



# TREES ON HEDGES IN CORNWALL

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*History / timber and wood / expansion of tin mining / the tanning industry / woodland hedges / tenancy restrictions on hedge trees / 20th century hedge trees come and go / Hooper's dubious "rule" / coppicing / veteran trees / restrictions on cutting down trees / planting trees on hedges / tree species in Cornish hedges / the future for Cornish hedge trees.*

***I'd as soon think to see a cow climb a scaw-tree***

(Cornish expression of disbelief. *Scaw* - elder.)

The importance of trees in hedges is inevitably linked with the availability of trees from woodland. Cornwall emerged from the last Ice Age with trees able to tolerate relatively cold conditions, notably birch and willow and, later, pine. As the climate warmed up, broad-leaved trees spread in. This is confirmed by the pollen found by archaeologist George Smith underneath the Bronze Age cairn at Chysauster, in West Penwith. Here pollen grains of birch, pine, elm, oak, lime, alder, yew, willow and hazel were recorded. Buried in the peat in the valley nearby, the same tree species were identified, plus beech, ash, holly and rowan. As the climate changed, so did the distribution of the different tree species.



*Sunny glades originally were enlarged into fields. Today most of Cornwall's trees are in the hedges.*

Our native woodland was never the dank dark covering of the modern close-planted commercial trees. Sunny glades have been an ever-present feature of the natural succession of trees, and prehistoric felling was an enlargement of these woodland clearings. The initial process of deforestation was begun by Mesolithic hunters perhaps as early as 8,000 BC, with slash-and-burn clearances which increased in the Neolithic period. The polished flint axe of Neolithic man could fell a fir

tree of 7ins (17cm) diameter in five minutes. Not to be underestimated was the effect of browsing by livestock. Nipping off the re-growth would soon kill a stump.

Outbreaks of Dutch Elm Disease have been noted intermittently since the 17th century, and probably originated long before that. In about 4000BC, at the time of the arrival of Neolithic agriculture, half the elm trees in Europe suddenly vanished. This may be no coincidence as the disease attacks all sizes of tree, and browsing livestock prevents the sucker regrowth. In the woods and hedges of Cornwall the most recent outbreak devastated the landscape, but already, half a century later, the suckering regrowth is in places higher than 25 feet (eight metres) and is starting to compete with other tree species again. Where the first new young suckers are exposed to browsing or hedge-flailing, the trees have not regenerated, so it is possible that an epidemic of this disease was a big help to the Neolithic farmer in clearing woodland. Probably this was not the only destructive pest to affect our trees over the ages, and it is an example of how a little thing can make such a big difference to the landscape and the economy.



*Livestock browsing has cleared young growth from the bank of this hedge. If the trees were coppiced without protection from stock, new shoots would be nibbled off and the stumps would die.*

There has been a popular misconception that once the primeval forest had been cleared, the land was permanently converted to agriculture. Away from the north coast, the Cornish landscape is always vigorously trying to revert to scrub and woodland, and it is only the constant work of man that prevents this. Ordinary grassland is not a natural habitat in Cornwall. Where land is unmanaged and un-grazed, the steady recolonisation by trees and shrubs is always there; most of our native broadleaved trees regenerate easily in the Cornish climate with its mild winters, and they usually do not die when cut down. Even the exposed land such as Bodmin moor, with a thin skin of earth over the granite, relies on the browsing of animals to prevent scrubbing over with gorse and thorn. Cornish heathlands are technically defined as being lowland heath, dependent for their survival on the influence of the oceanic climate and not solely



*Re-growth of elm along a Cornish hedge, 40 years after a major outbreak of Dutch elm disease.*

on altitude. About 2½ per cent of the world's lowland heath area is reported to be in Cornwall, and if this is not suitably grazed or browsed it will be lost. This is a surprisingly high percentage considering how much has been lost, and makes conservation of the remaining area important. Many of the surviving plants and animals are still to be found in hedges in or surrounding what was once heathland, and these too need to be conserved. Today woodland, as distinct from hedges, is only about 5% of the area of Cornwall, including some incongruous regimented blocks of alien conifers.

As man became a tool-maker and started to make wooden buildings, implements and furniture, timber became a resource competing with the cultivated land. As soon as the Cornish hedges were built to enclose this land, natural trees began usefully to grow on them, while gradually woodlands became restricted to the valleys where they grow very much faster than on exposed heathland. Tin smelting had been going on since 2000BC, and by about 1200BC the demand for charcoal had resulted in there being no woodland left in Penwith, and little on the Lizard. With the cooling of the climate at about this time, trees grew so slowly above the 400ft (120m) contour that any tree, unprotected by its owner, was likely to be cut down for firewood. By mediaeval times the remaining woods, mainly on the steep sides of sheltered valleys in other parts of Cornwall, were being managed as a valuable resource.



*In Cornwall the hedges contain often the only remaining trees in the area, giving necessary shelter in this windswept county.*

The Domesday Book records some 340 manors or large farms in Cornwall, of which 41 possessed substantial woods of over 20 acres, mostly in south-east Cornwall clothing the river valleys. Probably most of the remainder had small woods of a size to supply, along with wood from the hedges, the needs of the neighbouring people. Unfortunately most surveys of trees and woodland in Cornwall make no mention of hedge-growing trees. The big house at Mount Edgcumbe, typically of many, was 'supplied ... with wood, timber, fruit, deer, and conies [rabbits].' Religious houses without land relied on Lords of Manors for gifts of wood. The abbey at St. Michael's Mount got a cartload of fuel wood each week from the Clowance estate near Camborne, together with the right to pasture their oxen while they were getting the wood.

Pigs were kept in the woodland, a commoner's right called pannage. Mediaeval pig populations were probably managed on a subsistence basis in the woods, relying on the autumn acorn harvest for fattening. The acorn, generally unsuitable for other farm livestock because of its tannic acid content, appears to have no harmful effect on the pig, which learns to crack the shell and extract the nut. The acorn nut has a feeding value about half that of barley meal. Beech mast husk is more fibrous and rather less nutritive. Bracken rhizomes can provide up to 45 tons of edible starch per acre at a depth within reach of the rooting pig's snout; the demise of the cottagers' pig may account for some bracken spread. In many villages, each cottager had several pigs which were looked after in a village herd by the swineherd who had to keep them from robbing the field crops. Duchy of Cornwall tenants with extensive woodlands had to elect wood-wards annually, from within the ranks of the customary tenants, who



*Woods on Clowance estate.*

were to see that no animals were allowed to trespass. As the woods got fewer, sheep replaced the pig as the chief partner of the ox in the economics of the village pastoral husbandry.

Fitzherbert in the sixteenth century wrote 'if thou have any trees to shrede, loppe or crophe for the fyre-wodde, crop them in winter that thy beastes may eat the brouse and the mosse of the bowes, and also the yves [ivies]'. During the early years following cutting, the woods had to be protected from grazing animals. The tender regrowth is, especially in winter, much enjoyed by farm livestock, and coppiced trees are easily killed in this way. After three or four years when the coppice regrowth gets to 10 ft (3m) high, livestock can be let in again.

Intervals between coppicing varied according to the locality and to the greed of the owner. In a record of the Earl of Oxford's manors in Cornwall of 1575, there was offered: 'a wood pasture called Kellybarrett [*kelly barrek* = twiggy woodland, barrek from the same root as brake, thicket, from which bracken also derives], provided always that he will not use for grazing any part of the wood within 6 years of that part being felled by the lairds; rent 3s. 4d.' In the Duchy Manor at Liskeard, tenants in 1608 had 'the common of the herbage and pannage from and after the said wood is grown to be of 7 years growth in consideration whereof the tenants do both hedge and ditch the said woods and repair and maintain the fences during the said term of seven years.' In the same manor there were woods with trees of 23 and 34 years which were fit to harvest. This tenancy agreement underlined the reason for the hedges bounding the wood to be stockproof for seven years while the coppice re-grew to sufficient size, and allowed the tenants at least 16 years of grazing under the trees thereafter until the woods were coppiced again, when the next seven year ban would be imposed.

As late as 1861, there were 30,000 acres in Cornwall classified as 'furze brakes and plantations', and double that area of 'large enclosed crofts', but only 20,000 acres of 'timber and oak coppice' out of a total area of 860,000 acres. It is regrettable that some of these historic furze crofts have mistakenly been thought of as waste ground, and have recently been cleared and 'landscaped' with trees. Furze was sown on hilly crofts that were too steep for normal arable crops; it was cultivated as a single crop which was cut and, with the prickles hammered into a soft condition, fed to horses in winter. Native ponies will eat gorse prickles and all. It was also sown on newly built hedges in exposed localities to provide top-growth. In 1791 Lord Carteret purchased 4 lbs (2kg) of furze seed in London for the Stowe Estate. It was expensive at 4/6d, and rather than sown direct, seedlings were probably first raised in a nursery and then planted

out. It was probably cheaper or easier for him than to have local seed collected, and is an early example of the introduction of non-local stock. There is evidence of the nursery system in a letter from Sir Bevil Grenville to his wife at Stowe in about 1635, saying 'Charge Postlett and Hooper that they keepe out the Piggs & all other things out of my new nursery & the other orchard too. Lett them use any meanes to keepe them safe, for my trees will be all spoiled, if they come in which I would not for a world.' It is a crying shame that there have been in past years no commercial nurseries in



*This view in West Cornwall shows how integral a part of the holding was the furze croft on the hill (left, distance) and the willow plantation in the bottoms (middle foreground) among the small fields.*

Cornwall growing locally-native trees and shrubs for planting in the county.

Morton in his 1856 *Cyclopaedia of Agriculture* commented that: 'Trees are cultivated in hedgerows for the sake of their timber, for shelter to the adjoining fields, and for embellishment; and in many situations all these valuable objects are obtained in the same locality. It is true, that where timber generally rises to the greatest size and value, the situation which produces it is that which stands least in need of shelter; but where trees fail to become specimens of excellent growth, on account of the climate or exposure, the value of the timber is often compensated for by the shelter which the trees impart to the fields in their vicinity.' This is especially true of trees on Cornish hedges.

It was noted in 1873 that there were men still living in Cornwall who in their younger days used to make their plough frame from trees in the hedges. Undoubtedly before the coming of the industrial revolution, the self-sufficiency of country life relied vitally on hedge trees; so much so that the stealing of wood out of hedges was, at one time, an offence meriting all Sunday in the stocks and a whipping until the offender should 'bleed well'.

## TIMBER AND WOOD



*Maiden sycamore tree with single straight trunk.*

There is a legal difference between timber and wood, and they have different uses. Timber comes from maiden trees grown from seed or cuttings, and wood comes from coppiced or pollarded trees. In general our native trees are reproduced from seed and, when grown well, their trunks are straight and upright without flaws. Their timber is well suited to being used in long knot-free lengths for structural purposes eg roof timbers and planks. Traditionally timber is the product of trees of over 2ft (60cm) in diameter, though this was not invariably so; a typical Suffolk farmhouse was built from over 330 trees, half of them less than 9 inches (23cm) in diameter, about the size of coppiced oak trunks in Cornwall.

Wood, on the other hand, is the product of trees which have been previously cut down; their trunks tend to be less straight and to contain many more knots, especially near the ground. Coppicing is an efficient and reliable method of harvesting wood, although the quality and value is low because the trunks are so small. Their wood is

better suited for uses in which a smaller diameter is handier, such as poles, stakes, charcoal and firewood, with the bark for tannin. Sometimes selected oak trees in coppiced woodland were left to grow on to make timber trees. The word 'copse' is derived from 'coppice', and is defined as a 'thicket of planted or self-sown trees which are cut periodically for use or sale before the trees grow into timber'. [*Encyclopaedia Britannica*, 11th Ed.]

More often, especially where the landowner kept a tight control on hedge trimming, it was the hedge that provided timber trees for the estate. Trees planted on top of a hedge are timber trees until they are cut, and then if allowed to regrow become coppice, whereby their

product becomes wood. As the areas of woodland shrank during the medieval period, a higher proportion of trees was concentrated within hedges. In harvesting the wood these were coppiced, in contrast to hedgerow trees in lowland England which were often pollarded (cut off higher up the trunk than in coppicing). This is because trees on a Cornish hedge are higher off the ground, so the new growth is out of reach of grazing animals. At this height pollarding would have been a more difficult job, involving ladders. Lastly, a pollarded tree is a top-heavy shape and is more likely to blow over in Atlantic gales, demolishing a section of the hedge in its fall.

The distinction between timber and wood has always been important in farm tenancy agreements. Traditionally, most reserved the hedge timber for the landlord, while the tenant was allowed to use the wood from the hedges on his farm. These tenancy agreements were commonplace until about fifty years ago and there are plenty of trees growing on our hedges which started life under these legal conditions.



*Coppiced sycamore tree with many trunks growing on a Cornish hedge. This tree is overdue for periodic selective coppicing. If the larger trunks are not thinned out, eventually it might wind-rock and destroy the hedge.*

## EXPANSION OF TIN MINING

In the 16th century the demand for timber and wood increased rapidly with the expansion of deep mining. In about 1500 at St Austell it was recorded that 'if there [be] not Wood coale [charcoal] nor more cole [moor coal = peat] sufficient within the Stannary to blow the Tynn of the said Stannary, the Tynners may send their servants to Dartmouth Forest, and thereto make cole in any place where they list, paying for such Turf cutting and pasture as the Tynners or any other persons occupying the said Forest have paid for the same.' The word 'forest' as used here implied heathland usually covered in heather and scrub and not forest trees. In 1552, timber being carried on ox-drawn wains from Pencoys in St Gluvias to the Poldice mine was ambushed and stolen. The survey of the manor of Landulph in 1602 said that the hedgerow timber was of 'such scarcity that it will scant suffice ... to repair the customary tenements'. Trees grow splendidly on the Landulph estate in the sheltered Tamar valley, and the shortage must have arisen through greed or mismanagement.

Carew writing his *Survey of Cornwall* in 1602 said: 'For fuel, there groweth generally in all parts great store of furze, of which the shrubby sort is called tame, the better grown French, and some, good quantity of broom. The east quarters of the shire are not destitute of copsewoods, nor they of (almost) an intolerable price; but inmost of the west, either nature hath denied that commodity, or want of good husbandry lost it. Their few parcels yet preserved are principally employed to coaling, for blowing of tin. This lack they supply either by stone coal fetched out of Wales or by dried turfs, some of which are also converted into coal to serve the tinner's turn.'

*Na dalle deez perna kinnis war an sawe,  
Na moaz cuntle an drize dro dan keaw,  
Rag hedda vedn boaz cowzes dro dan pow  
Gwell eye veeha perna nebas glow*

You should not to buy fuel by the load,  
Or go to gather the brambles about the hedges  
For that will be spoken about the country.  
It would be better to buy some coal  
(James Jenkins c.1700)



*In this view at St Juliot, most of the trees are in the hedges, some forming substantial clumps where fields join their corners in the sheltered bottoms.*

Tenants were often allowed to 'cut down any timber growing upon his tenement for the erecting or repairing of their houses or cottages'. The tenant of Rescorla, near Sticker, had 'housebote, hedgebot, firebot, ploughbote, cartbote [wood for his house and hedge repairs, cooking, and repair of plough and cart]'. The landowner Rashleigh wrote in 1613 that 'woods now is grown exceeding scarce in this county', adding that this would bring great loss both to himself and the county at large, 'for want of coals [charcoal] for tin works'. In 1695 mariners from the Isle of Wight said they had worked 'almost time out of mind in

the carrying of charcole by sea from the New Forest into Cornwall for the use of the Refiners of Tynn.' Celia Fiennes, who made several long journeys on horseback across Britain, wrote in her diary in 1698 about tin smelting: 'Those mines do require a great deal of timber to support them and to make all these engines and mills, which makes fuel very scarce here. They burn mostly turfs, which is an unpleasant smell; it makes one smell as if smoked like bacon.'

Wood charcoal was the main fuel for tin smelting until experiments by Sir Bevil Grenville in the 17th century proved that tin could be smelted with coal. At its peak, the charcoal industry used thousands of tons of wood every year. The inspection and buying of the crops of various woods and coppices for charcoaling was a major expense in the blowing-house accounts.

Until about 1700 the majority of mines were drained by rag-and-chain pumps worked by hand using wooden pipes of 3" - 5" (75-130mm) bore and from 12 - 22 feet (3-7m) long. These were bored out of tree trunks, usually elm because it lasts longer than oak when perpetually wet. A four-inch pump lifting water twenty feet needed five or six men to keep it going. Pryce (1778) wrote that: 'The men worked at it naked excepting their loose trousers and suffer much ... from the violence of the labour which is so great that I have been witness to the loss of many lives by it ... and they are now pretty generally laid aside on account of the great expense and destruction of the men'. Similar pipes were used in Falmouth where Daniel Defoe, in the early 18th century, recorded in *A Journey from London to the Land's End* that the town was 'exceedingly well-watered, having water running in wooden pipes through the streets, and at intervals cisterns to receive it; and it is so contrived, that what overflows the cistern, runs down the hill the town stands upon'.

In 1855 in Wheal Freedom Mine, in Wendron parish, was discovered a column of elm-wood pipes of 11" (280mm) bore, previously used there for pumping out water. Similar bored-out trunks of elm trees were used for pumping liquid clay out of the early clay pits. These pipes were only a small part of the timber used in mines, both underground for props and above ground as a general building material. Redding quoted that the consumption of timber for mines was nearly 150,000 trees during 1856. Headgears, tramways, horse-whims, man-engines, ore-stamps, tin-washing buddles and many more installations were of timber construction. Most underground workings used timber as roof supports which are now rotting away, causing subsidence, especially unexpected where the former mining ground has been covered with bungalows occupied by incomers with no knowledge of what lies underneath.



*Typically, all the trees in this post-mediaeval landscape near Nancledra are in the hedges.*

One curious instance of the use of trees was the old men's tradition of planting an elder (Cornish - *skaw*) tree next to a shaft of a productive mine, and of a thorn (*hogan*) where the mine had failed. This led to a discussion quoted about the aforementioned Wheal Freedom by Jenkin in *The Cornish Miner*: 'On the opening up of an old wet mine called Wheal Freedom in the estate of Craskin near Helston, about 1855, an enormous 'skaw' tree was observed growing over the shaft, which many of the adventurers regarded as a good indication of riches being left by the old workers. Some of the more timid, however, pointed out a thorn-tree just opposite, which they claimed was the old men's sign that the work was poor. This was a conundrum, till suddenly one of the adventurers exclaimed: "Don't you see they had got a good thing, but on account of the water 'twas hard to come by."'

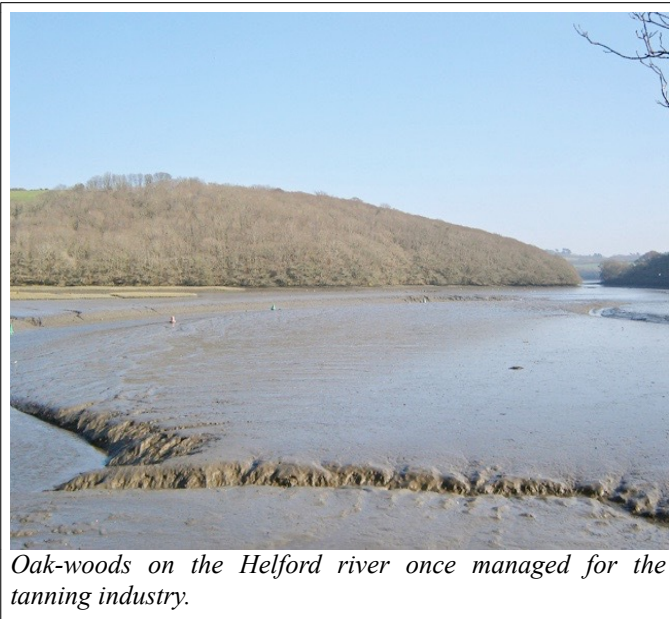
There may have been a link here to the old cottagers' tradition of planting an elder tree on the hedge by the house as a good luck charm and a protection from witches and all harm.

## THE TANNING INDUSTRY

Tannin is extracted from the bark of oak trees and was in huge demand for preserving leather and fishing nets. The trees in the sheltered valleys re-grew quickly after being coppiced, and the woodsmen favoured the oak trees, because of the value of the bark. The beautiful coppiced oak woods around the Fal, Helford and Fowey estuaries were managed for this need, the last bark being sold from Tregothnan Estate in 1975. The last traditional Cornish tannery at Grampound, which recently closed, relied on our oak woods.

From roughly 1780 to 1900 the tan-yards were a gigantic industry in which oak timber production was sacrificed for a greater yield of bark by frequent coppicing. The new shoots of oak can grow more than 2" (5cm) a day, and reach 6ft high and 1" thick in one growing season. Marshall in 1796 wrote: 'The method of taking down Coppice Wood, in this part of the island is singular. The ordinary woods being cleared away, previous to the barking season, the Oak is peeled standing; all the hands employed continuing to peel during the spring run of the Bark. When a check takes place, the woodsmen employ themselves in cutting down the peeled wood;





*Oak-woods on the Helford river once managed for the tanning industry.*

until the mid-summer run calls them again to the operation of peeling ... the wood being chiefly converted into saleable ware, during the winter months.'

Worgan wrote in 1811 that 'The coppices are all of the common oak, and are usually cut from twenty to thirty years' growth. ... The principal profit is the bark. ... some of the wood is converted into poles for farm purposes ... the greatest part is charred for the use of the blowing-houses, and for domestic purposes; the brushwood is sold for fuel.' The faggots were put together in the winter and had to dry out in the next summer before they could be used for cooking. The equivalent fuel

value of 1 ton of oak is about 5 hundredweight (250 kilograms) of coal and of pine 3 cwt, with beech, elm and chestnut between.

## WOODLAND HEDGES

The hedges surrounding woodland can sometimes give a useful clue as to its past. A hedge enclosing a wood was often built by the occupier of the wood (whether or not the adjoining land and the wood were in the same ownership) and remained the property of subsequent owners of the wood. Sometimes a ditch on the non-wood side of the hedge still remains as a sign that the actual boundary of the wood is probably on the field-side edge of the ditch. Where there is a pronounced ditch on the woodland side, the possibility of a deer park should be considered. It may have been a paled fence on top of a Cornish or turf hedge, or just a tall hedge. A lower hedge without any trace of a ditch suggests that it was only needed to exclude farm livestock. Often there are signs of these features within the wood, showing that the boundary had been moved outwards at some time, or it was within several ownerships. Where a wood is separated from a road by a 50-100 yard open strip, this may have been a precaution against highway robbery.

A wide hedge may be all that is left from an ancient wood, often evidenced by woodland plants surviving in the hedge. A survey by the Duchy in the early 17th century included Boyton where 'The right to common in Beare Wood had been usurped by three tenants, who alleged that they paid rent for this, whereas the payment should have been made in lieu of work in the woodland'. This wood has since vanished



*Cornish hedge around a wood, fenced to keep sheep in the field.*



*Woodland bluebells still grow on sunny treeless hedges, shaded by later growth of bracken and summer hedge plants.*

although some hedges south-east of South Beare look on the map as if they may have enclosed woodland, and may still have remnants of the woodland-edge wildlife.

It comes as a surprise to many today, to find bluebells and wood anemones plentiful on much of the heathland and associated hedges in West Penwith and elsewhere. These have survived for perhaps more than three thousand years, mainly because of the bracken. In our native deciduous woodland, bluebell and wood anemone have to do their growing during the period in the spring before the tree leaves come out and cast so much shade that sunlight does

not penetrate to the woodland floor. This shade also prevents plants which depend on summer sunlight, such as grasses and bramble, out-competing the bluebells, and later in the summer keeps the ground damp. It happens that bracken similarly casts summer shade, so the bluebells and anemones do their growing before the bracken unfurls its fronds, then profit from its shade and the reduced competition just as in woodland. In the places where there are no bracken or bluebells on the heathland, e.g. Woon Gumpus near Pendeen, the cause was likely to be have been the frequent removal of turf by local cottagers for domestic fires during the mining boom.

Another woodland-edge plant, the bramble or blackberry is unusual in that, although there are more varieties of it in Britain than there are days in the year, it is said that it does not often set viable seed. Apart from having varying blossom and differently shaped berries, the varieties also differ in the size and spacing of their prickles. If in a length of about 100 yards of hedge, there are four or more very different types of bramble, then either the hedge is an old one, or it gained its brambles from ancient scrub alongside or perhaps has been contaminated from nearby gardens. Some cultivated blackberries such as Himalayan Giant hybridise readily with the wild species and are often carried by birds out of the garden into nearby hedges where they grow into new semi-wild varieties of bramble. Thomas Tusser, who wrote in verse on matters domestic and agricultural in the sixteenth century, advised farmers



*A pink-flowered variety of bramble in a Cornish roadside hedge.*

'Go plough up, or delve up, advised with skill,  
The breadth of a ridge, and in length as ye will;  
Then speedily quickset, for a fence ye will draw,  
To sow in the seed of the bramble and haw.'

Trees in hedges, by virtue of their diversity of cover, provide for wide ranges of different wildlife, including the less obvious families of fungi and invertebrates which are foundations for the plants and animals that are the principal attraction of Cornish hedges. Most woodland

birds and butterflies adapt to a Cornish hedge habitat topped by trees and bushes. The largest number of species generally live at the junction of different habitats, especially at the woodland edge where the trees meet with meadow land. Cornish hedges in the more sheltered situations act as perpetual woodland edges.

## TENANCY RESTRICTIONS ON HEDGE TREES

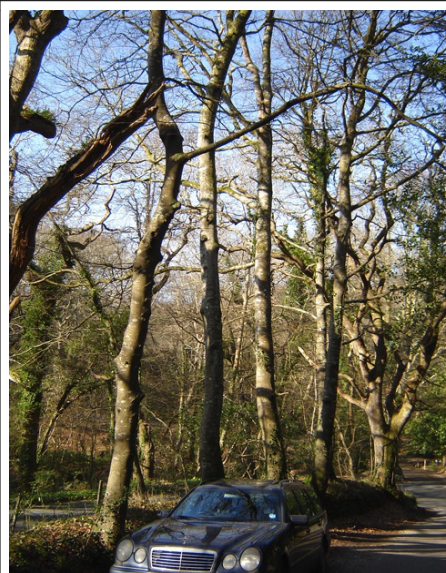
After the fifteenth century, more village woodlands were taken over by the landowner, and enclosed by hedges to separate them from the common. Tin mining continued to expand and, from being a community source of timber for making everyday things, woodland and hedgerow trees became a valuable asset bringing cash to the landowner, not to his tenants.

Timber was so scarce that landlords prohibited their tenants from felling fully grown timber trees or younger trees called maidens, i.e. that had not been previously coppiced. When a tenant wanted a piece of timber to repair, say, a cart, he usually had to ask his landlord for permission to chop down one of his trees for it. Restrictions in the letting of Croft Hendra in 1553 reserved to the landlord: 'all manner of timber trees of oak, ash or elm now growing or which hereafter shall grow in or upon the premises.' At West Beriw in North Hill at about this time 'There growth upon this tenement and Landreyne timber trees in the hedges and closes thereof worth to be sold...' This practice has continued on many of the older landed estates. It was, however, the custom of some landlords to keep the timber in the hedges for their tenants, selling only the trees in woodland to timber merchants as was recorded in 1787 at Trebartha Estate (North Hill). Another example of a Cornish lease in 1707 provided for one-sixth of the wood to be cut every year. Fifty years later, although the surveyor Bayntum advised that this same woodland should only be cut once in twenty-three years because of the 'badness of the soil', the new lease provided for cutting every ten years. This shows that the high demand for wood caused technical advice to be overridden by commercial considerations. One bulky item sent by Boulton and Watt to Cornwall was a wooden beam for a mine engine in 1793, which had been felled in Bar Wood, Stourport, 250 miles distant. The inherent difficulties in transporting such an item in those pre-railway days were such that it indicated that no beam as large as this could be made from trees growing in Cornwall or Devon.

An example of a Cornish eighteenth century tenancy agreement clause required the tenant 'Also to repair the mounds of hedges every time the wood is felled; and not to cut them under seven years growth; not to cut rods &c. but when the hedge is felled. ... Also not to fell, lop, or top any timber tree, under the penalty of ten pounds; not any maiden tree or sapling, under that of five pounds.' In another lease the tenant covenanted: 'Also not to cut hedges under twelve years growth; and then when the adjoining field is broken up for wheat; and to plash the sides (or outer brinks of the mounds), and shovel out the ditches (or hollows at the foot of the bank), throwing the mold upon the mound, to encourage the growth of the hedgewood.' Another typical lease covenant was: '... not to cut any wood, &c. for fuel, but at



*Most farms still have no other woodland than their hedges furnish.*



*Un-coppiced trees on a Cornish hedge near Gweek.*

the proper seasons; when hedges are cut, properly to splash and cast the same'. These are interesting references to the traditional practice of 'casting up', returning washed-down soil from the foot of the hedge to the top, to stabilise and renew the structure and encourage growth.

A member of the Arundel family, in a letter to Sir John St. Aubyn in 1771, complained of the shortage of oak and that: 'in little time our Navy, the glory and protection of our country, will be in a dangerous want of that best timber.' He went on to suggest that landowners should be made to plant several oak saplings for every acre newly enclosed. These would have had to be planted along the new hedges and, today, a hedge on Trewince near Grampond Road has a line of equally spaced oak trees obviously planted on top of the hedge over a century ago. Other examples have been seen on hedges in the Roseland.

Marshall in his 1796 *Rural Economy of the West of England* wrote: 'Many farms have no other woodland, nor supply of fuel, than what their fences [hedges] furnish; yet are amply supplied with this; beside, perhaps, an over-plus of posts, cord wood, faggots, and the bark of oak, for sale. Hedge-wood is looked up to as a crop. ... The hedgerow wood of the district is invariably coppice; with some few Pollards growing out of the sides, or at the bases of the mounds [hedgebanks], which are probably too high and narrow to support timber trees upon their tops, - were the tenants to suffer them to rise.' At his time of reporting, evidently most of the trees growing in our hedges had been coppiced or were suckers, particularly elm. There would have been exceptions where new hedges had been built as a result of enclosures or other encroachment on to common land. One of probably many instances was the roadside Cornish hedge enclosing Viverdon Down, two miles south of Callington, in 1894, which was planted with thorn and beech. In earlier times, tree seedlings were gathered nearby in the wild and planted on top of the hedge, adding much to the costs but thought worth the trouble. In Cornwall this resulted in quite a variety of tree species being planted on the tops of new hedges, a good example being hedges at Godolphin House where there are some especially wide hedges for which one explanation is that the landlord wanted to plant trees out of the reach of his tenant's cattle.

Trees tended not to be planted any more in hedges after about 1820 when agriculture fell into depression. With the poorer economy, hedges were trimmed less assiduously, to the benefit of the trees already growing thereon, these in effect replacing those which might otherwise have been planted.

## 20th CENTURY HEDGE TREES COME AND GO

After 1870, by which time most of the enclosures had been made, the number of trees growing naturally in hedges increased, probably more than doubling during the next eighty years. The principal cause was the widespread use of coal brought by ship into Hayle from South Wales. Not only was this used by the hundreds of tin and copper mines, but led to the installation of the famous Cornish slab, a locally-made cast-iron cooking and heating stove, in

every home, rich and poor alike. This brought to an end the long history of cooking on the open hearth fired by turf, furze and wood. With the increasing use of coal in the Cornish economy, the decline of the mining industry and the cheap imports of foreign timber, many woodlands were cleared and put into cultivation, the sale of the timber often paying for the reclamation.

During the two World Wars, when much mature timber was again extracted from woods,



*The flail mower has had a disastrous effect on the trees, the wildlife and the structure of the Cornish hedge. A once sizeable hawthorn tree here reduced to a few whiskers by repeated flailing.*

trees in hedges tended to be overlooked. In the 1950s the coming of tractor-mounted hedge-trimmers and general prosperity in farming induced a fashion for hedge tidiness which is still with us. Older farmers, remembering the overgrown and untidy hedges of the pre-war depression years, were proud to display their farms in the landscape as models of efficiency and prosperity. The introduction of the flail type of hedge-trimmer in the early 1970s allowed this tidiness to cause an entirely new scale of destruction of the natural growth and life in the hedges. It also prevented regrowth of the elms cut down by Dutch Elm Disease in the late 1960s.

By the 1980s conservationists, including many farmers, were beginning to realise that hedge trees were in a bad way, but misunderstood why. Free tree schemes and other incentives to tree-planting abounded, yet the slaughter of native saplings growing naturally in hedges continued unabated. Sometimes the more virtuous farmer kept the isolated 'tagged' sapling, leaving one every 50 metres to grow up into a tree. This tidy-minded concession was better than nothing, but did not go far towards landscape and wildlife amenity, and earnest conservationists were encouraged to further planting. Generally the free trees were planted in any non-farmed area, too often already ecologically valuable as heathland, wetland or scrub, at the recommended but much too close spacing of 4ft apart. This spoiled the existing habitat while not producing a valid type of tree habitat. Similarly trees were planted in close rows along the foot of Cornish hedges, tight against the hedgebank. The shading as they grow ruins the hedge habitat and makes it impossible to maintain the hedgebank.

Planting trees is still thought of as the essence of conservation, rather than an admission that conservation has failed. Tree planters suppose that a planted tree has the same value as a wild tree, and they fail to realise that it can harm the natural landscape and



*Trees planted too close to a Cornish hedge and too close together.*

wildlife. Species not normally found in Cornwall and with a 'garden' appearance, such as various conifers or trees with silver or red foliage, show awkwardly in the view, and often are unable to cope with the climate, soon looking sickly and deformed. At the same time, over-use of the ecologically disastrous flail has continued. Too much money has done seriously more damage than too little.

One answer lies in correct hedge trimming, which leaves a central strip of about 20" (0.5m) untrimmed along the middle of the top of the hedge, resulting in a natural line of bushes and trees, which is cheaper and far more effective for shelter, landscape and wildlife than leaving tagged trees.

### HOOPER'S DUBIOUS 'RULE'

The so-called Hooper's Rule is supposed to give the number of centuries in the age of the hedge by counting the number of tree and 'woody' species in thirty yards (27m) of hedge. Hooper's prediction was based on a survey of 227 hedges in lowland England between Gloucester and Lincoln that had already been dated by other evidence, going back to Saxon times. It is a pity that his survey stopped short of Cornwall where some of our four-thousand-year-old hedges have few or no woody or tree species growing on them.

He wrote of his hypothesis that: 'the correlation is a reasonable approximation to reality', yet admitted that a ten-species hedge might be predicted only to be within about 900 to 1,300 years old. He suggested that 'The botanical question of how the correlation came about is more difficult to answer. ... Personally I believe that a case of succession ... to the deciduous woodland which, it is believed, is the really natural vegetation over most of the country ... Usually the relationship between age and number of species is sigmoid, that is the number of species rises slowly at first then more rapidly and finally very slowly again until the natural type of vegetation is reached when the number of species is more or less constant ... [but] linear relationships, such as suggested here for the hedgerows, are not unknown.' He found that: 'Field maple begins to come in when the hedge already has four species in it. ... Spindle ... comes in when the hedge has six species in it.'

Field maple is not native to Cornwall but has recently been planted under free tree schemes. Spindle prefers limy soils and is found only in parts of the east of the county. Furthermore some landowners, including Victorians, planted several woody species in their new hedges, and this concept continues. At Ruan Laniorne, a new hedge was planted in 2003 of a mixture of wayfaring tree, spindle, wild privet, hazel, field maple, alder, dogwood, guelder rose, crab apple, buckthorn, quickthorn and blackthorn. Under Hooper's Rule, this hedge is already over one thousand years old. One nurseryman recommends 60% Hawthorn, 10% Blackthorn, 5% Field Maple, 5% Hazel, 5% Dogwood, 5% Spindleberry, 5% Crab Apple and 5% Wayfaring Tree, so is selling an instantly '800-year-old' hedge. How long some of these species will survive if planted in those parts of Cornwall where they do not grow naturally, is a moot point.

Hooper also acknowledged that 'hedge management raises another difficulty.' His own statistical analysis suggested that nineteen out of twenty hedges with ten species, could be aged anywhere between 900 and 1,300 years old, and the twentieth not even within those years. His idea was based on the concept that vegetation in England naturally evolves as deciduous woodland (not true for all of upland Britain), but the duration of the different stages varies from place to place depending on management, soils and climate.

Although a survey of hedges in Derbyshire showed an average of one shrub or tree species per century, this was only an average between 0.46 and 1.47 species per century which is too wide a variation to be helpful. The same survey had one-fifth fewer shrubby species in field

hedges as opposed to other hedges next to streams and gardens, for which no allowance was made. Allen (*Bramble-dating*, 1971) commented: 'The technique that Dr Hooper has described inevitably breaks down outside Lowland England. Throughout the north and west there are simply not enough kinds of shrub according to his criteria - and note this qualification - to permit the rule to operate.'

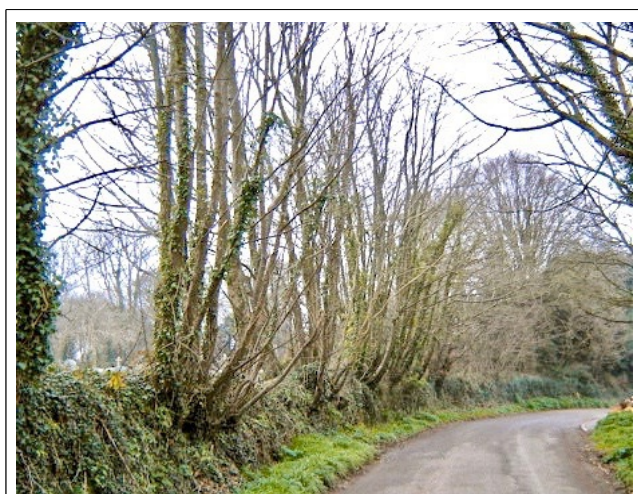
Experience in Cornwall has demonstrated that attempting to use Hooper's Rule to date our hedges is very unwise. Hooper's co-worker Pollard introduced the concept of 'indicator species' which are typically associated with ancient woodland and only colonise new areas very slowly. Again, these do not apply very well in Cornwall.

Some people say that the age of a hedge can be calculated by the age of trees. It is said that the majority of our larger native trees, on average, increase their girth at breast height by about an inch (2.5cm) a year. Ralph Whitlock in *The Oak*, 1985, advised that 'to form a rough estimate of the age of a tree, allow one year for every inch of trunk circumference. This is for trees in open country; for trees in woodlands allow two years for every inch. The circumference should be measured at five feet above the ground.' In Cornwall this average, if it is relevant, conceals such a wide variation with different soil types and wind exposure as not to be any guide; and it does not allow for coppicing, which has been done to most of our hedge trees. It is sometimes possible to saw out a section of the coppice stump showing the tree rings which may give an indication of the true age of the tree but, of course, not of the hedge, so the tree is damaged to no useful purpose. A tree seedling may appear at any time on top of a Cornish hedge many centuries or even millennia old.



*The number of different woody species in this Cornish hedge does not indicate its age.*

## COPPICING



*Coppiced trees on Cornish hedge.*

There is a tendency to think of coppicing only in relation to commercial woodland coppice, but most of the trees in our Cornish hedges have been coppiced over the centuries for reasons of management as much as commerce. In this way they are almost immortal, producing a constant succession of multiple younger trunks from the one stool, giving permanent shelter without the danger of blowing down in a gale and wrecking the hedge structure. Traditionally the trunks are coppiced individually and selectively, taking out one

at a time when it is '*as thick as a man's thigh at breast height*'. At this size, about 8" (20cm) diameter at 4½ ft (1.4m) high, the trunk and branches are removed easily without damaging the hedge. When there are other smaller trunks from the same coppiced stool they will each be cut in other years in their turn.

The shade cast by large un-coppiced hedge trees can have an effect on crop production, depending on the height of the tree and the length of its side branches. The effect is said to be appreciable up to a distance of twice the height of the tree-top from the base of the hedge, affecting production perhaps 16yds (15m) out into the field. The regularly coppiced hedge has little shading effect on crops and provides useful shelter. The wind permeability of coppiced hedges is near to the optimum of 40%, giving a reduction of around 20% in wind speed at the hedge bottom and appreciable shelter leewards for about 55 yds (50m).

One of the disadvantages of 'tagged' trees at intervals along the hedge is that they produce swirling down-draughts which buffet standing crops, and are uncomfortable for livestock. Keeping tagged trees encourages too-tight trimming of the rest of the hedgetop, leaving little to hinder the Atlantic gales, so the salt they carry damages the growing shoots of plants and trees. It is the effectiveness of the hedges in sieving the salt winds that causes the lop-sided growth of hedge trees where they are on exposed land, giving the Cornish landscape its characteristic appearance evocative of the sea's influence.



*Flailing between 'tagged' trees prevents the natural growth and succession of young trees on the hedgetop. It reduces the shelter value of the hedge, leaves very little wildlife alive and looks ugly and suburban in the landscape.*

The height of the trunk varies with exposure to salt-laden winds, so to a large extent the hedgetop trees are self-regulating, some never getting big enough for coppicing. Where trees grow tall, their situation is by definition well-sheltered, so there is less risk of their being blown down. Generally speaking it is the hedgetop trees that are fairly exposed to gales but not sufficiently wind-pruned that are most likely to need coppicing. This has become more necessary in recent years as climate change seems to be sending the prevailing westerly gales further north, so hedgetop trees, particularly sycamore, in Cornwall have grown more rapidly and more uprightly than ever before.

Selective coppicing of hedge trees not only provides a good source of wood for fuel and prevents blown-down trees damaging the hedge structure, but encourages many of the climbing plants (e.g. honeysuckle, dog rose, black bryony) and the diverse wildflowers of the hedgebank, which are easily shaded out by a large tree canopy.

## VETERAN TREES

Trees take a very long time to die naturally, indeed many go on living until destroyed by external factors eg disease, climate change. One obvious group are those that produce suckers. These trees have roots that come to the surface and make new stems a distance away from the





*Veteran native trees such as this hawthorn achieve a kind of symbiosis with the hedge and are best left alone to get on with their own strategies for survival, which contribute to the picturesque character of the ancient Cornish landscape.*

parent trunk, eg elm, blackthorn, cherry, aspen. Although the parent stump may eventually die, the root system continues to throw up new stems. Most broad-leaved trees will regenerate after coppicing or pollarding, the traditional way of managing and harvesting wood from our hedges. Many of our coppiced trees have very ancient origins. Our native trees, when left alone, grow up to maturity and then arrange themselves to survive for very much longer, often for longer than they have taken to grow from seedling to maturity. They layer themselves by rooting branches or twigs where these touch the ground, or when blown over they send up shoots to make

a new tree from the base using the roots that have remained in the ground. On hedges only the larger trees need to be reduced in height in the winder parts of Cornwall, to avoid their blowing down and destroying the hedge.

For the forester, a tree passes maturity when it gets 'stag-headed', because its timber starts to deteriorate thereafter. After the top branches die back, giving this similarity to a stag's antlers, the tree is not going to grow any bigger, and it may lose half or more of its upper boughs. At the same time the trunk tends to become more vulnerable to fungus infection and starts slowly to rot. The root system ceases to expand. The tree gradually becomes hollow and less able to resist stormy winds, but as this is accompanied by a wholesale reduction in the number of branches, it seldom gets blown down completely. If this happens it is usually because the tree is clad with ivy which has grown more vigorously as the top of the tree became more open, making a top-heavy load of ivy high up on the age-weakened tree.

The sapwood of a tree is the tissue that carries the water from the roots to the leaves, and is renewed outwards as the trunk expands. While the heartwood is earlier tissue no longer able to transport water, it gives structural support to the tree. Eventually the heartwood of the ancient tree rots and the wall of the hollow trunk becomes so thin that it splits asunder and much of the tree dies. Nevertheless a fragment of rooted trunk usually remains, with a twig and tuft of leaves which, if allowed to grow, makes a new tree. This whole natural process of decline and regeneration, from the tree's first becoming stag-headed, can take several hundred years. Many of the famous old trees in Britain have been in this stage for centuries. During this period of decay, both as part of the living tree and as bits lying on the hedge, the wood typically supports more than 1,800 species of invertebrates and over 1,000 species of fungi. As these break down the dead heartwood of the tree trunk they release locked-up nutrients which are recycled by the hedge's wildlife. Hollow trunks have usually decayed from the middle, while sawn-off trunks and boughs lead to decay from the outside inwards; each has its own range of fungi and invertebrates. Hollow or solid, a standing tree trunk as it rots supports a wider range of wildlife than a fallen one. The larger and taller the dead trunk, the more diversity it attracts.



*Stag-headed tree.*

In our windswept landscape, old trees are especially valued. Unfortunately Dryden's verse,

The monarch oak, the patriarch of trees,  
Shoots, rising up, and spreads by slow degrees;  
Three centuries he grows, and three he stays  
Supreme in state, and in three more decays.



*Typically rot begins when a large branch has been removed to prevent wind-rock.*

does not always hold true for Cornwall, especially in the exposed districts. He does rightly emphasise that trees can spend as much time in their dying as in their growing, but because of our climate, mature trees seldom last into extreme old age. Usually a branch is torn off by a gale, or is sawn off to prevent wind-rock, then fungi and bacteria settle in the socket. These grow into the tree's trunk which gradually rots so that eventually it loses its strength, often being hollow. In this weakened state, the rooting system is reduced and the tree is more prone to storm damage than its size suggests, especially as the Irish ivy that grows in Cornwall matures quickly and can make a huge top-heavy head on a weak tree. Timely removal of the ivy in such cases, before it can fill the sparse upper branches, may prolong the life of the tree. Otherwise ivy should be allowed to remain in trees as it does no harm and provides an invaluable shelter and nesting habitat for insects and birds. Only if the tree is clearly age-weakened and especially if overladen high up with ivy, and is in a situation where it is likely to do damage

if it falls without warning, something needs to be done.

If a tree growing in a hedge is blown over in a gale, it makes a large gap in the hedgebank to be repaired. About 10 yards (10m) of the hedge each side of this gap is loosened by the pulling of the roots as the tree falls down, so there are about 20-30yds (20-30 metres) of hedge needing attention, several days' expensive work. The best way of dealing with a stag-headed and ivy-loaded tree at real risk from gales is to top it at about 12 ft (4m) high, when it is usually found that the middle of the trunk has started to rot. Left alone, this tall stump may sprout new growth and make another tree; or it will die, and take perhaps twenty or thirty years to rot away. Usually ivy-clad, a tall dead stump like this makes outstanding wildlife habitat. When eventually it collapses, the stump has rotted so much that merely a lightweight shell remains. In its fall there is no danger to livestock or damage to the structure of the hedge, and there is plenty of other growth around the stump to fill the small gap it makes.



*This old tree has been left until the hedge structure is damaged and the stump, cut down too short, has died.*

Felling a dying tree at ground level is less likely to result in new growth, and the opportunity to make the valuable tall stump habitat is lost. Equally untoward is that the hedge growth under the tree will have been shaded and weak and, with too much of the tree trunk taken away, there remains a visual gap which livestock or people soon discover. If the tree is healthy, and is being cut down for another reason, then it may be felled at about 2-3ft (0.6-1.0m) for it to regrow from the stump. Although there has been no real market for home-grown timber in Cornwall for fifty years, there is sometimes a person who is ready to buy a sound straight trunk for a particular purpose.

The commercial value of timber in Cornwall today is low and the building trade prefers to import all its sawn timber. There are some niche markets, eg gig building, and good trunks for veneer are always valuable. The author's experience over the past 60 years has been that the people selling or planting trees have always been wildly optimistic about the economics of trees, both in woods and in hedges, with a healthy price always predicted for 30-40 years later. Sadly this has not yet come to pass, partly because of the plastics which have replaced wood in so many of its traditional uses. Most people have accepted that the value of a tree in a hedge is as a wildlife habitat and for its visual charm, shelter, dappled shade and overall environmental benefit. With today's belated realisation of the full impacts of climate change and the plastic waste crisis, attitudes are bound to change again, with a move back to using non-fossil fuel materials in manufacturing everyday goods, and to vastly increasing the mileage of hedge and number of trees in hedges to promote biodiversity and combat global warming.

## RESTRICTIONS ON CUTTING DOWN TREES

A felling licence is theoretically required when coppicing trunks exceeding 6" (15cm) in diameter. Usually the authorities are sympathetic to coppicing operations where the landowner is managing hedges in a traditional manner, if consultation is sought beforehand. Generally the Forestry authority does not want to be told about a tractor-trailer load of logs taken from coppiced trees once a year. The official licence-free allowance is 4 tonnes per calendar quarter. There is no reason why hedge-wood should not find favour again in private houses, certainly there are many farmers who are happy for friends to come in and to cut and take some away free; often the farmer only needs to be asked.

Some trees may have a tree preservation order which entails getting consent from the local planning authority before starting work. Special provisions also apply to trees within conservation areas designated by planning authorities, where the local district council has to be given six weeks' notice of any work on trees more than 3" (7.5cm) in diameter, or 4" (10cm) for thinning, measured 5ft (1.5m) above the ground. A tree preservation order makes it an offence to cut down, top, lop, uproot, wilfully damage or wilfully destroy the scheduled tree or trees without the permission of the council. But permission is not needed for:-

- Felling or cutting back a tree which is dying, dead or dangerous. (Cutting down or cutting back *excessively* may result in prosecution.)
- Conforming with an Act of Parliament.
- Complying with a request of certain organisations specified in the order.
- Complying with detailed, but not outline, planning permission.
- Preventing or controlling a legal nuisance.

If in doubt, a week's written notice should be given to the local district council before any work is done on the tree, in case permission is actually required. If a protected tree is deliberately destroyed, or damaged in a manner likely to destroy it, a fine of up to £20,000 may be levied by a magistrates' court. In some circumstances, compensation may be claimed if the council is uncooperative. The council has a list of all tree preservation orders, and often has an official who may be helpful in resolving problems. The purpose is to protect trees which make a significant impact on their local surroundings. Hedgerow trees, from a single tree to all the trees in the hedge, can be covered by an order, but not bushes or shrubs. Anyone can ask the local district council to make a tree preservation order on a tree or trees, which can take effect as soon as it is made. Replanting may be required if the tree was dying, or cut down without permission, and the replanted trees may be covered by an order.

## PLANTING TREES ON HEDGES

Care must always be taken not to loosen the top courses of hedge stones while planting on a Cornish hedge. The planting of trees on existing Cornish hedges is difficult also because of dry soil and root competition, and is usually unnecessary. The majority of hedges already contain tree seedlings occurring naturally which need only to be allowed to develop. Hedges above 100m altitude that are exposed to the salt winds and which do not naturally have trees are unlikely to be suitable for planting. More suitable are those hedges which have been closely trimmed, with the unfriendly horizontal trim across the top, for some years and appear to have no trees or bushes left growing on the hedgetop. Before spending money on planting new trees, these hedges should not be trimmed across the top, when trees will usually emerge by themselves from the hedgetop. These will have been there all the time, but kept in total subjection by the flail. If no trees emerge, young ones may be planted on the hedge, but need extra care during establishment.

Where a new hedge is being built primarily as a livestock barrier, the top of the hedge may be planted with **hawthorn** or **blackthorn**, according to which species predominates in the locality, to speed bushy growth, especially where the natural seed-bank in the soil used to top the hedge has been depleted by cultivation. In upland areas, seedling gorse is often to be found, growing naturally, and this is useful for planting on the hedgetop. This may be the **common gorse** (*Ulex europaeus*) which is thought to have been introduced into Cornwall for grazing stock in the eighteenth century, in contrast to the slower growing **western gorse** (*Ulex gallii*) which has been in Cornwall since prehistoric times. The main planting of trees on new hedges above 100m altitude should be based on blackthorn. Although the young plants may be twice as costly as hawthorn, it is more tolerant of salty winds and, because of its suckering habit, can be planted at a third of the density of hawthorn. Blackthorn attracts about two-thirds of the animal species associated with hawthorn, and it is a better barrier against livestock.



*European gorse flowers year-round, especially in spring.*

The planting of lowland hedges, below 100m altitude, should be with a mix of hawthorn

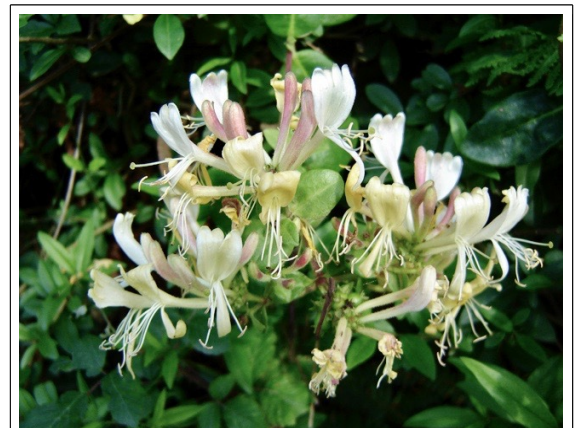


*Western gorse flowers in autumn.*

and blackthorn. The reason for including blackthorn is that it gives a good bottom to the hedgetop growth. For planting the top of the hedge with hawthorn and/or blackthorn, the plants are 12"/16" (30/40cm) tall, transplanted 1+1 or plug-grown, and planted 16" (40cm) apart in one row through the turf in winter, then pruned to 8" (20cm) above ground to improve drought-resistance while they establish their roots. Nurserymen recommend the planting of 5 plants per metre, but they do have a vested interest in selling more. Plants of native origin and local provenance should always be used if available.

Bare-rooted plants have much less chance of surviving especially if their roots have been allowed to dry out before planting. The tops of hedges, especially new ones, are very dry, and unless planted during the months of November and December, plants have difficulty in surviving.

Where a new hedge is to be planted with trees, instead of thorns or gorse, it should be built with the top and bottom widths increased by three feet (1m). If this is not done, there is not enough room in the hedge for the tree roots, and after twenty years or so they will start pushing the stones out. Local tree species should be obtained, and planted at an irregular spacing of about 5-10yds (5-10m). These should be oak, ash, sycamore and/or hawthorn, with occasional holly, beech, elder and sallow according to local circumstances. Trees such as poplar and horse chestnut are not suitable for planting on hedges as they are likely to blow over and are not traditional to the Cornish countryside. Conifers should not be planted on Cornish hedges.



*Honeysuckle has been lost from Cornish hedges due to flailing, and should be allowed to regrow.*

Plastic collars may have to be used to prevent rabbit damage. Trees can easily be grown from local seed by sprouting in a box of sand outdoors over winter (protect from mice), and then raised in pots in ordinary soil. The tap root should be pruned so that the seedling develops a healthy fibrous root system which transplants easily. About 10" (25cm) is a good height for transplanting pot-grown stock. Once the trees have become established on the hedge and have grown to a height of 3-6ft (1-2m), native wild **honeysuckle** (*Lonicera periclymenum*) and wild **roses** (native British species, primarily dog rose, *Rosa canina* and field rose, *R. arvensis*) should be added at intervals to give diversity. Honeysuckle, in its twining around the young tree shoots, particularly of ash and sycamore, may have so tight a grasp as to partly strangle the growth and form a deep corkscrew-like groove in it. This makes a traditional and attractive walking stick.

## TREE SPECIES IN CORNISH HEDGES

The principal Cornish word for a wood is *coed*, in East Cornwall given as *cut*, *cot* and *quite* and in West Cornwall as *coose*, *coys*, *goose*, *cus* and *coj*. There was possibly a link with the words copse and coppice. A smaller wood, or grove, is *kelly* or *gilly* (*killiow*, the plural). Trees are *gwyth*



Wild rose, *Rosa canina*.

(adjective, *gwithick*), tree is *gwedhen* or *wedhen*, tree-covered is *gwedhenek*, tree-root is *mot*. The Cornish words for a particular wood often survive long after the wood has gone, and are a useful indication of where a hedge might have been bounding a wood, with perhaps its relic wildlife and history.

In prehistoric times, **oak** (*Quercus* spp.) [Cornish - *dar*] was probably the most common tree in our woodland and on our hedges and because it has been in our landscape for so long, it has an extraordinary

amount of wildlife associated with it. Hulme advised that some 1500 insect species are supported by the oak in one stage or other of their existence. Ralph Whitlock listed 32 mammal species including 10 bats, 68 birds including 9 migrant warblers, 6 tits, 4 owls and 3 woodpecker species. 37 species of butterflies are found under and around oak trees, and 115 species of moths whose caterpillars feed on some part of the oak including 8 footman feeding on its lichens. 21 micro-moth, 44 beetle, 21 spider, 13 bee (*hymenoptera*) and 44 bug (*hemiptera*) species are associated with the oak. More than 30 lichens have been identified on oaks, and 10 fern species are found on the bark, under and around oaks. This wealth of wildlife thrives unseen by most people and provides the necessary food for the more visible mammals and birds. This is not to say that our other trees lack a comparable wildlife figure, it is just that oak has been studied and a list made of the wildlife that associates with it - indicative of the enormous value of trees, especially in hedges where they are associated with far more herbaceous plants than in woodlands, giving mutual benefit to a much greater biodiversity.

The typical oak in Cornish hedges is the Sessile Oak, *Quercus sessiliflora*, but within about five miles from each of the great 19th Century country houses in Cornwall there are many different wild self-sown hybrids between our native oak and the exotic imported oaks which the landowners planted in their ornamental gardens. Oak pollen is carried by the wind. These



Oak raised from local seed and planted with hawthorn on a Cornish hedge.

hybrids can be distinguished by their differently shaped and coloured leaves, being usually a darker green with a leafstalk like *Q. robur*, and the acorn cups which have a rougher texture. Oak woods are usually the haunt of jays and squirrels, which, in burying acorns, are agents for the spread of oaks.

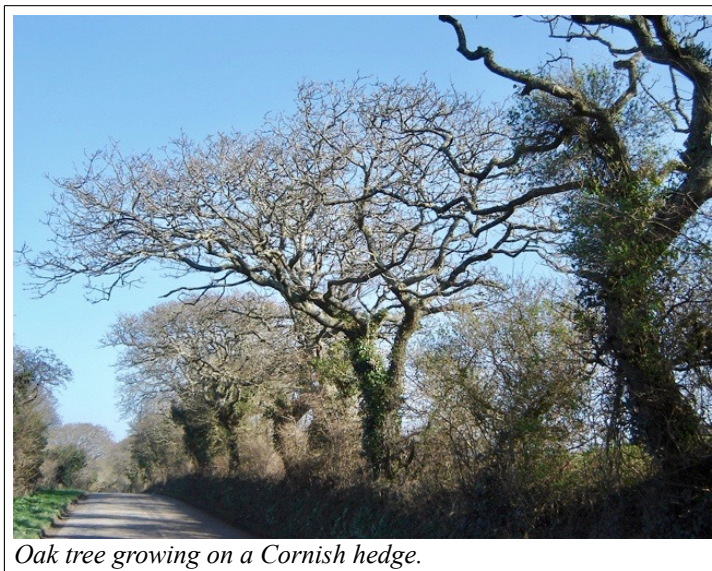
Oaks were the most planted tree on our hedges during the 17th and 18th centuries. Ancient oak woodland surrounds most of our estuaries, having been coppiced for many centuries, providing tannin, charcoal and wood. The oak can grow over six feet high and one inch thick in the first year after coppicing.

**Elms** (*Ulmus* spp.) [*elowen*] are, or at least were, the most characteristic hedge tree in Cornwall although being here an unimportant species in woodland. Ravaged by the 1960s outbreak of Dutch Elm disease, the species is trying to bounce back as it has done following previous epidemics. Re-growths have already reached over 30ft (10m) high before succumbing,

and the eventual heights of the survivors are taller each time they regrow. Rackham warns that the fashion to plant so-called disease-resistant strains of elm might not succeed, because of the ease with which the infecting fungus can mutate, so it probably pays better to let existing survival stocks persevere in re-establishing.

Elm colonies in hedges are usually growing on just one large single root, called a clone, which increases itself by suckers; elms do not spread easily by seed. Most of our elms are in hedges, past or present, because most of them were transplanted there, using rooted suckers. Elms are seldom found in woodland, excepting those that originated from a nearby hedge. The elm dominated many of our hedges so that, post-Dutch Elm disease, there were few trees visibly left in much of the hedged landscape, and farmers took the opportunity to trim flat along the top of the hedge. When the elm starts to regrow from that part of its root which was unaffected by the disease, the flail cuts off the emerging saplings, and where the hedge is unfortunately summer-trimmed every year, the elm eventually dies from root exhaustion. Still, there are now many hedges with a struggling elm population which, if left to grow up, would survive to reinvigorate our landscape. Here again, conservation's chief enemy is tidiness.

Identification of elms was, until a few years ago, thought to be easy, with one variety being called Cornish Elm. Recently botanists have recognised that our elms, although shy of seeding themselves, do interbreed and have produced enough hybrids to cause confusion in their nomenclature. The trouble is that most of our hedgerow colonies were established many years ago and, with this low rate of seeding, will take centuries to replace themselves if they die out. This is already happening on those of our hedges which are being flailed so tightly that the elm shoots are trimmed off before they have a chance to grow into trees again. They do survive for a surprisingly long time, so it is worth checking even now for elm regrowth in hedges and allowing it to happen naturally. Our elms are especially useful for shelter as their upright growth and arrangement of branches give shelter with only minor shading of crops. For burning in the house, elm is not the best, but improves when dry stored as logs over at least one summer. Its timber performs well under water and was successfully used as piles under the famous old London Bridge. Its cross-grain strength makes it suitable for mallet heads and, second only to yew, for bows. Being so strong it was also much used for country-made chairs. Elm hosts 25 species of the larger moths (Collins).



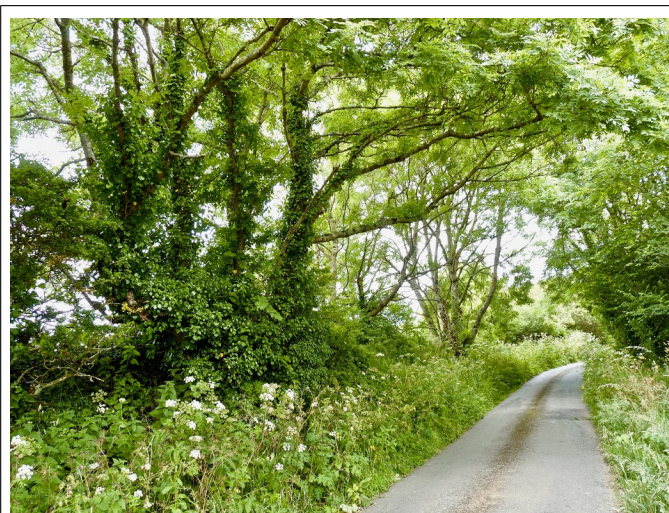
*Oak tree growing on a Cornish hedge.*

These wind-clipped elms near Penzance were among the very few to survive the great Dutch elm disease epidemic of the late 1960s and still look much the same today.



*These wind-clipped elms near Penzance were among the very few to survive the great Dutch elm disease epidemic of the late 1960s and still look much the same today.*

**Ash** trees (*Fraxinus excelsior*) [onnen] thrive in the sheltered parts of Cornwall, but also manage to exist in wind-sculpted shapes in hedges on the higher exposed ground. Although common throughout the county, it does not often naturally grow in groups, rather is found in association with other trees, especially sycamore. Interestingly these two trees often have a natural succession, one following the other, easily observable by finding a predominance of sycamore seedlings under ash trees and vice-versa. Copses of pure ash may have been planted. As befits a tree that has been a long time in



*Coppiced ash on the hedge makes a green and pleasant Cornish lane.*

Britain, it hosts 23 of the larger moth species (Collins). Ash burns as sweetly when it is green as when seasoned. Although it is not the easiest to split manually, ash wood has a toughness, lightness and elasticity which makes it highly valued for hand working, and an excellent wood for the handles of tools. The modern error of planting trees much too close together may unintentionally result, in the case of ash, in a grove of ideal Cornish shovel hilts.

It is devoutly to be hoped that the advent of sudden death and die-back disease in oak and ash will not result in the catastrophic loss of hedge trees as happened with Dutch Elm Disease. Perhaps the more widely spread specimens in the hedge network may at least be slower to contract disease than closely neighbouring woodland trees. Regular selective coppicing of the larger trunks may also help to control it, with swift removal of any infected part of the tree down to sound wood.

The **sycamore** (*Acer pseudo-platanus*) arrived probably in the 16th century, being called the great maple by Gerard in 1597. Traditionally sycamore is preferred for kitchen utensils as it is a close-grained white wood without odour. Unfortunately it has been condemned by some people as 'a weed', being in theory too recent an introduction to form part of the wildlife ecology in Cornwall. It is a relative of the field maple and would be expected to share some of its smaller wildlife, and it is believed that there are at least fifty-four species of invertebrates relying on sycamore. Certainly the abundant nectar from its flowers is very welcome to many flying insects which in turn provide food for insectivorous birds and bats. Pipistrelles and long-eared bats can be seen perpetually circling the sycamore trees on summer nights and blackcaps and many other small birds will spend hours picking under the leaves. Then, the infestation of



*A huge value of sycamore is that it will grow in exposed parts of Cornwall where few other tree species would survive other than as stunted, deformed bushes.*





*Wind-slanted beech on Cornish hedges near the Atlantic coast.*

aphids, which produce the sticky honey-dew enraging to tidy car owners who park their vehicles underneath, acts as a magnet for another range of insects and their predators. The winged fruits borne in profusion in the autumn are obviously welcomed by birds and small mammals, otherwise the countryside would be overrun by seedling sycamores every spring. Finally the leaf litter provided every autumn is more generous than from most of our native trees, and the bark is particularly attractive to lichens, mosses and liverworts. Certainly the wildlife virtues of the sycamore are

greatly undervalued by many naturalists.

It is a handsome tree and the Cornish landscape would be impoverished if sycamores were absent, especially in the more windswept areas where it is virtually the only broad-leaved tree to survive the salt-laden gales, providing much-needed shelter and wildlife amenity. The number of young sycamores in hedges has greatly increased since the flail type of hedge-trimmer was introduced, due partly to the effect of the flail in causing the loss of the seed-eating wildlife and partly to the absence of the old-time road-man who removed unwanted tree seedlings from the sides of the hedge before they could grow.

In the face of climate change the sycamore is probably the most valuable tree to help meet the immediate crisis, being large-leaved and very fast-growing, so well within ten years it begins to make its significant contribution to re-oxygenating the atmosphere, carbon capture and moisture retention, and sturdily breaking the force of high winds.

**Beech** trees (*Fagus sylvatica*) [*fawen*] thrive in our sheltered valleys and were frequently planted by the Victorians as specimen trees or bordering their private drives. It hosts 16 of the larger moth species (Collins). Beech is also used as a hedging plant, grown on the hedgetop and, although traditionally cut-and-laid and trimmed, is nowadays merely flailed. Grown like this it makes a good low windbreak because its juvenile branches retain their leaves over winter. When grown as a tree in hedges, it throws a significant amount of shade over the fields alongside. It does not easily spread by seed in Cornwall.

Both **hawthorn** (*Crataegus monogyna*) [*hagan*] and **blackthorn** (*Prunus spinosa*) [*spernen dhu*] have thorns and are the main small trees or shrubs in our hedges, though today they are often damaged or eliminated by flailing. They host many species of insects and are the basic habitat for most of our hedgerow birds. Both species host about 60 larger moth species, not all the same, as larvae (Collins). In evolutionary terms, when traditionally managed with coppiced trees, their scrubby habitats resemble the ancient woodland edge. Some people confuse them with each other, but they are not closely related.

Hawthorn (also known as may, white-thorn, quick or quick-thorn,) blooms after the leaves have emerged in April/May, rarely overlapping with the earlier-blossoming blackthorn. Its flowering usually coincides with the change from spring to early summer, hence 'Ne'er cast a clout till May is out', a slightly ambiguous saying, not to discard one's winter vest until the hawthorn either is in bloom or has finished blooming; or, alternatively intending May month, not

until the 1st of June. Hawthorn grows as a single tree to a height of 16ft (5m), has three- or five-lobed leaves and grey bark, and the fruits are small bunches of red haws. It rejuvenates, though rather slowly, after being coppiced when about 6" (150mm) diameter at breast height, or cut-and-laid.

The cutting-and-laying of hawthorn was practised occasionally in East Cornwall with turf hedges that are low (under 1 metre) and tend towards the ordinary hedgerow found in other parts of Britain. Otherwise the practice in Cornwall is layering, bending down a branch and, with a bit of turf or spare soil and a stone placed across it to hold it down, half-burying the tip, which roots and forms a new tree or bush close alongside the parent. A nick made in the underside of the branch may help it to root. Cornwall is famous for its clean Atlantic air, good for people's lungs and for lichens, but also friendly to fungal infections of plants. Layering, especially without the nick, eliminates the ever-present risk of disease entering the wounds when hedges are cut-and-laid. It is also much simpler and less time-consuming in making hedges stockproof.



*Hawthorn blossom.*



*Blackthorn blossom.*

Blackthorn (also known as sloe or slone) flowers on the bare branches, before the leaves emerge, in March/April over a couple of weeks which usually coincide with a spell of cold weather with arctic winds, hence the term 'blackthorn winter'. It grows as a thicket and can reach a height of 10ft (3m), or usually less if exposed, and has small oval leaves and blackish bark. Its small plum-like fruits are the sloes of sloe gin; they are edible but very astringent, hence the old saying 'as dry as slone pastry'. The thorns of blackthorn can sometimes cause a mild form of blood poisoning.

Blackthorn has no need of coppicing or layering as it immortalises and spreads itself by producing suckers, an advantage on the hedgetop but not always appreciated when it spreads into pastures alongside. Suckers appearing through the stone sides of the hedge must be pruned out.

A relative of blackthorn is the kea plum (kea being the Cornish for 'hedge'), which makes a tree 15 - 20ft high in sheltered places. It has no thorns and its fruits are larger than the sloe, palatable to eat when ripe and excellent for cooking or preserving, making a superb jam in particular. Kea plums will grow naturally but were also often planted in the hedge around cottage gardens or smallholdings.

Hawthorn and blackthorn have different ways of spreading along a hedgebank. Initially when the hedge was first built, their seeds might have been in the hedgebank fill. Both



*Blackthorn (in blossom) and hawthorn (in young green leaf) allowed to grow naturally in a field hedge near Penzance.*



*Wind-formed hedgetop hawthorns near Pendeen, sensibly presenting bowed backs to the Atlantic gales.*

colonise by seed, usually brought there in the guts of birds. Once these first trees grew up they were able to seed themselves directly on to the hedgebank, although only a few are allowed by the wildlife to germinate and grow into new trees. Blackthorn also spreads by suckers, underground roots that surface a few feet distant from the outermost woody stem, and then grow upwards to make another stem. Then as this new stem matures it makes its own suckers, and in this way blackthorn spreads along the hedgebank and, if allowed, eventually out into the field. The age of a hedge cannot be judged by the amount of

blackthorn or hawthorn because there is no way of telling whether the spread is due to seed, by planting or, for blackthorn, by suckers; and like all other woody growth, it may be centuries younger than the hedge structure beneath.

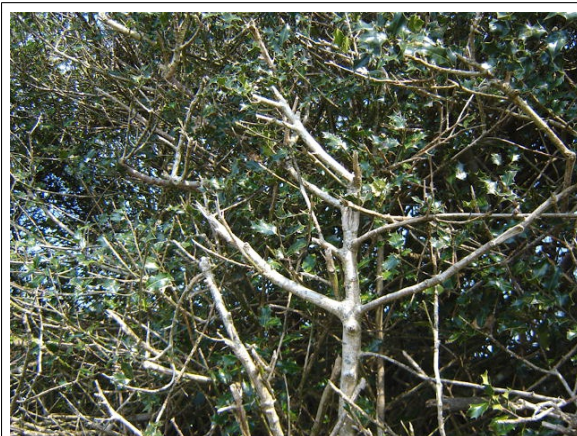
Traditionally, hawthorn was the most ubiquitous small tree of the Cornish hedgetops, to the extent that the powerful, sweet scent of the blossom acted as a guide to the crews of incoming ships approaching Land's End in a thick early summer fog, and as a heart-warming advance home greeting to Cornishmen returning from overseas.

The **alder** (*Alnus glutinosa*) [*gwern*] grows naturally in those of our hedgebanks where the base is waterlogged for much of the winter. Traditionally it was disliked because of its propensity to run suckers out into the fields. Collins lists 19 species of larger moth. From the 1980s the Italian alder (*Alnus cordata*) was imported in huge numbers into Cornwall by a free-tree scheme run by government. It grows quickly, reaching 11m in 20 years at Rosewarne (Camborne). Its widespread introduction, along with silver poplar and conifers also popular in these tree planting schemes meant that the numbers of local species being planted were much reduced. The Italian alder grows like a weed and coppices so easily that stumps have to be deliberately killed, and this vigour is likely to result in its remaining a foreign element widespread and conspicuous in our landscape. Ironically, the native alder will regenerate prolifically as free seedlings if land which once flourished as alder carr is left uncultivated.

**Hazel** (*Corylus avellana*) [*collen*] is found in hedges more in the east of the county where it was traditionally cut-and-laid, with the surplus shoots being sold locally. It dislikes salty winds. Lacking thorns it is a poor hedge plant for keeping livestock in, and it needs laying twice as often as hawthorn. It tolerates regular flailing and makes a dense windbreak up to 8ft (2m) high above the hedgetop, but this treatment largely removes its ability to produce the nuts that are essential to its wildlife value. The much-loved dormouse is especially fond of hazel and is rarely found very far away from it, so is now scarce in Cornwall. Collins lists 18 moth species using it as a food plant, and it also supports many micro-moth species.

**Holly** (*Ilex aquifolium*) [*kelyn*] has a tradition of being preserved in our hedges as trees. If they are trimmed tight they make a good stockproof barrier, but this prevents fruiting so they are usually left to grow up, with whole branches being cut off when needed. The origin of this

practise is believed to go back to pagan times when the holly was regarded as being sacred; and today many local people still prefer a berried branch or bunch of holly for Christmas instead of a fir tree. It was considered unlucky to cut down the whole holly tree in the hedgerow. The author remembers hedgerow holly being harvested for its berries at Christmas and sent upcountry in large wicker baskets by train. More recently, warmer weather joined with economics to stop this trade, as the berries now usually ripen and fall too soon. Close examination of trimmed holly in a hedge will often show that it has an ancient stump. What happened was that at some time the original tree was coppiced and the flail has been used to keep the regrowth from becoming a tree again. If allowed, holly will make a respectable tree over 30ft high.



*Flail-damaged holly on a Cornish hedge. One side of the tree completely smashed off.*

In our coppiced oak woodland, holly was weeded out because it tends naturally to take over, as is exemplified at the Malpas ferry, Old Kea, where it is even killing out the ivy and bluebells. Its control was traditionally by winter woodland grazing; native ponies will eat it. The age of woodland holly today is usually not much more than 70 years, demonstrating that the estate foresters in Cornwall were active in weeding it out until the second world war. It is still remembered as being done during the thirties in some of the Camel valley woods at Helligan. The stumps of many of our hedgerow hollies are much older. In ancient times, holly branches were cut and fed to sheep in hard winters. Holly is an excellent windbreak and any already in hedges should be allowed to grow into trees. Planting seedlings is an investment for the future as holly (at Rosewarne) is slow-growing at first and takes 15 years to reach a height of 8ft (2.5m).

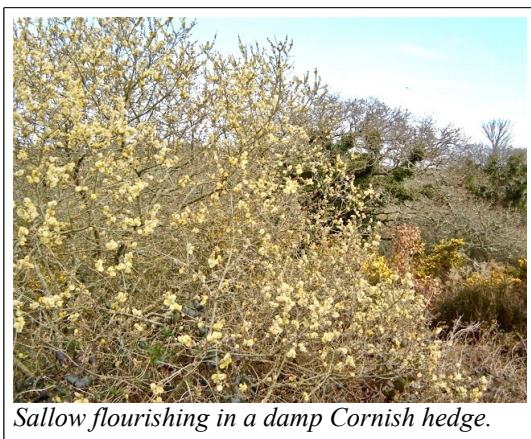
**Elder** (*Sambucus nigra*) [*scaw*] is regarded upcountry as being undesirable in hedgerows because livestock can easily push their way through. In Cornwall elder is valued for its shelter as it is tolerant of salty wind exposure. Nowadays with wire fencing protecting Cornish hedges, elder provides an easily-managed windbreak-component of our hedges. Its rough bark is a favoured wintering place for invertebrates among the many mosses that grow there, and so attracts the smaller birds.



*Elder, a small hedge-tree with many virtues.*

Elderberries are freely distributed by birds and animals and so will often seed on a Cornish hedgebank naturally. It was also deliberately planted on top of Cornish hedges, as at Gulval and on the hedges around the tiny cliff fields west of Lamorna Cove. The flowers and fruits are useful as herbal remedies and in preserves and wine-making. A solitary elder was planted on the hedge beside the cottage home for the tree's medicinal value and in lingering superstition as a traditional guard against witches.

**Willow** (*Salix* spp.) [*halygen*] appears in our hedges where the ground is wet, perhaps those alongside a marsh or stream. The term willow includes sallow, goat willow, osiers and various willow hybrids. They are all easy to propagate by cuttings which should be well rooted before planting on the drier hedgetop. When coppiced, willows can grow at 2" (50mm) a day. In wetter



*Sallow flourishing in a damp Cornish hedge.*

areas they make a good visual screen in the summer provided they are not flailed too tight. Willow is especially attractive to moths, 95 of the larger species use it for their caterpillars (Collins). The catkins, called “palm”, used to be cut for sale traditionally for Palm Sunday.

The **poplar** family (*Populus*) similarly does well in damper situations, but is unsuitable for planting on hedgetops, having the tendency to blow over and also to damage the hedge by aggressive suckering. Poplar trees grown from cuttings are usually

regarded as timber. They host 32 larger moth species. Unless very well sheltered, poplars are unhappy in the Cornish climate and do not thrive in salt winds, having an unfortunately messy, misshapen appearance in these conditions.

Less common on hedges are the two unrelated **chestnuts**. The **sweet chestnut** (*Castanea sativa*) [*kesten*] will grow on hedgebanks in our sheltered valleys, but the young spring growth is so early in Cornwall that it is sometimes cut back by frost. It coppices well but has not been traditionally planted in Cornwall for this purpose. This is surprising because it was already in Britain in Roman times and coppicing is an old technique well known in Cornwall. The **horse chestnut** (*Aesculus hippocastanum*) grows well in shelter but, like mature alder, tends to cast its boughs unexpectedly in gales. Both chestnuts are useless as a windbreak against our salty winds, and may be too top-heavy a shape for stability on hedgetops. Like poplars, chestnuts are too 'English' to settle with entire comfort in Cornwall's tougher environment, especially in the west.

Evergreen trees are sometimes planted on hedgebanks to provide shelter. **Holm**, or **evergreen oak** (*Quercus ilex*) [*glastanen*] was much planted by the Victorians and is a useful evergreen windbreak. It is slower-growing than many of the conifer species, but is much more suitable to the Cornish landscape and climate. Our native **Yew** (*Taxus baccata*) [*ewen*] is much too slow-growing to be of any economic use, and its leaves and twigs are dangerously poisonous to animals and humans. The notorious **leyland cypress** (x *Cupressocyparis leylandii*) is sometimes unwisely planted on hedgetops or alongside hedges. It shares with the **Californian pines** (*Pinus insignis* and *P. muricata*) the lack of a good root-hold and is easily blown over by gales when it gets high enough to be of shelter value. The native **Scots pine** (*P. sylvestris*) (*saben*) is slow growing, only reaching, on level ground, 30ft (9.5m) in 29 years at Rosewarne. The **sitka spruce** (*Picea sitchensis*) will tolerate winds but it is unsympathetic to the landscape and accommodates few wildlife. Conifers generally do not coppice, become leggy and are unsuitable for planting on Cornish hedges.



*Wind-sculpted holm oak. Footpath sign shows reduced size of the tree by weather-stunting.*

The **ivy** (*Hedera hibernica*) [*ydhyowen*] that grows in Cornwall is the same one that grows in Ireland, and differs from English ivy (*H. helix*) in



*Ivy changes its habit of growth and shape of leaf as it reaches the flowering and berrying stage.*

the shape of its leaves and in its habit of covering the ground seemingly as happily as when it is climbing trees. Its recent proliferation has been linked with global warming, but in Cornish hedges its aggressive spread has been directly caused by the annual flailing which removes competition, enriches the soil and produces ideal conditions for the ivy to take over at the expense of nearly all other species. It has been a modern disaster for our hedges as it eliminates biodiversity and along with the flail-induced spread of gorse on the hedge side destroys the stonework.

As regards trees, ivy does no harm to healthy trees except to those that do not grow very high. It can cloak the whole of a small tree so effectively that the tree struggles to put out enough leaves to survive, and with few leaves its roots are weakened and it may blow over. In the case of oak, elm, ash and other tall trees, the tree typically outgrows the ivy all the time, so most of its leaves are unaffected. It is only when the tree gets old and loses its vigour that ivy tends to take over the top of the tree, further weakening it and making it top-heavy so that it may blow over.

Ivy grows easily from seed and there is a big difference in the vigour of different plants. In one hedge there may be some hawthorns almost overwhelmed by ivy whilst a few metres distant, the ivy stays along the surface of the hedgebank. A peculiar feature of ivy is that the flowering shoots have changed from prostrate creeping stems to an upright woody growth, shown by the leaves being of a different shape as compared with the mat-forming state. This irreversible change tends to take place only after the ivy has climbed up into strong sunshine. In this state the ivy is a splendid plant for wildlife, especially when covering a tall stump, giving invaluable shelter and nest sites, while the nectar and berries are beloved of insects and birds.

There stood an old stock nearby  
where the Owl sang in her turn.

It was all overgrown with ivy;  
it was the Owl's dwelling-place.

(from the Middle English poem *The Owl and the Nightingale*)

Conversely, growing on the hedgebank side of flailed hedges, ivy is an unmitigated menace to all plants and other forms of life. As the damage of persistent flailing progresses, the heavy spread of the ivy eliminates every other species except bracken. Once it has a widespread stranglehold on a Cornish hedge it causes serious deterioration of the hedge's structure, loosening the stones, and is extremely difficult to remove, other than by completely rebuilding the hedge.

## THE FUTURE FOR CORNISH HEDGE TREES

In recent decades there has been no great demand for timber or wood from Cornish hedges as a worthwhile market. There may in future be outlets for firewood, as electricity, gas and oil become much more costly or are outlawed in the face of global warming. Trees have to be appreciated for their massive environmental, landscape and wildlife value, and their worth to the tourist, leisure and retirement demands of modern life.



*In the future trees in Cornish hedges will be more than ever valued for their wildlife, their environmental benefits in combating climate change and their picturesque appearance in the landscape.*

In meeting the climate crisis, trees on hedges will become ever more vital in the bid to re-oxygenate the atmosphere, sequester CO<sub>2</sub>, and mitigate effects of weather extremes, absorbing huge amounts of excess rainfall and giving shelter from gales.

The harvest of wood from selective coppicing and pruning management of hedge-top trees creates a significant source of material for replacing plastics and fossil fuels. By reinstating the miles of hedge lost to removal since the war and allowing trees to grow naturally on top, a huge contribution to survival can be made, using the minimum of land to achieve it. The practical outcome should be a greater awareness of the management advantages of selective

coppicing which, coupled with an enlightened approach towards hedge trimming, withdrawing use of the flail and leaving hedges to grow up naturally along the top, will foster and maintain the partly wooded landscape and the wide variety of wildlife which is expected and enjoyed by the public.

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