence' being interchangeable. Such interchangeability is demonstrated as late as 1899 for Arthur Vernon's *Estate Fences*, an exposition of the costs and techniques of construction for all manner of barriers, includes hedges<sup>11</sup>.

J. Worlidge set out concise instructions for alternative methods of hedge making in the 17th century. He urges that:

"Let your plants be about the bigness of your thumb, if you can, and set almost perpendicular, and cut within four or five inches of the ground, and planted in a double row at about half a foot distance; they will prosper infinitely, and outstrip the closest range of our trifling sets."

Followed by:

The other way most followed for the planting of a quick hedge, is on the bank of a ditch thus: place the first row of sets on the brink of the ditch and cover them with the better part of the mould taken out of the ditch, and raise the Bank about eight or ten inches above them; then place another row of Sets, each set against the spaces of the first row; then lay more of the best Mould to the roots of the sets, and then raise the Bank as before, and place another row of Sets opposite to the first, applying the best Mould to the Roots, and finish the Bank with the bottom of the ditch."<sup>12</sup>

The technique remained much the same into modern times, all that varied to any degree being the subsequent management which relates largely to the method of cutting the shrubs as well as the particular shrub used. (It has already been noted that not all hedges were made entirely of hawthorn.)

Survey in Hampshire has shown that the blackthorn was the most popular shrub after the hawthorn, despite persistent warnings given against this plant<sup>13</sup>. As early as 1523 Fitzherbert noted the disadvantages of the blackthorn as being its tendency to sucker and grow out into the field, taking up valuable space. Langley recommends blackthorn only if it is carefully managed, repeating the warning on its tendency to spread into a field<sup>14</sup>. Vernon does not discount it entirely, as Fitzherbert does, but like Langley urges caution, saying it should be carefully chosen or it will invade the field it enclosed<sup>15</sup>.

Of other species mentioned in 1523, the crab apple is put on an equal footing with the hawthorn. Also recommended are the holly and the hazel with oak, ash and elm being suggested as hedgerow trees, especially if woodland was scarce in the area.

Hedgerow trees were an important asset in hedgerows. Records show that they were deliberately cultivated and rigorously protected for the

11. A. Vernon *Estate Fences* (1899).

12. J. Worlidge *Systema Agriculture* (1681) 102.

13. *Op cit* fn 5.

14. B. Langley *A sure method of improving estates* (1728) 35.

timber they produced. In some cases, however, they were seen as a nuisance. They were often held to block out the sun from crops and to encourage vermin. Certainly as the need for timber for building diminished with the growth of the brickmaking industries in the 18th and 19th centuries, so the popularity of hedgerow trees declined. By 1796 it was suggested that they prevented hedges growing beneath them from flourishing if they were less than 15-25 feet apart<sup>16</sup>.

Batty Langley recommends planting hawthorns in the winter, 10-12 inches apart in no more than two rows, the rows a foot apart with the upper row planted opposite the spaces in the lower row<sup>17</sup>. The hedge bank is 'thrown up' after the first row is planted with soil from the ditch until it is one foot high. Then the second row is planted and the rest of the ditch soil laid 'thereon'. By this method an impenetrable barrier against cattle will be formed in three to four years.

If the land is 'cold and wet', he recommends planting the lower row with 'crabs' (crab apples) and the uppermost or second row with hawthorn. Within the upper row at 40 foot intervals oaks or elms should be planted. Such a technique would clearly throw out any dating survey made on such a hedge because it started its life as a 3 species boundary. Alternatively, according to the 1 species per hundred years formula in general use today, the same evidence would produce an apparently 300 year old hedge within a few years of planting!

He also gives sound advice on the suitability of certain species for certain soils, recommending hawthorn for light loams, the furze on sandy soils and the crab on 'strong lands or clays'. Blackthorn makes a good hedge when mixed with crabs or hawthorn but must be carefully watched because of its invasive nature. Elm also makes good hedges and should be planted in double rows, 2 feet apart, and clipped regularly. Holly makes good 'fences' but is a slow grower, although it is useful on dry, poor land where other hedges will not grow. Likewise willow and alder are suitable on lands that are 'very wet and cold'.

Finally, Langley gives the cost of making a hedge, which is useful for later comparisons. He suggests 1/- per rod, or 8-9d per rod when the 'hedgelings' are already provided. The rod 'is allowed to be 21 feet'.

William Marshall elaborates on Langley's dicta<sup>18</sup>. He recommends hawthorn, crab apple, holly, furze and 'Aquatics' for hedge planting according to the

15. *Op cit* fn 11, 33.

16. W. Marshall *Planting and Rural Ornament* (1796), 56.

17. *Op cit* fn 14, 27-36.

18. *Op cit* fn 16, 56-64, 86-9, 94.

locality. Hawthorn, he says, has been the most popular since 'time immemorial', being collected readily from wastes and woods. This confirms the premise that hawthorn hedges were not the invention of parliamentary enclosers. It will grow anywhere provided it is 'tolerably dry and warm'. The hawthorn is best for 'dead hedges' which are used to protect young hedges. He repeats Langley's recommendations for the other species.

He notes that in the south-east it is the practice to put up a dead hedge to protect young hedges since coppice wood is plentiful in these areas. In less wooded areas hurdles are used. Hedges in the south-east are cut after 7 or 8 years and they should not be allowed to grow too high or the young plants underneath will get no light. It is usual to cut in the spring, unless it is a hawthorn hedge when a winter cut is best. The method in the south-east is to cut to the ground and to put a dead hedge up until the new one regrows.

For other areas, he remarks that hedges are generally cut after 5 or 6 years in Yorkshire, but not until 12 or 15 years in Norfolk. In Hertfordshire, Yorkshire and Gloucestershire plashing is practised. Here the hedges are cut to 'middling' height and 'laid like wattle hurdles'. In Norfolk hedges are cut to 2 feet and laid.

With old hedges, it is better to grub them up and start again: this is noted as the practice in Norfolk. It is recommended that a different species is used to that which was previously occupying the soil. The best 'change' after hawthorn is crab with holly. Old hedges can also be repaired with young quicks or with cuttings of 'fallow or elder': another practice that can be seen to affect hedge dating.

Arthur Vernon gives useful dimensions of hedges suitable to varying soil conditions<sup>19</sup>:

Soil type	Recommended Width
Red sandstone	15 links or 10 feet wide
Lias	18 links or 12 feet wide
Oolite	12 links or 8 feet wide
Oxford Clay	16 links or 10 <sup>2</sup> / <sub>3</sub> feet wide
Corraline oolite	14 links or 9 <sup>1</sup> / <sub>4</sub> feet wide
Kimmeridge Clay	16 <sup>1</sup> / <sub>2</sub> links or 11 feet wide
Chalk	12 links or 8 feet wide

He repeats much of the information given in earlier manuals, but makes additions concerning hedges near the sea where sea spray can be injurious to some species, noting that this can be carried several miles inland in rough weather. Spindle, maple and cherry plum are less affected by the sea, although maple is described as otherwise 'inferior'.

19. *Op cit* fn 11, 18.

20. E. Pollard, M. D. Hooper and N. W. Moore *Hedges* (1974) 46.

21. *Op cit* fn 11, 97.

Hazel is noted as 'occasionally' used, which may reflect a survival from Tudor times when it appears this plant was more popular in hedgerows.

The cost of hedge plants would have had some bearing on their popularity. By the late 18th century professional nurserymen were supplying hedge seedlings on a commercial basis<sup>20</sup>. Vernon gives the following list<sup>21</sup>:

Plant	Cost per 100 (1899) planted	distance apart	sufficient for lengths of (yards)
Alder	2s 6d	12"	33
Birch	2s 6d	9"	25
Blackthorn	4s	4"	11
Crab apple	3s	9"	25
Elder	5s	12"	33
Spindle	40s	12"	33
Gorse/Furze	3s	9"	25
Hazel	3s	6"	16 <sup>2</sup> / <sub>3</sub>
Holly	30s	12"	33
Hornbeam	2s 6d	6"	16 <sup>2</sup> / <sub>3</sub>
Maple	3s	9"	25
Privet	5s	4"	11
Willow	6s	12"	33

The cost of planting and maintaining a hawthorn hedge in 1899 is as follows<sup>22</sup>:

2 row, 6" apart	per 100 yards
The plants	24s
Forming a ditch, bank and planting	23s 4d
3 rail protection at 8d a yard	66s 8d
<b>Maintenance</b>	
Weeding, trimming or pruning twice a year; May & Sept	4s 2d
Making and plashing fence, clearing out ditch every 7-10 yards at 6d per pole	10s

Vernon<sup>23</sup> gives some past costs for hedge work as below:

1583 Hedging, ditching and plashing	8d a day
1598 Hedging and ditching	3d a pole
1603 Hedging and quicksetting	7d a pole
1702 Hedging	3d a pole
1702 Hedging and ditching	7d a pole

Finally, to add to all the 'interference' that must have happened to hedgerows over the centuries (and affected any hedge dating done on them), Dowsett records the complaint that the 'Tories' have recently made a law for the 'demolition' of hedges<sup>24</sup>, i.e. that all hedges must, by law, be cut to no more than 2 feet high in order that the 'hunting fraternity' should be 'placated'.

### Hedgerows in Harrow

Hedges in Harrow acting as boundaries and stock control barriers date back beyond the so-called Enclosure Act era of the 18th and early 19th centuries. Documentary evidence shows that hedges were commonplace throughout the 14th century at the latest.

22. *Op cit* fn 11, 95.

23. *Op cit* fn 11, 18.

24. C. F. Dowsett *Land: its attractions and riches* (1892) 594.

LOCATION MAP

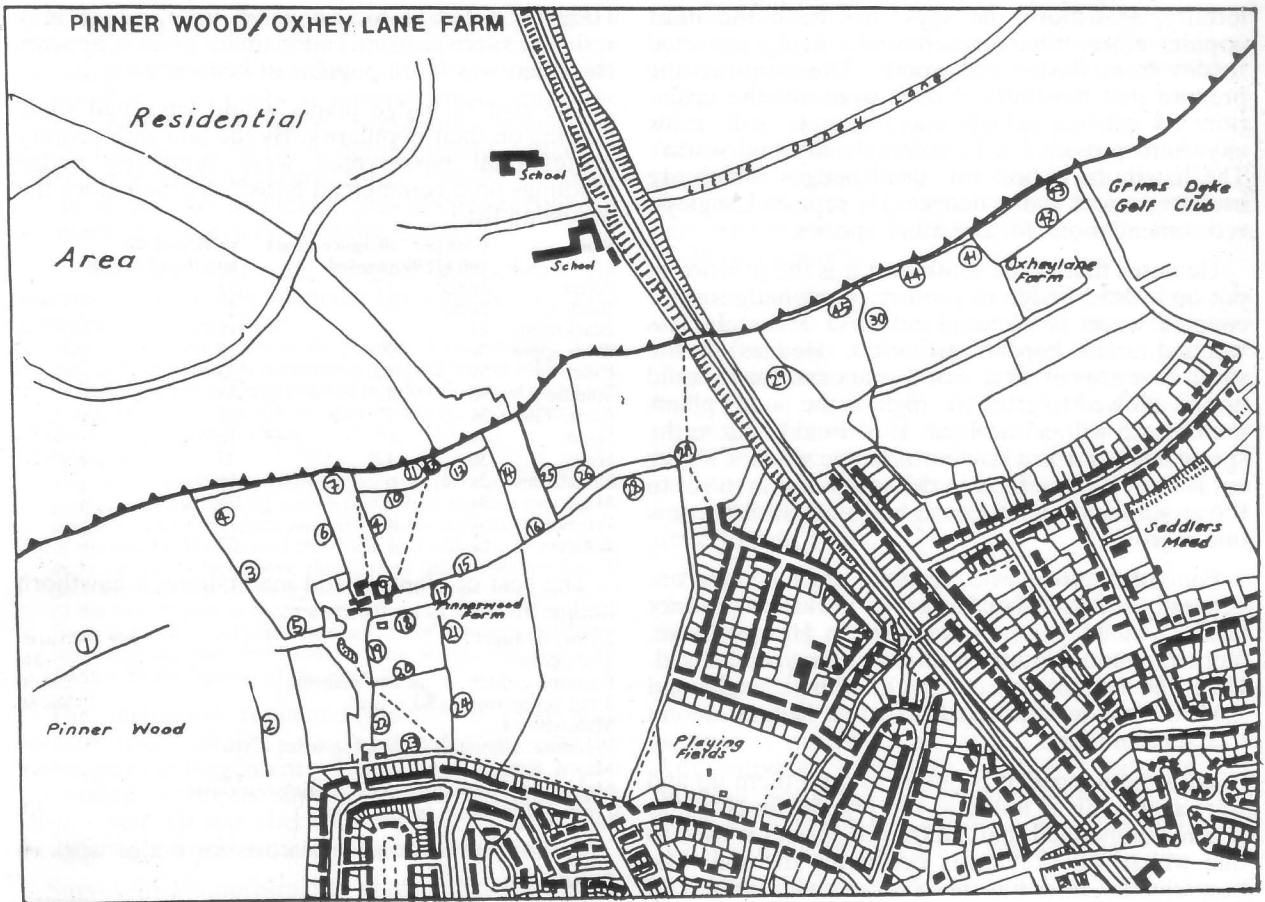


Fig. 1: location map of boundaries in the Oxhey Lane Farm and Pinner Wood areas of Harrow, surviving from the Enclosure Map of 1817.

In 1349 Walter Shorne of Great Stanmore gave up his rights to Robert Wendout 'in all the land called Brodecroft ... and all the arable land within hedges there, with the hedges, ditches and all other appurtenances of Great Stanmore'<sup>25</sup>. In 1360 John Redyng quitclaim 'of the field of land with hedges ... called "les Gores" in Harrow'<sup>26</sup>. A further quitclaim occurred in 1390 concerning 'a croft called salecroft with woods, ditches and hedges by Woxendoun in the parish of Harwe'<sup>27</sup>.

From the amount of enclosure in the manor according to the survey of 1547<sup>28</sup>, it seems likely that hedges were very much a feature of the area. This seems to be confirmed by a reference in 1578 to the wife of Richard Harcotte, who was fined at the manor court for being a 'common breaker and cutter of hedges'<sup>29</sup>. In the same year, after a longstanding

dispute, the tenants with land lying next to the 'fields of Welde and Kenton' agreed to divide those lands between them and enclose them with 'hedges and ditches'<sup>30</sup>. Furthermore it is recorded that, after frequent warnings, John Warren should close the gaps (in the hedges) of Middlefield or be fined 12d every time he needed to be reminded.

The evidence suggests that there were many well-established hedges in different parts of the modern Borough of Harrow in both the 14th and 16th centuries. Middleton gives us some idea how these hedges had developed by the end of the 18th century<sup>31</sup>. He records that the hedges are 'generally' full of live wood, mostly of hawthorns, elm and maple with some blackthorn, crab apple, 'bryers and damsons'. These hedges are made anew every ten or twelve years 'at which time the whole is cut down to

25. Close Rolls 1346-49, 614.

26. Close Rolls 1360-64, 93.

27. Close Rolls, 1389-92, 293.

28. *Tudor Pinner*, Pinner Local History Society (1981).

29. P. Davenport *Old Stanmore* (1933) 49.

30. *Ibid* 43.

31. J. Middleton *View of the Agriculture of Middlesex* (1798) 132-3.



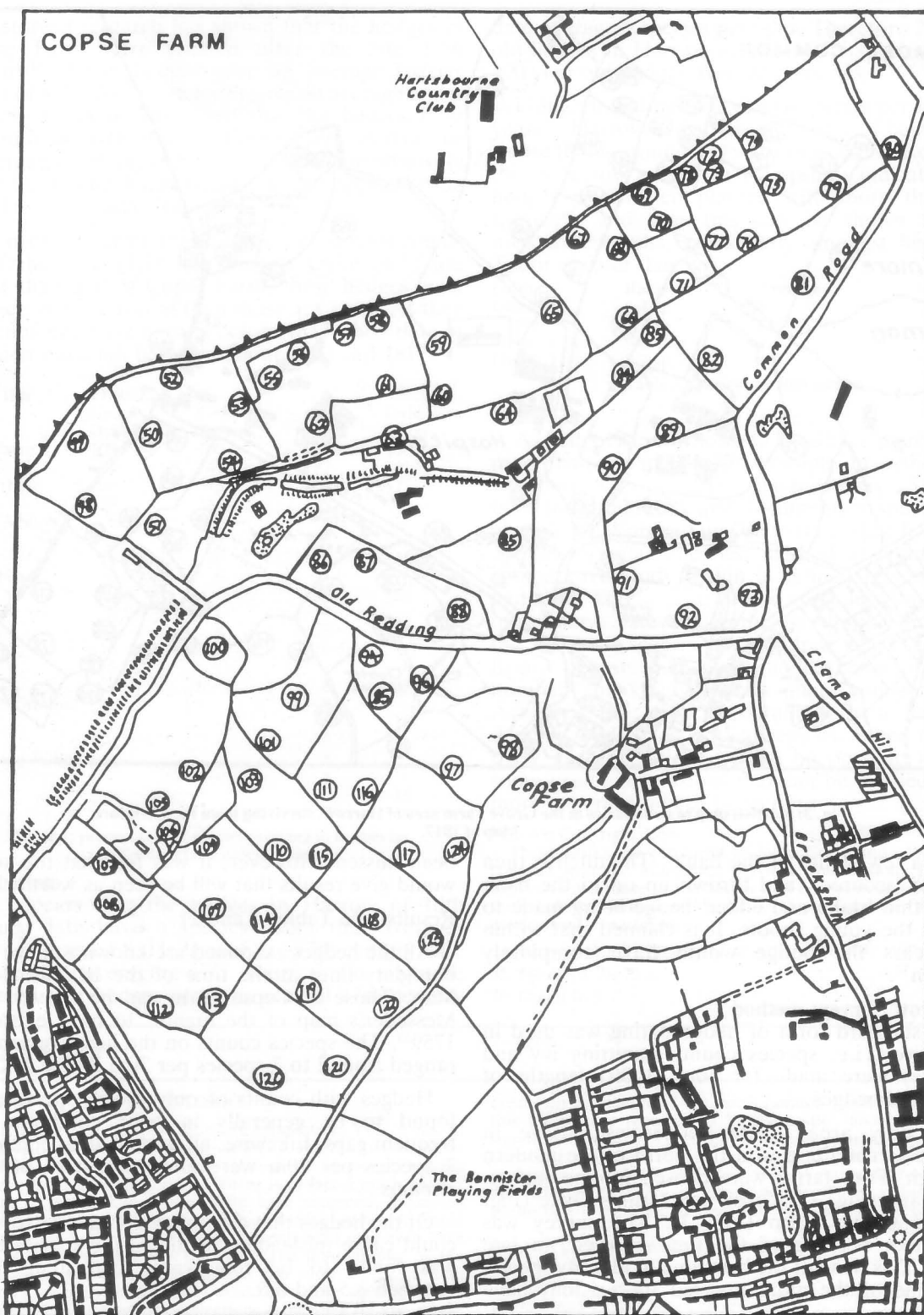


Fig. 2: location map of boundaries in the Copse Farm and Grim's Dyke areas of Harrow, surviving from the Enclosure Map of 1817.

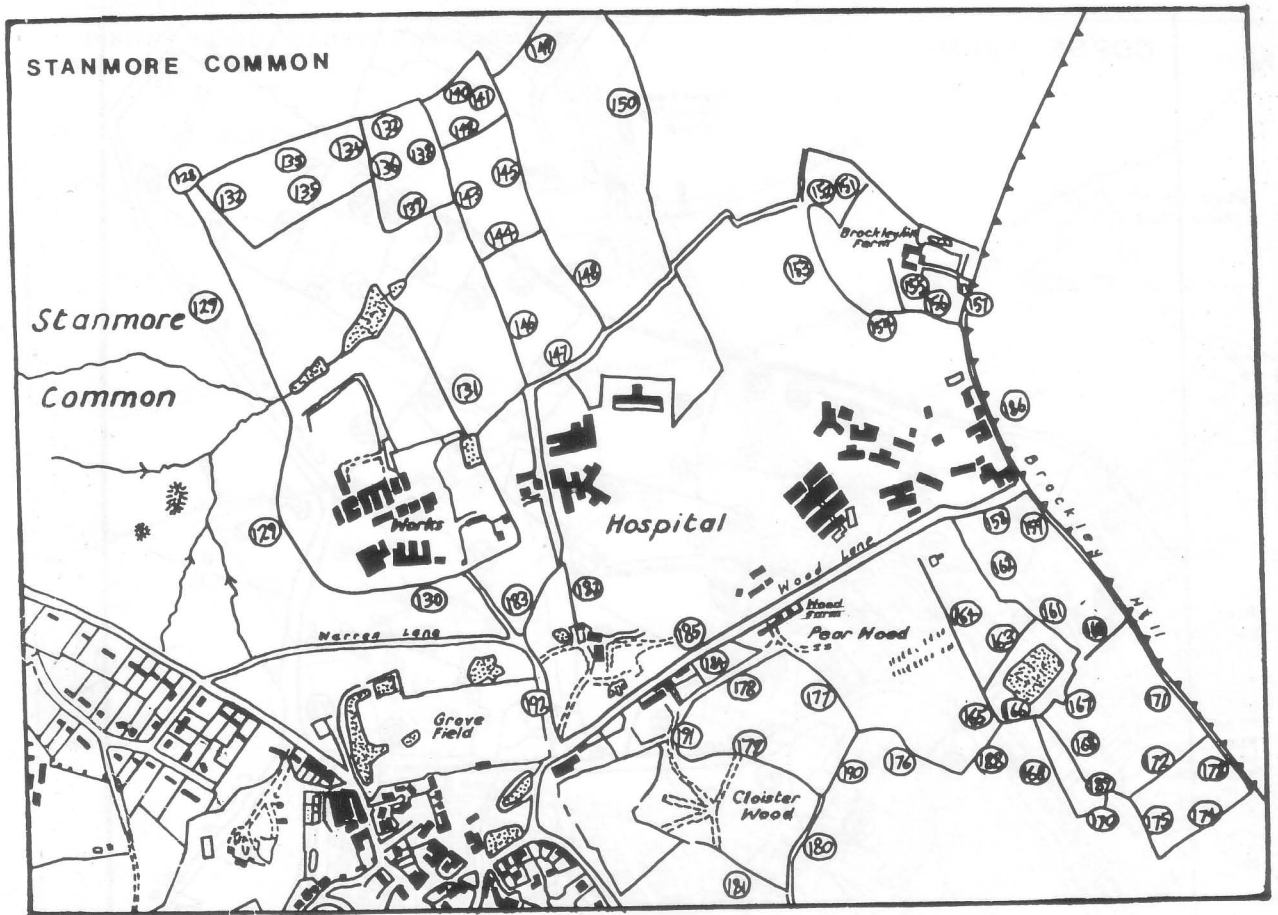


Fig. 3: location map of boundaries in the Grove Farm area of Harrow, surviving from the Enclosure Map of 1817.

within a few inches of the bank'. The ditch is then recut or 'scoured', and thrown up on to the bank with a thin 'stake and edder' hedge being made to protect the young shoots. It is claimed that within two years the hedge would have completely regrown<sup>32</sup>.

#### Hedgerow Survey: method

The standard form of hedge dating was used in this survey, i.e. species counts (omitting ivy and bramble) were made for 30m (100ft) lengths of designated hedges.

The only area where hedgerows survive in reasonable condition is in the north of the modern Borough. Four farms were chosen for the survey: Oxheylane (Fig. 1), Copse and Grim's Dyke (Fig. 2), and Grove Farm (Fig. 3). The survey was conducted, because of the time allowed, in late March. This was not the best time to identify species and some of the more unusual species may have

32. *Ibid* 132-4.

been missed. However, it was felt that the survey would give results that will be seen as worthwhile.

#### Results (see Tables 1 and 2)

All the hedges examined are known to have been boundary lines at the time of the 1817 Enclosure Map. Those at Copse Farm can be shown, from Messeder's map of the manor, to have existed in 1759<sup>33</sup>. The species counts on the hedges examined ranged from 2 to 7 species per 30m length.

Hedges with counts of only 2 or 3 species were found to be generally in poor condition with frequent gaps. Likewise, all three hedges containing 7 species per 30m were along the lines of small streams.

Of the hedges that did not exhibit any factors that could cause misleading readings, the species count was found to be remarkably consistent, being between 3.5 and 6.5.

33. GLRO: Acc. no. 643/2nd deposit.

Historical research has shown that the hedges of Copse Farm were created after the late 17th century<sup>34</sup>. These hedges gave an average species count of 4.75. As Grove Farm gave an average count of 5.5, it can be suggested that the hedges here generally predate those of Copse Farm. A date for the creation of these hedges, taken comparatively from the Copse Farm results, would appear to be late Tudor to early Stuart.

Conversely, given that the average species counts for Oxheylane (4.1) and Grim's Dyke (4.5) are lower than that of Copse Farm, these hedges must be seen as more recent than those at Copse. As they are known to have existed before 1817, their date of creation must fall between about 1700 and 1817.

SPECIES	PERCENTAGE			
	Grim's Dyke	Copse Farm	Grove Farm	Oxheylane Farm
Hawthorn	100	100	83	100
Rose	87	41	87	41
Blackthorn	66	75	66	75
Elder	39	41	39	41
Pussy Willow	6.5	-	6.5	-
Oak	93.5	83	100	50
Ash	26.5	16	50	16
Hornbeam	6.5	8	25	8
Elm	19.5	-	33	33
Beech	6.5	-	8	-
Holly	87	8	25	8
Birch	13	-	16.5	-
Yew	6.5	-	-	-
Maple	-	-	8	33
Horse Chestnut	-	-	8	-
Hazel	-	-	8	16
Box	-	-	16.5	-
Weeping Willow	-	-	8	-
Osier	-	-	8	-
Alder	-	-	-	16
Willow	-	-	8	16

Table 1: percentages of species growing in hedges on individual land units studied

## Discussion

It appears that the hedges in Harrow of 18th century date have a species count that averages between 4 and 4.5. Hedges of late 17th century date have counts averaging 4.75. From this it might be deduced that hedges of more general 17th century

date average 5 species per 30m. Therefore 200 year old hedges in Harrow average 4-4.5 species, whilst 300 year old hedges average 5 species.

Using the old method of one species per hundred years<sup>35</sup>, Harrow hedges are in danger of being given a date that is around 200 years inaccurate. Results of the hedgerow survey in Hampshire indicated that hedges were often planted with more than one species<sup>36</sup>, and that this can be shown to give inaccurate results, particularly amongst hedges of Tudor or later date.

Farm	Range	Average
Grove	4-7 sp.	5.5
Copse	3-7 sp.	4.75
Oxhey Lane	3-6.5 sp.	4.1
Grim's Dyke	2-7 sp.	4.5

Table 2: species per 30m section

## Conclusion

As hedges can be shown to have been planted with more than one species (for example, blackthorn and hawthorn with oak trees planted every 25 yards), both from fieldwork and documentary sources (see above), it has proved unwise to try to date hedges by a rigid formula. The best method of dating is by comparative study within a defined region where hedges of known date can be compared with those of unknown dates. Nevertheless, despite dismissing the old 'one species per hundred years' adage, I firmly believe that older hedges contain higher numbers of shrub species than younger ones. Accuracy can only be obtained by a long and detailed study of individual regions. When more of these are completed, it may be possible to draw some useful conclusions that can be applied to the more general study of hedgerows.

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34. *Victoria County History of Middlesex*, vol. IV (1971) 228.

35. *Op cit* fn 20, 79.

36. *Op cit* fn 5.

# Letter

## A PLEA FOR THE PREHISTORIC

YOUR PLEA for the prehistoric (*Commentary*, Vol. 5, no. 8) may have been answered (in part at least). For the last month or so I have been engaged on an assessment of the prehistoric evidence from Central London. There is in fact a much greater amount of material than one might have imagined, indicating settled occupation from the Neolithic onwards (just as one would expect on the banks of the Thames). Settlement may even have been as dense as that revealed by aerial photography of the Thames-side gravels in Oxfordshire, but most traces of it in London have been obliterated. I would echo your sentiments that an assessment of museum collections is needed for the whole

area: Lyn Blackmore of the North London Team has been doing this for pottery reported as 'undiagnostic', and has identified significant amounts of prehistoric pottery, including some beaker sherds. I agree too about the need to predict areas where prehistoric evidence is likely to survive (Southwark, for instance) and allocate funds to searching for it. There definitely is a prehistory of the London area, and it can still be recovered.

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*Mr Merriman's work will be the subject of this year's Annual Lecture (see Diary), and will also feature in our Autumn issue.*