

# Trees in early Ireland

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## Summary

In this article an attempt is made to identify all the twenty-eight trees and shrubs which are listed and Old Irish law-text of about the eighth century AD. There is also an account of trees which are mentioned in early Irish poetry and proverbs, as well as brief description of woods and woodland management in pre-Norman Ireland. The article concludes with a discussion of tree-references in early English, Scottish and Welsh sources.

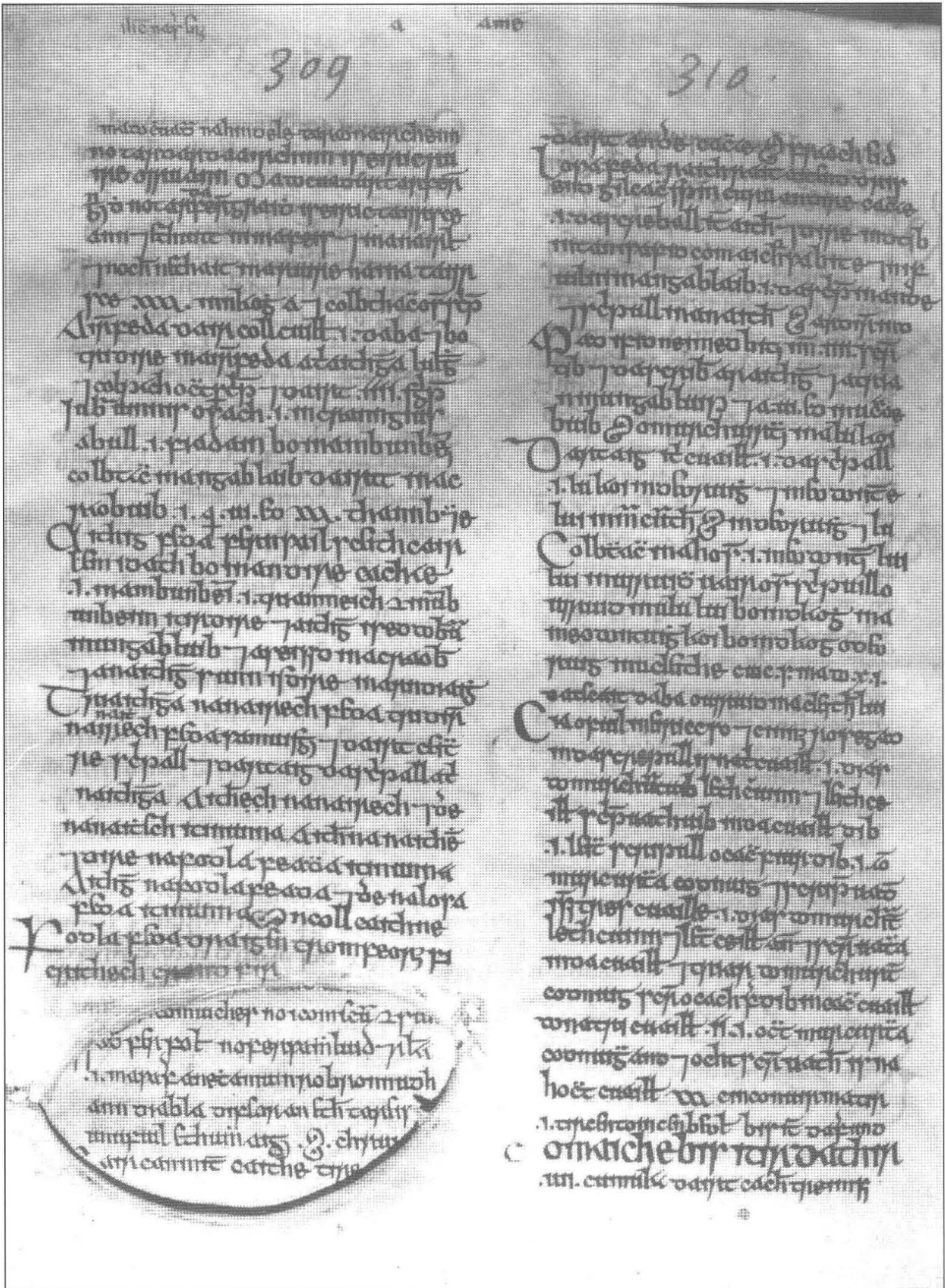
## Foreword

I am very honoured to be asked to give the annual Augustine Henry Memorial Lecture to the Society of Irish Foresters, and wish to express my gratitude to the President and Committee for this kind invitation. In the time at my disposal I intend to examine what the written sources in Irish and Latin tell us about the trees and woods of pre-Norman Ireland. I would like also to make some comparisons with the documentary evidence on this topic from early England, Scotland and Wales.

The literature of pre-Norman Ireland was rich and varied, and texts of many types survive: annals, histories, sagas, saints' lives, penitentials, religious verse, collections of proverbs, and law-texts. Of these, the law-texts provide the most detailed information on the trees of Ireland. These texts were mainly written between the seventh and ninth centuries AD, and describe a legal system ('Brehon law') which survived down to the end of the sixteenth century in those parts of Ireland still under Gaelic control. The law-texts cover a very wide range of legal topics and the wealth of information contained in them has been a godsend to the legal and social historian.

## The Old Irish tree-list

The law-text which contains most information on trees is entitled *Bretha Comaithchesa* 'judgements of neighbourhood', and dates from about the eighth century. It deals with the various offences which a farmer is liable to commit against his neighbour, and includes a section on damage to trees and shrubs. Four different degrees of damage are distinguished: complete extirpation of the tree, cutting it off at the base, fork-cutting and branch-cutting. Obviously, damage to an especially valuable tree such as an oak or yew would be a more serious offence than to a less prized tree such as a birch or willow. For this reason, the twenty-eight principal trees and shrubs are divided in *Bretha Comaithchesa* into four classes of seven, based on their economic worth.



This photograph shows columns 309-310 of the fifteenth-century legal manuscript no. 1336 (H 3.17) in the Library of Trinity College Dublin. It contains a version of the Old Irish tree-list, originally composed in about the eighth century. (Reproduced by kind permission of the Board of Trinity College)

## Class A

The most valuable class of seven is described as the “lords of the wood” (*airig fedo*).<sup>1</sup> I present here the Old Irish list with the equivalent English and scientific terms:

1. **Dair** ‘oak’ (*Quercus robur*, *Quercus petraea*)
2. **Coll** ‘hazel’ (*Corylus avellana*)
3. **Cuilenn** ‘holly’ (*Ilex aquifolium*)
4. **Ibar** ‘yew’ (*Taxus baccata*)
5. **Uinnius** ‘ash’ (*Fraxinus excelsior*)
6. **Ochtach** ‘Scots pine’ (*Pinus sylvestris*)
7. **Aball** ‘wild apple-tree’ (*Malus pumila*)

For any offence against one of the lords of the wood, the culprit must pay a penalty-fine (*díre*) equivalent to two milch cows and a three-year-old heifer. In addition, if the injury he has inflicted is merely branch-cutting, he must pay compensation (*aithgin*) of a yearling heifer; if it is fork-cutting, a two-year-old heifer is due, and if base-cutting, a milch cow. The text provides no information with regard to the compensation for extirpation. It is clear from the law-texts that damage to a tree belonging to another person was sometimes associated with the quest for honey or a swarm of bees. The seventh-century law-text *Bechbretha* ‘bee-judgements’ states that there is a heavier fine for damage to a tree during the period of growth than during the period of dormancy. The author was evidently aware that most types of tree are more likely to develop rot or disease if a cut is made during the growing season.

**Dair** ‘oak’. A ninth-century legal commentary appended to *Bretha Comaithchesa* provides a useful summary of the reasons why the seven lords of the wood are so highly prized. The value of the oak is said to derive from “its acorns and its use for woodwork”. There are many references in our sources to the importance of the acorn-crop (*mes*), particularly in relation to the fattening of pigs. A later legal commentator claims that a single oak can provide enough acorns to fatten one pig in a good year. This commentator describes the oak as *in Temair feda* “the Tara of the wood” on account of its size and eminence. The value of oak-timber is stressed in many texts. The sturdiest type of fencing described in *Bretha Comaithchesa* is the *dair-imbe* ‘oak-fence’, and there are many references to a type of church called a *dairthech* (or *daurthach*) lit. ‘oak-house’. Another use of the oak which is quite often mentioned in legal material is the provision of bark for the tanning of leather. If a person illegally removes enough bark from another person’s oak to tan a pair of woman’s sandals, he must give him a cow-hide. If he removes enough to tan a pair of man’s sandals, he must give an ox-hide. In addition, he must cover the wound with a mixture of smooth clay, cow-dung and fresh milk until there has been the width of two fingers’ new growth on all sides. This technique is similar to the modern one of painting an air-excluding preparation over the wound where a bough has been sawn off.

<sup>1</sup> It is interesting to note that a similar expression is used in the ancient Indian Laws of Manu. In this text, the trees which do not have (conspicuous) flowers are termed the “lords of the forest” (*vanayas-patayas*). Another Indian text entitled the *Anūgītā* names eight principal trees which are called “the princes among trees”.

In none of our texts is a distinction made between the two species of oak, *Quercus robur* and *Q. petraea*. Finally, mention should be made of an intriguing reference in an undated scrap of vellum which has been inserted in the fourteenth-century Yellow Book of Lecan. It records an abundance of moths (*tuile féidlecán*) in West Connacht “so that they did not leave a leaf on an oak in the whole territory of O’Flaherty”. This must be a reference to a plague of the moth *Tortrix viridana*.

**Coll** ‘hazel’. In spite of its relatively small size, the hazel is included among the lords of the wood. The ninth-century legal commentary explains that this is because of its nuts and its rods. Hazel-nuts were an important element in the early Irish diet: the fact that they could be stored made them a particularly important foodstuff during the generally lean and hungry winters endured by the early Irish. Later legal commentary describes the hazel as *in briugu feda* “the hospitaller (food-provider) of the wood”. It is clear from both the documentary and the archaeological evidence that the strong, pliable and quick-growing rods of the hazel were of the utmost importance in the construction of fences, enclosures and house-walls. The archaeologist Chris Lynn has described the ingenious method of house-construction employed at the seventh-century site at Deer Park Farm, Co Antrim. A double layer of wattling was used to build up a nearly circular structure. The rough side of each layer was turned inwards so that both the outside and inside walls had a smooth surface. Insulating material such as moss and feathers was packed in the cavity between the two layers.

**Cuilenn** ‘holly’. Two reasons are given in the ninth-century commentary as to why the holly-tree is included among the lords of the wood. The first is obscure but may possibly refer to the use of holly as a winter-fodder for livestock. A legal gloss from about the twelfth century refers to a “hook or sickle for cutting ivy or holly”, and another gloss intimates that both were fed to cattle. Writing in the late fourteenth century, a Catalan pilgrim to Saint Patrick’s Purgatory in Co Donegal, Count John de Perilhos, says that “the beasts eat only grass instead of oats, and the leaves of the holly, which they roast a little on account of the prickles which are in the leaves”.

The second use of the holly is the manufacture of chariot shafts. A later legal commentary refers to the holly as *in crann fuluchta fiannsa* “the tree of the open-air cooking-pit” because its hard wood is especially suitable for the manufacture of cooking-spits. Concealed spikes for trapping deer may also have been made from holly.

**Ibar** ‘yew’. The ninth-century commentary attributes the yew’s inclusion among the lords of the wood to “its noble artefacts”. There is frequent mention of the use of yew-wood in the manufacture of domestic vessels, and a law-text on status includes the *sai ibrórachta* “expert in yew-work” as one of the categories of craftsman. In later legal commentary this tree is described as *int éochrann aicdide* “the yew-tree of artefacts”.

**Uinnius** ‘ash’. This tree is included among the lords of the wood, according to the ninth-century commentary, because it was used for furniture and spear-shafts. A king’s chair seems to have been commonly made of ash, as it is referred to as “the support of a king’s thigh”. In other texts there are references to oars and yokes for oxen being made from ash. There was also an awareness that the presence of ash is a sign of good land: a law-text on land-classification refers to “hilly arable land... in which there are ashes in every second piece of ground”. The author may have had in mind fertile hilly terrain with fields inter-

spersed with ash-covered hills.

It is noteworthy that three out of the five venerated trees celebrated in verse in a Middle Irish collection of place-lore (*Dindshenchas*) are ash-trees – see under ‘Venerated trees’ below.

**Ochtach** ‘Scots pine’. Because of the extinction of this tree in Ireland in later medieval times, it is particularly interesting to find that it is included among the lords of the wood in the eighth-century *Bretha Comaithchesa*. The ninth-century commentator explains that its inclusion is on account of “its resin in a bowl”. Pine-resin was used to make pitch for caulking boats, preserving wood, etc. There are also a number of literary references to the use of pine-beams in house-building, and a gloss identifies the mast of a ship as being of pine. A Latin Life of Saint Samthann provides evidence of the increasing rarity of the pine. It describes how monastic builders spent four days in the woods of Connacht searching vainly for pines with which to build a refectory. Pines were eventually found, but only through the miraculous intervention of the saint.

The Old Irish word for ‘pine’, *ochtach*, can be shown to be etymologically connected with words for pine in other Indo-European languages such as Greek, Old High German and Lithuanian. In addition, a variant form of the word (*octgag*) is used in a seventh-century gloss to explain the Latin word *pinus* ‘pine’. In about the tenth century another word for ‘pine’ – *giúis* – is first attested in the Irish language, and was applied both to the living tree and to bog-deal. It seems to be a loan-word of unknown origin, and its appearance in the language may indicate that pine was becoming so rare in Ireland that it had to be imported.

**Aball** ‘wild apple-tree’. The ninth-century commentary attributes the inclusion of this tree among the lords of the wood to “its fruit and its bark”. Even the small sour fruit of the wild apple would have been much appreciated by the early Irish during the late autumn and winter. There is also evidence in the texts of a distinction between the wild apple and sweeter cultivated strains. Thus the ninth-century Life of Saint Brigit refers to an abundant crop of sweet apples in a churchyard. A legal passage states that the penalty for destroying an apple tree belonging to a dignitary is a fine of ten milch cows. In addition the culprit must restore a tree of the same variety. This implies the existence of different varieties of apple. It seems impossible to be certain whether the early Irish cultivated apple derived solely from selected sweeter strains of the native apple, or whether there was also introduction of grafts or seeds from elsewhere. I suspect the latter, as we know that the technique of grafting apples, vines and other fruit-trees was well known to the Romans, and is likely to have been witnessed by Irish monks on the Continent. To my knowledge there is no early evidence in Irish sources of different varieties of cultivated apple. In the late 1940s, J. D. G. Lamb carried out a pioneering survey of the cultivated apple in Ireland – an enterprise continued in recent years by Michael Hennerty, Anita Hayes and other pomologists. Many of the distinctively Irish apple-varieties are associated with particular places, such as the Kerry Pippin, Blood of the Boyne or Ballyfatten. One variety of cider-apple has a descriptive Irish name, which suggests that its pedigree goes back at least a few centuries. It is the Cocagee, apparently an anglicisation of Irish *cac a’ ghé* ‘goose-shit’. This seems a very strange name for an apple, but may perhaps refer to the appearance of the pulped cider-apples before straining. A sixteenth-century glossary contains an otherwise unattested Irish word *nenadmin* which is explained as “the delicate juice of wild apple” and possibly refers to cider. The reference in ninth-century

legal commentary to the value of the bark of the apple-tree is difficult to explain. John Tierney has suggested to me that it may refer to the use of the inner bark of the apple-tree to die cloth yellow. For magic apples, see under ‘Venerated trees’ below.

## Class B

The seven trees of lesser value which are distinguished in the text are the “commoners of the wood” (*aithig fhedo*). The penalty-fine for damage to any of these trees is a milch cow. In addition the culprit must pay compensation. There is some inconsistency in the different versions, but it seems likely that the original text required the payment of another milch cow as compensation for base-cutting, a yearling heifer for fork-cutting, and a sheep for branch-cutting. If the tree is completely extirpated (*aurbe*), a payment of two milch cows and a three-year-old heifer is due.

1. **Fern** ‘alder’ (*Alnus glutinosa*)
2. **Sail** ‘willow, sally’ (*Salix caprea*, *Salix cinerea*, etc.)
3. **Scé** ‘whitethorn, hawthorn’ (*Crataegus monogyna*)
4. **Cáerthann** ‘rowan, mountain ash’ (*Sorbus aucuparia*)
5. **Beithe** ‘birch’ (*Betula pubescens*, *Betula pendula*)
6. **Lem** ‘elm’ (*Ulmus glabra*)
7. **Idath** ‘wild cherry (?)’ (*Prunus avium*)

**Fern** ‘alder’. There are references in the texts to the use of alder-wood in the manufacture of shields, masts and tent-poles.

**Sail** ‘willow’. Our texts make no distinction between the different species of willow. No doubt because of its lightness willow is quite often mentioned in the context of house-building. In general, early Irish dwelling-houses would have been impermanent structures, so there would not have been a need to use more durable timber. The wooden church, on the other hand, was made of oak (see above). There are also many references to the use of a twisted willow withe (*gat*) to tie up livestock. As in modern times, willow-rods would have been used for basket-making, wattling, etc.

**Scé** ‘whitethorn’. The whitethorn is prominent in later Irish folklore, and there are many references to the magic properties of thorn-trees growing on fairy-mounds, but in early texts various other trees – particularly oak, hazel, yew and rowan – have more association with the supernatural. There is no mention in early texts of the whitethorn hedges which later became such a striking feature of the Irish landscape. Legal commentary from about the twelfth century includes haws (*scechóra*) among the wild fruit of minor economic importance. In spite of their insipid taste they were clearly of use as a source of nourishment in times of hunger.

**Cáerthann** ‘rowan’. There is little information in our sources on the practical uses of the rowan, apart from the manufacture of spits for roasting meat. Legal commentary also indicates that its berries (*cáera*) were of minor economic value as food.

In literary material, on the other hand, the rowan features prominently. In verse, the beauty of its berries and flowers are extolled (see ‘Trees in poetry and proverbs’ below). A fine passage in the eighth-century tale *Táin Bó Fraích* describes how a rowan-branch

contributed to Princess Findabair's falling in love with the warrior Fráech. Her father King Ailill and his retinue had gone to the river to bathe after a morning spent watching the hounds out hunting. The king spied a rowan-tree on the opposite bank of the river, laden with berries. He ordered Fráech to get a branch for him, as he thought its berries beautiful. Fráech did so, and swam back across the river holding the branch above the water. Findabair used to say afterwards that she had never seen anything as beautiful as Fráech crossing the river with his white body and beautiful hair, his well-shaped face, his very blue eyes, and the branch with its red berries between his throat and his white face.

There are also traditions of supernatural properties associated with this tree. For example, in one of the most extraordinary of the mythological cycle of tales, the Wooing of Étaín (*Tochmarc Étaíne*), the heroine Étaín was struck with a rowan wand by her husband's jealous first wife, the witch Fúamnach. As a result she was turned into a pool of water, which later became a beautiful fly.

**Beithe** 'birch'. As in the case of the rowan, the beauty of the birch-tree is frequently extolled in early Irish verse, but the relatively poor quality of its timber explains its inclusion among the trees of only secondary economic importance. *Beithe* 'birch' is the name for the first letter of the Ogam alphabet – an Irish script ultimately based on the Latin alphabet – which was mainly used for inscriptions on stone monuments from about the fifth to the seventh centuries. It is possible that the choice of *beithe* as the first letter was suggested by its resemblance to *Beta*, the name for the first letter of the Graeco-Roman alphabet. Tree-names are also used to denote other Ogam letters, such as *Coll* 'hazel' for *C*, *Dair* 'oak' for *D*, *Sail* 'willow' for *S*, etc. Hence in Irish grammatical writings the word *fid* 'tree' is used to mean 'letter'. Some later grammarians claimed that all Ogam letter-names referred to trees, but this is erroneous. For example, *Gort*, the name for *G*, is stated in later glosses to be the word for 'ivy', but it is in fact the common word for 'garden, field'.

**Lem** 'elm'. The palaeobotanical evidence indicates that the elm suffered a catastrophic decline during the first millennium – Frank Mitchell put it about 500 AD. It is significant therefore that it was still present in sufficient quantity to warrant inclusion among the "commoners of the wood" in the Old Irish tree-list. The word *lem* 'elm' is an occasional element in early Irish place-names, e.g. *Lemchaill* 'elm-wood', *Lemdruim* 'elm-hill', *Lemmag* 'elm-plain'.

It is well known that cattle are particularly partial to elm-leaves, and the Roman author Cato records that elm-leaves were routinely fed to cattle and sheep. An Irish text describes the elm as "sustenance of cattle" and "friend of cattle" so it is likely that the same practice was widespread in early Ireland. Indeed, the cutting of elm-branches for this purpose may have contributed to the decline of this tree.

There are some early Irish references to bark rope (*súainem rúisc*). No information is given with regard to the source of this bark. However, the Medieval Welsh law-texts refer to ropes made of elm-bark, so it is possible that this material was likewise used for rope-making in Ireland.

**Idath** 'wild cherry (?)'. My identification of the Old Irish tree-name *idath* (also spelled *idadh* or *fidat*) with wild cherry (*Prunus avium*) is uncertain. Stones of the wild cherry have been found in a number of excavations, most abundantly in the Late Bronze Age stratum at Ballinderry crannóg no. 2. The main textual evidence in favour of my sugges-

tion is the reference to “berries of *idath*” in a ninth-century poem entitled the King and Hermit Dialogue. The context requires that these berries are edible. In his edition of this poem Gerard Murphy sought to identify them as the fruit of the bird cherry (*Prunus padus*) which is also native to Ireland. However, its fruit is about half the size of a wild cherry, as well as being dry and sour. It seems more likely, therefore, that *idath* refers to the wild cherry.

Stones which have been identified as belonging to the sweet cultivated cherry *Prunus cerasus* have recently been found in an eleventh-century pit at Winetavern Street, Dublin. In general, however, it seems that the cultivation of this fruit belongs to the period after the Anglo-Norman invasion of 1169. The Irish word for the cultivated cherry is *sirín* (also *sílín*), a borrowing from Middle English *cherrie*.

### Class C

The third class of seven distinguished in *Bretha Comaithchesa* is the “lower divisions of the wood” (*fodla fedo*). In general, the trees in this group are of approximately the same size as the “commoners of the wood”, but somewhat less common. In one version of the tree-list the whitethorn is placed in the ‘lower divisions’ and its place in the ‘commoners’ is taken by the aspen.

The texts do not give a full account of the various fines due for damage to the ‘lower divisions’. The penalty-fine is given in one text as a yearling heifer. Another text states that the compensation-fine for base-cutting is a two-year-old heifer. It also says that the fine for complete extirpation (*aurbe*) is the same as that due for a ‘commoner’: this may be a scribal error.

1. **Draigen** ‘blackthorn’ (*Prunus spinosa*)
2. **Trom** ‘elder’ (*Sambucus nigra*)
3. **Féorus** ‘spindle-tree’ (*Euonymus europaeus*)
4. **Findcholl** ‘whitebeam (?)’ (*Sorbus aria*)
5. **Caithne** ‘arbutus, strawberry tree’ (*Arbutus unedo*)
6. **Crithach** ‘aspen’ (*Populus tremula*)
7. **Crann fir** ‘juniper (?)’ (*Juniperus communis*)

**Draigen** ‘blackthorn’. The blackthorn is often mentioned in early Irish texts, mainly in the context of its forbidding thorniness. However, it clearly also had some economic importance. According to *Bretha Comaithchesa*, twigs of blackthorn were used as an equivalent of barbed wire of modern times, and woven into a “thorny crest” (*cír draigin*) on the top of the field-fences.

Ninth-century legal commentary contains a most interesting reference to *draigen cumra* “sweet blackthorn” apparently in opposition to the wild blackthorn. From approximately the same period we have a reference to *áirni cumrae* “sweet sloes” in a Life of Saint Brigit. The same distinction is made explicitly in later commentary (from about the twelfth century) which contrasts the value of the wild sloe (*áirne fiadain*) with that of the sweet sloe (*áirne cumra*). These references suggest that some form of cultivated plum was present in Pre-Norman Ireland. The experts are not in agreement about the genetic history of the garden plum (*Prunus domestica*). Some authorities hold that the garden plum is a cross between the blackthorn and the wild cherry-plum (*Prunus cerasifera*) of southern Europe and neighbouring regions. However, in their *Domestication of plants in*



*the Old World*, Zohary and Hopf argue that the blackthorn is unlikely to have made any contribution to the ancestry of the domestic plum. In their view, the garden plum was evolved from the cherry-plum by human selection of sweeter varieties, and their maintenance by grafting. If this is so, the likelihood is that the ‘sweet blackthorn’ of early Irish sources is an introduced species of plum. Stones of a bullace-type plum, *Prunus insititia*, have been found in an early eleventh-century pit at Fishamble Street, Dublin. It is however possible that these are from a consignment of imported fruit rather than from home-grown plums.

While on the topic of introduced fruit-trees, I should also for the sake of completeness note that the wild pear (*Pyrus pyraeaster*) is native to Britain but not to Ireland. There is no textual evidence of the presence of cultivated pears in Pre-Norman Ireland. The Irish word for ‘pear’, *péire*, is a borrowing from Norman French or Middle English.

**Trom** ‘elder’. The elder-tree prefers nitrogen-rich soil and therefore tends to grow in places which have been enriched by human or animal faeces. The author of a ninth-century triad associated the elder with an accursed (i.e. abandoned) site: *Trí comartha láthraig mallachtan: tromm, tragna, nenaíd* “three signs of a cursed place: elder, corn-crake, nettle”.

**Féorus** ‘spindle-tree’. The main use of this widespread small tree seems to have been in the manufacture of spindles.

**Findcholl** ‘whitebeam (?)’. The literal meaning of the compound *findcholl* is ‘white hazel’. It must be admitted that – apart from leaf-shape – there is no particular resemblance between the whitebeam and the hazel. However, the white undersides of the leaves of this tree make it very conspicuous in early summer, so the first element of the compound fits well. Another slight argument in favour of this identification is the reference in an Old Irish tale to the use of *fidshlatta findchuill* “staves of white hazel” for belligerent purposes. The wood of the whitebeam is tough, heavy, springy and not liable to split. It would therefore make a formidable fighting cudgel.

An argument against this identification of *findcholl* is that its Welsh cognate *gwyn-gollen* (*gwyn* ‘white’ + *coll(en)* ‘hazel’) is valued at 15 pence in the record of a legal plea of about 1400 – this is the value of an ordinary hazel. Other trees, apart from the oak, yew, beech and sweet apple, have lower values. It seems, therefore, that the Welsh word corresponding to Old Irish *findcholl* refers to a variety of hazel, and not to any other species of tree. It is hardly a term for the filbert (*Corylus maxima*).

**Caithne** ‘arbutus’. At the time of the composition of *Bretha Comaithchesa*, the arbutus must have been more widespread than its present restricted range in parts of Kerry and West Cork, with a few trees by Lough Gill in Co Sligo. In their study of the distribution of this tree in vol. 38 of the *Journal of Ecology*, Sealy and Webb note that “the northern limit of its Mediterranean and the eastern limit of its Atlantic distribution are determined apparently by winter temperature; the regions in which it can flourish and regenerate are almost entirely those in which the mean January temperature is above 40° F (4.5° C)”. It is therefore unlikely to have grown naturally in central or eastern Ireland.

There is some evidence from place-names that it was formerly present in the Dingle Peninsula in Co Kerry and in Co Clare. The Irish name of the village of Smerwick near Dingle is *Ard na Caithne*, which is likely to mean ‘the hill of the arbutus’. There is also

possible place-name evidence of its presence near Inchicronan Lough, Co Clare. In his article on “The forests of the counties of the Lower Shannon valley”, Thomas Westropp marks a place called Derrynacaheny. In his discussion he does not provide an interpretation of this name, but it seems very likely to be *Doire na Caithne* ‘the oak-wood of the arbutus’, i.e. a wood which is predominantly of oak, but with some arbutus. One can compare other *Derry*-names in the vicinity: Derrynagullion (*Doire na gCuilleann*) ‘the oak-wood of the hollies’, Derrybehagh (*Doire Beitheach*) ‘the oak-wood of the birches’, Derryskeagh (*Doire Sceach*) ‘the oak-wood of the whitethorns’.

I should also mention another place-name in Co Clare which has wrongly been thought to contain the element *caithne*. This is Quin (Irish *Cuinche*). In his *Irish Names of Places* vol. 2, Patrick Joyce suggested that *cuinche* is a collective from *caithne* meaning ‘arbutus land’. The etymology of *cuinche* is unknown, but a connection with *caithne* is not possible.

Presumably on account of its rarity, the arbutus is replaced by *féithlenn* ‘honeysuckle, woodbine’ (*Lonicera periclymenum*) in three versions of the tree-list. This woody climber sometimes attains considerable dimensions, but it does not seem to have been of sufficient economic importance to warrant inclusion among the “lower divisions of the wood”.

**Crithach** ‘aspen’. The only native Irish poplar is the aspen. Its name *crithach* means ‘the trembling or shivering one’.

**Crann fir** ‘juniper (?)’. My identification of *crann fir* with the juniper is uncertain. The ninth-century King and Hermit Dialogue refers to *cáera fir*, which Gerard Murphy translates “berries of privet (?)”. However, the context requires an edible berry, whereas those of the privet are inedible. In later times, the juniper was widely used for flavouring or medicinal purposes. A variety of names has been applied to this plant. In a list of medicines from the fourteenth or fifteenth century it is called *ibhur craigi* lit. ‘rock yew’. Other more recent names include *iubhar beinne* lit. ‘mountain yew’, *bearnán Brighde* lit. ‘the gapped one of Brigit’, and *biora leacra* lit. ‘spines of the rock’. A Scots Gaelic name is *giuthas na beinne* lit. ‘mountain pine’. In many dialects, there seems to be an overlap between words for furze and for juniper. Thus in South Donegal *aiteanach* is applied to both plants, and juniper berries – formerly used to flavour poteen – are called *caora aiteanaigh*. In Scots Gaelic, the word *aitean* and its variant *aiteal* are given in dictionaries for ‘juniper’. In Irish, the word *aiteal* seems confined to dictionaries.

In conclusion, the identification of *crann fir* with ‘juniper’ should not be accepted as certain without further evidence, either etymological or textual.

## Class D

The least valuable of the twenty-eight trees and shrubs are the “bushes of the wood” (*losa fedo*). The three other classes of seven are fairly constant in the various manuscripts of *Bretha Comaithchesa*. In the case of the *losa fedo*, however, there is considerable variation between different manuscripts. I quote here the version in the oldest manuscript, Rawlinson B 487 in the Bodleian Library, Oxford. It lists six woody shrubs, along with the common fern bracken. Some other versions add an eighth member, *eidenn* ‘ivy’ (*Hedera helix*). In three manuscripts, either *raith* ‘bracken’ or *rait* ‘bog-myrtle’ is replaced by *lecla* ‘rushes’.

1. **Raith** 'bracken' (*Pteridium aquilinum*)
2. **Rait** 'bog-myrtle' (*Myrica gale*)
3. **Aitenn** 'furze, gorse, whin' (*Ulex europaeus*, *Ulex gallii*)
4. **Dris** 'bramble' (*Rubus fruticosus* aggregate)
5. **Fróech** 'heather' (*Calluna vulgaris*, *Erica cinerea*)
6. **Gilcach** 'broom' (*Sarothamnus scoparius*)
7. **Spín** 'wild rose (?)' (*Rosa canina*, etc.)

According to *Bretha Comaithchesa*, the penalty-fine for damage to a shrub in this class is one sheep. A ninth-century legal commentator on this text recognises the absurdity of imposing a fine for minor damage to such plants and states that there is no penalty for cutting a single stem of any of the *losa fedo*. For destruction (*aurbe*) of the whole plant, however, this commentary fixes a fine of one yearling heifer.

All the plants in this class must have been viewed as being of minor economic value. Bracken was used for bedding, and an eighth-century tale mentions furze and heather as providing inferior grazing for livestock. Of the additional *losa fedo*, ivy was used for winter fodder, and rushes (*Juncus effusus* and other species) served as floor-covering, etc. Bramble and wild rose were no doubt valued mainly for their fruit.

### Other trees and shrubs

Finally, a brief note should be made of those native trees and shrubs which do not appear in any of the four classes: buckthorn (*Rhamnus cathartica*), alder buckthorn (*Frangula alnus*), dogwood (*Cornus sanguinea*), guelder rose (*Viburnum opulus*), and privet (*Ligustrum vulgare*). If I am right in identifying (B7) *idath* as wild cherry, another omission is bird cherry (*Prunus padus*). Wild raspberry (*Rubus idaeus*) may for legal purposes have been regarded as belonging with (D4) bramble (*Rubus fruticosus*), and bilberry (*Vaccinium myrtillus*) with (D5) heather. Honeysuckle (*Lonicera periclymenum*) is usually absent, but replaces (C5) arbutus in some versions of the tree-list. In general the omitted species seem to be of little economic importance.

### Venerated trees

Throughout the world, trees have excited feelings of wonder and reverence, and in many mythologies woods are peopled by a variety of divine, semi-divine or fairy beings. There is a long tradition among the Celtic peoples of veneration for trees. On the eastern extreme of the Celtic world, it is recorded that the Galatians conducted rituals at a *drunemeton*, which may mean 'oak-sanctuary, sacred oak-grove'. In Ireland, on the western extreme of the Celtic world, the emphasis seems to have been on individual venerated trees rather than on sacred groves. Such trees are referred to as *bile* or *fidnemed*. In some cases they were on monastic grounds. For example, the Annals of Ulster record the destruction by lightning in AD 996 of the monastery of Armagh, including its timber building, stone church, porch and '*fidnemed*'. Venerated trees may also grow on secular sites, and be a focus of local pride. Traditions concerning such trees are recorded in a Middle Irish collection of lore about places called the *Dindshenchas*. One poem celebrates five outstanding trees: *Éo Rossa* (a yew), *Bile Dathi* (an ash), *Éo Mugna* (an oak), *Cráb Uisnig* (an ash) and *Bile Tortan* (an ash).

A tree's special status may make it the target of an enemy attack. The Annals of Ulster record that in 1099 the Cenél nÉogain chopped down the sacred tree of the Ulstermen,

the *Cráeb Telcha* lit. ‘the tree (branch) of the hill’. In 1111 the Ulstermen retaliated by felling the sacred trees (*biledha*) of the Cenél nÉogain at their inauguration site of Telach Óc. It is probable that some of these specially venerated trees continue a tradition of tree-worship going back to pre-Christian times.

As in Greek mythology, there are a number of references to magic apples in early Irish literature. In the tale *Echtrae Conli*, the hero Conle was one day sitting on the hill of Uisnech with his father, Conn of the hundred battles. A fairy woman appeared and tried to lure him to join her in the Land of Everlasting Youth. The king’s druid chanted against the woman so that Conle was unable to see her. But before she left she threw an apple to him. He spent the next month without food or drink, sustained solely by the magic apple which did not diminish however much it was eaten. He longed for the woman. After a month she returned in a ship of glass. Conle leaped in beside her and the pair rowed away through the air and were never seen again.

Magic hazel-nuts also feature in early Irish literature. Nine hazel-trees grew above the spring of Segais where the Boyne river rises. Their fruit, flowers and leaves used to burst forth simultaneously. Their nuts were the *cna imais* ‘nuts of inspiration’, which used to fall into the river. The salmon of knowledge derived its poetic wisdom from eating these nuts.

### **Trees in poetry and proverbs**

The beauty of trees is a familiar theme in Irish poetry. Some of the finest of such verse is to be found in material associated with the story of Suibne Geilt (‘Mad Sweeney’). After being cursed by Saint Rónán, Suibne lost his reason and went to live in the trees. In a ninth-century poem attributed to him, his home in an ivy-covered tree-top is compared to a hermit’s oratory. It is protected from the rain, but the sun, moon and stars are visible, and it is said to be “as bright as though one were in a garden”. In later verse, probably from the twelfth century, Suibne is represented as praising the trees of Ireland in turn, starting with the oak and the hazel:

A dair dosach duilledach,  
at ard ós cinn chruinn;  
a cholláin, a chráebacháin,  
a chomra chnó cuill.

‘O bushy leafy oak,  
you are high above every tree;  
o little hazel, o branchy one,  
o coffer of hazel-nuts’.

He then goes on to praise the alder and the blackthorn, and describes how everyone tries to shake down the apples of the apple-tree:

A aball, a ablachóc,  
trén rot-chraithenn cách;  
a cháerthainn, a cháeracháin,  
is álainn do bláth.

‘O apple-tree, o little apple-tree,  
strongly does everyone shake you;  
o rowan-tree, o berried one,  
your blossom is beautiful’.

He praises the beauty of every high tangled branch of the proud and melodious birch, and extols the holly for sheltering him from the wind. But other trees arouse less positive feelings. He describes the ash as the ‘baleful one’ as it provides the handle for a warrior’s weapon, and he castigates the bramble for tearing at his skin until its thorns are covered in blood. The noise made by the shivering leaves of the aspen fills him with dread as they remind him of a marauding band of raiders. He expresses hatred for the barren (i.e. acornless) oak-tree, which he compares with a milkless cow (*gammach*):

Mo miscais i fidbadaib  
(ní cheilim ar cách)  
gammach darach duilledach  
ar sibal go gnáth.

‘My hatred in woods  
(I conceal it not from anyone)  
is a barren leafy oak,  
habitually swaying’.

In another poem of the same period there is a dialogue between Suibne and Saint Moling, in which the saint attempts to persuade the madman to abandon his wandering existence among the trees. The attractions of the life-style of each man are compared. Saint Moling observes that a leaf of the Psalter of Saint Kevin is beautiful, to which Suibne replies that a leaf of his yew-tree in Glenn Bolcáin is fairer to him. The saint then states that he is going to say Mass, to which the madman replies that he is going to leap a high leap over a fair-ivied tree. Eventually, however, Suibne found respite from his insanity, and died at the entrance to Saint Moling’s church. He was buried with honour.

Trees also feature in various collections of proverbial and gnomic material. A ninth-century miscellany entitled ‘The teachings of Cormac’ contains the observation that “a wood is good at every season” (*maith fidbad cach ráithe*) and comments on the long-living nature of the yew-tree.

From approximately the same period, there are a number of references to trees in the collection known as *Trecheng Breth Féne*, edited by the great German scholar Kuno Meyer under the title ‘The Triads of Ireland’. This collection consists of ideas and images arranged in threes. Thus in Triad 105 the shedding of leaves by a tree is compared with annual sheddings by deer and cattle. The text reads: *Trí bí fochedet marbdili: oss foceird a chongna, fid foceird a duille, cethra focerdat a mbrénfhinda* “three live ones which shed dead things: a deer which sheds its antlers, a tree which sheds its leaves, cattle which shed their coat (literally, their stinking hairs)”. Another triad, no. 68, is rather difficult to translate, though the individual words are straightforward: *Trí bróin ata ferr fháilti: brón tréoit oc ithe messa, brón guirt apaig, brón feda fo mess* “three sorrows which are better than joy: the sorrow of a herd of pigs eating acorns, the sorrow of a ripe field of corn, the sorrow of a tree laden with fruit”. Here the author compares the hush of a herd of feeding pigs with the heaviness of a ripe corn-stalk or a fruit-laden bough. All three phenomena

are evidently regarded as having the appearance of sorrow, but are in fact “better than joy”, because they provide food, whether fat roast pig, bread or fruit.

### Woodland in early Ireland

The evidence of the law-texts and other sources indicates that there would have been many trees in a typical early Irish landscape. Because of their importance as a source of timber, firewood, charcoal, fruit, etc. trees – as we have seen above – were afforded strict legal protection. The picture portrayed by the texts is of farmland interspersed with individual trees and small woods. Many of these woods would have been privately owned, but it is emphasised in the law-texts that all law-abiding freemen in the community enjoyed limited rights in private woods. These include such privileges as picking berries, collecting enough firewood to cook a meal, gathering a fistful of hazelnuts, cutting rods for carrying away a dead body, and other minor concessions.

It takes only a generation’s neglect to turn farmland into woodland, and it is likely that after the great plagues among people and livestock in the mid-seventh century, there would have been considerable expansion of tree-cover. In general, however, the documentary evidence of the early Irish period indicates that large woods were rare and confined to poor land. The author of a ninth-century series of geographical triads clearly regarded large woods as unusual in the Ireland of his day. He lists the three wildernesses of Ireland (*trí díthreib Éirenn*) as *Fid Mór hi Cúailngi* “the great wood in Cooley” (Co Louth), *Fid Déicsen hi Tuirtre* “the wood of Déicsiu in Tuirtre” (probably on the slopes of Slieve Gallion, Co Tyrone) and *Fid Moithre hi Connachtaib* “the wood of Moithre in Connacht”. In addition to these three, there is a reference in another ninth-century text to a great wood (*Fid Mór*) to the west of the Sperrin mountains.

There has been much debate on the location of *Silva Vocluti* ‘Wood of Fochluth’, mentioned by Saint Patrick in his Confession as being “near the Western Sea”. The Patrician scholar Ludwig Bieler placed it near Killala in Co Mayo, but without providing definite proof.

### Woodland management

Our sources provide us with relatively little information on the ways in which woodland was managed by the early Irish. It is clear however that privately owned woods would normally have been surrounded by a ditch or wall. A law-text on land-values emphasizes that the worth of a wood is increased if there is access by road.

A passage in the twelfth-century tale *Cath Ruis na Ríg* provides evidence of the use of the ‘coppice with standards’ method of woodland-management, whereby a few large trees are allowed to grow to maturity while the underwood is regularly coppiced to yield a crop of rods every decade or so. The author makes a vivid comparison between an army in which all the lesser warriors have been slain – leaving only the great champions – and an oak-wood in the middle of a plain in which all the underwood (*cáel*) has been removed, with only the great oaks remaining.

### Timber and wood-cutting implements

Legal commentary distinguishes three categories of wood: firewood (*connad*), rods (*cáelach*) and timber (*clárach*). A standard beam (*clár n-inraic*) is legally defined as twelve feet in length, two feet across and one foot in thickness. An eighth-century law-

text on social status lists the various wood-cutting implements which a prosperous landowner would be expected to possess: a small axe (*eipit*), a large axe (*biáil*), a billhook (*fidbae*), a saw (*tuireasc*), an adze (*tál*) and an auger (*tarathar*). There is also mention in other texts of a wedge (*gend*) for splitting wood.

The small axe is primarily for chopping wood for the fire, and is also referred to as a *túag connaid* “firewood axe”. It is clear from the annals that the easily-concealed small axe was sometimes used to carry out murders. Thus the annals of Connacht record that in the year 1243, a man named Giolla gan Ionathar Ua Miadhaigh tricked Hugo de Lacy into inspecting a moat at Durrow, Co Louth. As Hugo was stooping down to measure the ground Giolla gan Ionathar despatched him with a *túag connaid* which he had hidden under his armpit. Similar murders with a firewood axe are recorded in 1232 and 1424.

The large axe was clearly a prized possession in an early Irish household. A ninth-century triad lists the three which are most valuable in a house as “oxen, men, axes”. The penalty-fine for stealing or destroying somebody else’s axe is a two-year-old heifer. Another law-text provides a detailed description of a proper axe, and specifies that the axehead should be manufactured with three heatings: red heat, white heat and the heat of tempering. The cutting-edge of the iron blade should be so hard that it is not dented by oak or yew i.e. the toughest woods which would be encountered. Some of the terminology used in this passage is obscure, but it seems that the author envisages an axehead of six inches in width with a cutting edge of three inches. The socket in which the wooden handle (*samthach*) is fixed is two inches in breadth. There is little mention of the saw in our sources, except in the context of small-scale carpentry, and it is clear that the normal tree-felling implement is the axe. The legal implications of accidents during the cutting of trees or branches are discussed in the law-text *Bretha Étgid*. The tree-cutter is liable to pay a fine and medical expenses for any injuries which he causes if he neglects to shout a warning beforehand. A later commentator on this passage further states that he must drive away any livestock which are grazing nearby, and ensure that there are no sleeping, deaf or witless people within the danger-zone.

Because of the enormous importance of rods (see under *coll* ‘hazel’ above) in the early Irish economy, it is not surprising that the billhook is classed along with the large axe as the two principal ‘irons of husbandry’. A law-text provides an account of the design and dimensions of a proper billhook. The socket is a fist in diameter, and the curved blade is about six inches long. The metal is one third of an inch thick at the beak (*corr*), half an inch at the middle of the blade, and an inch at the handle. There is a cutting edge on one side of the blade only, but there may have been a short spike (*frithchorr*) at the back of the blade. This would have been employed to pull branches towards the user.

### References to trees in early English and Scottish sources

Apart from the arbutus, the trees and shrubs in the Old Irish tree-list are native also to Britain. A number of other trees are native to Britain but not to Ireland, such as the beech (*Fagus sylvatica*), hornbeam (*Carpinus betulus*), maple (*Acer campestre*) and small-leaved lime (*Tilia cordata*). The documentary evidence on early English trees has been assembled by Oliver Rackham in his marvellously readable and informative books *Trees and woodland in the British landscape* and *The history of the countryside*. Unlike their Irish counterparts, the early English law-texts provide little general information on trees. The great richness of the English material lies in the preservation of detailed early records of the trees, woods and other physical features of specific areas. Appended to charters from

between c. 600 and 1080 AD, about 840 Anglo-Saxon ‘perambulations’ survive which describe the exact boundaries of named areas of land. Rackham notes that 766 individual trees of seventeen species are mentioned in these documents. Specific local evidence of this type is very rare in early Irish sources. An exception is to be found in the ninth-century Book of Armagh where a careful record is made of the boundaries of the fifth part of an estate belonging to a man named Caíchán in the territory of Calraige (Calry, Co Sligo). As in the case of the Anglo-Saxon perambulations, trees are used to mark some of the boundaries of this piece of land. For example, one landmark is given as the Great Oak-wood (*Daire Mór*) and another as the Slope of the Nine Trees (*Ucht Noí nOmne*).

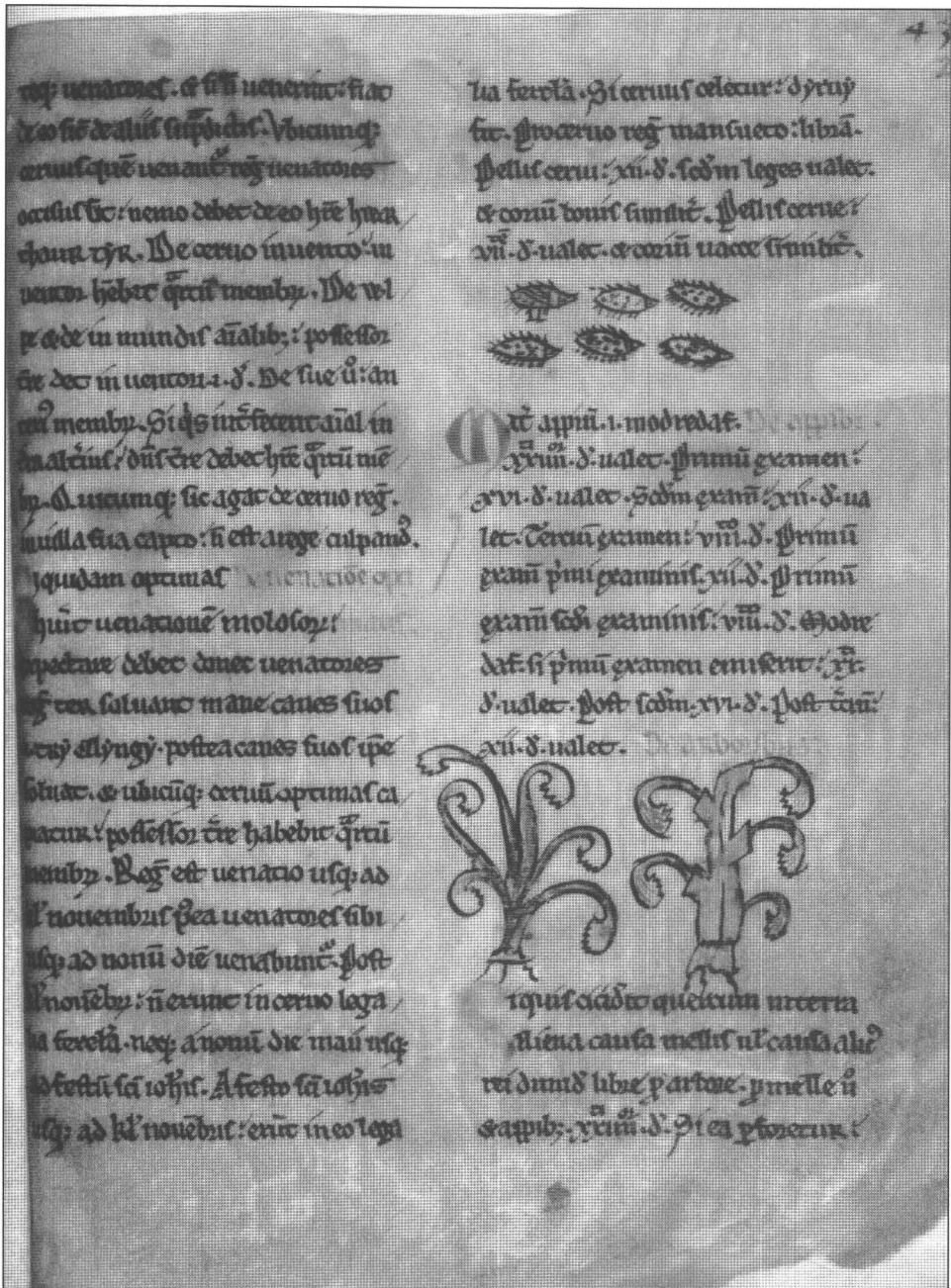
The Scottish *Leges Forestarum* ‘laws of the forests’ date from the twelfth and thirteenth centuries. A forest is a more or less wooded area under the control of the king or one of his barons. The *Leges Forestarum* lay down fines and penalties for grazing-trespass by domestic animals within the forest. For example, if the king’s forester catches goats in the forest, it is lawful for him on three occasions to hang one of them by the horns in the trees. On the fourth offence, he must kill one of the goats and leave its entrails there as a sign of the trespass. This document also deals with the killing of deer within the forest under various circumstances, and specifies what fines are to be paid to the king. There are a number of references to trees. If the oaks of the forest provide an abundance of acorns in a particular year, the forester is required to summon pig-owners from both town and country to bring their pigs there. For every ten pigs which come to the forest, the king gets the best one among them, and the forester gets a young pig. The *Leges Forestarum* deal also with the forester’s duty of exacting fines from those who cut trees in the forest. A distinction is made between fruit-bearing trees and those which do not bear fruit, but there is no list of species. If the forester finds anyone cutting an oak, he must evaluate the tree and exact six pledges from the culprit. If the offence is repeated, the number of pledges is doubled. Imprisonment is the penalty for a third offence.

### Tree-lists in Medieval Welsh texts

From the point of view of information on trees, Medieval Welsh documents have the most affinity with those of Ireland. A text entitled *Cad Goddau* in the fourteenth-century collection of poetry called the Book of Taliesin describes a battle involving trees and shrubs of different species against a common foe. In a recent study, Marged Haycock has suggested that it is a parody of the descriptions of warriors in Welsh heroic literature. This text can be compared with Suibne Geilt’s account of trees (mentioned under ‘Trees in poetry and proverbs’ above) as each tree in *Cad Goddau* is given a personality of its own. There is also a good deal in common between the tree-lists found in Irish and Welsh law-texts, though the Welsh texts are considerably later, dating mainly from the thirteenth and fourteenth centuries. I concentrate here on the version of the tree-list in *Llyfr Iorwerth* from Gwynedd (North Wales), as it provides the most detailed treatment of the legal consequences of damage to another person’s trees. Law-books from South Wales, *Llyfr Blegywryd* and *Llyfr Cyfnerth*, have similar lists, with some additional material. There are also Latin versions of the tree-list, one of which (Recension A) shares features of both *Llyfr Iorwerth* and *Llyfr Blegywryd*. In general, the fines for offences against trees seem somewhat lower in Welsh law than in Irish law.

**Derwen** ‘oak’. The value of an oak (*derwen*, cognate with Irish *dair*) is 120 pence, which is the equivalent of two milch cows. The total fine payable for cutting down an oak in





Two trees which have been cut in different ways illustrate the section entitled *De arboribus* 'on trees' at folio 22' of the thirteenth-century Welsh legal manuscript Peniarth 28.

The section begins *Si quis ciciderit quercu...* "if anyone shall have felled an oak ...".

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Irish law would be three milch cows and a three-year-old heifer (see above). As in the Irish law-text, a distinction is made between fork-cutting and branch-cutting. If the oak is forked with two main trunks of equal thickness or growth, a fine of 60 pence is payable for each trunk. A fine of 30 pence is payable for a cross-branch which reaches to the heart of the tree. No fine is payable to the owner of the oak if top branches are cut, but the culprit must pay a special fine (*camlwrw*) to the king. In the Latin version of the Welsh tree-list in the thirteenth-century manuscript Peniarth 28, this passage is accompanied by an illustration of two trees, possibly oaks. They are reproduced with this article by kind permission of the Trustees of the National Library of Wales. In his book on *Welsh woods and forests*, William Linnard suggests that the one on the left has been coppiced at the base, whereas the one on the right has been lopped at various heights.

Welsh law also distinguishes a special category of oak-damage called *twill* 'cutting into, perforation', for which the different versions assign fines of 24, 30, 40 or 60 pence (with in some cases an additional fine to the king). This type of damage is associated with the theft of honey from a bee-colony which has taken up residence in a cavity in the oak. The Welsh text assigns the derisory value of 4 pence to a rotten oak (*kegyn derwen*) which produces no acorns. One can compare Suibne Geilt's contemptuous reference to the barren oak (*gammach darach*) which has been discussed above.

**Collen** 'hazel'. *Llyfr Iorwerth* assigns a value of 24 pence to a hazel-grove (*collwyn*). If an individual tree (*collen*, cognate with Irish *coll*) is cut from a hazel-grove, only 4 pence are to be paid. Other versions do not assign values to a hazel as part of a grove, but simply state that a fine of 15 pence is due for the destruction of a hazel.

**Afallen** 'apple-tree'. The Welsh law-texts generally make a distinction between the sweet apple-tree (*afallen ber*) and the crab apple-tree (*afallen sur*). According to *Llyfr Iorwerth*, a graft (*ymp*) of a sweet apple-tree is worth 4 pence until the winter after it is grafted. Thereafter its value increases by 2 pence each season until it bears fruit. It is then worth 60 pence. The crab apple-tree, on the other hand, is only worth 4 pence until it bears fruit; it then acquires the value of 30 pence. The distinction in the Welsh texts between the sweet and sour apple is not made in the Old Irish tree-list. It is however mentioned in other Irish texts (see under *aball* 'apple-tree' above). Welsh *afallen* is cognate with Irish *aball*.

**Ywen** 'yew'. *Llyfr Iorwerth* assigns the yew a value of 25 pence. *Llyfr Blegywryd* and *Llyfr Cyfnerth*, on the other hand, make a distinction between a woodland yew (*ywen coed*) worth 15 pence and a churchyard yew (*ywen sant*) worth one pound (= 240 pence). The same distinction is made in Recension D of the Latin version.

**Other trees.** *Llyfr Iorwerth* states that any tree which has been planted for shelter in a garden or beside a house is worth 24 pence. In other situations, the ash (*on*), alder (*gwern*), willow (*helyg*) and other 'non-fruiting' trees (without fruit of dietary importance) are given a value of only 4 pence.

The blackthorn (*draenen*, cognate with Irish *draigen*) is not specifically mentioned in *Llyfr Iorwerth*. However, in *Llyfr Blegywryd* and the Latin versions it is valued at 7½ pence, and in *Llyfr Cyfnerth* it is valued at 8½ pence. Another tree which is omitted from *Llyfr Iorwerth* is *ffawyden* 'beech'. In his *Welsh woods and forests*, William Linnard

explains that this is because the beech had not been introduced to North Wales at the period of the texts. In *Llyfr Blegywryd* and *Llyfr Cyfnerth* from South Wales, the beech is given a value of 60 pence, as is the case in Latin Redaction D.

## BIBLIOGRAPHY

- Bieler, L. 1979. The Patrician texts in the Book of Armagh. *Scriptores Latini Hiberniae X*. Dublin Institute for Advanced Studies.
- Charles-Edwards, T. and Kelly, F. 1983. *Bechbretha: an Old Irish law-tract on bee-keeping*. Early Irish Law Series I, Dublin Institute for Advanced Studies.
- Emanuel, H. 1967. *The Latin texts of the Welsh laws*. University of Wales Press, Cardiff.
- Haycock, M. 1990. 'The "Cad Goddau" tree-list'. In: *Celtic Linguistics: Ieithyddiaeth geltaid. Readings in the Brythonic Languages, Festschrift for T. Arwyn Watkins. Current Issues in Linguistic Theory* 68:297-331.
- Kelly, F. 1976. The Old Irish tree-list. *Celtica* 11: 107-124.
- Kelly, F. 1997. *EARLY IRISH FARMING a study based mainly on the law-texts of the 7th and 8th eighth centuries AD*. Early Irish Law Series Volume IV. School of Celtic Studies, Dublin Institute for Advanced Studies, Dublin.
- Linnard, W. 1982. *Welsh woods and forests: history and utilization*. Caerdydd, Cardiff.
- Lucas, A. T. 1963. The sacred trees of Ireland. *Journal of the Cork Historical and Archaeological Society* 68:16-54.
- Lynn, C. 1987. Deer Park farms, Glenarm, Co. Antrim. *Archaeology Ireland* 1 (1) 11-15.
- McCracken, E. 1971. *THE IRISH WOODS SINCE TUDOR TIMES Distribution and Exploitation*. David and Charles, Newton Abbot, Devon.
- McManus, D. 1991. *A guide to Ogam*. Maynooth Monographs 4. National University of Ireland, Maynooth
- Meyer, K. 1906. *The triads of Ireland*. Todd Lecture Series XIII. Royal Irish Academy, Dublin.
- Meyer, K. 1909. *Tecosca Cormaic: the instructions of King Cormac Mac Airt*. Todd Lecture Series XV, Dublin.
- Mitchell, F. and Ryan, M. 1997. *Reading the Irish Landscape. Town House and Country House*, Dublin.
- Murphy, G. 1996. *Early Irish lyrics, eighth to twelfth centuries*. Oxford 1956. Reprinted Four Courts Press, Dublin.
- Owen, A. 1841. *Ancient laws and institutes of Wales i-ii*. Commissioners of the Public Records, London.
- Rackham, O. 1976. *Trees and woodland in the British landscape*. Dent, London.
- Rackham, O. 1986. *The history of the countryside*. Dent, London.
- Westropp, T. J. 1909. The forests of the counties of the Lower Shannon valley. *Proceedings of the Royal Irish Academy* 27 (C):270-300.
- William, A.R. 1960. *Llyfr Iorwerth: a critical text of the Venedotian Code of medieval Welsh law*. Cardiff.
- Zohary, D. and Hopf M. 1993. *Domestication of plants in the Old World*. Oxford University Press, Oxford.