COST E42: VALUABLE BROADLEAVED TREES IN EUROPE

CULTURAL ASPECTS OF THE TREES IN SELECTED EUROPEAN COUNTRIES

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INTRODUCTION

This paper describes how a particular group of broadleaved trees – known as "valuable broadleaved trees" because of their special value as timber and their general rarity in terms of timber supply – have had a special place in the cultural landscapes and cultural life of a number of countries in Europe. The paper is an output of Cost Action E42 – "VALBRO" - Valuable Broadleaved Trees in Europe. The countries presented here reflect those which took part in the action, although conveniently they represent a good range of different regions – from Finland in the North to Greece in the south and from Ireland in the west to Poland in the east. Not all of the trees are found in each country and in some they are planted but not native. The cultural values and associations therefore vary but there are also some great similarities in the way trees have played a role – economically, providing a range of products both timber and non-timber; as elements that identify place and help establish place identity; as sources of folklore, myths, legends and superstitions. These values are on the point of being lost to most cultures because they are associated with traditional, rural ways of life. As Europe becomes more urbanised such cultural heritage is at risk of becoming lost forever. Trees become either utilitarian sources of products of economic value or are used as aesthetic objects in landscape design.

Many of these trees, while having a place in the forest or woodland, are often found in the cultural, agricultural landscapes where they played important roles in everyday life, providing a range of products and often occupying a specific place in the landscape.

In those countries which have lost their forest over the years and which have lost whatever forest associations they may once have had, such as Ireland or the UK, some of the cultural associations are relatively few, whereas for the more heavily forested countries such as Finland or Greece the trees take on a larger role. In Ireland and to a lesser extent the UK, post-glacial rises in seal level meant that some of the trees failed to arrive there naturally. In Britain the Romans and Normans introduced several trees which have now become naturalised but this did not happen in Ireland. Likewise, some of the cultural traditions and mythology have spread around Europe in ancient times as the result of the movement of peoples at different phases of history. Thus, in Britain many features of Anglo-Saxon or Norse mythology can be seen to survive from the period of the late "Dark Ages" when colonisation by people from these areas took place.

The Celtic traditions, which also came from south-western Europe are maintained to some extent in Ireland. The ancient Irish invented an alphabet that reflected the special role that trees played in every day life. The alphabet, called Ogham was in use by the fourth century AD and was the first form of writing ever used in the Irish language. The Ogham alphabet consisted of a series of markings cut into the edge of standing stones. Ogham is read as a tree is climbed, from the bottom up. Each group of marking correspond to a letter and each letter is assigned a name. The word for the letter B was beith and this was associated with the birch tree, while the letter D was associated with oak (dair). Originally eight letter were named after trees; birch, alder, willow, oak, hazel, pine, ash and yew. In the middle ages, scholars read other tree names into the remaining letters, resulting in a tree alphabet.

The so-called Brehon Laws also used trees The list of twenty-eight trees and shrubs as arranged in the eighth-century Old Irish law-text *Bretha Comaithchesa* 'judgements of neighbourhood' is as follows:

Airig fedo 'lords of the wood'

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)

Aithig fhedo 'commoners of the wood'

8. **Fern** 'alder' (Alnus glutinosa)
9. **Sail** 'willow, sally' (Salix caprea, Salix cinerea, etc.)
10. **Saé** 'whitethorn, hawthorn' (Crataegus monogyna)
11. **Cáerthann** 'rowan, mountain ash' (Sorbus aucuparia)
12. **Beithe** 'birch' (Betula pubescens, Betula pendula)
13. **Lem** 'elm' (Ulmus glabra)
14. **Idath** 'wild cherry (?)' (Prunus avium)

Fodla fedo 'lower division of the wood'

15. **Draigen** 'blackthorn' (Prunus spinosa)
16. **Trom** 'elder' (Sambucus nigra)
17. **Féorus** 'spindle-tree' (Euonymus europaeus)
18. **Findcholl** 'whitebeam' (Sorbus aria)
19. **Caithne** 'arbutus, strawberry tree' (Arbutus unedo)
20. **Crithach** 'aspen' (Populus tremula)
21. **Crann fir** 'juniper' (Juniperus communis)

Losa fedo ' bushes of the wood'

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

The structure of this paper is to take each tree in turn and to present its cultural aspects as they relate to each country. Readers will be able to see what a fascinating and rich set of aspects are associated with these trees from just a relatively small sample of countries: it is easy to imaging what could be achieved with a more comprehensive selection. Finally, some comparisons are made which show some interesting patterns of usage across Europe. These show that the uses made of the trees in non-wood products were wide ranging and there is still much potential to discover new products or to rediscover traditional ones which may prove efficacious in future.

The material used in this paper comes from a range of sources, few of which are based on research but on books and web-based resources published often for general interest. This shows that the subject is of more popular than academic interest at present.

CHAPTER 1. ASH: *Fraxinus excelsior*

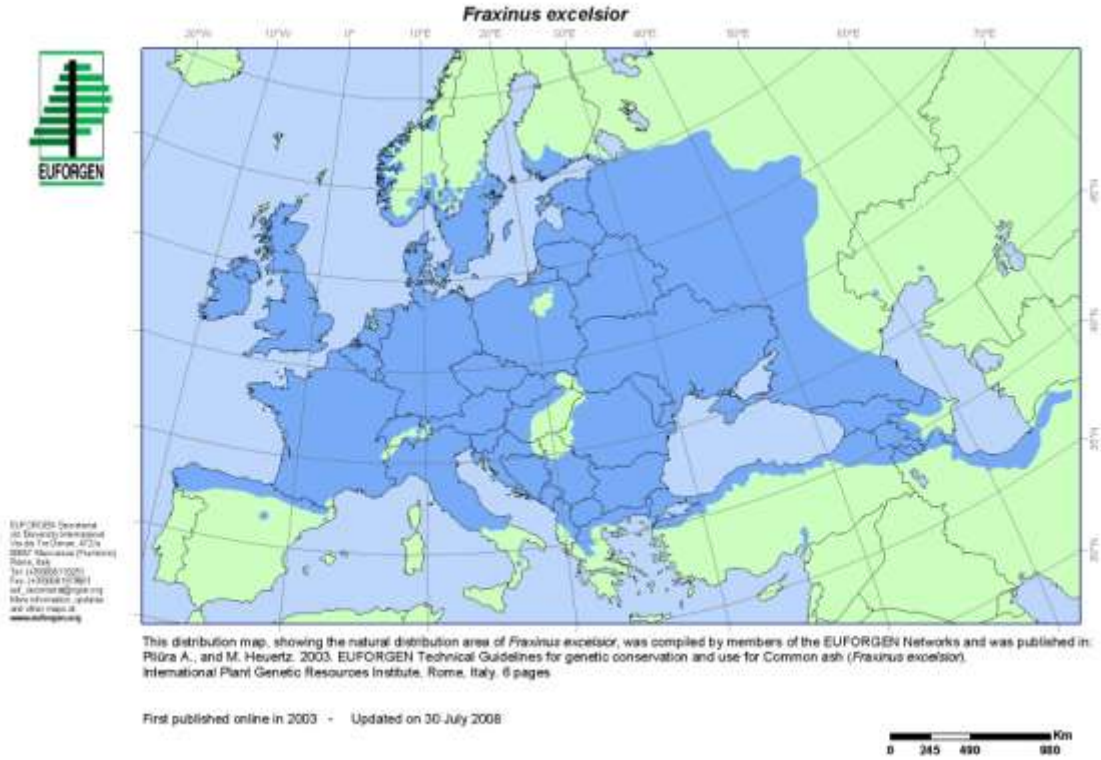

Fig. 1. Distribution of ash in Europe. Source EUFORGEN

Fig. 2: Ash: *Fraxinus excelsior*

Photo: Agata Cziesewska

The United Kingdom: *Ash*

Simon Bell

Ash is a native tree to the British landscape, especially England and Wales, being less common in Scotland. It is often found in limestone areas and on steep slopes as well as valleys and valley sides. Ash woods can also be found in places. In the national vegetation classification there is a specific woodland type of *Fraxinus excelsior – Mercuralis perennis* (Ash with dog's mercury) which is found on base-rich, moist soils. These are the most favourable for the tree which is found as mono-specific woodland in such areas. The English name ash is derived from *aesc* the Anglo-Saxon name for a spear, once a common use for 'ground ash' as young slender saplings were called. Arrows for the famous English/Welsh longbow were made of ash.

Ash has also been traditionally widely planted in hedgerows and fences, especially in places enclosed in the 18th and 19th centuries. It thrives in rich agricultural soils and also casts a light shade so is less in competition for crops.

Ash has been traditionally grown for sports equipment, especially hockey sticks (for field hockey). It needs to be grown fast, on good soils for this purpose. It is also traditionally regarded as excellent firewood. Ash timber is also renowned for its toughness and pliability which make it arguably the best wood for tool handles, sports goods such as hockey sticks (as noted above), oars and where wood framing may be required for large vehicles or caravans.

In English folklore, it was thought that the opening of the ash buds could predict the weather: if oak leaves were seen to open first, the summer would be dry, while if the ash leaves opened first, the weather would be wet. This can be remembered by the following rhyme:

If the oak comes out before the ash,we're in for a splash
If the ash comes out before the oak,we're in for a soak.

The seeds of the ash were used in love divination. If the seeds did not appear on a tree the owner was thought to have been unlucky in love, or a future venture would not be successful. By repeating the following traditional English (UK) verse the inquirer would soon have the identity of their intended revealed:

'Even-ash, even-ash, I pluck thee,
This night my own true love to see,
Neither in his bed nor in the bare,
But in the clothes he does every day wear.'

In the North of England it was thought that by a woman placing an Ash leaf in the left shoe, she would be fortunate enough to meet her future spouse immediately. To ward off negative energies and personal misfortune the following English verse was thought to aid those who came upon an Ash tree and picked a leaf from a branch:

'Even ash, I do thee pluck,
Hoping thus to meet good luck.
If no good luck I get from thee,
I shall wish thee on the tree.'

Having found a leaf by chance, success and happiness would be doubly assured if the Ash leaf was kept upon the person or worn openly.

In British folklore the ash was credited with a range of protective and healing properties, most frequently related to child health. Newborn babies were popularly given a teaspoon of ash sap. Ailing children, especially those suffering with rupture or weak limbs, would be passed naked through a cleft in an ash tree or ash sapling, to cure them. The cleft was often specifically made for the purpose and bound together again after the ceremony to heal over as the child also healed. Some folklore then suggested an intimate bond between the welfare and fate of the now related tree and person, with harm to the tree being reflected in the healed person's life, leading people to become understandably protective of 'their' ash tree.

Ireland: *Fuinseóg*

John McLoughlin

Ash is one of the commonest trees, it is found in hedgerows and in woodlands. Ash trees are often found close to churches and holy wells and its special place in Irish culture dates back to a time when it was revered as a *bile* or sacred tree. It grows on a wide range of soils but thrives best on deep alluvial soils. Unlike other trees ash timber is strongest when grown fast. It is prized for Hurley manufacture (hurley is a fast moving game where a ball is hurled around using the distinctive sticks), one of the last of our cottage industries. Every year a half million hurley are used in Ireland. The pale dense wood can also be used for tool handles, furniture and is ideal firewood. The flowers are very dark, almost black, and may be seen before the leaves develop. Ash has adapted well to our climate and is the last tree to come into leaf and the first to lose them in autumn – this helps it to avoid damage from the frost. The tallest tree is 40 metres.

In the Brehon Laws the ash is among the nobles of the woods and the letter N in the Ogham alphabet. Ash is associated with fertility and healing through its symbolic link with water. Many superstitions surround the ash; ash is believed to be the first tree to be hit by lightening. It is believed that an ash stick is 'kindly' for driving cattle; it is also believed to be a protection against witches! Many place names are called after the Irish version fuinseóg, Ashford – *áth na fuinseóige* – ('ford of the ash').

Germany: *Esche*

Tatiana Reeg

In the Middle Ages, ashes were planted near castles because of their wood qualities. In the past, they were regularly planted in parks and avenues, too. Pollarded ashes can be found especially in mountain regions like the Alps or the Black Forest. Often, ashes stand around abandoned houses, farmsteads and on fallow meadows.

A typical management technique for ashes was the pollarding to gain fodder for the livestock. Sometimes, ash could be found in coppice or composite forests.

The wood is very hard, flexible and elastic. Therefore it was typically used for spears (already Homer praised it) and bows, fences and palisades, ladders, wooden carts and wheels, skis and tennis rackets. As ash wood burns very efficiently and nearly smokeless, it was very popular as fire wood ("a king deserves an ash fire"). Nowadays, mainly furniture, parquet flooring, gymnastic apparatus and tools are produced.

In the past, different parts of ash trees were used for medicinal purpose: the wood was put on wounds; strips of the bark had styptic effects; the juice of the leaves was supposed to protect against snakes. Its bark was a substitute for oak-tanbark. Today, ash is part of teas against rheumatism or is used externally in form of alcohol.

To predict the summer's weather, people used to observe the sprouting of ash and oak in springtime: If ash sprouts first, summer will be warm and dry. If oak sprouts first, summer will be wet *(„Kommt die Eiche vor der Esche, hält der Himmel große Wäsche. Kommt die Esche vor der Eiche, hält der Himmel große Bleiche.").*

In Germanic mythology, man derives from ash and women from elm. Also, the world rests in the treetop of the ash of live, *Yggdrasil*. Some peoples called the Vikings "Ash-Men".

Fig. 4: Natural grown ashes on terraces in grassland

Photo: Tatiana Reeg

Switzerland: *Esche*

Urs Muhlethaler

Ash is found in hedges and wood borders, alluvial and ash forests, in the mountain as solitary tree, occasionally in gardens and parks. Ashes stand often around farmsteads because the leaves, reaches on proteins, once dried were often important winter fodder for livestock. The strong roots are good to fortify streams and river banks. Ash is growing fast and inelegant. When it has too much space in the top it tends to develop gross branches and forks. Forks are also due to the moth of ash forks, which kills the top buds. For the treatment of young-growth trees the ash can be planted on stumps. In this way the adjacent stump sprouts serve as food for game animals, who are then not approaching the young ashes. For roe bucks stump sprouts are used as fraying tree.

Ash wood is used to build furniture, parquet, veneer. It is ideal for the fabrication of ladders, because of its resistance and toughness. It is also in high demand for the fabrication of numerous sport equipment like skies, sledges, parallel bars or oars, because of its flexibility. Ash wood was earlier used in the game of "Hornuss" for the sticks and flagsticks for flag swingers. It was also used for lashes, in particular plaited ones. 95% of tools handles are still made of ash wood. The traditional construction of wooden wagons also used ash.

The wood of special ash species (Fraxinus ornus and Fraxinus angustifolia) excretes, from injured barks, a sugary juice called "Manna". This juice was intensely used in the past century

in south Italy, so that there were entire ash woods, named "frassinete". The juice was used to make sweeties, as sweetener for diabetics or for different medicaments. It has laxative and diuretic skills; it activate the transpiration and it facilitate the digestion.

Chewing slowly a recent ash leaf is reasonable to fortify gums and improve the breath. The ash bark contains salicylic acid, the active substance of aspirin.

Ash foliage is considered still today the best livestock fodder in reference to nourishing content and micro elements. Earlier ashes were regularly pollard to obtain forage. Farmers were relied on ash leaves, since in winter they distributed them to the animals instead of straw.

Ash nomenclature comes from the old Nordic "ask-r" and the Anglo-Saxon "äse", which refer not only to the tree, but also to the javelin made with ash wood.
The Italian ash name "Frassino" comes from Greek "frasso", which means as far as to defend; it is referred to the wood utilisation for weapons production. In German speaking countries family names associated with ash are Esch, Escher, Eschmann, Eschbach and many others. In Switzerland there are two towns named Eschenbach, one in canton Luzern, the other in canton St. Galle; altogether five localities with the name Aesch are known.

Mushrooms collectors know that morels are growing preferably together with ashes. This is particularly noticeable on sandy alluvial forest habitats, but also on streams ash forests.

France: *Frêne*

André Gavaland

Common ash, *Fraxinus excelsior* L., is spread almost all over France except mountainous areas of more than 1400 m elevation a.s.l. In the Mediterranean areas, water deficiency prevents common ash from thriving; it is replaced by southern ash, *Fraxinus angustifolia* Vahl. Common ash belongs to the French rural landscape; it is present as isolated trees or in hedgerows in which it is associated with other tree species, so it can be considered as the "king of bocage". Besides it can be reminded that the French word "frêne" comes from Latin name *Fraxinus* coming from Greek name Phraxis meaning "hedge" or "separation". Ash trees spread in the countryside display a great variety of shapes: standards within forest stands or hedgerows, pruned or pollarded trees, or also small spaced elongated stems within spontaneous young stands; it bears witness of its straight links with agriculture and its numerous uses. Furthermore, the numerous names given to this tree attest of it's importance for rural populations : thereby it is called "common ash", "high ash", "tall ash", "acute leaved ash", "German Gaïac", "Quinquina of Europe" or also "bird tongue".

Common ash is a colonizing quick growing species (80 cm per year during the first ten years was observed in a silvo-arable ash stand), which allowed farmers to harvest ash trees soon for multiple uses.

The wood of ash is very commonly used as fuelwood in rural areas because it can be easily lit, displays a high calorific value and does not need to be dried during a long time contrary to oak and beech. It also can be easily worked, which explains its traditional use for making many local handicrafts, especially in the Pyrenees Mountains:

- many farm tools : shepherd's crooks, tool handles, forks, rakes, ladders, shafts, flour sifters, collars and fasteners for animals, troughs, racks, drinking troughs, manure channels …

- sporting or hunting articles: skis, snowshoes, sleigh runners, slings, bows
- Many toys and goods (cheese mussels and trays, seats).

Ash wood was also traditionally used for building houses and barns (posts, beams) and for making furniture; in the Pyrenees, rafters were often made of limewood or poplar, softer and lighter than ash wood. The latter becomes very hard when it is dried, it is then difficult to plant nails in it and this must be done when wood is not yet dry.

Beyond uses of ash for its quality wood, this species is also used for many non wood purposes.

Ash leaves display an excellent fodder value. Using ash leaves as fodder is the main non wood use of ash tree. Until the beginning of 20th century, dried ash leaves were part of winter cattle food ration. "Ash hay" is perfectly adapted for feeding nursing females because of high calcium concentration, twice higher than that of hay from natural meadows. Fodder from dried ash leaves is well appreciated by cattle such as goats, sheep, cows and pigs. Major part of the leaves is edible; actually, only 25 % of the leaves including petioles cannot be used as fodder.

Harvesting an ash tree of mid size can yield 50 kg of fresh leaves; this weight will be reduced by two after drying. Leaf production of ash trees is less important than that of other tree species but is rich in proteins (124g/kg MS). Energy value and chemical composition of ash leaves, as leaves from other tree species, vary with time. Actually, fodder value is being reduced along summer because of Nitrogen content decrease; consequently, cattle farmer should harvest leaves early in summer to get fodder of higher value. Equally, ash leaves digestibility is decreasing from August to October.

Therapeutic properties of leaves, fruits and bark of ash are well known for a long time in the countryside. So, they have been traditionally used to make medicines; it was said that "ash relieves at first and then cures". Bark of ash twigs have always been used for its febrifuge and astringent properties. Little by little, ash was replaced by cinchona, which appeared in Europe by 1630. Medicines from ash have been used until the Second World War. Nowadays, it is still possible to buy herb teas, granules and capsules from ash in pharmacies.

Ash leaves are also used to make drinks such as "frênette", a family drink still made in rural areas which was called "cider for poor people", "forest champagne", "drink of the harvests" or "hygienic drink". The "frênette" is at first a cheap and refreshing drink very good for health; it is recommended to rheumatic or gouty people; it is well known to be purgative and to eliminate toxins of blood.

Ash leaves can also be used as human food because of their high food value: they are rich in tannins, glucosides, vitamin C and nutrients (Ca, Fe, Cu, Mg). Nevertheless, bitterness remains the main brake to consumption of ash leaves. Young samares were used to be eaten in the past after steeping in vinegar. However, they had to be boiled previously to reduce bitterness. Stuffed ash leaves were a delicious recipe that could only be prepared during spring with the first great leaves: the stuffing made with bread, milk, eggs, onion and sausage flesh, is wrapped in boiled leaves. Ash leaves were also used to be eaten as "wild salad", a mixture of tomatoes, watercress and ash leaves without petiole dressed with lemon juice and olive oil.

In all its locations, ash tree always represented cultural values for farmer communities. So, beyond its numerous uses detailed above, ash trees, planted next to farm houses, represented a divine symbol. Consequently, ash, like oak, is often cited in tales and legends with strong symbolism. Ash represents young man recently married or in search of a woman, faithful husband or fearless warrior, it symbolizes virility; while oak represents maturity.
Thus, numerous sayings certify that roasted or grated ash samares treat the male impotence.

In France, ash tree is well-known for keeping the snakes away; it was planted next to barns in this aim. This property can be explained by the fact that ash tree hosts many birds predatory of snakes.

Fig. 5: Two ash trees – an old former pollard and a tree still being pollarded Photos: André Gavaland

Fig 6: a stool and the rafters of a barn constructed out of ash. Photos: André Gavaland

Italy: *Frassino*

Laura Pennati, Francesco Ferrini

Common ash is present throughout Italy, but mostly in the North from the plain up to 1500 m elevation. It is a sporadic and demanding tree that grows on deep, cool and damp soils and in mountain areas it is associated with maple, beech, white and red fir, while on the plain with pedunculate oak and European hornbeam.

Ash wood is widely employed due to its resistance and durability; it is known as grey ebony. It is nearly white with a large grain and exceptional hardness. For these qualities, it is used in a variety of products: for example, oars and masts for sailing vessels, tool handles, hockey sticks, tennis rackets and skis.

In the past, isolated ash plants were kept along the margins of arable fields and near animal barns to make it easier to collect fresh forage from the plants, appreciated for its purgative qualities. The leaves, fermented in sugar- or honey-water, were used to prepare a pleasant sort of wine.

It was believed that ash had both medicinal and mystical properties: Pliny advised the use of ash-leaf juice against snake venom; and it was thought that burning ash in a room kept away bad spirits. Superstitions and legends aside, the leaves and bark of European ash can yield various medicinal products due to their eupeptic, diuretic, diaphoretic and laxative properties and are used in the treatment of forms of rheumatism or gout. The principal components of the leaves are free malic acid and calcium malates, hynosyte, mannite and bitter substances.

Manna ash grows, in Italy, throughout the peninsula and islands, with the exception of the central-western alpine region and the Po Valley, up to an elevation of 1000 m in the north and 1500 m in the south. More tolerant of drought than ash, Manna ash is found on dry, sunny slopes frequently associated with Mediterranean maquis and Turkey oak, pubescent oak, hop-hornbeam (hophornbeam), sweet chestnut and holly oak. There are rarely pure stands.

Fraxinus ornus wood has darker duramen than *F. excelsior*, is harder and has more grain, but the trunk is not as straight as that of common ash. *Fraxinus ornus* supplies a good production of manna: a yellowish exudate that heals trunk wounds and upon contact with air turns white and congeals. Shallow cuts are made in the bark and from these sap seeps out, and then hardens along the trunk. It is called "manna in cannelli" and it is of the best quality. Even that which drips all the way down to the ground is collected and is called "manna in sorte". Manna is used in the confectionary industry and is also transformed into a slightly laxative syrup due to its content of mannite. In the past it was widely used, indeed thousands of pounds of it, from southern Italy, were consumed in Venice at a cost of twenty thousand ducats per year. The Senate, at the time, decided to control the harvest of manna from the woods of the Republic and due to the advice of a friar, Francesco Cosenza, the Senate in 1769 decreed that all the manna ashes in Dalmatia, even those on private land, were "untouchable", and fixed the price. However, the plan was not a success and in 1790, with another decree, extraction of manna, even from plants growing on public lands, was liberalized and sold to the highest bidder.

Today it is cultivated, even if to a lesser degree, in the South and in particular in Sicily, in the province of Palermo, due to the favourable conditions of climate, precipitation and soil fertility with a long growing season, plenty of sunlight and relatively dry conditions which permit better production in terms of both quality and quantity. There are still in this area traditional local

festivals dedicated to manna and some place names (e.g. Gibilmanna) underline the importance of it production for the local population.

Greece: (Με′λια, με′λιος, με′λεγος, μελι′να, μελια′δι, φρα′σσο) (Melia, melios, melegos, melina, meliadi, phrasso)

Ioannis Ispikoudis and Olympia Dini-Papanastasi

It is the melii of the ancients or melia of Europe, common melios, meleo, phrasso. Ash is a native tree to Greek landscape. *F. ornus* L.: In shrublands, woodland edges and forests all over Greece. *F. excelsior* : Limited distribution in mixed forests of high altitudes in North-East mountains of Greece, sparce or in small stands, along streams in valleys, as well as on slopes with fertile and wet soil, but also very often used in parks and alleys in urban areas.
F. angustifolia Vahl ssp. *oxycarpa* (Willd.): All over continental Greece and in some islands, in riversides and wet areas, in mixed forests and wood pastures. Also used as ornamental in parks and alleys in urban areas.

The Greek name melios or melia is derived from the colour of the wood, which is like the colour of honey = με′λι (meli). The name phrasso, from which perhaps the Latin name *Fraxinus* derives, is derived from the word "φρα′σσω" (phrasso), which means fence or palisade or rail, block and/or defense blocking with spears or fight with spears, which were made mainly of ash with copper sheathing as well, as the ash spearheads.

Ash wood is strong, durable, resilient and has been traditionally grown for sports equipment, arms and tools. It is also traditionally regarded as an excellent firewood. Ash timber is also renowned for its toughness and pliability, which makes it arguably the best wood for tool handles (axe shaft etc), sport goods such as oars, as well as for ploughs, harrows, rakes, carriages, cart axles, rims of cart wheels. It is used also for wood mosaics (art). Its charcoal is excellent for gunpowder.

Ash bark was used for tannage, dyes and medicines. The leaves and the bark were used to make fabric dyes, ranging in colour from gray, blue-gray to black (from that derives perhaps the name "μελεγος" (melegos) = black spear ("με′λας"=black and "ε′γχος" =spear).
Dioscurides reports the leaves and bark as medicinal. The bark of *Fraxinus exelcior* was used as a substitute of quinine to cure malaria.

Its leaves constitute luxurious fodder for livestock. It is the Voumelios of Theophrastus, which means the ash of cattle. Sometimes pickles were made from its offshoots. *F. excelsior* is used as fodder, ornamental etc. *F. ornus* is used for tool handles, cart wheels etc. In Mediterranean areas it is also used as fodder for cattle, goats and sheep (managed by pollarding), as fuel (managed as coppice), as source for manna (used as laxative and marmalade). *F. angustifolia:* Its leaves fresh or dried are used as fodder for livestock (managed as pollarded). Its fodder is very much preferred by deer.

'Melia' is the ancient name of this species, reminding us of the Melies Nymphs, the most ancient divinities of nature and protectors of flocks and livestock. Meliads (Μελια′δες) These nymphs of the ash tree were born from drops of blood spread by Uranus after Cronus had wounded him. In memory of their birth in blood, deadly lances were made from the wood of the ash trees in which they lived. The Bronze Age human race supposedly sprang from ash trees. This was the third age of people who inhabited the earth and was warlike and harsh. For the creation of human beings, Hesiodus claimed that 'melia' or 'melegos' (*Fraxinus*) was used.

He reports that Zeus created the third generation of human being 'strong as the wood of melia'.

Its wood was excellent and used for spears and javelins, many times mentioned by Homer for this use (Achilles' spear). Ash is well known from the spears (*Sarissa*) of the Macedonian phalanx of Alexander the Great. Hercules' club was also made from its wood. Nemesis, goddess of justice, holds a branch of 'melia', symbol of her rigidity and sedateness, while the Erinyes as divinities of revenge got in their iron made palaces in the netherworld sticks of 'melia' wood for the punishment of sinful people. Theophrastus, the Greek botanist (372-287 B.C.) and Dioscurides (40-90 A.D.) report that ash has the property to cure the bites of snakes; bitten people had to drink an infusion of ash leaves and the infused leaves were then applied on the wound. Dioscurides also reported that a drink made of ash leaves ground in wine had the property to make fat people lose weight.

Farmers used to plant ashes around their farms for the protection and safeness of babies.

Vines on trees ("Περι' αναδενδρα'δων" - peri anadendradon): There are descriptions how to use these trees to support vines (reported as *anadendrades ampeli* = vines on trees, in classical time and/or as *ypoklima dendra* = under-vine trees, in Byzantine period and later).
'Anadendrades are of a great usefulness to everybody. Because, they produce the best quality of wine, which is the sweeter and longest preserved and if they are planted sparse, they allow cultivation every two years on the land between them (this is a description of a well organized agroforestry system). *Not all of trees should be anadendrades, but only those, which have a tap root system or those, which have their roots outspread and their foliage is not too much dense, in order not all the vine to be shadowed. And these trees are elms, upright poplars, ashes and sycamores. And they should have a height of thirty feet (10 meters)'.*
There are descriptions also, how and when to plant these trees in gardens.
'In month October ***.....*** *and it is also possible to plant in paradises (= gardens) olive trees, and almond trees and cherry trees and all the fruit trees and elms and poplars and ashes …'*

Ash trees are used very often as ornamentals in rows of trees in towns, in parks and gardens.
Some of the most important and interesting Greek Natural Monuments are comprised of ashes and elms.

Portugal: *Freixo*

José Castro, Ana Maria Carvalho

A native tree, found mainly on riparian edges throughout the country but also shaping the landscape, being found as scattered trees and in hedgerows and woodlands, over meadows and arable fields (only a few) in the North; recently, unmanaged hedgerows in meadows have expanded to become small as woodlands, particularly in isolated meadows unprofitable for agricultural use. Moreover, rural abandonment has encouraged a trade in wood for fuel.

Ash was managed mainly as pollard trees reflecting their use for cattle and sheep forage as well as having a protective role on stream margins across meadows; trees can survive several decades in the ground - due to pollarding effects that maintain them in a partially juvenile state. Its use as fodder depends on seasonal weather and is more intensive in dry summers, when herbaceous growth stops early. Branches can be cut entirely ("ramalhos") and left to dry in streets or on threshing floors, to be used later in winter to feed livestock when snow cover the meadows.

Ash provides good timber and very resistant and durable poles or wooden beams, used for construction and furniture, mostly tables and chairs. Ash is considered to be very good to manufacture of curved elements of ploughs, harrows, rakes, scythes, tool handles, and certain components of traditional rural carriage and also spindles used in winemaking. The shape of the tree (trunk and branches) determines its use for special artifacts such as bow neck yoke. Ash firewood has characteristics similar to cherry wood, oak and elm. Wood ash has high calorific value and burns slowly.

The leaves are often used for cattle fodder at the end summer because they stimulate lactation The medicinal use of ash involve infusions from leaves and decoctions of fruits (key or samara) to reduce cholesterol, to relieve painful inflammations due to rheumatism and gout, and for its laxative and diuretic properties. In the southern regions of the country decoctions made from the fresh bark or the leaves were applied to heal scorpion stings and snake bites.

Portuguese folk tale: "The trees and plants didn't accept very well being burnt at the end but, if it wasn't a shame, ash will burn even under water". Ash was one of the species used in Jewish gardens, with the pollard top evoking circumcision practices and identifying Jewish homes. The ash from ash wood fires was used, boiled in pots, to launder clothes and linen. People from certain villages claim that there are two types of branches, the male and female; according to this, women prepared infusions with the leaves from the female branches, which are those with "some drooping leaves (fruit/samara)", and men drank infusions of leaves from the branches without fruits. The shepherds from the southern region use to have a walking stick made of ash that they used to put under the head while sleeping to keep away snakes and scorpions.

Let me go quickly
to the ash to get a nest
The ash is breaking
With the weight of the bird.

I went up to the high ash
To cut a little branch;
For love that is understood
A little sign is enough.

Poland: *Jesion*

Agata Cziesewska and Jacek Borowski

Ash is very common tree all over Poland, one can find it in lowlands as well as lower parts of the mountains, usually on fertile soils close to rivers as an element of riparian forest but also on elevated slopes. In the countryside it was traditionally used as a alee tree, but in parks ashes are popular not only in typical variety but also as 'Pendula' - mostly as a single tree. In Tatra mountains traditionally ash had been planted in front of the house.

Beside oak ash for Slavian tribes was the most important tree in the holy (sacred) groves. It was thought that source of wisdom flow out from ash roots. Slavian water-finders used to say moreover that ashes grow on ascendant watercourse in site of power. Sleep under the ash tree had a wholesome (healthy) role and brought regeneration.

In Slavic mythology ash was a symbol of sun and fire. Its' top reaches the heaven while its roots were in hell. For Slavic people ashes attract thunder and lightning, and because of this

the tree was dedicated to the God Perun (the Slavic Zeus or Odin). In the past ash wood was the best material for coffins, as it was believed to bring everlasting peace for the deceased. Traditionally ash tree was the magic protection against the *evil eye*, also ash leaves put under the sheet could help with a marital quarrel. In Poland ashes were sacred tree, so up today they are planted close to churches.

Ash wood for the reason that its features as resilience, toughness, susceptibility to coloration it was and still is used for wooden tools: sledge runners, wheels and ski, in the past also for spears, lances and nowadays mostly for sport equipment such as oars and paddles but also for furniture as veneer. The ash bark was used for dyeing and leather tanning.

In the past sprouts and leaves were often use as cattle fodder – in such case ashes were pollarded. In folklore medicine ash leaves' infusion was used as laxative and in a mixture with other herbs to treat rheumatism, but also ashes, particularly bark's infusion was believed to help with snakebites.

Finland: *saarni* or *lehtosaarni*

Kirsi Makinen

Ash is a southern boreal tree species in Finland. In Åland/Ahvenanmaa archipelago, ash even forms woodlands, but in continental Finland it is only as individual trees or tree groups. In the archipelago, ash is a dominant tree and a part of the traditional meadow culture. In these wooded meadows, the open and closed landscapes form a small-scaled mosaic. These areas were used for hay-making and coppicing for cattle. Ash woodlands in the archipelago were often kept to get good quality timber for boat and ship building. It is one explanation why they were remaining there, and not used for fuel wood etc. Moreover, the coppicing required a lot of work and in the archipelago, there were not enough people to do coppicing, except near the settlements. Ash communities in the mainland of Finland are thought to be relicts from warmer climate periods.

The mainland stands are often situated near springs, where the soil freezes later than in surrounding soils. Individual ash trees are mainly situated in groves and eutrophic peatland forests. Sometimes small woodlands are encountered. One common reason for the small number of grove forests in Finland is that many of these habitats are shifted to arable lands. The clearing of forests using hard technology and the dredging of natural brooks have damaged many stands. Some have benefited during decades from the cessation of pasturing in forests and from the suspension of felling young trees for making horse-collar bows and boat parts. In silviculture, ash is known to be a demanding tree, especially in Finland. The sites of planting must be carefully chosen.

In urban landscapes, ash is rather a rare tree used in parks or courtyards. The ashes have leaves rather a short period in Finland, because of late bud burst and early leaf fall. These qualities of ash are often repeated like a warning not to plant this tree: ash is demanding, susceptible for frost and has short-aged leaves. The noble characteristics of ash has not been seen in Finland as in other Europe. In design, the qualities of ash could bring variety to mixed plantings.

The wood is easy to saw and plane, and it responds well to steam bending. Ash wood has been used in wood handicraft, e.g. in boats and wooden parts of horse harnesses (e.g. collars). It was also a valuable wood for decoration (carvings). Other uses have been handles of tools such as axes, hammers and garden tools, and for the wooden parts of agricultural machinery.

In the Finnish tradition ash has not occurred often. In Åland archipelago it may have been a holy tree (pitämyspuu). In the Finnish national epic, the Kalevala, ash is mentioned once (as a wood material).

Fig. 8: A group of young ashes in a suburban park.
Photo: Kirsi Makinen

CHAPTER 2: MAPLE: *Acer pseudoplatanus, Acer platanoides and Acer campestre*

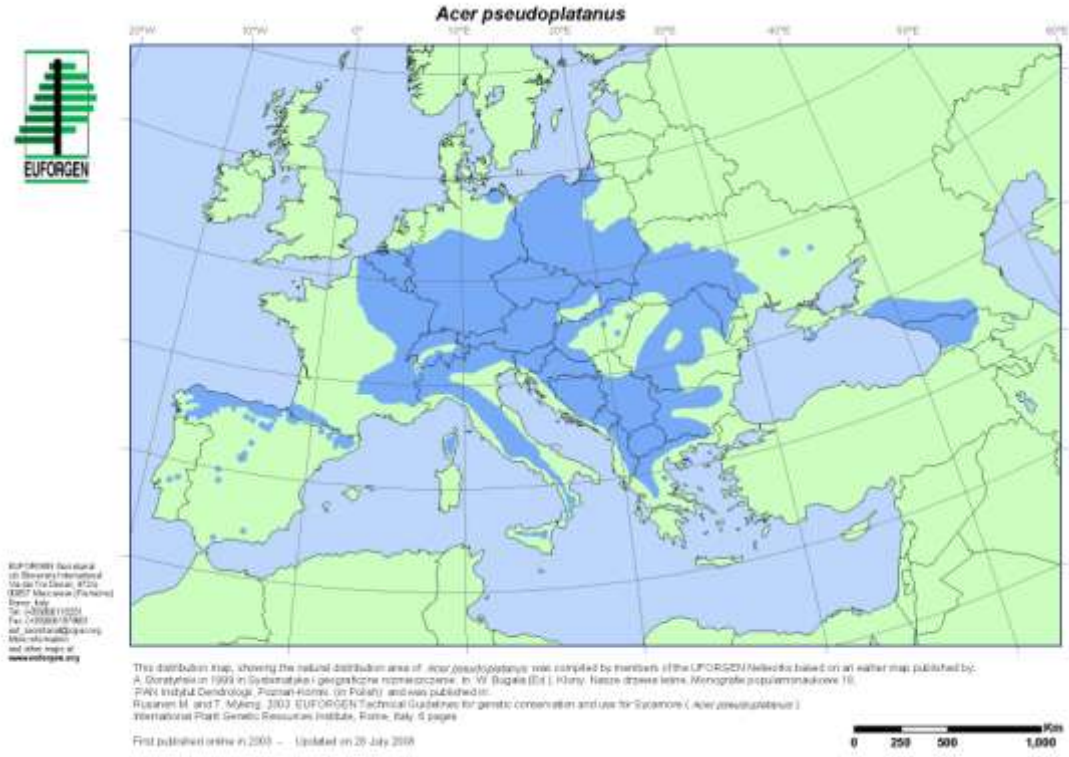

Fig.9: Distribution of sycamore in Europe. Source: EUFORGEN

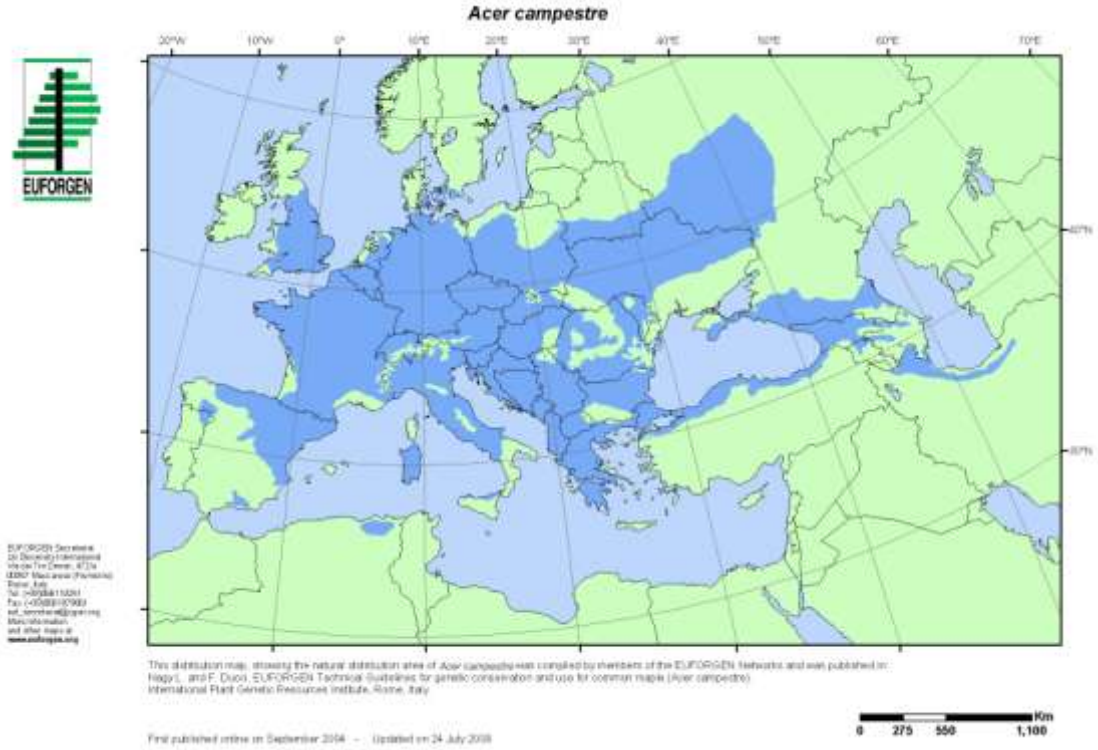

Fig. 10: Distribution of field maple in Europe. Source: EUFORGEN

The United Kingdom: *sycamore, Norway maple and field maple*

Simon Bell

Sycamore was introduced to Britain sometime before 1500 and still rare in the 17th century. Some people think it was originally introduced by the Celts and the seed used for flour, while others believe the Normans reintroduced it, but there is no real proof of either of these claims. It became more widespread and established during the last 200 years. The name comes from a mis-identification with the sycomore fig (*Ficus sycomorus*) whose leaves it resembles. It is a native of the Caucasus but has become naturalised in Britain.

Sycamore is a versatile tree growing in quite exposed areas up to around 500m and it is tolerant to industrial pollution and salt from coastal winds, making it very useful for shelter in many places. It can often be found along coastal areas where it is sculpted by the wind and around farmsteads in exposed upland locations.

Sycamore seeds very prolifically and naturally regenerates itself, sometimes very competitively, for example on sites where ash also grows, but due to its greater tolerance of shade it can out-compete ash. Thus it is frequently seen as a weed tree by conservationists and has become very controversial in recent years.

The wood, being soft and easily worked has been used for carving and turnery. It was used for bowls and containers, Welsh love spoons traditionally given by a young man to his sweetheart and more mundane items like butchers chopping blocks. The necks and scrolls of violins are also made of sycamore. It is considered to have anti-bactieral properties, making it good for use in food processing (the butcher's block). Rare examples of wavy grain sycamore are extremely valuable.

Norway maple is not native to the UK, it's English name suggesting that it came from Norway. It is mainly found in parks and gardens where it is prized for its autumn colours.

Field maple is native and grows as a small tree in hedges and woodland edges.

Ireland: *Seiceamóir*

John McLoughlin

While sycamore is not native to Ireland it has now become a familiar tree. It is treated as a weed by gardiners and by conservationist trying to restore our native woodlans. But for householder in the West of Ireland on the edge of the Atlantic it's a wonder tree – standing up to the high winds and salt spray it provides them with vital shelter.

There are no plantations of sycamore so the timber is not well known. Beekeepers are anxious for more planting of sycamore or any Acer species to provide nectar for bees.

Sprigs of sycamore were placed over the door on May Day to ward off evil spirits, this tradition lasted into the 1960s in the south of Ireland.

Germany: *Bergahorn*

Tatiana Reeg

Sycamore can be found amongst deciduous forests, in hedges, along avenues and roads and exposed in fields. This tree is common in hilly and mountainous areas, steep slopes and next to mountain farms.

The leaves of sycamore were used for fodder by pollarding the trees. Sometimes only the leaves were slipped off the branches by hand. Some sycamore species produce tasty sap, so they were tapped.

Sycamore has a bright wood which is easy to work on. Therefore it was very popular for turning ("birds-eye-wood") and carving. In marquetry, humans and flowers were created with sycamore wood. In past times, the wood was used to make cleats and household articles. Today, the wood is popular for making propellers, furniture, billiard cues, veneer and stringed instruments like guitar, violin and cello.

In former times, the leaves were given to livestock as fodder. It was said that leaves for medicinal purposes had to be picked on the 24th of June. These leaves were dried and later made sodden in boiling water and fermented. This medicine was supposed to soothe swellings and to heal wounds. Sugar from the juice was produced during times of war and crisis, in Germany the last time being during First World War.

In superstition, parts of the sycamore tree were quite important: Tenons made of sycamore wood in doors and thresholds prevented witches from coming into a house. Branches put on windows and doors the 24th of June protected from flashes of lightning. Branches of sycamore put around fields of potatoes and flax drove away moles.

Fig. 11: Sycamore trees in the mountains of the Black Forest and at Burg Hohenzollern

Photos: Tatiana Reeg

Switzerland: *Bergahorn*

Urs Muhlethaler

Sycamore is found in mixed forests, sites with run-of-hill scree and moist gorges (Hart's-tongue Fern/Asplenium scolopendrium – sycamore maple forest), hedges, forest edges, often alsoemployed as a tree for avenues and parks. It is a very beautiful species with golden bright leaves in autumn. In mountain regions it is often found as a prominent solitary tree in meadows or as a farm tree instead of lime or walnut, since it is less affected by heat. Ideal species for protection forests thanks to its aptitude to heal lesions dues to falling rocks quickly and to withstand snow pressure.

The sycamore maple is numbered among the most inelegant great deciduous trees. Within the maple family the sycamore is the biggest and the one which grows fastest. After thinning aimed to a closed canopy the Sycamore tends to develop many branches.

Sycamore maple wood is much in demand for large furniture, building of kitchens, parquets or veneer, musical instruments, house or kitchen equipment, wood carving and turning. It is one of the best woods for uncoated table boards, particularly hostelry tables.

It is said that sycamore maple wood has a disinfectant effect, which is why it is especially appreciated in food hygiene.

In spring-time sycamore maple produces a lot if sap, which was earlier extracted to make sugar. Still today maple syrup is a fine, rare drink and can be used to sweeten and to spread on bread. Maple leaves were often dried and employed as straw for livestock in winter.

In the German language most of the trees have a female name. An exception is made for the maple: that comes from a traditional meeting of men in Trun (Canton. Graubünden, Switzerland), which from 1424 until now has been held under a sycamore tree. In 1870 a storm blew down the five hundred years old sycamore. Already during pagan times and in the early Christian middle ages the sycamore had a religious meaning and people wetted its roots with wine. When someone felled a sycamore, then he had to bare his head and to kneel, saying vows.

Italy: Sycamore - *acero, Norway maple - hevea acero*

Laura Pennati, Francesco Ferrini

Mountain maple (Acero di montagna), growing as isolated trees or in small groups in mixed broadleaf (Turkey oak, sweet chestnut, European beech, hornbeam, red spruce) forests, is present in all regions of Italy with the exception of Sardinia at elevations between 500 and 1500 m above sea level. In the *Castanetum* zone it prefers cool, shady sites, while in *Fagetum* warmer and sunnier ones. This tree requires fertile, non acidic, cool soils which can have various mineral nature but not compacted or even packed clay.

Sycamore maple (hevea acero) is the largest maple in Europe, reaching heights of 35 m. Large, isolated trees are sometimes found in mountain meadows or near ancient constructions. In the past it was often planted near colonial farmhouses to provide shade and to keep cheese products cool. It is also widespread in parks and along boulevards.

The wood of this tree is ivory in colour with brown veins and it is among the most beautiful and desirable as it is easy to work and long-lasting when used internally; it is often used in furniture-making, for tool handles, items for the kitchen and musical instruments. The famous lute-maker from Cremona, Stradivari, was the first to use mountain maple wood for the bridge which supports the violin strings in addition to use for the base, side band and neck.

A mountain maple tree became famous in the Apennine mountains near Bologna for the appearance among its centuries-old branches of a miraculous image of a Madonna brought from the East at the time of the Crusades. In the shade of this tree, a chapel was built in 1358, dedicated to the Madonna of the Maple and still today, on August 5th of each year, a celebration is held. When cut, the trunk exudes a sap which, in the past, was used to combat scurvy and to make an alcoholic drink.

The word "*acer*" derives from Latin and it literally means pointed, acuminate, and it is the principal characteristic which distinguished maple leaves, and in particular those of *Acer platanoides*. Norway maple is spread in both north and central Italy in the natural state and it is a species of secondary importance given its limited diffusion. It is mesophyll and grows well in valleys where the soil is deep, cool and non acidic (this is the most demanding of the maples in terms of soil) under these conditions it makes up small groups or sporadic trees in mountain thermophile woods composed of di European beech, Norway spruce and Turkey oak in northern and central regions of the peninsula as far south as the Marches and Umbria.

This tree is also suitable for city planting given that it is tolerant toward smog and dust. The leaves, differently from those of some ornamental maples, do not lose their green color even if the plant grows on calcareous soil. Yellow-flowered corymbs appear at the beginning of spring before the leaves. They provide a useful food source for bees during a period of the year when few other sources are available. The wood is compact, pinkish-white, and less shiny than that of mountain maple; it is heavy, homogeneous and easy to work. The wood of Norway maple is utilized for the same purposes as that of mountain maple but it is more susceptible to wood borers.

In Italy, field maple is widespread and common in mesophyll woods, above all in oak woods of all regions, from sea level up until the lower reaches of the beech zone. It is one of the most familiar plants of the rural Italian landscape. It was traditionally used as a living support for grapevines when rows of vines were planted along the borders of fields of herbaceous cultivations. Large specimens of hedge maple can still be found near farmhouses where they are appreciated for the deep shade they offer thanks to their compact crown. This tree is also used to form wind breaks, to provide nesting areas for birds and to hold the soil on bare, sloped, damp and often rocky sites.
The tree's wood is undifferentiated, light pink or reddish-brown in color with uneven and sometimes longitudinally wavy rings; it is heavy and tends to deform. It is used for handles, toys, rifle butts and for the base, side bands and necks of violins. It is also excellent firewood. The plant is very melliferous and its leaves provide outstanding forage.

The leaves of hedge maple have been used popularly as astringent and for invigorating baths. A handful of dried bark added to bathwater can be beneficial for particularly fragile and delicate skin. The leaves were used as fodder for sheep and goats for their tender and sweet leaf lamina. It is said that Leonardo da Vinci got his idea for rotating wings by observing the samara of a hedge maple, and Sikorskij invented the helicopter by watching the fall of maple seeds.

Portugal: *bordo, plátano-bastardo*

José Castro, Ana Maria Carvalho

In northern and central Portugal sycamore it is an urban tree used for exterior decoration on side roads, streets, plazas, church courtyard and some public buildings. It is not common in the Portuguese rural landscape.

Greece*:* Σφε′νδαμος, σφενδα′μι, σφοντα′μι, κρε′κεζος **(Sphendamnos, sphendami, sphontami, krekezos).**

Ioannis Ispikoudis and Olympia Dini-Papanastasi

Maples are native to Greece and there are several species. *Acer pseudoplatanus* L. (Sycamore maple): In mountainous deciduous forests of central and northern Greece. Also used as ornamental in alleys, parks, and gardens. The name pseudo (faulse)-platanus comes from the resemblance with the leaves of the plane tree (*Platanus orientalis*). *Acer platanoides* L. (Norway maple): As scattered tree in mountainous forest all over continental Greece. Also used as ornamental in alleys, parks, gardens. *Acer campestre* L. (Field maple): In forests and shrublands all over continental Greece, woodpastures, in hedgerows and as scattered trees in the fields.

The Greek name Sphendamnos is derived from sphondylos = whorl, scroll or sphendoni = sling. The name κρε′κεζος (krekezos), derives perhaps from the verb κρε′κω (kreko) = produce sound. This is reasonable since the bodies of all traditional music instruments in Greece, such as bouzouki, baglamas, outi, etc are made of walnut or combination of walnut and sycamore, while the long arms of all these instruments are made of sycamore. The necks and scrolls of music instuments are made also of sycamore. Its timber except its use for furniture and veneers it is very suitable for many valuable wooden products such as musical instruments, tools, woodcrafts. It is used for weapons (bows), turning, fine-woodcurving, handicrafts, for wood mosaics (art) and small tools as well, especially for kitchen tools.There is a common expression Sphendaminos, from wood of sphendamnos, which means powerful, strong, hard.

Sycamore wood, being soft and easily worked, has been used for carving and turnery. It was used for bowls and containers. It is considered to have anti-bactieral properties, making it good for use in food processing (the butcher's chopping blocks and/or chopper boards in kitchens). Rare examples of wavy grain sycamore are extreemly valuable.
It has medicinal uses also, such as antiseptic.

The wood is used for furniture. Its sap is saccharine, while its leaves usually are covered by 'manna' where bees forage vendibly.
It was used to support '*anadendrades ampeli'*.

Sycamore is a versatile tree growing in all elevations, tolerant to industrial pollution and salt from coastal winds, making it very useful for shelter in many places. Maples have great aesthetic value and they are used as ornamentals in rows of trees in towns, in parks, and gardens and a lot of cultivars, with leaves of different colours have been created for this purpose.

The Ancient Greeks considered that the maple tree was under the power of Fovos (=Fear), demon of horror and god Mars' attendant. This was possibly because this beautiful tree during the autumn gets a very rich red colour.
Acer campestre: sphontami, krekezos, probably the "κλινο'τροχος" (klinotrochos) reported by Theophrastus. There are several local names.

Poland: *Klon jawor*

Agata Cziesewska and Jacek Borowski

Sycamore is a native tree to Poland, it grows on fertile soil with alkaline pH, and it needs also high humidity. Sycamore is distributed irregularly in the north eastern part of the country and mostly in the mountains. One can find 17 different woodland types with sycamore in the Sudety Range and 20 types in the West Carpathians.

The name Klon comes from the pre-Slavonic name of Klen or Klejn, probably deriving from the ancient Greek word *klinotrochos,* a name for Sycamore. Slavic people used to treat sycamore as a magic tree. People believed that after injuring it the sycamore the tree cries and brings misfortune to the man who did it – he would start to cry in a similar way as the tree, and bad luck would follow in the wake until the tree wound skinned over.

From XVIII century sycamore started to be the lovers' patron tree. In many regions lovers met under the sycamore and the tree started to be their confidant. Even today in most of folk songs dedicated to love the lovers are present under the sycamore tree. One can find the name Jawor in many places such as Jawrzno, Jaworzynka, Jaworki.

Sycamore wood has a feature of resonance, thus was used traditionally for musical instruments: piano parts, guitar and violins, also spoons, boards, in the past also for simple furniture as tables or stools.

In the past from the Sycamore the sap was used to make sugar and syrup, products which were used against scurvy.

Fig. 12: A well-grown sycamore.

Photo: Agata Cziesewska

Finland: *Vaahtera, Acer platanoides – metsävaahtera*

Kirsi Makinen

Norway maple is an indigenous species that lives in Southern Finland. The tree thrives in moist, eutrophic groves and mixed forests. Maple has scattered and scarce occurrence in Finland. It is also spread from cultivated areas. Maple grows often in groups and as undergrowth. It becomes a high tree only in the coastal area, mainly in Southern Finland. The clearing of new arable land, grazing, and fodder for the household use have excluded maple from many earlier localities. In the Central Finland, it grows in the forests only as undergrowth. In the North, only on favourable places, it can become a small tree. Maple has been one valuated hardwood among the others (lime, oak, elm) in mansion courtyards. In the urban areas, maple is commonly used as a park and street tree, though it is susceptible for mechanical damages.

Among Finnish dendrologists and botanists, studies and writings of maple have been much less in number than "the favourite hardwoods": elm, ash and lime. One reason for little botanical interest was that the natural stands and cultivated maples have been difficult to differentiate at least at the time before better genetic methods.

The maple wood is hard, dense and easy to carve. The clean bole portion of the stem is usually short. Because of the scarcity of raw material, no significant industrial utilisation of maple wood takes place in Finland. Traditionally, maple has been used rather seldom in wood handicraft. According some mentions of rather rare sources, maple wood has been used mainly in rakes and small wooden tools. More accurate descriptions reveal uses like, wooden parts of horse harnesses and different kinds of furniture (chairs, tables, closets, benches). Wooden parts of ploughs, harrows, shafts, wheels, shovels and flails were made of maple. The small household utensils like bowls, plates and spoons were made of maple wood. Material was used also for shoe nails and boot-trees (models for shoe making). Some people thought that a best handle of an axe was of maple. Among wood, the maple leaves were used as fodder for the cattle.

Among the contemporary people, maple is sometimes mentioned as a beautiful tree for its autumn colours (Guenat, 1995). In previous decades, rural people used to bring maple seedlings from the forest to get a decorative tree in one's courtyard.

The folklore mentions maple rarely. There are still many old name variations of maple (*vahter, vaaher, vaher, vaheri*), and they have been studied in place names. These have been suggested to reveal the ancient distribution of maple in Finland. There are 350 place names that were derived from maple. Compared to the ecological data of historic times, the ancient people had good knowledge of the occurrence of maple. Based on place names, it has been suggested that maple was a valuated tree species in earlier times. Still, there is no evidence that maple was a holy tree in Finland as in the South.

CHAPTER 3: LIME OR LINDEN: *Tilia cordata and T. platyphyllos*

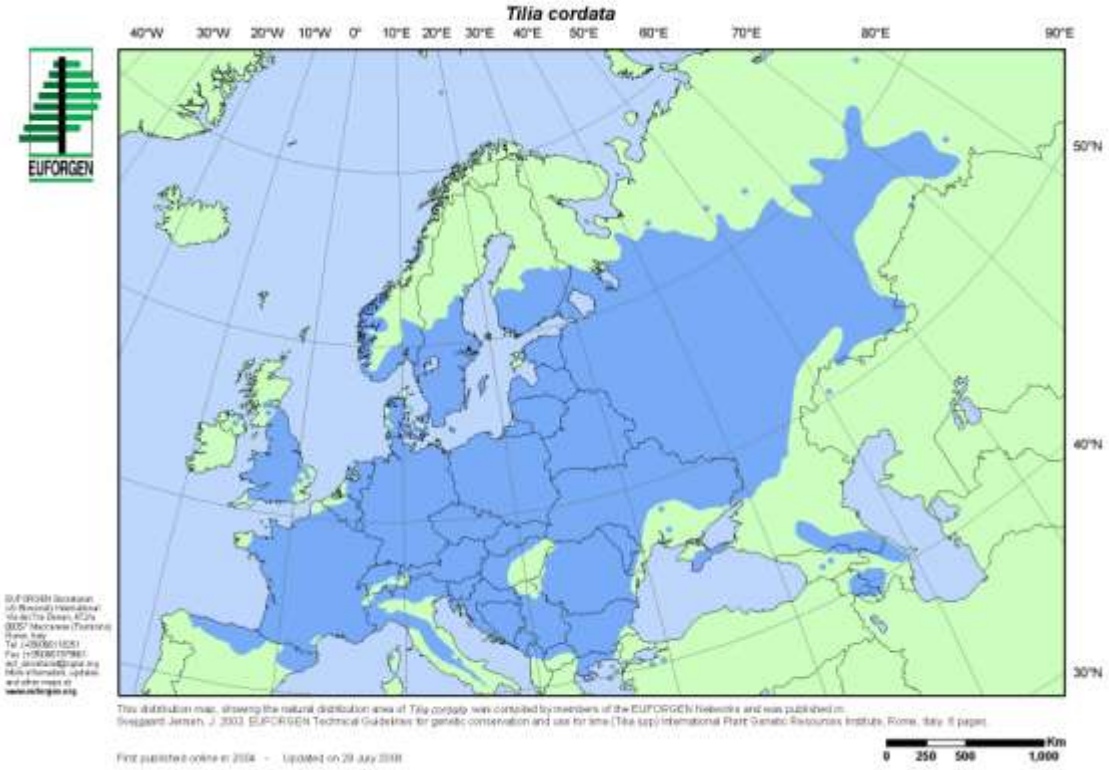

Fig. 13: Distribution of Tila cordata in Europe. Source: EUFORGEN

Fig. 14: An old lime tree near a house

Photo: Tatiana Reeg

United Kingdom: *Common lime and small-leaved lime*

Simon Bell

Tilia platyphyllos and Tilia cordata are both native species which interbreed to form common lime (linden). Small-leaved lime (*T. Cordata*) is the more common of the native species. The name linden comes from germanic roots and refers to the lind or bast, the fibrous cambium layer growing beneath the bark and once used for textiles. Lime is not found in Ireland nor is it native over most of Scotland.

Limes were often managed by coppice and pollarding and some extremely ancient examples still survive, resembling a circle of smaller trees, the heart of the original coppice stool having long since rotted away. An ancient coppiced Lime tree in the Silkwood at Westonbirt Arboretum (near Tetbury, Gloucester, U.K.) has a stool which was thought to be as old as 2000 years. With John White's refined measurement techniques however, this special tree is probably really more like 6000 years old. This venerable lime may be one of the oldest living organisms in Great Britain. Lime-woods can still be found in places, especially in the Lincoln Wolds where one of the biggest areas of woodland dominated by small-leaved lime can be found.

Limes have also been popular for avenues. Many have been used in the landscape parks of stately homes, especially those of the earlier pre-Brown/Repton period when more formal designs were common. The form lends itself to creating a linear enclosed space. Because it can be propagated by layering it is easy to produce many genetically identical trees, important for creating the regularity in an avenue.

There are many place names related to lime in the British countryside, showing its importance in the landscape in previous eras. Lyndhurst means an open place in a forest where limes grow

The wood is very good for carving. The renowned woodcarver of the 17th century Grinling Gibbons used lime wood for his exquisite carvings. As well as the wood, lime flowers are used as a tea and honey from bees which collected pollen from lime flowers is also valued.

Germany: *Linde*

Tatiana Reeg

Lime trees had - and in some places still have - a major importance in the cultural landscape: They were planted next to farmsteads and houses, on the central place of villages, in front of monasteries and on places of pilgrimage. The lime tree was the tree of repose and contemplation. On top of hills, lime trees were a symbol of freedom and peace. Often they are planted in allees along roads.

The lime is called "the coppice tree", because this tree is very vital in making coppice shoots. Limes planted next to buildings served the purpose as lightning conductor, bee pasture and to provide shade.

The lime wood is soft and easily worked; therefore it was (and is) used for carving, especially for religious figures and altars during the Middle Ages, and for making toys, containers, chests and wooden shoes. Today it sometimes serves as veneer.

In the past, Germanic tribes and North American Indians utilized the bark for making baskets or for covering roofs. The bast was used to make clothes, string and ropes, e.g. on ships. Diverse medical uses of leaves, flowers and charcoal from the wood are known. Most popular still today is a herbal tea made from the flowers which has fever-reducing and sudorific effects. The lime tree is a very important plant for beekeepers to gain the valuable blossom-honey and honey dew. The perfume industry uses secretions to make the most attractive scents.

The lime tree is the most important symbolic tree for the Germans. In Germanic mythology, the lime tree was associated with Freya, the goddess of fertility, love and truth. As she was Wotan's (Thor) wife - the god of thunder - no lightning dared to strike this tree. Under lime trees, usually situated in the centre of the villages, the Germans used to hold their judicial Thing meetings.

Martin Luther said: "Under the lime trees, we use to sing, drink and dance and be happy, because the lime for us is a tree of peace and joy." *(„Unter den Linden pflegen wir zu singen, trinken und tanzen und fröhlich zu sein, denn die Linde ist uns ein Friede- und Freudenbaum.")*

Another way to show the importance of this tree species is to look at place names: the word "Linde" (lime) is part of more than 850 names of villages and towns in Germany.

Fig. 15: A row of lime trees near Freiburg

Photo: Tatiana Reeg

Switzerland: *Linde*

Urs Muhlethaler

Linden were planted for shade and as lightning attractors close to farms, especially on moraine hills. Still today they testify their past, when they were called "Justice Linden"; by standing on many hills of the Alps foothills as a landscape mark. Linden is also employed as park and avenue tree, thanks to its resistance to urban pollution.

For its maintenance it is important to leave enough space and light, so that it can develop optimally. "Little-leaved linden" (Tilia cordata) can also be mixed in plantations to stands helping soil amelioration; it tolerates half-shade.

Lime wood is a very soft wood, not very durable and sensitive to wet conditions: it is appropriate for carving and turnery, construction of models, wooden shoes, toys, statuary and musical instruments (i.e. harp). The linden charcoal is particularly good. Its coal was also adopted for the fabrication of gunpowder.

Linden bark contains a lot of bast fibres, used in the past to fabricate garden ligatures instead of raffia, cockle, ropes (Vedel et al - Schnieper 1999). Linden blossom tea, mostly obtained from the "large-leaved linden" (Tilia platyphillos), is a popular drink to enjoy warm or cold as thirst-quenching. Linden blossoms (scientific name: tiliae flores) are also employed for medical purposes: they contain *tiliacin* (glucose) and tannin. They have positive effects against colds, headache and earache; they also reduce fever and help to expel the sweat from the pores. From linden blossom a liqueur is obtained, employed for making the pastry "maison" (Switzerland), and an ethereal oil, very fragrant, used as additive in the perfumes fabrication. Linden is also interesting for the honey production from the nectar and the honey dew from the leaves.

Linden in the past were planted as court tree in the farms: they stand for quietness and equilibrium. They were also planted close to churches and chapels, as trees of peace and joy. Justice linden and linden in town centres are known since the Alemanni times. The word "subtle" derives from "subtilia", that is "under the linden". Under the justice linden only easy court cases were dealt with and no heavy decisions were taken. As a justice tree its task was to soften the heart of severe judges and to purify the soul of accused. Every town and locality maintained its dance linden. Because of that the tree was shaped since it was young: its main branches were forced to grow horizontally, helped by woodpiles or stone columns; the top was cut in form of stairs and planks were placed within the branches. In this way, after some time, a kind of vegetal hospice was growing, where the musicians established themselves to play for the dancers.

Many names in German speaking countries derive from linden: Lindenmann, Lindenmaier, Lindenlaub, Lindenberg, Linder, Lindner, Zulindner. Linden appear also in locality names as i.e. Lindenholz in BE (CH). It is also found very often as hostelry, street and place names (i.e. Lindenweg in Wabern). The most beautiful lindens to admire in Switzerland are in the north shore of Walen lake.

To celebrate the liberation of canton Vaud (CH) from Bern domination in 1798, several "freedom trees" (emblem from French revolution), were planted, first in Lausanne, then in the whole canton. At the commemoration in 1898 many linden were planted in the canton and later, in 1998, it was the turn of "common oaks" (Quercus robur). Some trees from 1789 are still alive today. The oldest linden in Switzerland is in Linn on the Bötz mountain and it is reputed that it is more than 1000 years old. Linden wood was called also "Lignum sanctum"

because in the Middle age many Christ and holy figures statues were produced from it. Linden means "soft, flexible", qualities that well describe its wood. Linden is considered by many people to be a symbol of love and fertility, probably because of the ethereal oil contained in its blossoms, Farnesol, a pheromone, which acts as a sexual attraction scent.

Italy: *Tiglio d'estate, Tiglio riccio (selvatico)*

Laura Pennati, Francesco Ferrini

Large leaved lime is found in all Italian regions (with the exception of Puglia and Sardinia) in mountain mesophyll woods or together with European beach, silver fir and mountain maple on wet sites up to 1200-1500 m above sea level, in association with *Castanetum* and *Fagetum*. It can also be found at lower elevations but it needs a very high hygrometric state. *Tilia platyphyllos* prefers cool, deep soils that are rich and nutrients, preferably near neutral pH but also calcareous or, although less preferable, slightly acidic as long as they are well drained.

This species flowers several weeks before other limes and it is attractive for early bees. It is rare to find saplings of this type of lime in a natural state as it is greatly appreciated and greedily eaten by grazing animals. In woodland areas open to livestock, the oldest limes are often stripped of leaves up to the height where animals can reach. Once established, it is a resistant tree which beautifies parks and public gardens. It is long-living and, by contrast with other species of the same genus, it does not produce root-suckers. As it resists pruning, even when severe, it is frequently used along roadsides while it is not of great interest in silviculture.

The wood is ring porous, whitish or pink in colour, opaque, with medullary rays which are small but visible to the naked eye; it appears sericeous, is soft, non-durable, and easy to work; it is used in carving, fine carpentry and cabinetry; it is not good as firewood but it is used for the production of charcoal for drawing. Lime flowers are intensely fragranced, rich in an essential oil (farnesol) that is used by herbalists for its beneficial properties (antispasmodic, sweat-inducing, emollient and sedative). All limes are heavy metal accumulators, making them purifiers of air and soil, but for this reason it is important to only use linden-based products from unpolluted sites. Even honey or calming infusions should not be underestimated: if their precise origin is unknown, it is better not to use them. Herbalists advise lime honey for children who do not sleep much and those who, in winter, suffer from recurrent bronchitis and coughs. The oldest lime known in Italy is one growing in Macugnaga (NO), believed to have been planted in the 13th century.

Small-leaved lime is more continental and thus it is less widely distributed in the southern regions of Italy; it grows in phytoclimatic zones corresponding to *Castanetum* and *Fagetum* where it can be found also at rather high elevations (1700 above sea level). It prefers deep, cool and nutrient-rich soils but, compared to large leaved lime, its tolerance for intense light and acidic soils is less and it resists drought better. These trees are not very sociable, they never form pure stands, but rather are found sporadically in small groups mixed with sessile oak, maples, ashes, hornbeams and Turkey oak, as well as with common beech and silver fir. They are often found in parks, large garden and along roadsides with other non-native limes even outside their usual vegetation zone, for their canopy, beauty, fragrance, majesty and longevity.

Limes have been used for the shade they provide since the beginning of time: there is documented evidence that the Greeks and Romans used lime trees for this purpose. Instead, for Pliny, the lime was one of the trees of happiness because its bark, when left to macerate, yields long fibres which were then used to weave the ribbons to tie the crowns dedicated to

Venus and the bandages for the wounds of warriors. It was also called the "tree of justice" because elders met around the trees to pass judgement. Lime branches were also considered able to send witches away from forests and to protect from lightning or bad spirits.

The wood of small-leaved lime is similar to that of other limes; it is however lighter than large leaved lime, with alburnum and duramen which are indistinct (omoxilous), ranging from yellowish-white to slightly pink in color, sericeous, widely porous, and with medullary rays which are small but visible to the naked eye. It is soft and exposed, it is short-lasting. While it is difficult to work it is attractive and is used in fine carpentry, cabinet-making and in modelling for its lightness and resistance. Since it does not easily suffer from deformation, it is still used today for resonance boxes and for piano and organ keys. The flowers contain mucilage and essential oils; when dried in the shade, they are used to prepare calming, diuretic and emollient infusions.

The charcoal obtained from coppice lime wood was used to produce gunpowder and artist's charcoal. The sawdust from lime wood was sometimes used to feed animals for its elevated fat content. From fresh linden sapwood mucilage is obtained which can be used to cure wounds; also the bark contains mucilage and some glucosides (vanillin, tiladina) that are medicinal and which have been used popularly since antiquity.

Greece *: Φιλύ′ρα, φλαμουρια′, φιλουρια′, λι′πα* ***(Philyra, phlamouria, philouria, lipa*****)**

Ioannis Ispikoudis and Olympia Dini-Papanastasi

The name φιλύρα perhaps derives from the words "φι′λος" (friend) and "υ′ρον" (υ′ραξ) = "σμη′νος" (bevy), because lime attracts bees. All of them are native species. *Tilia cordata* Mill. (*T. parvifolia* Ehrh.) (Small leaved lime): As scattered trees in forests of Macedonia and Thrace (Northern Greece). *Tilia platyphyllos* Scop. (*T. grandifolia* Ehrh.) (Large leaved lime): As scattered trees in forests of continental Greece and in the islands of Eboia and Corfu
Tilia tomentosa Moench (*T. argentea* Desf. & DC) (White lime): In forests of central and northern Greece and in Eboia island. All the above species are used also as ornamental in urban areas (parks, gardens, and alleys), centers of villages, in front of churches, in several yard/garden of village houses).

There is a common expression Philyrinos, which means light as philyra's wood. Their wood is used for paper pulp, hard board, woodcrafts, food boxes, shoetrees, fuel, charcoal, gun powder, musical instruments, while their bark is used in basketry etc. Their wood is whitish, light, lancewood, easy to be treated and useful for many products. The wood is very good for carving, especially in churches, which is why lime is called the tree of the Virgin Mary.

The inside of the bark (bark fiber) was used to make paper and mats, strong ropes that don't rot, thick clothes for wrapping goods and other hosiery. Their leaves are eaten with great pleasure by sheep and goats as well as by cattle. Like wood, lime flowers are used as a tea and honey from bees, which collected pollen from lime flowers is also valued. Limes are used for medicinal purposes and for natural dyes (nutshell, bark, roots)

Limes were often managed by coppice and pollarding and some extemely ancient examples still survice. Limes have great aesthetic value and have been popular for avenues, used as ornamentals since the classical period. Many have been used in rows of trees in towns, in parks

and gardens. There are many place names related to lime in the Greek countryside, showing its importance in the landscape in previous eras.

Sacred symbol in Greece, the symbol of the female ancestor of the human race. Pyrrha ("Πυ′ρρα"), the Redhead. She married Deucalion and became through him the mother of the human race after the mythical cataclysm. When Zeus felt that the men of the Bronze Age were so steeped in evil that he had better destroy them, he decided to unleash a great flood upon the world and drown them all. He decided to save only two decent people, Deucalion and his wife. On Prometheus' advice, Deucalion and Pyrrha built an 'ark', a big chest and got inside. When the flood had abated, Zeus sent Hermes down to them, to tell them they could make a wish and it would be granted. Deucalion wished that they could have some companions. Zeus then told both of them to throw their mothers' bones over their shoulders (meaning stones - the bones the Earth, the great Mother of all). So Deucalion threw stones over his shoulder and from the stones he threw sprang men. Pyrrha followed suit and from the stones sprang women. However, in another version, Deucalion threw acorns and Pyrrha threw seeds of lime. This version of the myth shows the importance of these two trees, used for leafy hay for the winter, for the survival of humanity.

It was the symbol of Uranus, the symbol of Poseidon (Neptune), the god of the seas and Ares (Mars), the god of war as well. Philyra (Φιλυ′ρα) was the mother of the centaur Chiron whom Cronus loved. Chiron was born on Mount Pelion, in Thessaly, where his mother lived with her son in a cave. Later she helped him to rear the children who were entrusted to him, in particular Achilles and Jason. Perhaps Mount Pelion was covered by limes at that period. It is the tree of all fairies and it cures the sickly children.

Fig. 16: Tilia platyphyllos **(limes) around a square of a mountainous village in Central Greece.**

Photo: Ioannis Ispikoudis

Portugal: *Tília, Tila*

José Castro, Ana Maria Carvalho

Nowadays lime is cultivated more frequently and is found in the streets and along roads, widely distributed over the country; it is also an urban tree used for exterior decoration along side roads, on streets, plazas, courtyards of churches and some public buildings.

Its wood is suitable for joinery, but not common.

The lime flower infusion is highly appreciated and recommended as relaxant to insomnia and diuretic, and used in colds, cough, fever, infections, inflammation, high blood pressure and headaches. It is also considered a honey plant.

People say that formerly lime should be found in the "estates of noblemen, in the courts or the churches, because poor people did not have anywhere to grow it".

Poland: *Lipa*

Agata Cziesewska and Jacek Borowski

Both species of lime are native to Poland, but small–leaved lime is more common. Limes used to be found on fertile soils in sunny or semi-shaded places. Trees are frost resistant and sensitive to soil salinity. Limes and particularly small–leaved lime are important allee tree in the Polish landscape, and also popular as a single tree. Nowadays limes can hardly be introduced to urban areas due to their sensitivity to salinity caused by de-icing chemicals. Limes are common in fertile mixed forest, but now it is rather rarely planted by foresters. Remnants of lime forests are uncommon, most being protected as nature reserves.

Lime was the main pagan tree being an element of holy groves, as well as symbol of women, then in Christianity it became the symbol of the Virgin Mary. The tree was a symbol of family protection - planted with the birth of children – usually in noble families limes were planted when girls were born and oaks for boys. Also, baptism was, in many occasions connected with this tradition of planting lime – usually the tree and child gained the same name. New lime trees also often appeared after the wedding, and especially when the young couple came from neighbouring families the tree was planted on the border between both estates. For many years lime trees commemorated important events for the village but also for all the country as conclusion of peace.
Many names derive from the lime tree – also the name of the month of July (in Polish Lipiec) - as a symbol of the lime blossom time, but also name of villages such as Lipniki, Lipnica, Lipka or Lipce (known from a novel by Prus about Polish peasants). One of the most common poems about the lime tree is by Jan Kochanowski "On the Linden Tree" from 16 century.

On the Linden Tree

Guest, sit beneath my leaves and rest at ease!
The sun will not reach you here, I promise,
Even if it truly soars, and straight beams
Draw the scattered shadows under the trees.
Here cool breezes always blow from the field,
Here nightingales and starlings sweetly keen,
From my fragrant flower, industrious bees
Take honey which graces nobleman's feast.
With my soft whisper I know by what means
To lull you with ease into sweetest dreams.
Though I do not bear apples, my lord prizes me
The most fruitful plant among the Hesperian trees.

The wood assured peace of mind, therefore it was used for cradles and also for coffins – particularly for young people - but also for spoons (people believed that food eaten using a lime spoon is harmless) and fiddles. Lime with its soft wood is an important timber for

woodcarving, for example the most famous altar in Poland located in the Mariacki Church in Cracow made by Veit Stoss (in Polish Wit Stwosz), but also holy figures are found in many churches and chapels.

Among Slavic Tribes other uses of lime were common such as ropes, baskets, and bast shoes, but also to make charcoal. Lime wood because of its stability when dry, was one of the best material for icons.

Traditionally, lime produces crucial non–wood products mostly from its flowers – honey, tea, nectar, pollen and honey dew, in the past the seeds were also used to press oil, while leaves were used to feed livestock. Probably the best nectar honey in this part of Europe is lime flower honey – it has a rich and pleasant aroma reminiscent of the fragrance. It is yellowish green or light amber, and since many centuries has been used to brew mead. The art of making beverages from honey was initiated by Slavic tribes over 1 thousand years ago. The old name of mead is "drinking lime" (in Polish lipiec pitny).

The favorite lime tree can be also found in many town and village names such as Święta Lipa (Holy Lime), Święte Lipy, in many cases on the sites of old places of Pagan cults or groves.

Finland: *Lehmus*

(Tilia cordata, T. platyphylla, T. vulgaris – metsälehmus, isolehtilehmus, puistolehmus)

Kirsi Makinen

Lime is one of the most northern of the valuable hardwoods in Finland. It grows on sites ranging from dry to moist eutrophic. Usually lime does not form large woodlands, but there are a few places in Southern Finland, where lime forms small forests together with maple (protected areas). Limes are encountered near the northern sides of cliff walls. It also occurs in some nutrient rich esker slopes in Southern Finland.

Lime has been an important tree species, and lime's older Finnish name 'niini' occurs in many place names in Southern Finland. It has been suggested that especially the origin of Finns in the East (Russia) also influenced in the knowledge of uses of the lime trees. Old Finnish names for lime are called e.g. *pernä*, *perna* and *pärnä*, which are rather strange names to modern Finns. The name *lehmus* is possibly the same origin as in Estonian, Ingrian and Livonian languages.

Lime stands have decreased in Finland through both human activity and changing ecological conditions. Many lime habitats in lower lands have been converted to cultivation in Southern Finland. The bast tax and slash-and-burn–culture changed the habitats of lime trees. The changing climate has affected to the occurrence of lime. It used to be much common in warmer climatic periods. In our times, the northernmost stands have lasted due to coppice management and good shade tolerance. The lime seed do not ripen in the current climate in Finland. Moreover, lime has to compete with spruce on nutrient rich soils.

In the countryside landscape, lime has been planted along the manor allees and as individual trees in their courtyards. Lime as a homestead tree has not been very common. Less than 1% of inventoried homestead trees were lime trees. Most homestead trees were found in SW

Finland, in the archipelago area. The trees are usually in mixed groups or form small stands. The lime allees are very rare in the countryside.

Lime is very common as a park and a street tree in urban areas. In early 19th century, the Russian emperor gave a command to plant boulevards and park trees in the young capital, Helsinki. Lime was also introduced into urban landscapes in those times. During during thelast decades, lime is found often in newer urban landscapes. In the capital city, the number of lime trees is between 20000-3000 trees, which are growing in the parks and along the streets. The most common species are nowadays Tilia vulgaris (58%), the second one is T. platyphylla (18%) and the third, T.cordata is 7%.

Lime may have been the oldest valuable hardwood in Finland (Hinneri 1996). The hardwood is valuable for small-scale wood industry (furniture etc.). The wood is soft and light which makes it easy to carve. The wood is not very durable. Earlier, timber was used in skis, fences and shafts. Bath whisks (bunches used in the sauna) were sometimes made of it. In Finland, lime is very rarely cultivated for timber. The cultivation could be possible in Southern Finland, but there are many challenges to grow it.

Ropes made of bast (niini) were important in the shipping industry. A bast tax was collected also in Finland (in Swedish period) and lime stands suffered from this activity. Actually, after the 17th century, there were not enough trees left to collect tax. Lime bast has has been also used in nets, carpets and sacks for grain and flour. Lime ropes and nets dating from the Stone Age have been found in Finland.

In folklore, the lime tree was not mentioned often, possibly because it is such a rare tree in forests. The folk poems and songs mention lime ropes. In the Kalevala lime is mentioned several times, as wall and floor material and in cradle material.

Fig. 17: Lime in urban landscapes. It is very commonly used park and street tree. The first photo is from the Esplanade, in the historic city centre of Helsinki, a park from the Empire period (when Finland was part of the Russian empire. The second figure is from a city centre Helsinki housing area from the 1970s

Photos: Kirsi Makinen

CHAPTER 4: WILD CHERRY: *Prunus avium and Prunus padus*

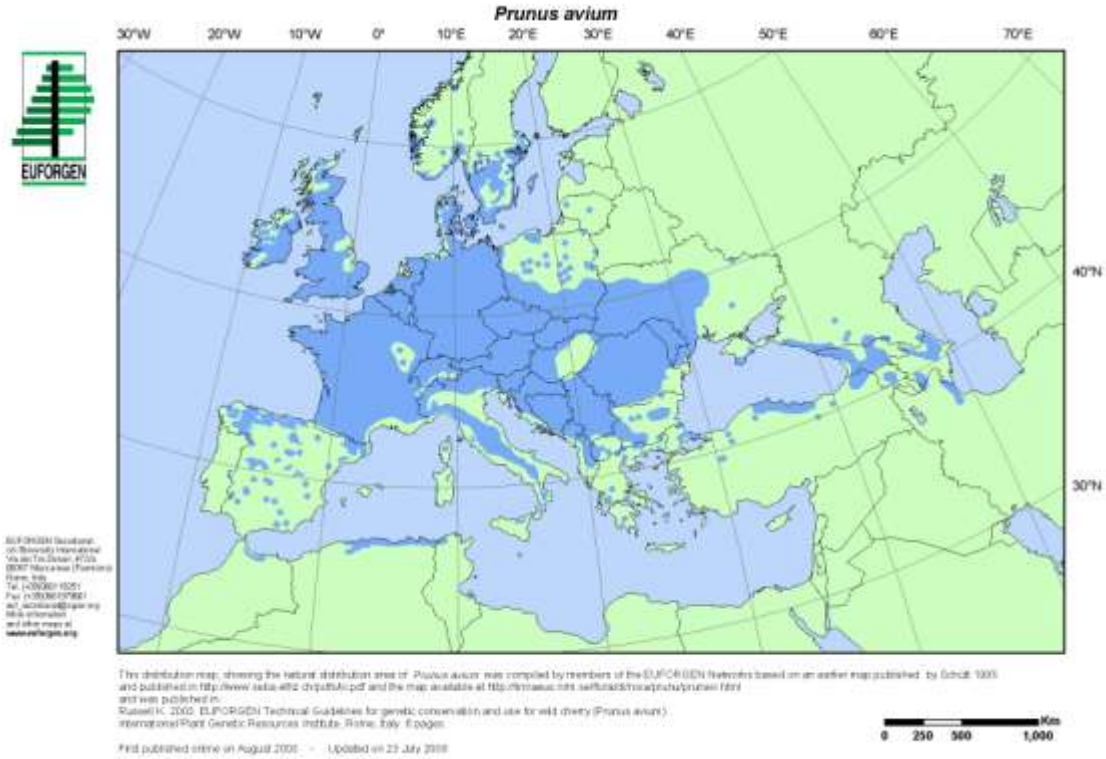

Fig. 18: Natural distribution of wild cherry (Prunus avium). Source: EUFORGEN

Fig. 19: Wild cherry in flower on a Greek hillside.

Photo: Ioannis Ispikoudis

United Kingdom: Wild cherry or gean - *Prunus avium* and Bird cherry *- P.padus*

Simon Bell

Both species are native species. *P.avium* (wild cherry or gean) is mainly found in the south of England, *P. Padus* (bird cherry) in the rest of the country. The species prefer deep soils over imestone or chalk or else alluvial or flushed soils on valley slopes.

Both grow in woods and in open or woodland edge landscapes. When they are in flower along woodland edges they make a strong contribution to the landscape.

Cherry wood is hard, fine-grained and used for turning, especially the large burls with unusual grains which can appear on the trunk. It is also used for making furniture, and its red-brown wood polishes up well to a deep, shiny brown colour.

Recorded folklore for either the wild cherry or bird cherry is sparse, and it seems likely that some folklore was indiscriminately ascribed to either or both of these trees when encountered in the landscape. In the north east of Scotland bird cherry trees were known as hackberry or hag berry and warned against using the tree's wood for any purpose, as it was considered a witch's tree. An infusion made of the stalks of the berries was used medicinally to treat bronchitis and anaemia. Wild cherry folklore has unusual associations with the cuckoo, whereby the bird has to eat three good meals of cherries before it may stop singing. Similarly, a children's rhyme from Buckinghamshire says:

'Cuckoo, cherry tree,
Good bird tell me,
How many years before I die',

the answer being the next number of cuckoo calls the singer heard.

Gean and bird cherries were both used to flavour alcoholic drinks such as whisky or gin, and cherry brandy can easily be made by filling a bottle with wild cherries, adding sugar, topping up with brandy and leaving for a few months. The resin which leaks from the trunk was formerly used by children as chewing gum. It is recorded as a treatment for coughs, and when it was dissolved in wine, it was used to treat gall stones and kidney stones. The bark was used to make fabric dyes, ranging in colour from cream to tan, while a reddish-purple colour was derived from the roots.

Ireland: Wild cherry – Crann - Silín fiáin; Bird cherry – Donnroisc

John McLoughlin

Like the birches there are two species of cherry native to Ireland: bird and wild also called 'gean'. Cherry is a most attractive tree and is most easily spotted in May when it has white flowers. The dark berries ripen in August but can be difficult to locate in a wood; you have to find it by the 15 August as the birds may have found it before you! Today, many imported cultivated cherries are planted in our towns and cities and they give a great splash of colour in early summer. Cherries have a most attractive flaky bark with horizontal rings. The wood from cherry has a distinctive reddish colour and is much sought after, cherry- wood is one of the most valuable timber tree grown here. The tallest tree is 15 metres

In the Brehon laws it was considered a 'commoner of the wood' and cherry is not represented in the Ogham alphabet indicating that it may have been scarce in Ireland - because of the damp conditions cherry tends to be a short lived tree.

The cherry is a symbol of youthfulness, beauty and love. The gum from the bark is said to be useful for the complexion. There is very little lore about cherry again emphasising its scarcity in earlier times.

Germany: *Wald-Kirschbaum, Vogelkirsche (P. avium) Traubenkirsche (P. padus)*

Tatiana Reeg

In the Southern part of Germany, cherry trees have often been planted in avenues along roads and on vineyard terraces. The reason for planting them in the vineyards was on the one hand to harvest fruit in early summer, on the other hand to attract birds that also feed on vermin in the cultivations. Additionally, its early bloom served the bees and therefore local honey production. It is a pioneer tree which needs much light, growing on clearings, at the edges of woods and on waysides.

Cherry wood has a beautiful red colour. Therefore it's very popular and is well prized for high-quality veneer, music instruments, crafts, turning and inlays.

South Germany is famous for its cherry products such as cherry-schnapps (Kirschwasser), juice, must, jelly, liqueur, compote and Black Forest Cherry Cake. In times of war or famine the cherry seeds were used to produce cooking oil. The so called cherry rubber ("Kirschgummi") is haemostatic and beside that was used in the Kattun-cloth printers. The young leaves can be part of teas; an infusion of the dried stalks is said to help against coughs. Even the "Kirschwasser" (spirits made from the fruits) is supposed to have healing effects. Bags with cherry stones served as "hot-water bottle": They were warmed up at the oven and later taken into bed.

Tales concerning cherry trees are e.g.: In the moonlight, ghosts haunt under cherry trees, and fairies dance there. People said that a girl's first bath water should be emptied under a cherry tree, so that the girl became beautiful. The fruits were a symbol of love, likewise of a sinful and immoderate love. Flowers and fruits could serve for marriage oracles. Branches of cherry trees, broken on the 4th of December ("Barbarazweige") and put into a vase, are supposed to flower on Christmas Day.

Fig. 20: Flowering cherry trees in Southwest Germany. Photo: Tatiana Reeg

France: *Merisier, Cerisier des bois (P. avium) Merisier a grappes, Bois puant (P. padus)*

André Gavaland

Wild cherry comes from Middle East. It is said that it has been planted for the first time in Europe in year 44 B.C., the day when Julius Caesar was murdered. Since the Middle Ages, wild cherry fruits were commonly eaten and horticulturists selected early species.

Domestication of wild cherry led to the cherry tree from which derived sweet cherries, with soft flesh and bigarreaux, with firm flesh. Two other cherry tree species are grown in France, *Prunus cerasus*, with acid fruits, and *Prunus* x *gondouinii,* an interspecific hybrid between *P. avium* and *P. cerasus*.

Wild cherry and the cultivated cherry can be distinguished by trunk length, shorter for the latter, and branching habits: branches of cherry tree are bigger and crown is larger, while Wild cherry is more slender. Wild cherry is also called "bird cherry" (latin name *avis* means bird), though not ot be confused with P. padus, also called bird cherry in the UK and Ireland. It can be found in hedgerows or on abandoned arable lands. It is a typical tree species of forest borders or of degraded forests next to areas occupied by people. Wild cherry is spread almost all over France except in the Landes and in the Mediterranean area. It is scattered in forest stands (on average ten stems can be found per hectare), always associated with other tree species, mainly oaks on acid and neutral soils.

Wild cherry is a fast growing tree species producing reddish wood with very fine grain in high demand for cabinet-making and stringed instrument making.

Wild cherry fruits, small berries of dark purple colour, are edible but bitter, contrary to cultivated cherries which are bigger and sweeter. They are used to make jam or tarts and are also used to produce kirsch by distillation. These fruits are well-known to be diuretic because of high potassium concentration (2.5%); they are also rich in vitamins A, B and C and nutrients (K, Na, Ca, Fe and P).

Wild cherry stalks have diuretic and astringent properties. They were infused with cinnamon sticks or prunes (to reduce bitterness) as a traditional medicine. Leaves and seeds contain hydrogen cyanide at very low concentration; consumed in small quantities, they can stimulate breathing and improve digestion, but high quantities may lead to stopped breathing and possibly to death.

Wild cherry is also associated with some symbolic value: wild cherry wedding correspond to 53rd wedding anniversary.

Italy: *Ciliegio selvatico(P. avium)*

Laura Pennati, Francesco Ferrini

Cherry is found in all Italian regions, as a sub-spontaneous or cultivated plant, even if in some sub-acidic mountain broadleaf forests it is probably spontaneous. It occurs from the cold *Castanetum* subzone to the *Fagetum* zone, but it seems that its optimal setting is the warm *Fagetum* subzone.

It is an heliophilus, rustic and plastic species that can adapt also to carbonate soils; very tolerant also to low temperatures. It is found sporadically or in small groups together with other deciduous broad-leaf plants but it is present also along the margins of the most thermophilic red spruce forests. On superficial, limestone-rich soils it suffers if there is a shortage of water and prefers fertile sites that are especially rich in nitrogen and with sufficient water. If these needs are met, along with adequate light, it is a useful species for reforestation and it easily colonizes together with birch, as pioneer species, previously cultivated or grazed areas.

The wood is reddish in colour, shiny and flexible, being used in cabinetry, for veneer and to make pipes. It is good quality wood, even if the largest specimens have a hollow trunk. It is currently considered a useful species for the improvement of both coppice and fruit-bearing chestnut woods that have thinned out due to the death of the oldest trees.

It has been called "*avium*" because almost all birds particularly like to feed on the fruit and also because it is through this route that the seeds are spread over large areas: the seed is ingested with the pulp, expelled with the faeces, and then falls to the ground under trees where birds perch to sleep or digest.

In ancient times it was believed to be able to cure illnesses. In the Middle Ages, if a boy had a hernia he was made to walk through a young cherry cut in half longitudinally. Then the young tree was put back together and covered with cow manure so as to favour the "closing" of the two parts: how easily and quickly the tree recovered was an indication of how the boy's healing would be. There was also the habit during the winter solstice, a time when the sun was reborn, to weave a cord of straw and tie it around those cherry trees that during the previous summer had produced few fruits, and therefore were expected to produce well the following season, so they would not be cut.

Greece: Κερασια', αγριοκερασια' (Kerasia, agriokerasia)

Ioannis Ispikoudis and Olympia Dini-Papanastasi

Wild cherry is a spontaneous species in Central-South Greece, Peloponnesus and Euboia island, while in the forests of Northern Greece sweet cherry is growing too. Its cultivated varieties are found all over Greece, while in some specific areas there are hundreds of hectares under intensive cultivation. Usually they are grafted on *Prunus avium* and/or on *P. mahaleb*, mainly in North-eastern Greece (Thrace). As ornamental, it can be found in urban areas (parks, gardens, alleys etc). In one town in Thrace it was the dominant tree along the majority of the roads.

It can be found in mountainous areas scattered in woods and in open or woodland edge landscapes. When they are in flower along woodland edges or with their red folliage in the Autumn they make a strong contribution to the landscape.

Fig. 21: A Greek landscape with cherries in flower

Photo: Ioannis Ispikoudis

Cherry wood is hard, fine-grained and used for turning, fine-woodcarving and for wood mosaics as well (art), especially the large burls with unusual grains, which can appear on the trunk. It is also used for making furniture, while its stems were used for making tobacco pipes.

Cherries are used to flavour alcoholic drinks and cherry brandy can easily be made by filling a bottle with wild cherries, adding sugar, topping up with brandy and leaving for a few months under the sun. From cherries, kind of liquors such as 'kirs' (=kerasi) and 'ratafia' are prepared also. The bark was used to make fabric dyes.

The resin, which leaks from the trunk, was used by children as chewing gum. Latex (gum) of cherry fruits and trunks is used as medicine (antitussive), in the pharmaceutical industry.

The leaves after they are boiled can be placed on burns. An infusion made of the stalks of the berries was used medicinally to treat bronchitis and anaemia. It is recorded as a treatment for coughs, and when it was dissolved in wine, it was used to treat gall stones and kidney stones. Boiled stalks of cherries were also used to treat kidney stones. Fresh cherries were preserved in alcohol. The kernel of wild cherries contains a fragrant, thick oil, which is used for the preparation of the Holy unction.

There are countless place names related to cherry (kerasia) in the Greek countryside, showing its importance in the landscape in previous eras.

Cherries are reported in children's songs, proverbs and sayings, dream-books, Cretan folk couplets, poems, folk songs and nostrums. The cherry tree is considered as the symbol of optimism. There is a very well known novel by M. Lountemis, with the title 'Cherry trees will blossom again this year'.

This species was well known in ancient Greece since it was reported in a dialogue in the book "Deipnosophists" by Athenaeus that the species was introduced in Greece by Lysimachus, a successor of Alexander the Great, for its tasty, juicy fruits and that it was known in Greece before Roman Empire (Baumann 1999). Dioscurides (1st century A.D.) mentioned that latex of cherry fruits and trunks increase people's sagacity and appetite and dissolved in wine treat kidney stones. He mentioned the fruits of cherry tree as laxative, while Diphilos reported it as very good for stomach and a lot of other and he mentions as the plummiest cherries, the most red and those from Militos.

There are descriptions also, how and when to plant these trees in gardens.

"In the of month October…and it is also possible to plant in paradises (= gardens) olive trees, and almond trees and cherry trees and all the fruit trees and elms and poplars and ashes …"

There is a description of the technique of 'vine-ization' of cherry trees.
"Grafting: Cherry tree is grafted, peach tree is grafted on cherry, vine is grafted on cherry and it produces grapes in May, when it is time for cherries."

Portugal: *Cerejeira brava, Cerdeiro*

José Castro, Ana Maria Carvalho

A native tree, common north of the Mondego River and in the most interior eastern regions, less frequently found in other regions. In the rural landscape, scattered cherry trees used to be found isolated in gardens or on path borders. New plantations are replacing some abandoned arable fields.

The wood is very good quality and sold for carpentry, joinery and construction. Cherry furniture is greatly appreciated and valued, typically used for coffers and clothes chests.

The wild fruits are not often gathered, because they are only used for local production of liquor or for traditional celebrations. There are three grown varieties: red fruits (the hardest), black fruits (the softer) and white fruits (the later in the season). Black ones are the best for medicinal purposes; the infusion of pedicels has diutetic properties and it is highly recommended for the urinary system and weight loss.

In April and May near Bragança there are two annual fairs in which the tradition is to eat the first cherries and use them as gifts for boyfriends, godparents and godchildren. Fruit pedicels are assembled and twisted with cotton thread forming sprigs and sold in baskets during the fair. Cherry trees are often mentioned in popular tales and songs as giving beauty to the landscape when flowering.

Poland: C*zereśnia ptasia (or Trześnia)(P.avium) and Czeremcha pospolita (P. Padus)*

Agata Cziesewska and Jacek Borowski

In Poland it is native only in the south of the country as an element of the mixed forest on fertile soil, but also quite often on the field edge, in shelterbelts or hedgerows.
Cherry is not often planted in parks, though it is used as a rootstock for ornamental cherries. Quite a rare variety of '*Plena*' and '*Pendula*' can be found in such places. White flowers among the light green colors of deciduous trees early in the spring hills make an attractive scene.
The interesting colour of the wood as well as other features, especially its toughness and thickness, make cherry wood good for furniture – tables and chairs, but also for musical instruments, particularly flutes. In many cases the cherry wood replaces walnut wood as in Poland where walnut is out of its range. Cherry wood was also used for bowls and plates.
In middle age cherries' resin was used as glue.

Cherry fruits have important ecological value as a food for birds, and it was popular for making syrup, tinctures, cordials and vodka – one of the strongest!

Bird cherry can often be found along watercourses, on the woodland edges on fertile, moist soils in complexes with ash, alder and elm – therefore usually as a tree seen first by its white flowers then lighter green against the dark wall of the forest. In the mountains bird cherry mostly grows as a bush up to an elevation of 1150m. More often it is to be found in park where the strong scent is connected to folk medicinal use as a disinfectant. In the forest experienced tourists used to put a tent close to bird cherry because of the phytoncides derived from leaves and flowers that are deadly for most microorganisms and insects. In the past bird cherry twigs were used as a material to make wicker fences. The fruits are a delicacy not only for birds but also mammals.

The Polish name – czeremcha is originally a Ukrainian term. In the past in Poland there were many synonyms such as: trzemcha, kotarba (popular Polish family name), kocierba, korcipa, korciupa, kucipa, smrodynia (stinky).
A Masovian superstition said that when on bird cherry grows a grave the means that the person buried there does enough feels regret and asks for prayers.

CHAPTER 5: BIRCH: Silver - *Betula pendula* and Downy - *B. Pubescens*

Fig. 21: Typical silver birch in autumn in Finland

Photo: Kirsi Makinen

United Kingdom: *Silver birch, downy birch*

Simon Bell

Both are native species in the UK. *B. Pendula* (silver birch) is a component of other woodland types such as oak on acid sandy soils. *B. Pubescens* (downy birch) grows with Scots pine in Scotland. Pure birch woods occur in the north of Scotland but otherwide the trees are a pioneer and a component of other woodland types. Both are effective colonisers.

The word birch is thought to have derived from the Sanskrit word *bhurga* meaning a 'tree whose bark is used to write upon'. When the poet S.T. Coleridge called it the 'Lady of the Woods', he was possibly drawing on an existing folk term for the tree. Birch figures in many anglicised place names, such as Birkenhead, Birkhall and Berkhamstead, and appears most commonly in northern England and Scotland. Beithe (pronounced 'bey'), the Gaelic word for birch, is widespread in Highland place names such as Glen an Beithe in Argyll, Loch a Bhealaich Bheithe in Inverness-shire and Beith in Sutherland. The adjective 'silver' connected with birch seems to be a relatively recent invention, apparently making its first appearance in a poem by Alfred Lord Tennyson.

In Britain birch of either species are not known for their form, being usually branchy and not very straight. The uses of birch are many and varied. The wood is tough, heavy and straightgrained, making it suitable for handles and toys and good for turning. It was used to make hardwearing bobbins, spools and reels for the Lancashire cotton industry. Traditionally, babies' cradles were made of birch wood, drawing on the earlier symbolism of new beginnings.

Folklore and herbalism credit different parts of the birch with a variety of medicinal properties. The leaves are diuretic and antiseptic, and an effective remedy for cystitis and other urinary tract infections. They were also used to dissolve kidney stones and relieve rheumatism and gout. The sap (as wine or cordial) similarly prevents kidney and bladder stones, treats rheumatism, and can be used to treat skin complaints. The bark is said to ease muscle pain if applied externally.

The birch has strong fertility connections with the celebrations of Beltane, the second, summer, half of the Celtic year (nowadays celebrated as May Day). Beltane fires in Scotland were ritually made of birch and oak, and a birch tree was often used as a, sometimes living, maypole. As birch is one of the first trees to come into leaf it would be an obvious choice as representation of the emergence of spring. Deities associated with birch are mostly love and fertility goddesses, such as the northern European Frigga and Freya. Eostre (from whom we derive the word Easter), the Anglo Saxon goddess of spring was celebrated around and through the birch tree between the spring equinox and Beltane. According to Scottish Highland folklore, a barren cow herded with a birch stick would become fertile, or a pregnant cow bear a healthy calf. Maypoles were often made of birch and at Whitsuntide birch branches were used to decorate churches where the sound of breeze rustling the leaves was said to resemble the sound of the Holy Spirit descending.

Ireland: Silver birch - *Beith gheal Downy birch – Beth chlúmhach*

John McLoughlin

There are two species of birch native to Ireland, downy and silver. The most common is the downy, which like silver birch is a delicate tree with fine branches and small leaves. In springtime the flowers, catkins appear and remain on the tree and in autumn contain the mature seed. Birch is a pioneer species and will grow on poor soils but it likes sunny positions. Birch can tolerate higher elevations than any of our native Irish trees. Birch woods occur widely, especially on marginal soils. Birch is used frequently as an ornamental in gardens and in towns as it does not grow too large. Its small seed are prized by small birds. The tallest tree is 25 metres.

In the Brehon Laws it was considered a 'commoner of the wood' and in the Ogham alphabet is represented by B. Many place names derive from birch, such as Ballybay, Co Monaghan, béal átha beithe (mouth of the ford of the birch).

Germany: *Hängebirke, Warzenbirke (B. pendula) Moorbirke, Haarbirke (B.pubescens)*

Tatiana Reeg

Birches can be found nearly everywhere in the open landscape, in small groups, lines or as a single tree. Often, one or two birches frame crucifixes or wayside shrines. It is a typical pioneer tree species growing in gravel or stone pits, along railway lines or in abandoned industrial areas.

The wood is hard, elastic and light. It's very good firewood. Traditionally it was used for wooden shoes, tables, chairs, ladders, shafts and for turning. The first hunting weapons were made of birch, it is good for making arrows. Today the wood of the birch is popular for furniture, propellers and plywood. The structured wood is very popular for knife-handles.

Traditionally, different parts of birch trees were used: Besoms were made out of the branches; naughty children were beaten with birch twigs. The whole bark was and is utilized to make roofs, boxes, mats and baskets and for dyeing. The outer parts of the bark could be processed into "birch-bark-pitch" (Birkenteer) which served for preserving leather and wood, for sealing up boats and containers and for healing wounds of animals. Its main use was glue, since stone-age piles and feathers were stuck on the shafts. Furthermore, the bark was used to write on instead of paper: books dating from the first century AD. written on birch bark are known, as well as "postcards" German soldiers wrote during the First World War.

From the medical point of view, parts of the birch were a household remedy against rheumatism, gout, renal calculus and bladder stones; teas made out of the leaves and the pitch helped against skin diseases. At least since "Ötzi" ("Frozen Fritz"), the birch polypore (a fungus) was harvested for medical reasons, mainly haemostatic ones.

The birch is a symbol of spring and growing love; as the so called "Maibaum" (tree of May), birch symbolizes the awakening of spring. When young men put fresh branches of birch in front of their lover's window, it is a sign of their love and a symbolic proposal of marriage. When cows leave their cowshed for the first time in spring, they should be driven by a branch of birch to stay healthy and to give plenty of milk all year long.

Fig. 22: Group of birches accompanying a path and the beautiful colour of birchin autumn

Photos: Tatiana Reeg

Switzerland: *Hängebirke, Warzenbirke (B. pendula) Moorbirke, Haarbirke (B.pubescens)*

Urs Muhlethaler

Birch is found on high moors; acid soil, humid and rich of nutrients, often associated with pines. It is also used as decoration in gardens or parks. There is a well-known birch avenue between Wabern and Kehrsatz, close to Bern, in Switzerland. Especially decorative is the bark, which is white, smooth and subdivided by black bands. In some municipalities from the region of Locarno (TI, Switzerland) some laws from 1313 forbade the felling of birches. Interdictions to chop down trees were not uncommon but pioneer trees were not usually regarded as especially valuable trees. The exceptional prescription can be explained by the rarity of the birch in this region and at that time. The presence of birch increased during the last century, as a result of the increasing abandonment of grazing lands and other agricultural areas.

Birch wood is fine structured, light, ductile and elastic, commonly used for furniture, turnery and wood carving. Birch is burns well, sought by bakers; its charcoal has a high calorific value, which produces an intense and sustained warmth. During the burning process birch wood makes nice flames and does not produce cracking noises; that is why in the past the bourgeoisie used it a lot for their chimneys. Since birch bark stores the so-called birch tar, the wood is burning even in fresh and humid conditions.

Its wood is often employed as support for game animal trophies (deer horns, chamois decorations). It is also appreciated for its strength and its resistance. It gives anexcellent construction plywood. Today it is very employed on buildings as prefabricated element or facing material. Birch is also used to produce paper.

Birch branches were earlier used to produce brooms (besoms), that is the reason why today it is still possible to find stocky birches close to many farms. From the bark it is possible to obtain an oil, used as medicine. The sap coming out from the bark is sweet; once fermented it

is employed to produce alcoholic drinks and vinegar. About hundred years ago from was even fermented wine birch juice, although it is not possible to find it on the market today. At that time it was produced as luxury article in regions were grapes were not grown. Birches also have the ability to influence water content of human body. Tea and tree juice stimulate the bladder and kidney, because of their content on flavones and saponine, without irritating them. Birch is a proven remedy against dropsy, rheumatism, gout, arthritis, bladder and kidney stones. Birch juice should strengthen hair. Birch charcoal is a component of a recipe used to cure enteritis in dogs. In the past, during famine periods, birch was employed as food, by grating the bark and mixing it with wheat flour (Vedel et al). Containers for smokeless tobacco were also produced from birch bark. In fact bark oils gave a fine and unique flavour even to bad quality tobacco powders. Ötzi, the 5300 years old dried body found in the Alps Ötz valley in the nineties, had with him two bowls made of birch bark, used to transport embers wrapped in fresh maple leaves to isolate the heat.

Farmers rules: when birch has catkin is time to sow barley! Many family names in German speaking countries are associated with birch: i.e. Birch, Bircher, Birchner, Birchler, Birkhäuser, Pircher and Pirkheimer. Locality names as Birchli (SZ, Switzerland) or Birchegg (LU, Switzerland) are not very common. Birch is an emblem of spring because of its power that awakes life. Marriageable lads used to leave fresh birch branches in front of their lovers' windows. Under birches grow many toxic mushrooms from the family "Amanita": one of them is the "fly agaric" (*Amanita muscaria*) which can be lethal.

Italy: *Betulla Bianca (B. pendula) Betulla tomentosa (B.pubescens)*

Laura Pennati, Francesco Ferrini

In Italy, silver birch is found in sub-alpine alder woods, in forest clearings, in alpine red spruce forests, in Scots pine woods and also in pre-alpine heaths; it is sporadic in the northern portion of the Apennines, not present in the central portion, and then found again along the Apennine ridge in Abruzzo in small disaggregate stands. It is a tree of secondary importance in Italy. It develops particularly well on sandy soils and on detrital slopes, and is used as an ornamental tree in gardens thanks also to its reduced size.

The wood is homogeneous, flexible and workable, ivory-white in color and the alburnum and duramen are not distinguishable; before being worked, the wood needs to be well seasoned because it is subject to strong retractility. For centuries it has been used and appreciated for particular purposes: for frames, decoration on carts and ships, furniture, walking sticks and various objects made on a lathe. It is also used to make resistant but light plywood and it also used in aeronautics and sometimes to make cross-country skis for dry snow. It can be easily turned and for this reason it is used in the making of hand-made objects and light-coloured furniture which can have attractive veining especially if wood from the zone between trunk and root is employed. Industrial use of birch wood is common in Nordic countries, while in Italy there are not large forests made up of this tree and so its use is largely as firewood. When birch wood burns it produces a type of charcoal that has elevated absorbing potential and thus, when finely powdered, it is used for intestinal disorders and mushroom poisoning.

From the tannin- and betulina-rich bark, a particular leather-tanning substance has, since time immemorial, been obtained which gives the famous "Russian leather" smell; in addition, from the impermeable, resistant and insulating bark, shoes, shed and floor coverings, tobacco bags,

mats and progues are made. During the Second World War, when food was particularly scarce, the bark of young birch trees was ground up to make a sort of flour for bread.

Birch bark was also well known for its tenacity and thinness by the Romans who used it to make rods for the bands the lictors carried when they preceded the magistrates.

When birch leaves are treated with alum a green colorant is obtained, if it is boiled with clay a yellow dye for wool can be obtained. In addition, the leaves can be used to make a diuretic infusion for cardio-renal disorders; roots and buds can make a betulina alcohol decoction useful for the cure of cutaneous ailments. Cutting the trunk provokes the escape of a very sweet sap which, if left to ferment, produces alcoholic beverages and vinegar; if it is left to harden, it takes on the consistency and taste of manna.

Downy birch is a rare and sporadic species in Italy, limited to a few peat bogs or damp woods in the Alps or Karst as far as Monviso; in the Apennines it is found only in the Parmense area (Corniglio forest). It is an heliophilus species, even if less so than other birches, however it is more demanding in terms of water and for this reason it is found where there is a constantly elevated amount of rainfall, while it is present on peat and swamp-like soils in areas where there is alternation with dry periods. In Italy it is not a species of interest for forestry due to its sporadic nature.

The wood is soft and, although it rots quickly in open air, it can be used for furniture, tool handles and plywood. When used as firewood, it burns with a particularly luminous flame.
Birch sap is rich in sugars. Extracted in spring, it can be transformed into birch wine, with the addition of honey. Birch oil is extracted from the bark and is used as an insect repellent.
Betula pubescens buds stimulate all catabolisms and immune reactions, activating the endothelial-network system. Leaves contain tannin, tannic acid, sugar, an alkaloid, an ethereal essential oil, some glucosidi, nicotinic acid. The macerate obtained from *Betula pubescens* buds prepares and renders the therapeutic action of other macerates which are more specific for organotropism.

Greece: Σημυ'δα, βε'τουλη (simyda, vetuli)

Ioannis Ispikoudis and Olympia Dini-Papanastasi

Silver birch is found as a scattered tree or in small stands in high mountains of Northern Greece. It is an effective coloniser. In some cases it is used as ornamental tree. The uses of birch are many and varied. The wood is tough, heavy and straight grained, making it suitable for handles and toys and good for turning. The sap is used to make delicious alcoholic liquor. Its leaves constitute luxurious fodder (livestock food). Its long and whippy branches were used for brooms and perhaps that is why birch is associated with witches.

Birch was used for tanning and for insect repellent lotions. The leaves are diuretic and antiseptic, and an effective remedy for cystitis and other urinary tract infections. They were also used to dissolve kidney stones and relieve rheumatism and gout. The sap (as wine or cordial) similarly prevents kidney and bladder stones, treats rheumatism, and can be used to treat skin complaints. The bark was used for stomach pain and it is also said to ease muscle pain if applied externally.

Birch was the symbol of Sun and Moon. Athena, the warrior goddess of Wisdom, of Reason, presided over the arts and literature, more closely connected with philosophy, patroness of

spinners, weavers etc, protectress and patroness of towns, is associated with olive tree and birch. Strangely, birch was also the symbol of the Nereids too, although they were sea-dieties. Their number is usually set as fifty. They were the grand-daughters of Oceanus and they can possibly be said to personify the countless waves of the sea (*like the birch branches waving under the strong winds in Northern Greek mountains?*). They were all very beautiful and they spent their time spinning, weaving and singing. Perhaps this is the connection between birch, goddess Athena and Nereids. According to folklore, being a tree in the foggy and mysterious high mountains of Northern Greece, it was the tree of all fairies and of the witches.

Poland: *- Brzoza brodawkowata (B pendula);–Brzoza omszona (B pubescens)*

Agata Cziesewska and Jacek Borowski

Birch, both species are wide distributed all over the country; particularly *Betula pendula* is a very common tree. Birches prefer light soils typical for fluvial or fluvio-glacial sediment with high range of moisture in the ground. In parks and garden it is used as a single tree – particularly the variety 'Youngii' and also in groups. Furthermore one can find birches in allees and double rows. Contemporary popular varieties are those with red and yellow leaves.

In forest management birches are common in pinewoods and also in acid beech wood habitats; quite often it is planted on moors (*Betula pubescens*). It is popular also in mixed forest with Scots pine and spruce, but rather rare in the habitat of rich dry-ground forest and riparian ash forest.

Birches were very important in Polish traditional material culture starting with food. In the past during early spring hunger happened quite often so people used to eat mixed bark of birch, while leaves were used as cattle fodder. In spring people obtain the sweet water (sap) of birches called *osokoła.* The oldest description about this procedure has been found in a text dating from 1472. Birch water (*oskoła*) contains plenty of nutrition. New age fashion and the return of traditions in different areas make birch sap drinking popular again after 50 years of falling into oblivion. Today in every health food shop it is easy to find birch juice, mostly imported from the eastern neighbours of Poland (Lithuania, Ukraine, Belarus). Birch water in the past was also used to make vinegar, beer and syrup.

Birch is "healthy tree" rhabdomancers (waterfinder) that gives a positive energy. In the past birch brew was used as a diuretic medicine. It was said that "birch's tears heal injury". Also fresh leaves were used against rheumatism and the infusion of buds for diarrhea.

There is plenty of practical application of different parts of the birch. Twigs are used for brooms; larger branches for fences, also to make some fishing tools. Birch bark was used also in tanning; in the east of Poland women used to dye in birch bark into green and yellow colours, but also to paint eggs for Easter. From the middle ages it was quite common to make birch tar. In the north of Poland birch wood was the main material to make snuff-boxes. Birch wood is a popular material for furniture and in the past often used by wheelwrights (to make wheels for carts and wagons), turners (to make handles of many tools), coopers (to make barrels), but also to make toys, match boxes and charcoal.

The magical role dominates the cultural values of birch – in the past it was a strong superstition remedy to prevent or cure disease. Birches have a particular role during Easter. In Christianity this tree is a symbol of new life. Traditional palms that are taken to the churches

during Palm Sunday are sometimes made of birch twigs. It is believed that twigs of birch put to the water on Palm Sunday brings happiness to house when the leaves appear up to Easter. In many parts of Poland birch is a symbol of happiness. With Easter it is also connected to the most important tradition so called "dingus". Young boys used to beat girls with birch twigs; they use to get some money and eggs for that. Bunches of birch twigs are also used by young people to turn sleepyheads out of the house.

The next important celebration with an important role for birch is the feast of Corpus Christi, when cottages and houses churches, chapels are still today decorated with young birches; in some regions these days also cattle are decorated with garlands. These twigs later became a remedy for many problems such as: put in the garden – against moles, also put on fields of flax (*Linum*), hemp (*Canapis sativa*) and cabbage, keep in the cow byre – against pests. This, as in many similar cases has Pagan roots and means magic protection against witches.

Birch is also related to Beltane when boys dance with burning birch twigs. The birch has long tradition to complement familiar feasts. Shortly after baptism, when the child is brought home, parents and grandparents used to put the child on the doorstep and lash him/her 3 times to be more polite, they believed it would not be necessary to do it later on.

Birch is also the so-called good and merciful tree whose crying (sad) branches were traditionally used for crosses on graves – particularly after the Second World War it became a symbol of young people graves (as partisans in the forest). According to Pagan myths birch on grave protects against ghosts, with Christianity the tree was transformed into birch cross.

Finland: *Koivu*; *Rauduskoivu (B. Pendula), Hieskoivu (B. pubescens)*

Kirsi Makinen

Silver birch grows all over Finland except the most Northern Lapland. It is a pioneer species, which grows both dry and moist forest soils. It is commonly seen in different kinds of forest stands, in roadsides and along watercourses. In mature forests, it grows in mixed stands, but sometimes pure birch woods are cultivated. Silver birch has been valued as timber and a raw product in Finland. During centuries it has supplied many goods to people and cattle: timber, fuel wood, sap, bark, and fodder.

For a short period of Finnish forestry in 1960s- 80s, birches were unvalued and removed from the forest. Birches were called *White lies* of Finnish forests that were not economically important but took the energy from valuable tree species like conifers. From this era, some people call the birch a rubbish tree.

In Finnish tradition and landscape ideal, silver birch has many meanings. Legends, riddles, folktales, charms and songs have told about birches. In many songs, a girl is compared to a young birch etc. (SKS, sledge songs). Many people in sources of folklore data mention a birch as a feminine tree. Usually the sacred trees were pines or spruces in Finland, but also broadleaved trees were included, rowan, goat willow and birch. Often families had such trees and they sacrificed food to them. If the tree got destroyed, the family was believed to be in danger.

A birch belonged usually to the *good trees* in folklore (with spruce and pine). Some trees were evil, but there were contradictions of these species, like rowan, ash, alder, willow and wild

cherry. One folktale tells of a birch formed of the tears of the Virgin Mary. Another story tells how a birch once gave shelter to our Saviour against the sun, and he blessed a birch with a light bark which protects it from frost and sun. Often trees became good or bad based on their behaviour. In the Kalevala, a birch is an important tree, mentioned 69 time. At the era of slash-and-burn culture birch was valued and worshipped as it gave so many goods for the people. Not every birch was cut down in the process. "One birch was left for the birds to rest and for a cuckoo to sing".

Since the time of national romanticism, lakeside birches are especially a part of the Finnish mindscape. The birch has been a symbol of joy, light, and goodness. When Finland became an independent nation, birch was given many symbolic values to represent Finland, - its nature and its people. Many art forms expressed these values, such as visual arts, literature and cinema in 20th century. An iconic image of Finnish films is a heroine leaning against a lakeside birch in the setting sun. One well-known fairy tail of Zacharias Topelius is called *A birch and a star* (1893), which tell about the lost children that found their home, in the memory of the familiar tree.

In the countryside, birch has been grown in tree allees (e.g. manors, farms). Individual trees are also popular in courtyards. In a study of a homestead trees in Finland, more than half of the courtyards had birches. People are used to mention the birch among beautiful and even romantic tree species. A home birch usually had a place of honour in the courtyard, and Finnish people respected the trees in the yard. In 1988, silver birch was voted a national tree of Finland. On midsummer's Eve, young birches are often brought to the door sides of houses.

Fig. 23: Manor allee of birch in Southern Finland. Especially birches with weeping branches are highly valuated among Finnish people. Urban birch woodland in Sibelius park, Helsinki.

Photos: Kirsi Makinen

Silver birch is an important species in the timber industry (saw products, veneer, paper, pulp etc.). Birch furniture is popular in Finland. Traditionally, birch was also used for furniture, carriages and sledges. In old-fashioned trams and trains birch wood was an important material. An aeroplane-veneer was manufactured from birch. Legendary Finnish cross-country skis were often made of birch wood. Other sports outfit, like javelins and ice-hockey sticks were also manufactured. In agricultural societies birch wood was used in many agricultural utensils, collar bows and other wood harnesses. Wooden parts of hammers, sickles and axes were also made of birch. In addition, wood parts of rifles and shotguns were often of birch. All kinds of small household utensils were of birch wood. Flavouress birch wood was used e.g. in butter and herring jars. Also play tools for children were often made of birch.

Birch bark (*tuohi*) has been a valuable product in northern Europe. It is very strong material which tolerates cold, moisture, and it is light, durable and does not rot easily. Bark is used for many handicrafts (bags, baskets, jars, boxes, ropes, etc.). People used bark-made bags (*kontti*) to carry hay, fish, game and food. In fishing nets bark was used both as woven floats and weights (a rock woven inside). Bark was also used in buildings (to protect trunks, also as roof material). Both bark plates and strips were used as material. The folded plates (*tuokkonen*) were often used as simple jars for the berries, porridge and other kinds of dishes. A smaller plate cup (*lippi*) was used to drink water from springs etc. Bark was also used in shoes (*virsut*), belts, caps and hats. As a decorative and practical material, birch bark was used in holsters for knives, axes and sickles.

Bark was most available in slash-and-burn areas. Birch was valued in these sites and these woods were called *bark forests*. The bark was collected in *bark month*, one month around Midsummer. Even in the 1920s it was allowed to take the bark from living trees. It was compared to berry-picking, if one did not take vast amounts of it. From ones' own forests, one could take bark without limit (Harju, 1964). People used to criticize the appearance of torn trees in birch stands.

Birch is favoured as a valuable fuel tree, because it gives hot steam in sauna and warms houses effectively. There was a saying that if the coffee or food was very hot, "it was cooked on the birch bark fire".

Birch ashes were used to produce potash (component of e.g. glass, soap). Moreover, carbonised birch bark formed one kind of birch tar. Birch bark soot was used to manufacture colour for black paint (*kimröökі*).

Birch is also linked to the cult of the sauna in Finland. The soft whisk (*vasta* or *vihta*) of birch twigs is commonly used, although many urban Finns are no long aware of the traditional habit of making and using bath whisks in the sauna. A sauna bath enjoyed with a properly prepared whisk gives a feeling of relaxation. These branches are bound together in early summer (at the time of haymaking), when leaves sit tightly and do not drop in use. The best material comes from lower branches of fairly young trees. The whisks are used instantly or dried ones can be hung from the rafters in a dry, dark room for use during winter. During winter, the whisk is firstly soaked in hot water so that it becomes soft again. One family member explained that they used to make 300 whisks for the winter. The extra whisks were given for the cattle. Dried branches (*kerppu*) were also collected for cattle for winter fodder. The best time to collect fodder was the change of June-July. The leafless branches were also very much used for brooms.

Birch sap (*mahla*) has been collected as a common early spring drink. One adult tree could give many litres. In some regions or traditions, only fallen trees were used for this, because the sap collection damaged a tree. Sap was used for dishes and against the diseases. It was a spring

time drink after a long winter diet. It was also given to the cattle. Beer and lemonade was produced of birch sap among richer families in 19th century.

Fig. 24: Old backpack made of birch bark. Modern birch bark containers.

Photos: Kirsi Makinen

Downy birch is spread even more in the North than silver birch. It lives in moist, medium or high nutrient soils, such as peatlands. It is seen also in shorelines and roadsides or field sides. Birch bark is also collected from this birch. Sauna whisks are not usually made of this birch.

The subspecies of this birch B.pub.ssp. czerepanovii (*mountain birch – tunturikoivu*) is a hemiarctic-middle boreal species that lives in the Lapland, forming in many places the tree and forest lines in the hill areas and uplands.

Another important subspecies is B.pend. var. Carelica (*Curly birch - visakoivu*) is valued for its decorative and hardy wood, that is used for furniture and other handicraft.

CHAPTER 6: WALNUT: *Juglans regis*

Fig. 25: A 400 year-old walnut in Greece.

Photo: Ioannis Ispikoudis

United Kingdom: *Walnut*

Simon Bell

Walnut was introduced to Britain by the Romans, for the nuts and oil. In Britain it is only found in parks, gardens and other cultivated locations. Many large old specimens date from mediaeval times, often from monasteries, now incorporated into parks or gardens.

Germany: *Walnuß, Walnußbaum*

Tatiana Reeg

The walnut tree likes the climate of wine-growing regions. Often walnut trees are grown in gardens and parks. They were planted next to houses, into fields and on terraces to provide people with nuts, in many places used for oil production. Due to its distinct scent, it is said to keep insects away, that's why farms usually have old walnut trees standing in front of the main house.

The wood has a special, beautiful colour; it is tough, heavy and smooth. It was and is used for furniture, pianos and organs, arts and crafts. Walnut trees provide famous wood for stocks of rifles and pistols. Because of its grain, the wood of the roots and the part just above the ground is the most beautiful and expensive indigenous wood. In the past, a lot of uses for different parts of the walnut tree were usual: An infusion of the leaves was, because of its effects as insecticide, used internally and externally against pests, parasites and worms. It was considered to be good against gout and diseases of the skin as well. The nuts were important for eating and for producing cooking oil. Because the oil doesn't dry up, it's utilized for artistic oil paints. Leaves, bark and nutshells were dried and used to colour wood and to dye wool and hair. The leaves even served as a substitute for tobacco.

During antiquity, the walnut tree was consecrated to Jupiter. In the past, people believed that a branch of walnut protects against flashes of lightning, like branches of hazelnut do as well. The shade of the tree was supposed to be harmful to health. During the Middle Ages, the walnut was a tree that brought misfortune and took away fertility from the surrounding ground. The nut, however, is a symbol for fertility.

Fig. 26: Young walnut tree and crucifix at a road junction; Walnut trees in a meadow. Photos: Tatiana Reeg

Switzerland: *Walnuß, Walnußbaum*

Urs Muhlethaler

Belongs to the lordly groves of our cultivated landscape, often stands near barns, not least to deflect lightning from the house into the treetop. Can be also be found as park trees, in mixed woodland, as single trees in hedges and individually on grassland. Because of its light requirement it is rather a field than a forest tree.

It is predominant on sites with mild climate, e.g. in viticulture regions. The most beautiful walnut trees are found in Inner Switzerland and the föhn sites of the Lake Lucerne respectively, at Lake Walen, in the County of Vaud and in Ticino. Walnut trees grow fast and produce a stately specimen already at forty years of age.

The walnut wood is one of the most beautiful and is used for cabinet-making for a long time. It is used in the veneer and solid furniture industry as well as finishing (kitchen, floors). It is in high demand for the construction of pianos. It is well suited for turnery and carving; it is the best wood for gunstocks. The roots of the walnut can be processed to very beautiful maser veneers. Beautiful walnut trees are sought-after and realise record prices.

Once upon a time walnuts were a staple food. During the last world war walnut trees were under protection on that account. In agriculture, walnut trees are still grown most notably because of the nut crop. As a forest tree, it bears almost no crop, so is best in cultivation. By pressing the walnuts nut oil is gained, which can be used as edible oil, for cosmetics, as energy oil or source material for paint varnish.

Beside a multitude of medical aspects, fresh nuts are used for the production of shampoo. In addition, there are found various recipes for walnut liquor.

Probably the best known Swiss speciality with walnuts is the "Engadiner Nusstorte" (nut flan). Walnuts are also found in yoghurt, müsli and candies. Walnuts are said to have positive effects on the health of man. For instance the cholesterol-lowering effect of the walnuts was proven in recent years, as well as a positive effect on the circulatory system. In veterinary medicine skin disorders of cattle (scabies, dermatitis, ring worm) are treated with an emulsion containing walnut oil. The shell of the walnut can be used for dyeing cloth, especially cotton. The tanning agents contained in the shell give the cloth a beautiful nut brown.

In the past leaf litter was used in the cattle barn. But it was observed that walnut leaves cannot be used for this purpose, otherwise the cows would lose milk performance. In cellars with a natural floor walnut leaves can be littered between stored fruit. This is supposed to scare off mice and vermin. The evaporation of the live walnut tree contributes to keeping away flies and mosquitoes. Therefore walnut trees are very popular around farmhouses.

Weather lore: If the walnut tree heavy of fruits, a hard winter will come.

In popular belief the walnut tree has an important position in spite of its foreign origin. Many customs (e.g. fertility cults) were transferred from the local hazel to the walnut. It is said in many places that nuts in numbers bring boys in numbers. The cross-like seedling, also called Lord nail or cross nail, is put into the shoes by children. It should prevent stumbling, if you stumble anyway, you find a treasure immediately.

In former times the walnut was a symbol of fertility. At a wedding, many walnuts were given to the bride. It was believed that eating many of these nuts would increase the chance of many healthy children. When a boy was born then, a walnut tree was planted in the garden of the parents as a symbol for the happy birth. But the tree was not just put into the earth: First the afterbirth of the mother was put into the hole and afterwards the walnut tree was planted exactly over the afterbirth.

In the past, the walnut was one of the tree types along with Spanish chestnut, Cherry and Olive tree which applied to the law of "Jus Plantadi". The Jus Plantadi was the right for members of the community (e.g. township, patriciate, "Degagna", "Vicinanza"), to plant a private tree on public ground, in most cases collective pasture or "Selves". In terms of geography the Jus Plantadi was spread around the Mediterranean. There are numerous examples of its appliance, predominantly in Ticino and northern Italy. The first written testimonials of this law derive from the 10th century, even though the habit was probably already in use before Roman times.

In Fricktal the green, thick-fleshy paring around the fruit is called "halle". This "halle" pops in September or October and the fruit falls to the ground, or the fruit falls together with the halle. This means that the fruit is ripe. Now if children are so tired that they can barely keep their eyes open, then they are "ripe" to go to bed. Old-established Fricktalians will say that these children are "hallig" and belong to bed(vernacular).

Italy: *Noce; Legno di noce*

Laura Pennati, Francesco Ferrini

Common walnut was present in the Italian peninsula up until the glacial period, after which time it disappeared, however pollen evidence has indicated a possibility of its presence, although sporadic. It was imported to Rome by the Greeks around 100 B.C. and from there it spread to the rest of Europe.

It is a typical species of *Castanetum* but it does not go much higher due to the low temperatures; in order to bear fruit it needs regular rainfall. It is a social tree but it is not a forest tree as dense shade is detrimental, for this reason it's found mainly near houses, in meadow tree groupings, in small valleys, in fields and pastures. Walnut prefers deep, fertile, cool, well-drained soils which are subacidic to neutral; it is a very demanding tree in terms of light and its notable allelopathy provides advantages in competitive processes.

Thanks to its majestic appearance, it is used and along roads as ornamental treein parks. It is also cultivated for its fruits which are both consumed fresh and employed by the confectionary industry.

The wood of this tree has been appreciated for centuries for its various qualities: it is hard and compact; it can be divided into veneers for inlays, it is suitable for the lathe, scalpel and plane, and for making quality furniture, rifle butts, and luxury flooring. The alburnum is grey while the duramen has an attractive dark colour with more or less smoky veining.

Juglans derives from the Latin "*Jovis glans*" (acorn of Jupiter) and it was thus named by Linnaeus, who used the same term as the Romans. Virgil, in the "*Bucoliche,*" mentioned the ancient habit of distributing walnuts at wedding banquets as a sign of prosperity and of tossing them during the procession accompanying the bride and groom. Carbonised walnuts, having

the same characters as the variety currently cultivated in Sorrento, have been found in excavations at Pompeii.

In the Middle Ages, the similarity of the kernel to the human brain stimulated popular imagination and walnuts were considered to have both therapeutic use in mental illnesses and malefic influences. It was an easy step from the strange shape of the fruit to a link with Evil and the walnut became the 'tree of the witches' Sabbath, the meeting place for witches and he-goats, and infernal spirits. The walnut tree of Benevento became famous as the tree around which witches' from all parts of Europe met, after having flown to the place on their brooms.

The writer Manzoni dedicated some of his most serene and delicate passages in "*Promessi Sposi*" to this tree. In the book, Fra' Galdino tells the story of a miracle: a walnut tree that is about to be cut down because it doesn't bear fruit is saved by the promise of an abundant harvest destined to feed the poorest of the poor. When the tree bears a great quantity of fruits, its owner becomes greedy and refutes the promise, provoking in turn another miracle: the fruits turn into dry leaves.

The leaves, hulls and kernels were used to treat many illnesses: an infusion of leaves stimulates appetite, purifies the blood, and provides muscle tone; the hulls, in addition to the qualities listed for the leaves, also eliminate worms from the intestine and are a cure for dysentery. Pliny wrote that the shells were used to treat dental cavities. Fresh walnut oil is one of the best edible oils but, unfortunately, it easily turns rancid and when it does it forms a sort of gelatine; this latter is, along with linseed oil, one of the oils with the greatest drying potential. In fact for this reason it is widely used in the production of oil paints. The oilcake that can be obtained by pressing is an excellent feed for livestock. The hulls are frequently used in the dermatological field because, in addition to being able to dye the skin brown and lend brown tones to grey hair, it contains juglone, a substance with antiseptic and keratinizing properties. The oil extracted from the hulls is among the most effective skin softeners. Daily use of preparations based on walnut hull oil help to keep skin soft, elastic and slightly coloured. It also slows down exfoliation of superficial cells.

Also walnut leaves have good bitter-tonic and digestive properties and are used in the preparation of digestive wines and tisanes; for external use, they are useful in the treatment of venous insufficiency and alleviate the sensation of heaviness in the extremities. Young, tender walnuts are used to produce a liqueur called "nocino", made by infusion of green hulls in alcohol and sugar and then aged for 6 months. The hulls, macerated in water or alcohol, are used by cabinet- and furniture-makers to obtain a stain which give to certain light woods a very dark colour.

Greece: Καρυδια', καρυα', καρυα' η ια'τωρ **(Karydia, karya, karya the healer)**

Ioannis Ispikoudis and Olympia Dini-Papanastasi

One of the most important trees in Greece. Found in deciduous broadleaved forests as scattered trees. It is cultivated all over Greece, while in some specific areas it is found under intensive cultivation. It is the most common tree in agro-silvo-pastoral systems. It is also used as an ornamental tree in urban areas (parks, gardens, allees), squares of mountainous villages and in front of churches. Walnut trees are common in gardens in all villages, mainly in mountainous ones. There is at least one walnut tree in every yard/garden in every mountain village house. Many large old specimens date from mediaeval times, often from monasteries.

The Greek name Karya is derived from the Karyon = hard (karyon is the fruit) or from karos = torpor, due to the common belief that sleep under the shadow of the tree is not very good. The leaves and the husk of the fruit contain a volatile oil, which causes the shadow of the tree to keep a person awake and to cause a headache (kara = head). According to Plutarchos, Karya was named because of this property.

Walnut wood is hard, fine-grained and used for furniture, turning and woodcarving, especially the large burls with unusual grains which can appear on the trunk or in the lowest part of the bole above the roots, known as '*lupos*'. Its brown wood polishes up well to a deep, brown colour (usually the shuck of walnuts or walnut oil was used for it). Walnut wood from north-eastern Greece (the mountainous area of Rodopi prefecture) is famous as one of the best quality in the world. This is because in that area, a monastic world flourished during the Byzantine era, where walnut trees were of a great importance for the survival of the monks and thus huge, very old trees exist all over the area. The wood of very old trees becomes darker and darker, with very specific brown colour, but also usually it has very rare wavy grain, which is extremely valuable. It is reported that when a tree like this is cut down, a ship hired just for this purpose is coming to take the tree to Italy or elsewhere to be used for specific products, such as gun stocks for collectors. Walnut wood is fissured easily in very fine layers and polishes perfectly. This is why it is used for furniture, fine-woodcarving, woodworking, turning, weapons making (spears and bows, stocks), for musical instruments and for wood mosaics as well (art).

Walnut tree is one of the most valuable trees in Greece. It is the tree with the 1001 uses and considered as the gold of peasants. Everything is useful, especially for medicines: the wood, the bark, the leaves, the flowers, the fruit and its oil, the nutshells and their shuck, the shuck of the stalks and of the root etc. Walnut trees are important for honey production also and they have great aesthetic value. The roots, the nutshells and the bark were used to make natural dyes, ranging in colour from auburn to nut-brown for clothes and leather. The husk of the nuts is used to make ink and dyes for cloths and woods. The nutshells are used to make the nut-brown color, which is used to burnish walnut wood in order to give its nice, characteristic colour.

The fruit is used in confectionery and in '*home economics*' i.e. dried, cooking, oil and liquors.
From the kernel of mature walnuts abundant and special oil is produced, which is used in soap making, oil colors and varnishes. Painters used it to dilute their colors. Walnut oil has the same nutritious value to olive oil and butter. People all over Greece prepare a kind of liquor for the stomach from the immature and fresh fruits, a kind of pickles and a preserve (karydaki), which was used also to treat tuberculosis. A kind of liquor is made up from the husk of the walnuts. There are several culinary recipes, including boiled wheat offered with funerals. Leaves of walnut are used in religion customs and together with the thick oil from the kernel of wild cherries and other stuff, are used for the preparation of the Holy unction. Walnut oil is used as medicine for tapeworm. The outer succulent shuck of the fruit is vermifugal.

Hanging walnut leaves in the house fends off flies, mosquitoes and bedbugs, while being astringent they were used as a medicine to protect horses, donkeys and mules from pest insects and horseflies. Leaves are used also as moth repellent for clothes and in repellent lotions for other insects, such as ants, etc. They are effective also for sweated hands and feet. Tea made from leaves palliates diabetic thirst. Medicinal uses are endless. We can say that there is almost nothing that walnut cannot cure, that is why its name was *'Karya the healer'* and/or *'The tree of life'.*

Walnut is reported in votive epigrams, children songs, proverbs and sayings, culinary recipes, feasts, mores and traditions, folk Cretan couplets, carols, dream-books, poetic miscellanies.

The great Dream-book:
Walnut with fruits = happiness and pleasure
Walnut with flowers only = sorrow, pain and ridiculous abuse
Discovering hidden walnuts = discover treasure
If on the trees = disorders and difficulties
If fresh = satisfying news with something bad
If dry = difficulty and loss of fortune but several times = unexpected earnings

On the first of May, women used to put a branch of walnut (καρυδιά = καρδιά = heart) in their hair in order to be "καρδιαρε′ς" = fearless, courageous, and for their heart to be open. Walnut leaves are used for preserving other fruits, in cooking, in religious ceremonies and they help women to bear children.

Way of preserving apples (Apulios, 2nd century A.D. - 10th century A.D.): put the apples over a layer of walnut leaves in order to preserve them but also the apples to have nice colour and flagrancy. It was considered much better if each apple was enwrapped in the walnut leaves.
Weak women, who wish to have a child used to boil walnut leaves etc and sitting above the steam in five nights she should be pregnant. According to the myths, Gods used to live in walnut trees, when human beings used to live still in the oaks eating acorns. Walnut is the symbol of Zeus.
Spartans spears were made from walnut wood.

Karyatis = Name of Artemis (Goddess of forests, hunting etc) and Karyatides, the well-known female–figures-columns of the famous "Porch of the Maidens" in the temple of Erechtheum in Acropolis of Athens, were the Nymphs, dancers and priestess of Artemis. Their name is derived from the same source as for walnut.

Fig. 27: Karyatides on the porch of the Erectheum on the Acropolis in Athens.

Photo: Ioannis Ispikoudis

Fig 28: Walnut forest in the mountains in Northern Greece.

Photo: Ioannis Ispikoudis

There are endless stories about walnut, its uses, its properties, etc. Just one example: Gaius Pompeius found among the treasures of Mithridates, king of Pontus, a manuscript, where he described the secret antidote against poisons. The main ingredient was walnut.

There are countless place names related to walnut trees in the Greek countryside, showing its importance.

Portugal: *Nogueira*

José Castro, Ana Maria Carvalho

A native tree, found over all the country shaping the rural and forest landscapes with scattered trees and small patches, mainly in the surroundings of villages, across arable fields and along forest borders. It is also widely found in villages centre, in churchyards, backyards and homesteads.

Scattered trees and small walnut orchards are pruned for canopy thinning and lifting. Cereals and vegetables can be cultivated under the trees. Trees in small woods and along forest borders are pruned for trunk formation.

The wood is widely used in joinery, furniture (tables, chests, beds) and buildings (ceilings, floors, doors and windows, lintels, jambs and panels). The wood is very good quality, popular and high priced.

In traditional veterinary and medical practice walnut leaves are a powerful and essential disinfectant and anti-inflammatory. Decoctions of the leaves are used alone or mixed with other herbs to enhance their effects. The water from dried leaves boiled with mallow (*Malva neglecta*) and plantain (*Plantago major*) leaves are recommended for washing wounds and skin burns. It was also used to gargle. Infusion of buds is taken for diabetes and kidney disease. Washing the hair with boiled buds and leaves prevents dandruff and alopecia. Fire heated leaves with olive oil were applied on skin burns, bruises and boils. Unripe walnut husks also removed warts and blemishes of the skin. A poultice for snake bites was prepared with milled nuts, the leaves of sage *(Salvia officinalis)* and fringed rue (*Ruta chalepensis*), garlic and honey.

Immature nuts were one of the components of a mixture used for fishing. People say that when it ferments in water it is toxic to fish. In the morning of the pig slaughter "matança", nuts are eaten with bread and brandy "aguardente" as breakfast. It's called the "mata-bicho", a kind of snack very useful during very cold weather. The fruits are important ingredients in traditional gastronomy and bakery: traditional sausages, cakes and biscuits, jam and marmalades and spirits. Due to the high value of its fruit, the walnut is considered and valued by its owner more than any other species.

Poland: *Orzech włoski* (*Italian nut tree*)

Agata Cziesewska and Jacek Borowski

Walnut is not a native species to Poland, being usually planted in gardens, but quite rare as an ornamental tree. In the past, walnuts were called "delightful trees", planted for pleasure, frequently in front of manor house in order to show off the wealth of the family.

CHAPTER 7: COMMON ALDER: *Alnus glutinosa*

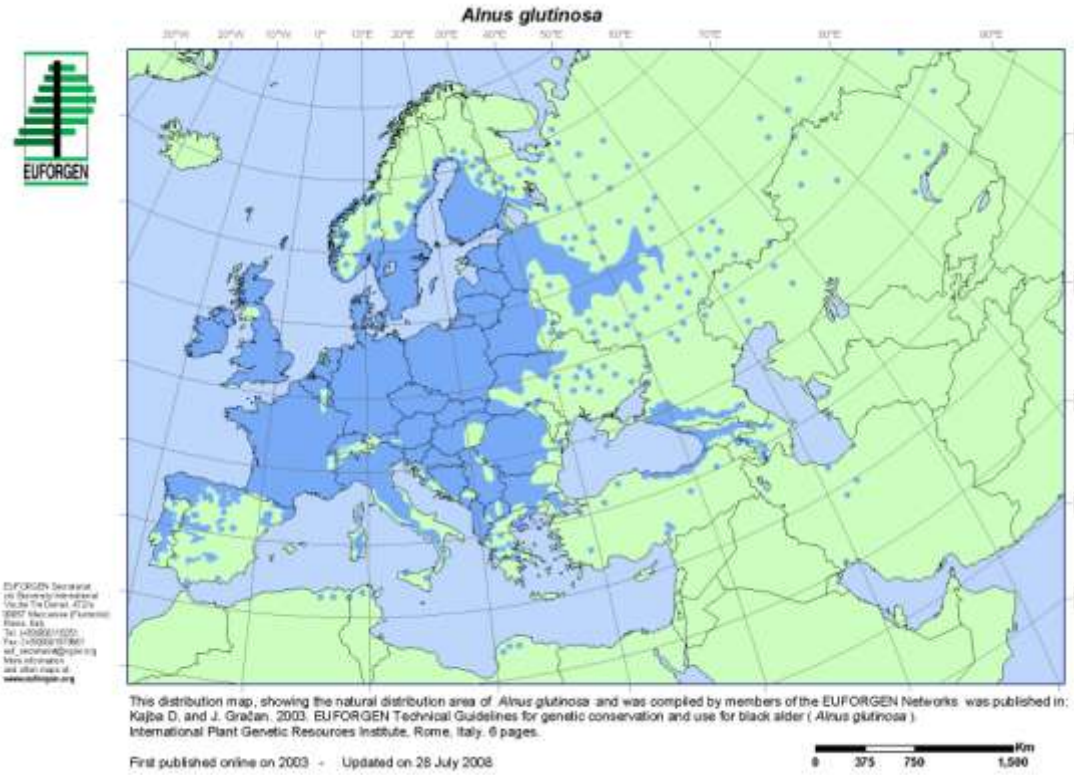

Fig. 28: Distribution of Common alder (Alnus glutinosa)

Source: EUFORGEN

Fig. 29: Alders along a river bank. Photo:Kirsi Makinen

United Kingdom: *Common alder*

Simon Bell

A native tree found mainly in wet places. It does not mind waterlogged conditions. Associated with riparian woodland types in Britain. Being a nitrogen fixer, through the root nodules, it is also used in the restoration of sites where there is little soil and poor nutrients, such as old industrial areas.

As befits a tree which grows primarily in swampy areas or by riversides, the alder's wood does not rot in wet conditions and indeed becomes as hard as stone when left immersed in water. People have made good use of this property since the Bronze Age at least, when crannogs (wooden strongholds on Scottish lochs) were built on rafts or piles of alder trunks. Such uses continued into the time of the Industrial Revolution when alder wood was favoured for the making of lock gates and other canal equipment.

Out of water and out of doors, however, the timber rots easily, and so it proved less suitable for building or fencing. It was similarly less than ideal as a fuel for heating, though it is good for cleaning tar from chimneys, and it does make excellent charcoal. This burns with an intense heat and was used by the Celts, for example, to forge their best weapons. Later the charcoal was used in the manufacture of gunpowder, and because alder coppices easily, small plantations of the tree were often established next to such factories. In England alder was the preferred wood for clog making, possibly because it is a poor conductor of heat. Factory workers in the mills of Lancashire wore alder clogs for many decades.

Perhaps these woods, which in springtime can be mired in several inches of water, were seldom visited and as such made ideal hideaways. The green dye which can be derived from the flowers continued the hiding theme, being used to colour and thus camouflage the garments of outlaws like Robin Hood, as well as the clothes of faeries, to conceal them from human eyes.

Given the alder carrs' wet terrain and the risk of meeting bandits, boggarts or worse, it is not surprising that the Irish considered it unlucky to pass an alder tree on a journey. However, judging by the frequency with which the Gaelic for alder, fearn, crops up in place names in both Scotland and Ireland, there must have been a fair chance of such an encounter. The tree did make amends for this though, by providing its leaves which, when placed in shoes at the start of a long journey, would cool the feet and prevent swelling.

Ireland: *Fearnóg*

John McLoughlin

Alder is one of our most widely distributed trees and is found in damp areas, beside lakes and rivers. Its strong fibrous roots help keep the river banks in place by preventing erosion. Like most of our native trees, alder flowers before the leaves are out, with attractive reddish catkins and small cones that contain seeds. Alder will grow on most soils but likes wet soils. Given a rich damp soil alder will grow rapidly and is a really productive tree for timber. Traditionally used for clogs, as it is resistant to decay when submerges in water, alder is used to make sluice gates and other structures along streams, rivers and canals. With modern drying facilities it has many uses; the timber is dark brown and often called 'Irish mahogany'. The tallest tree is 12 metres. In the Brehon Laws alder was classified as a 'commoner of the wood' and in the

Ogham alphabet alder is represented by the letter F *Fearnóg.* There are many place names called after the alder in the Irish format; Ballyfarnon meaning (mouth of the ford of the alder), Ferns in Co Wexford means alder tree.

The alder, because it was traditionally used to make shields, and because when its wood is cut it turns from white to red, was considered to be a tree of war and death.

Germany: *Erle, Schwarzerle, Roterle*

Tatiana Reeg

Alder trees can be found on wet sites, in flood plains and on the banks of rivers and creeks. Before the big clearings for agricultural use took place, parts of the boggy lowlands in Northern Germany were covered with extensive alder dominated forests. The alder has a good capability for vegetative regeneration; therefore it was managed by coppicing.

Exposed to air, this wood is perishable, but under water, it's very hard and durable. That's why Alder wood was traditionally used for the construction of ships, for pile dwellings (half of Venice is built on alder posts), wells and wooden pipes. In the smoke of alder wood fire, meat and fish can be smoked and preserved, its charcoal was used in gunpowder. Today, the wood is used for furniture, turning and carving, the production of paper and for tools in the house and kitchen. Most people use pencils made of alder every day.

The alder is a pioneer tree which is nowadays used for the recultivation of waste dumps, contaminated soils and open-cast mining sites. Along watercourses it is a very useful tree to prevent bank erosion.

In the past, Alder leaves helped against fleas. An important use was for dyeing: people got brown colour out of the branches, green from the flowers and black from the bark. This colour was utilized for example to dye leather.

In past centuries, people believed that the alder was the tree of evil ghosts, of the devil and witches. Witches needed alder wood to "make the weather". It was a scary tree; in the woods with alder haunted jack-o'-lanterns, demons and elves. On the other hand, the alder was the tree of fertility and useful for different kinds of magic for fertility. For example, it could help cows to bear their calves without difficulties. Branches of alder, broken on Good Friday, could drive away mice from fields or houses.

Switzerland: *Erle, Schwarzerle, Roterle*

Urs Muhlethaler

Alder is often along the course of streams and on lakeshores, alder swamps and alluvial forests, humid composite stands in lower elevation regions.

The role of the the alder for the consolidation of banks was already mentioned in the Bedretto Valley in 1761. At this time, the community has already put into force a law for the exploitation of the Voordelta. In fact, there was only allowed to gather wood without the use of tools. Planting possible on soils with dammed-up water. The demand for light is immense: Alders of good quality only evolve with early and great favourable treatment. In its youth it has

to be protected from fraying. The willow beetle can become harmful, the alder leaf-beetle by contrast, is harmless.

Alder is used to produce wood products of all kinds, solid wooden tables, kitchen furniture, sliced veneer. The wood is light, tender and coloured: Used for stationery, fibreboards and particle boards. In former times breadmaking and saboteria. In Ticino, alder wood of all kinds was used for charcoal produsction until the end of World War II. At remote places with difficult access routes the charcoal production – which means to create a better energy/mass ratio – was the only possibility to exploit alder forests (also green alder) rationally. In many cases charcoal had to be transported with manpower.

The mellow black alder wood becomes constantly harder and more rot resistant if it stays constantly in the water. It is suitable for stakes of landing stages; it is said that half of Venice is standing on alder stakes. The bark, containing tannins and bitter substances is used as tea and decoction against a series of illnesses (fever, Ulcer disease, wounds, pharyngitis…). In the liquour industry, the juice extracted from cooked alder bark is used as a bitter substance.

Places like Erlen (ZH), Erlenbach (ZH, BE) and Erlach (BE) as well as the name of the noble Bernian family "von Erlach" are derived from the alder. Weather lore from Prättigau: In October you cut a green twig of a beech or an alder: Is it wet, there will be a snowy winter. Is it dry, there will be little snow.

Because the alder is comfortable on wet, swampy soils, wanderers feared to fall into the trap of the alder hag, who would haul them into the dark meadow. The alder hag was therefore a witch. She is believed to have existed in an alder region and to have had blood red hair like the fresh chopped wood. The saying "to break the staff over someone" derives from a quaint custom. For legal practice in court there were broken four staffs of alder wood over the head of outcasts from the tribe. After this, they were thrown in four different directions, which pictured the dissociation from the family. Oracle sites on islands are often composed of an alder grove. Alder twigs are often used on the prowl as "last bite" for wild boar, if there are no oak twigs left.

Italy: *Ontano, Albero delle Betulacee*

Laura Pennati, Francesco Ferrini

Common alder is found in all Italian regions, even if it is less frequent in Apulia and Sicily, from sea level up to 800-1000 m (from the *Lauretum* to *Fagetum*). Very demanding in terms of water, it is found along the margins of marshes and along ditches; it is one of the tree species which best tolerates prolonged submersions of its roots. It is practically indifferent to the nature of the substrate but deals well with very acidic soils because it can easily absorb nitrogen in an ammoniacal form. Common alder has roots which contain nitrogen-fixing bacteria, thus improving the lack of nitrogen which is generally found in very damp soils. It can also be planted to enrich poor soils, or to impede erosion along river banks.

The wood is not differentiated (there is no evidence of duramen and alburnum), pinkish-yellow in color when fresh and rusty red when dry; it has the peculiar quality of notably hardening and being practically undeformable if it is completely submerged, while it deteriorates easily when exposed to air. For this reason it was used in the past (but no longer) for pilework (it was used frequently in Venice), small bridges and hydraulic works; other uses for the wood from the past include wooden shoes and buckets for milk, pieces turned on a lathe, in

foundries and also for orthopaedic purposes. It was frequently carbonized and the charcoal was then used in foundries and forges and was highly valued for the production of pencil leads.

Alder produces various dyes: red from the bark, green from the flowers, brown from the young twigs. The bark is rich in tannin, used in leather tanning and for the preparation of ink; twigs, leaves and buds contain emodin, alnulin, glutane, tannins, and mineral salts having astringent, diuretic, febrifugal and anti-inflammatory properties. Alder leaves were used to feed animals (cattle, sheep and goats) in that they contain a higher percentage of nitrogen.

According to ancient tradition, evil lived in alder. The tree was feared because when the wood is cut it turns blood-orange, almost as if the tree were bleeding. From this phenomenon came the belief that the tree was the personification of a bad spirit.

Grey alder (*Alnus incana*) is found in the Alps and northern and central Apennines until the Arno basin and in Emilia-Romagna, in the *Fagetum* and *Picetum* phytoclimatic zones up to an elevation of 1500-1700 metres above sea level. It is less hygrophilous than common alder, tolerating only temporary water-logging. It grows on poor and stony soils; on gravely river beds it is found in pure stands or in association with other species. It is used in the consolidation of landslides and roadcuts and as a pioneer species in the reforestation of bare terrain with the function of enriching the soil and rendering it suitable for more demanding species.

The wood of grey alder is of little value but it is acceptable for the production of paper.
According to ancient tradition, grey alder has a "calendar" aspect: it was said that its leaves change their position on the longest day of the year and thus the tree takes on a different colour as the leaves are light green above and greyish below). This sign helped the people who lived in the countryside know when the days began to get shorter.

Italian alder (*Alnus cordata*) is spontaneous in the southern Apennines (from Campania to Calabria) and Corsica, especially in the transition zone between deciduous oak woods and chestnut woods (in the lower portion) and beech forests (in the upper portion).

The best soils for Italian alder are deep and cool, however it is not particularly demanding and can adapt to very different types, including clay soils. Although it is present along waterways, Italian alder trees shun standing water and tolerate a certain degree of drought.

The wood is largely porous with an orange-red colour that darkens upon cutting. It can be sawn and worked easily; it easily deteriorates in the open while it is long-lasting when submerged. It is used in carpentry, for hydraulic works and pileworks, even if not as much as common alder wood. It is of low quality as firewood.

Greece*: Σκλη′θρα, κλη′θρα* ***(Sklithra, klithra)***

Ioannis Ispikoudis and Olympia Dini-Papanastasi

Alder is found all over Greece, associated with riparian woodland types and as an ornamental tree. As a native tree it is found mainly in wet places. It does not mind waterlogged conditions. Being a nitrogen fixer, through the root nodules, it is also used in restoration of sites where there is little soil and limited nutrients.

The alder's wood is light, soft, fissile. Perhaps the Greek name derives from the word "σκληφρο′ς"= slender, thin, light. It does not rot in wet conditions and indeed becomes as hard

as stone when left immersed in water. It is used for boats, shovels, boxes, wooden toys, wooden clogs, in woodcarving, as a fuel and as charcoal for gunpowder. Out of water and out of doors, however, the timber rots easily, and so it proved less suitable for building or fencing. It is very useful for fine-woodcarving, especially the root (model handicrafts). Leaves are used as fodder for goats. Alder was used for tannage and for medicines. The bark was used for dying wool cotton cloth black, while blue ink was produced from the fruits. It is also important for honey production.

Theophrastus reported it to be amphibian.

Portugal: *Amiero*

José Castro, Ana Maria Carvalho

The native alder is distributed all over the country, except in the south-eastern region, mainly along stream-margin and corridors, water bodies or wetlands. In hilly and hillside sites of remote and mountain regions of the north, alder hedgerows can be also seen running across the arable fields of concave profile. Nowadays, scattered alders can be found near villages, something impossible a few decades ago when alder trees were under pressure for their use for making various artifacts. Alder woods are not usual.
Alder became used as a short rotation species, around 60/70 years, because of its popularity for traditional practices and uses.

It produces a resistant and durable timber but soft and thus easy to work. The best footwear was made of alder - slippers, clogs, shoes and boots. It was very much appreciated but difficult to find because only few people were able to select the material good enough for making them. Small thin branches are used for crafting and basket making. Alder wood was also used for charcoal dust, a fine powdered form of charcoal for mining, as well as hydraulic posts and piles, and brush handles.

The medicinal use of alder leave is indicated for rheumatic and sciatic problems and as a sudoriferous preparation. Fruits and bark bad been used to dyer and tan, and as an antipyretic and amygdalate medicine.

The bark and ashes boiled in water were used for dyeing, staining linen black and wool brown. Flax could be whitened when boiled with the ash of alder, ash and willow.

A popular legend says that those catkins or aments flowering in May never mature because when Our Lady escaped to Egypt, she took a rest under a flowering alder and her mantle became all stained. As a punishment, Our Lady said to the alder: "ting, ting, ink without smoothness, that from your fruit you will never hap". The women used to immerse cloth in boiling water with milled soap and alder ash before putting them into the sunlight to whiten the laundry and cause a good smell. "Alveiro" (niveous) was the name of the linen bed sheet in which the ashes were kept. In some north-eastern villages alder shoes were called "balalaicas".

Alder from Sabor river
Go slowly, I'm going too;
I take your shadow
Cause moonlight left me

Alder: *Olsza czarna (Black alder)*

Agata Cziesewska and Jacek Borowski

In Poland alder is a very common tree widespread all over the country. It avoids calcareous ground, dry and sandy soils. Alder prefer the banks of rivers and other watercourses, close to ponds, lakes and swamps. It creates its own type of forest but it is also a part of mixed forest mostly with ash. It is also used in parks and gardens along ponds and watercourses.

For forest management, because of its ability to fix nitrogen, alder is used for restoration of wetlands, excavations, waste-tips and opencast mines.

Wet, alder wood was in the past used as the best firewood for smoking meat. Homemade sausages and hams are still smoked over alder wood. Because of it delicacy it is also perfect for smoked fish such as salmon and trout. Alder gives them yellowish color.

Alder leaves are used as a medicine to treat stomach ulcers. In the past its sticky leaves was also the remedy for insects. It was said that leaves taken with the morning dew are best against fleas, but put on the floor under grains protect the harvest against mice. Female catkins were also used in folk diarrhea medicine. Young twigs were used for tanning, and bark for dying fabric black.

Alder wood is widely used for elements that need to be under water such as bridge pilings or well linings. Modern use also includes plywood made form alder; it is also used for tools handles, parquet and charcoal.

The oldest alder In Poland is 181 years old.

Finland *Leppä* (*Alnus glutinosa – tervaleppä)*

Kirsi Makinen

Alder lives in eutrophic, moist, often in flooding shoreline forests. In addition to coast and lakesides, it can be encountered in peat lands and along riverbanks. Alder's distribution in Finland is as far north as the middle boreal zone. It usually forms small woodlands, which can be in groups or rows, following shorelines.

The people of the countryside usually did not have alders in courtyards. They thought it was not decorative. Alder is encountered both in the natural shores and park areas in the urban landscape. Black alder is rarely used as a street tree, but the experiences of the uses have been promising, because of its scenic values and tolerance.

Alder's red wood has been valued in wood craft (furniture, etc.). Alder is also valued as indoor decoration material in saunas and apartments (panels).

In folklore, alder has been mentioned as an evil tree. In one folk poem (with many local variations), many trees were created by God and good spirits, but the alder was made by a spirit which tempted people to uncontrolled behaviour. Although evil, it was also a charming tree. Alder was used for spells, such as to protect the cattle before they were lead to the forest pastures. Alder was also used to arouse love and attraction. The whisks were used for this

purpose in the sauna. Summer frost was also deterred from the grain fields with fires made of alder (also juniper was used), that gave a lot of smoke.

Alder's Finnish name '*leppä*' means blood, but this is not a common knowledge to contemporary Finns. It meant both a synonym and paraphrase for blood. Other Finno-ugrian cultures have also called alder a blood-tree. When in 1990s, Finnish people were asked for an explanation for the red colour, people either mention the colour of the wood or sap. In 20th century folklore, older people connected the red colour of alder to a story that Christ's cross was made of alder and that is a reason why it got red sap and wood. Another story states that Judas Iscariot hanged himself from an alder tree.

According to Finnish folklore, alder did not have many uses. Jars and decorations are made of it. Some people valued the red colour. As a tasteless wood it was suitable material to keep butter and milk in. Alder wood is light and easy to carve. One carpenter favoured alder when making spinning wheels.

Alder was also winter fodder for cattle. Alder whisks were used to keep flies away from cattle when they were milked. In some regions in Finland this was not correct, because there was a belief that alder caused dysentery in cattle. Alder brooms were also used in cleaning or dusting houses. Traditionally a planting medium for pot plants was collected from alder woodlands. The soil was put on the stove on a mild heat in order to get rid of insects.

Alder wood was also a fuel for cooking and warming houses. In the sauna, alder gives a soft heat. Many still think alder does not give enough heat in the sauna. Alder wood was good because it did produce much soot.

The bark was used for dyeing wool and fishing nets. It was favoured for smoking fish or meat giving both an attractive colour and a good taste.

Figure 30: Alders in a seashore park in suburban Helsinki. Photo: Kirsi Makinen

CHAPTER 8: ELM: *Ulmus spp*

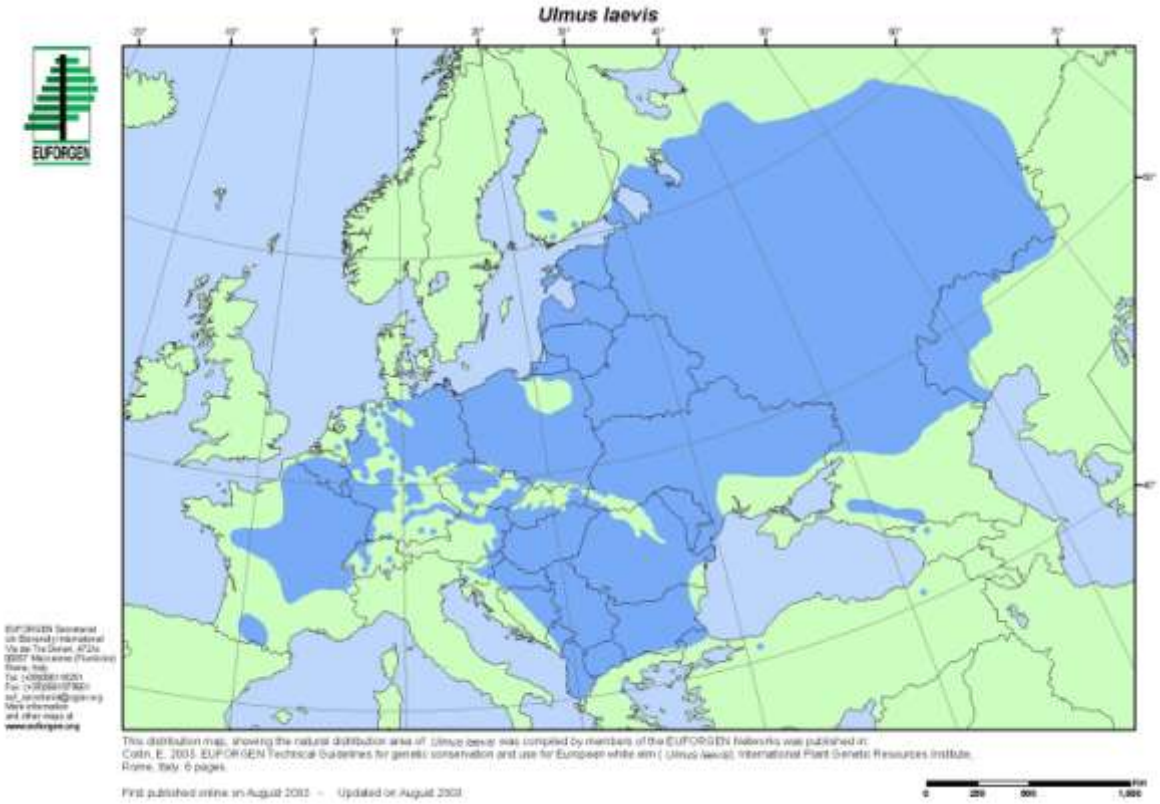

Fig. 30: Distribution of Ulmus laevis. Source: EUFORGEN

United Kingdom: *Elm*

Simon Bell

Elms are native to Britain and there are several species. They used to be major elements of the English countryside, featuring in the paintings of John Constable. Wych elm is a more woodland tree of north and west Britain and does not produce suckers whereas *U. procera* does. Known as the English elm, *Ulmus procera* was widely planted between 1550 to 1850, when hawthorn hedgerows were being established during the Enclosure Movement. Elms were chosen as they are majestic when mature, and make good hedges as they grow vigorously from suckers produced from the roots of any felled trees. They also tolerate atmospheric pollution and salty sea winds. Unfortunately the vast majority succumbed to Dutch elm disease in the 1970s and their place in the landscape disappeared.

The elm's wood bends well, or distorts easily, depending on the point of view, the word 'wych' in wych elm referring to its wood being pliant, and not to witches, who were said to avoid elm trees. This characteristic means that the wood is not very suitable as a building material, nor does it make a good fuel. However, like alder wood, elm wood withstands wet conditions very well, making it popular for building boat and barge hulls, bridge foundations, and cartwheels. Elm wood was hollowed out to make water pipes, for chair seats and wheel hubs as it resists strains and does not split easily. Mediaeval Welsh archers made their long bows from elm wood, whereas English bowmen preferred yew.

Elm trees in Britain can grow to become some of the tallest and largest native trees. Like the oak, they often had very specific customs and folklore attached to individual, named trees such as the Tenor, Bass and Alto elms on Humberside, or the Dancing elms of Devon around which May Day dances were held (these trees have all since died of Dutch elm disease). As well as their widespread use in hedges, their stature made them imposing landmarks and boundary markers, and travelling preachers and judges would often pronounce from beneath them. Their large distinctive shapes feature prominently in many English pastoral paintings by Constable (e.g. his famous painting "The Haywain") and others.

The mythology of both the yew and the elm is connected to death and the transition into the Underworld, and both woods were used to deadly effect in mediaeval warfare. Elm is also traditionally used to make coffins, though the wood's durability underground may also play a part in this choice. Perhaps people who knew elms well were reminded of their own mortality when remembering the elm's reputation for dropping large boughs without warning on otherwise still, warm days; "Elm hateth man, and waiteth" as the old saying goes.

In Scotland wych elm is the more common species of elm. In Gaelic it is known as 'leven', as in Loch Leven in Kinross, and was valued for its roles in the dyeing of wool. Intermittent colours in woollen yarns (by which a weaver could more easily create a pattern in the weave) could be introduced by way of an early form of tie-dyeing. Twine made from the bast of the elm tied tightly at regular intervals, to form 'hanks' of the yarn, was used to stop a dye from reaching the wool. A yellow dye could also be derived from the elm, and the leaves were fed to livestock when other fodder was scarce.

Ireland: Wych elm – *Leamhán sléibhe*

John McLoughlin

Wych elm is the only elm native to Ireland, but many varieties of wych elm and smooth leaved elms have been introduced and planted in the past, mostly for timber. Since the 1970s our stock of elms has been ravaged by Dutch elm disease. Elms tend to sucker from the base of the tree and these can be used for propagation. Our native wych elm, which is less common, appears more resistant to the disease. However, it does not produce suckers and must be grown from seed. Elm thrives on moist free draining soil - good agricultural land. It will not be found on exposed or upland sites or poor soil. Elm makes a fine parkland tree and tends not to be a forest tree. The timber is water resistant and was much valued in the past for coffins and water pipes. The tallest elm in Ireland is 35 metres high.

In the Brehon laws it was a 'commoner of the wood' which is very surprising; this could indicate its scarcity, nor is it represented in the Ogham alphabet. Very little elm remains in Ireland and lore on the species is scarce.

Germany: *Ulm, Bergulme (U. glabra), Flatterulme (U. laevis) Feldulme (U. minor)*

Tatiana Reeg

In the past, elms were often planted near churches and on other public places. Nowadays, due to the Dutch elm disease it is a rather rare tree species mainly found inside forests together with lime, sycamore and ash.

In some regions, elms were pollarded. From stone-age to the Middle Ages, the trees were peeled to get the bast fibres.

The Romans used elm wood as stakes in vineyards. Because of its tough and compression-proof fibres, in the middle Ages its wood did good service as shield inlays to protect against arrows. Furthermore it was used for spokes, rims and water-wheels.

Today, the wood is used for furniture, parquet and veneer, the wood of the roots is utilized for turning and carving. In experimental archaeology it is a highly requested wood.

In the past, tying material, ropes and beehives were made using the bast fibres. Infusions of these inner bark layers were supposed to help against coughs and were also taken as medicine for healing wounds and fractures. Tea made from the bark was used as a treatment for diarrhoea. The leaves produced good fodder.

In antiquity, the elm was a symbol of death and sorrow. In Germanic mythology, man derives from ash and woman from elm.

Fig. 31 Chest made from elm wood in the Viking-style of the 10th century (and close up of carving) (photo: M. Rupp)

Switzerland: Ulm, *Bergulme (U. glabra), Flatterulme (U. laevis) Feldulme (U. minor)*

Urs Muhlethaler

Elms are found in the Midlands in Jura on fresh to moist slopes, in ravines and alluvial forests. Sub-montane; although the wych elm grows up to 1500 m altitude. It was widely used as an linear tree along parks, avenues and roadsides. It has good wind and spray resistance. Occasionally elms are found in gardens, where they demand much space or have to be trimmed regularly.

Elm produces a decorative wood suitable for furniture, veneers, panelling, carpentry, turnery as well as for the manufacture of tool handles, ladders and sport equipment; English elm most suitable. It is used for constructions often exposed to humidity, eminently for fishing boats, lighters and pile dwelling.

During the Middle Ages the elm, in addition to the yew, was the preferred type of wood for archery. Later, armourers observed that elm wood can catch the recoil of firearms (also artillery) better than other types of wood.

The inner bark of the elm can be processed to binder and ropes.

The elm was used for medical purposes. The decocted mucilage and the tanning agents of the bast were supposed to help in case of cough and diarrhoea as well as wounds and skin eczemas.

Elm leaves present nutritive values comparable to those of lucerne. The elm survives massive crown trimming and its leaves are also available during the dry season. For this reasons elms were a popular fodder source from the Middle Ages onwards. Out of its leaves there was even processed a kind of sauerkraut for human nutrition. In times of famine flour was also made from the bark. Also the seeds are eatable.

The elm, also called elm tree or „Ilme" has not left many traces in the names of places and families. Examples are Elm in the county of Glarus. Also the upper and lower "Vallée des Ormonts" in the county of Vaud.

In antiquity the tree was a symbol for death and sorrow. In the Middle Ages, there was often dispensed justice under the elm which stood in front of the feudal manor. From this use derive the expressions: "waiting under the elm" and "advocate under the elm".

Italy: *Olmo, Olmo di montagna (U.glabra) Olmo diffuso (U. laevis) olmo campestre (comune)(U. minor)*

Laura Pennati, Francesco Ferrini

Smooth-leaved elm is present in all regions of Italy, including the islands; in woodlands, hedges and uncultivated land from the plains up to 1000 m elevation. Its typical associations are those of humid plain woodlands with pedunculate oak. From this position it can move away from the hilly woodlands with downy oak or Turkey oak (and also in Mediterranean woodlands), establishing itself on valley floors, in low-lying areas and in the variations of bushy thorn thickets in the most fertile spots. English elm prefers cool, deep, very fertile soils that can be base rich and have variable moisture; it is very adaptable to clay soils.

The wood is valued, easy to work, tenacious, very durable when submerged and attractive to the eye especially when veined. It is used for furniture, tools, cabinetry and floor boards. Fibres are extracted from the bast to make cordage and mats, similar to linden. Dutch elm disease has decimated this species as elsewhere in Europe.

Smooth-leaved elm is one of the trees which characterize the Italian agricultural landscape. Very resistant to pruning and pollarding, it was used as a living support for grapevines and the leaves from branches near the cuts were considered excellent forage for livestock. As an ornamental plant it appeared, isolated or in groups, in parks and gardens or along roadsides. The young fruits, called "*pane di maggiolino*" (may-bug bread), were consumed in salads or fried.

The Romans believed that elm had divining ability. This belief came from the fact that elm was thought to be able to stimulate and generate dreams as it was considered sacred by Morpheus, one of the thousand children of Sleep. In the Middle Ages the tree took on a new meaning:

together with oak it was chosen as the tree under which trials were held. Magistrates administered justice under elms planted in front of castle gates.

Since antiquity, the leaves and bark of elm were used to coagulate blood and heal wounds, to treat burns, fistula and inflammation. The roots were believed to cure baldness; to give tone to skin, clean sores and treat eye disorders a particular sweet, viscous liquid, called "elm water" was used which came from the galls formed by leaf parasites. In modern times, the composition of the leaves and bark has been studied and it has been determined that their content of silica, potassium, tannin and mucilage confers healing, toning and purifying properties. In addition, the bark in tincture or decoction is used as an efficacious phytotherapeutic remedy for ulcers and skin eruptions.

In Italy, wych elm is present in mountain areas up to 1600 m elevation in all regions from the Alps to the Apennines of Campania and to the Umbrian forest; it is not present in Sardinia (Gellini and Grossoni, 1997). It grows sporadically in mixed, mesophyte broadleaf forests of the *Castanetum* and *Fagetum* on very fertile, cool and aerated soils; different from English elm, it avoids compact and clay soils.

The branches of this tree are very flexible and, when made into riding whips, it seems they brought good luck to riders who used them. It is used in the same ways as English elm but it is generally more highly valued. It is long-lasting even when constantly immersed in water; in the past it was used for underground water pipes by hollowing out entire trunks with an auger. Today it is still used in the marine field for boat keels, breakwaters, bollards, etc. The leaves were used in the past, together with other elms, as forage for livestock.

Greece: *Πτελέα, φτελιά'* (*Ptelea, phtelia*)

Ioannis Ispikoudis and Olympia Dini-Papanastasi

Perhaps its name derives from the words "πτερο'", φτερο' = plume, wing, due to plume of the fruit. Another version connects the name "Πτελέα" with "πτέλας" = wild boar, since wild boars appear usually in areas full of elms.

Elms are native to Greece with several species. They used to be major elements of the Greek countryside, being one of the most common trees around the farms (fields). It has a lot of long roots which makes it is a valuable tree to plant on slopes to prevent soil erosion. Farmers use it for this reason.

U. minor Miller (*Ulmus campestris* Auct. non L., *U. carpinifolia* Suckow): The farmer's tree. All over Greece in mixture with other species in forests, in hedgerows, scattered trees in the fields, woodpastures and in village squares. *U. glabra* Hudson (*Ulmus nontana* With.): In mountainous areas, in mixture with other broadleaves in all continental Greece, as ornamental in village centers, in alleys and hedgerows. *Ulmus laevis* Pallas (U. pedunculata Foug., U. effuse Willd.): In wet places in Macedonia, Thessaly, S. Peloponnesus and Euboia island.

Elms are majestic when mature, and make good hedges as they grow vigorously from suckers produced from the roots of any felled trees. The majority of them suffered from the Dutch elm disease, but fortunately they recover little by little. They also tolerate atmospheric pollution and salty sea winds. This is why they are used in central roads of big cities, such as Thessaloniki.

***Fig 32: Ulmus minor,* 500 years old, a Natural Monument, in the square of the mountainous village Aidona, in Central Greece. Photo: Ioannis Ispikoudis**

Like alder wood, elm wood withstands wet conditions very well, making it a popular choice for building of boat and barge hulls, bridge foundations, and cartwheels. Elm wood can be hollowed out to make water pipes, chair seats and wheel hubs as well as for wind instruments, as it resists strains. A yellow dye could also be derived from the elm.

It was used for medicines. It is considered to have anti-bactieral properties and it is splinterless, making it good for use in food processing, such as butchers chopping blocks. Due to this it was used for yokes and other constructions or items, which people or animals touch. The fruits were used as substitute of hop (*Humulus lupulus)* for making beer*.* Its leaves constitutea valuable fodder, especially for sheep and goats. It was used to support '*anadendrades ampeli'*.

Elms are used in rows of trees in towns, in parks and gardens and they are very common in rows along countriside roads and farm boundaries. Elm trees in Greece can grow to become some of the tallest and largest native trees. Like the plane and walnut trees, they often had very specific customs and folklore attached to individual, named trees. Their widespread use in hedgerows and stature made them imposing landmarks and boundary markers. There are many place names related to elm (ptelea) in the Greek countryside, showing its importance in the landscape in previous eras.

Ptelea was a nymph protectress and patroness of the tree.

Portugal: *Ulmeiro, Olmo, Negrilho*

José Castro, Ana Maria Carvalho

A native tree which has been disappearing over the last two decades due to Dutch elm disease. Survivals sprout every spring, but are weak and bushy. It used to be found all over the country but not in higher areas, shaping the landscape with scattered and small hedgerows, though fewer along arable field borders. Found widely in village centres, in churchyards and homesteads.

No management takes place nowadays due to Dutch elm disease; in former times only some incipient silvicultural management for wood and branches. Sometimes, in the northeastern region, elm trees were also pollarded in the same way as ashes

According to traditional advice "elm wood is hard, but it is easy to work with". On the other hand, when wet it can be moulded and never bends after it has been carved. There were trees with trunks 1.10 metres in diameter and the sale of this wood was economically important to people and families. The timber was much sought after for construction and furniture: decks, floors, wooden tables, chairs, benches, carpenter's tables, tool and flax handles, farm timber locks, boardwalks, and so on. Several components of ploughs, harrows, neck yokes and animal-drawn carriages that had to withstand movement and stress were made of elm such as wheels, shafts, and vertical and lateral supports.

At the end of summer and in autumn leaves and branches were cut to be fed to pigs and ruminants. Bundles of branches were dried in the streets and on threshing floors. Leaves were supplied to livestock through the winter and sticks were kept for supporting growing plants in vegetable gardens.

People say that "everyone, rich or poor, used to pollard the elms". Their trunks were kept in the dark, inside moist and cold cellars to encourage *Pleurotus ostreatus* spores, which are highly prized mushrooms. An old winery press in Varge, a village near Bragança, is made of an entire elm, trunk and roots. The elm is often used in toponymy and for reference sites, or land administrative demarcations. As in other countries, in Portugal the "Judge under the elm tree" was a category of court, referring to the act of justice of proximity, in the open air, where the elm could confer nobility. Elm trees are often referred in popular legends as hideout places for thieves or kidnappers probably because of its remarkable size before Dutch elm disease.

The leaf of the elm
Is like small hearts
It is to hide the love
On certain occasions.

Finland: *Jalava (Ulmus glabra), vuorijalava, kynäjalava (Ulmus laevis)*

Kirsi Makinen

Elm is a Southern boreal species in Finland. U. glabra is more marine species than U. laevis. It thrives in moist and eutrophic soils, often near cliff walls and brook sides. Some elms have a cultivated origin, but they have spread to the surroundings. Elms were common in Finland in warm climate period (8000-9000) years ago. Today, they occur only in mixed stands. Some reasons for the scarce populations are the competition of other tree species after the glacial period, the unfavourable climate for elm, human influence and severe Dutch elm disease (which has not occurred in Finland). The human influence on elm stands probably occured from the Neolithic period, at the start of the cultivation and foddering for the cattle.

In urban areas elms are used rather lot as street or park trees.

Ulmus laevis is also a southern boreal species. It is not as widely spread or common as U. glabra and its distribution is more continental. Elm lives in moist, high nutrient grove forests, shoreline forests and sometimes eutrophic forests. Sometimes it has spread from cultivated areas. The dendrologists have been wondering why elms are neglected as decorative trees. As a park tree a handsome white elm has been surprisingly rare. In Southern Finland (Häme, Pirkanmaa) it occurs in as a mansion tree. The tree has suitable qualities to become more used in plantations. It grows quite quickly and the crown has an impressive shape and autumn colour. The hardiness for climate conditions is also quite good up as far as Central Finland.

Few uses of elm woodcraft have been found in Finland. The white elm used to be a desired material in horse harnesses. Branches and young trees of white elm were formerly used as harness bows for horses- elm stands were cultivated for this purpose. It took 10-12 years to have suitable material for this use. The quality and hardness of elm bows were so known that there was a saying that "Every horseman knows a white elm". If it was available, harness bows were made of either elm or ash wood. The elm wood lasted 10-15 year in harness bows. In addition, it was light enough compared with bird cherry and rowan. Also lime wood was tested, but it was not hardy enough. Countrymen from higher and lower ranks knew the value of bow material. When encountered, this wood was collected, sometimes without permission.

In Finnish folklore, there are hardly any mentions of elms. A reason could be its rarity in the landscape. The values of elm may increase in urbanised areas, as it is a common street tree.

Fig 33. European elm in a suburban park, April-May, when the tree starts to bloom, Helsinki.

Photo: Kirsi Makinen

CHAPTER 9: WILD SERVICE TREE: *Sorbus torminalis*

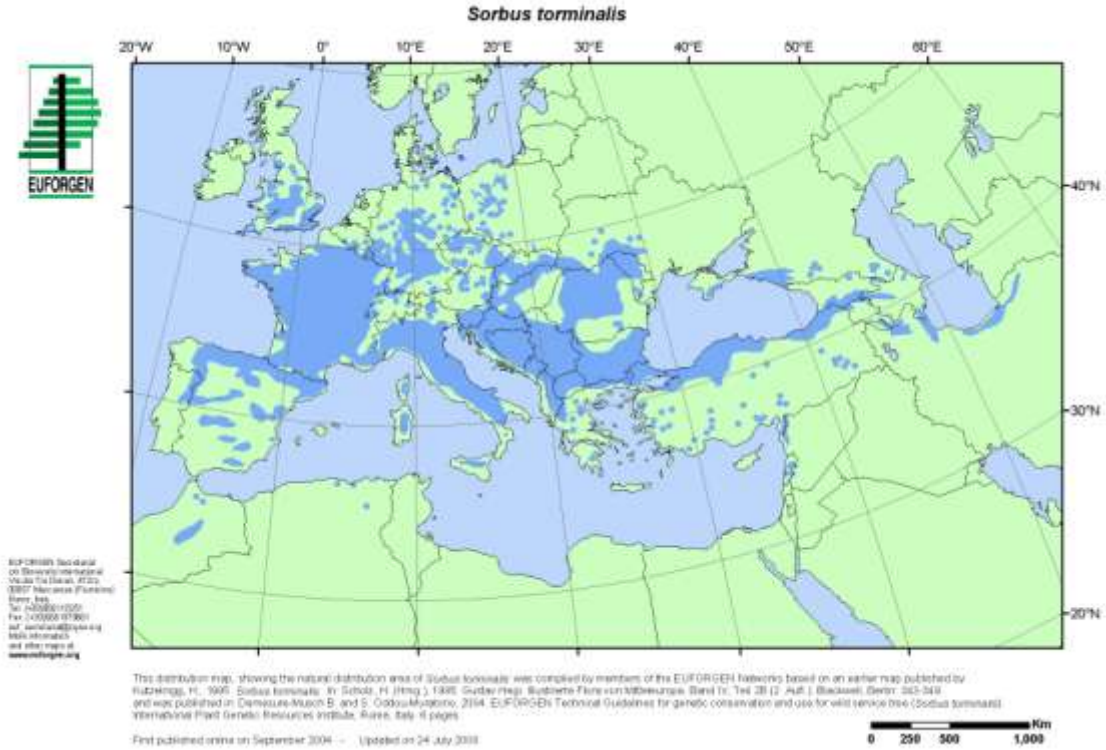

Fig. 34: Distribution of Sorbus torminalis. Source: EUFORGEN

Fig 35: Wild service tree. Photo: Tatiana Reeg

United Kingdom: Wild service tree

Simon Bell

Also known as the Chequer(s) Tree It is relatively rare and is usually confined to pockets of ancient woodland, although it can also be found growing in hedgerows. It can often be found associated with oak and ash woods, preferring clay and lime based soils. Wild service tree is often found on the edges of ancient coppice woods, usually as small trees and rarely in any abundance, suggesting that in the past it was treated as something of a weed tree of no great commercial value, to be cut out of the coppice or tolerated at the fringes of the wood.

Many pubs take their names from the Chequers Tree. The link may lie in an alcoholic drink made from Chequers berries and that the tree and its fruits derived their local name being served in Chequers Inns, although the name may also come from the way the bark cracks to form a chequer pattern. The fruit has been eaten in many parts of the country but it has to be left to go rotten first, or 'bletted' before it is edible.

Germany: *Elsbeer, Elsbeerbaum*

Tatiana Reeg

In the past, wild service trees grew in coppice forests. Because it needs a lot of light, this tree species likes sparse, light forests. Sometimes it can be found in hedgerows along paths and roads. Single wild service trees in the landscape are quite rare in Germany, and because it cannot grow inside the usual forest stands, this species is seldom found. In general, its distribution follows the wine-growing areas.

In the past, wild service trees were coppiced and grown for nourishment and for medical reasons.

The wood is homogenous, hard, elastic, tough and heavy. In the past, it was used for gauges, turnery, looms, cogwheels and music instruments. Today, the wood is very much in demand for making furniture and high quality and high-priced veneer. It is one of the most valuable and desired woods amongst cabinetmakers, wainwrights, turners and carvers. Also bowyers are looking for that rare wood.

The fruits of the wild service tree have been used for medical purposes for a long time, the Romans used them against dysentery (old German name: "Ruhrbirne", means dysentery pear). Hildegard von Bingen (1098 – 1179 A.D.) said about this tree that it's "good for everything".

The berries are edible; they can be used for making jam and juice. Traditionally, they are known as an herbal remedy for colics and dysentery. The juice can be used as a medicine against diarrhoea, too. Another product are spirits made of the berries which are sold for very high prices; "Elsbeerschnaps" is one of the most expensive spirits in middle Europe, there are only 10 breweries in Europe which produce that speciality.

Due to slow reproduction and the dominance of other tree species in the forests, the wild service tree decreases in numbers. Today, this tree needs to be supported and protected to prevent it from vanishing in our landscape. As there is no comparable wood on the global market, foresters work to establish bigger populations.

Switzerland: *Elsbeer, Elsbeerbaum*

Urs Muhlethaler

The wild service tree is found in hedges, edges and mixed oak woods, first of all on the first Jura ridge between the lakes of Neuchatel and Bienne, here and there in the Basel and Schaffhausen Jura and in Valais.

The wild service tree is a rather rare tree species in Switzerland. Many pointers indicate that its population has decreased. A basic reason for this is the enclosing of the forests and the unilateral promotion of other species.

It can be used for carpentry, turnery, veneers and instruments. The wood is on of the hardest kinds in Europe. Because of its resemblance to pear-tree wood it is often used as a substitute for it. This is why the wood of the wild service tree in Switzerland is sold with the trademark of "Swiss Pear-Tree". In France and Germany prices have raised hugely in recent years. In Switzerland there is no solid market for it.

The fruits are edible after frost. They were used as a remedy against dysentery and diarrhoea. The fruits can also be used for hard liquor. However the sought after fruits only ripe on solitary trees and thereof are not many. With an average revenue of approximate 230 CHF per litre (42%) this is a very lucrative business. The fruits of the wild service tree and true service tree are very popular for birds. For this reason these species were often planted near houses and barns earlier, to ease fowling.

France: *L'alisier terminal*

André Gavaland

Wild service tree is a fruit tree species scattered in forests with post-pioneer nomad behaviour. It is considered as secondary high valuable species because of slow growth and small size. Wild service tree can be found everywhere in France on many kinds of soils: it can support pH from 3.5 (siliceous sands) to 8 (rendzinas) and a large range of soil water availability. This large ecological range could be explained by the existence of several ecotypes, some adapted to acidic soils, others adapted to calcareous soils.

Five species of *Sorbus* can be found in France: *Sorbus aria* (whitebeam), *Sorbus domestica* (service tree), *Sorbus aucuparia* (mountain ash), *Sorbus latifolia* (service tree of Fontainebleau) and *Sorbus torminalis*. Among these five species, only one, wild service tree, produces marketable wood; the other *Sorbus* produce wood of lower quality and thus are in less in demand and used only locally.

Wild service tree is spread as the seed is scattered by birds, which explains that it is present in forest borders and next to oak standards in coppice with standards. *Sorbus* spp are honey species appreciated by bees; in particular, wild service tree displays important blossoming from the beginning of May at low elevations. The fruits of wild service tree are edible as raw or cooked fruits. Taste gets sweeter when fruits are frozen. To improve taste, fruits can be kept in a dry place to let them putrefy.

Wild service tree properties can be guessed from latin name, "*sorbere"* meaning "to drink" and "*torminalis*" meaning "treating stomach aches". Wild service tree fruits are astringent because

they contain tannins; they are also anti-diarrhoeic, healing, anti-haemorragic (they contain pectic acids), diuretic, emmenagogic, cholagogic (they contain sorbitol) and treat gall or kidney stones and cough.

These fruits are also used (like those of service tree and whitebeam) by distilleries to make sweet brandies; fruits have to be previously left to steep in alcohol to get flavours extracted. Some fermented drinks or vinegar are also prepared with service tree or wild service tree fruits.

Wild service tree is also used as ornamental tree because of nice colors of its leaves in autumn: from green, they become yellow-orange and then dazzling red.

Wild service tree produces wood of very high quality, displaying great mechanical resistance, stability after drying and fine grain; like pear tree wood, wild service tree wood is resistant to abrasion and can easily be worked. Formerly it was used to make machine parts (gears, rollers, press screws and barrels for brandies). Nowadays it is in great demand for cabinet-making and veneering, but small pieces of wood are also used to make parts of pianos, billiard cues and woodcarving.

Wild service tree wood price can reach 1500 € per cubic metre or more but can also be much depreciated by flaws, like for example colored heart which is frequent; it is then used for less noble uses. Being very dense, it is good as fuel wood or to make charcoal.

Fig 36: Wild service tree leaves in autumn, flowers and fruits.

Photos: André Gavaland

Italy: Ciavardello

Laura Pennati, Francesco Ferrini

Wild service tree is present in Italy in broadleaf deciduous woodlands of the *Castanetum* and also warm *Fagetum* in hill areas up to about 800 meters above sea level. It generally grows on limestone soils and where there is sunny exposure, preferring cool soils rich in humus. The wood is heavy, compact and resistant and has a pinkish color; it is suitable for lathework and cabinetry.

If examined superficially, wild service tree looks like maple for the shape of the leaves and its autumn colours; the leaves are, however, alternate. The fruits are sour-tasting, edible pomes which are appreciated by birds. In the past they were given to treat colic and dysentery for their astringent quality. The Latin name for the species, *torminalis*, derives from *tormina*, meaning colic, in reference to the plant's usage.

Greece**: Ο'α, σουρβια', σουρδουλια', αυγαρια' **(Oa, sourvia, sourdoulia, avgaria)

Ioannis Ispikoudis and Olympia Dini-Papanastasi

Service trees are native trees to Greek landscape. *S. torminalis* is found in forests of Central and North continental Greece and some North islands. The fruit used to be eaten in many parts of the country but it had to be left to go rotten first, or 'bletted' before it is edible. A beverage (cider) was made from its fruits.The wood is of the best quality and is very valuable for turning and fine-woodcarving. Fruits of *Sorbus torminalis* are used as medicine (anti-laxative).

Service tree was the symbol of prophesies. The walking stick of soothsayer Tiresias, that was given to him by goddess Athena, was made from its wood.This wood was used also as talismans to avoid fairies. Well known is the New Year's Eve carol 'sourva-sourva' in Northern Greece (Macedonia and Thrace). Children used to enter houses holding a stick of service tree and carol:

"*Sourva-sourva and joyfulness*
purse-strings of the householder
full of leptons and drachmnas
amen for many
and next year to be more"

Sourva (the fruits of service tree) symbolize wealth and prosperity. These carols were well known since Homer's period. It is reported that he used to sing these in Samos Island.

There are some place names related to service tree (Avgaria = Αυγαριά) in the Greek countryside.

Portugal*: Sorveira*

José Castro, Ana Maria Carvalho

S. domestica is an endemic specie of Madeira Island, very rare, which occurs naturally on upland heaths. *S. torminalis* is not a species found in the Portuguese cultural landscape. *S. aucuparis* and *S. aria* are rare in the north and only known and used by a few people.

CHAPTER 10: SUMMARY OF THE CULTURAL VALUES AND ASSOCIATIONS

This publication presents a limited amount of material on a selection of trees species, known as "Valuable broadleaved trees", from a limited but widely distributed number of European countries. Surveys were undertaken of literature and through visits to different areas. Amongst the experts who comprised the working group, each was asked to assemble information from a range of sources on the subject, in order to sample some of these values for the countries represented in the working group. Not all species are found in each country and in some they are planted but not native. The cultural values and associations therefore vary but there are also many similarities in the way trees have played a role in culture:

- **economically** in providing a range of special or local non-wood products
- sources of **folklore**, myths, legends and superstitions.
- As part of the composition of the cultural landscape, imparting a **sense of place**
- As elements of the **ecological landscape**

These values are on the point of being lost to most cultures because they are associated with traditional, rural ways of life. As Europe becomes more urbanised such cultural heritage is at risk of becoming lost forever. Fewer people know about these special values or how to use the trees for making special products. In the case of medicinal products there is a risk that potentially useful compounds may be missed.

The pattern of uses shown in Table 1 illustrates that some trees are used for more products than others. A key example is walnut which produces nuts which can be used in many ways and is economically important in countries such as Greece. Lime, which has a fibrous cambium layer (bast), is also used quite widely. Another aspect relates to the countries with low numbers of tree species but large amounts of specific species, Finland and the use of birch being a prime example of this.

Traditional products are derived from the non-woody parts of the trees: bark, flowers, fruit, sap and seeds. The main traditional use common to most countries appears to be their use to produce dyes. Many of the trees were and still are used for medicinal purposes and the fact that they are recorded and still in use indicates their importance to society over the centuries.

Table 1 presents a comparison of the species where most parts of the trees are used frequently for different purposes.

The cultural associations of the selected species examined here are broad and have persisted for many centuries. Cultural associations include the relationship of the tree or products from the tree in folklore, mythology, in religious practices, in symbolism and as a sign of good or ill luck.
Comparing the cultural associations with tree species in the different countries (Table 1), it can be observed that:

- there are some tree species with strong symbolic aspects which are found across several countries;

- there are the same issues (religious, superstitions) connected with different tree species in different countries;

- the cultural/religious importance of a tree species often determined the place where these trees could (or still can) be found. In Greece, for example, lime (tree of Virgin Mary) and walnut (its leaves are used in Orthodox Christian ceremonies) are associated with religion. This is enhanced by the fact that these trees are very often growing in front of churches.

Cultural associations are one way in which people identify themselves with a particular place. This place attachment is an important facet of the way that people belong to the landscape. This is usually a strong element of rural communities and societies and tends to persist in places where the rural community is still vital. In many places in Europe migration from rural areas to cities the and resulting depopulation is weakening the attachment of the population to the countryside and the survival of knowledge of cultural associations with these and other trees, plants and other landscape elements can be seen as an important part of heritage. This is the same for the traditional products noted in the previous section. Table 2 presents a comparison of the main cultural associations

Table1:
Non wood uses of Valuable Broadleaved Trees – species more common use cross Europe (Abbreviations: CH – Switzerland, D – Germany, FI- Finland, F – France, GR-Greece, IR – Ireland, P – Portugal, PL – Poland, UK – United Kingdom)

Tree species	Bark	Branches	Leaves	Other (flower, fruits, sap, etc)
Alder	To smoke fish, to dye fishing-nets (FI), for dye (Fin, P), for black dye of wool and cotton cloth (R), teas (CH) tanning (P) Medical: catharses, intestines anti diarrheic anti-hemorrhagic (F), fever, ulcer wounds (CH), to cure throat infections and to lower fever (P)	Brown dyes (D)	For dusting the house, nutrients for pot plants (FI), Green dyes (D) Medicine against fleas (D), Stomach ulcers and remedy against insects (PL), for rheumatics and sciatica and to help to induce sweat (P) Fodder for goats (GR)	Fruits: dyes into brown (P); blue ink (GR) as a cure for diarrhoea (PL) Flowers: honey production (GR)
Ash	To reduce fever (P), astringent medicine (F) and to heal snake bites (PL), dye grey, blue-grey, black & tanning (PL, GR)	Brooms (GR, CH), fire beaters for forest fires (D)	Fodder for cattle (FI, PL, F, D, GR) Medical: against: tea and champagne (F), laxative (PL), as diuretic, rheumatism and to help stomach movement (P),	Its charcoal excellent for gunpowder (GR)
Birch	For green dye and painting Easter eggs (PL), to improve skin and kidney and gall bladders problems (P), against stomach pain, to relief from muscle pain (GR)	Tar, potash, black paint, sauna whisks and fodder (FI), brooms (GR) brooms and fish hook (FI, F, IR, PL and CH), fire beaters for forest fires (IR)	Medical: diuretic, antiseptic, for kidneys, rheumatism, gout, skin complaints (D, UK, GR), powder for tea (D, F), as a diuretic (P, GR) As fodder for animals (GR)	Sap is a popular drink for humans (GR) and animals, beer lemonade (F, PL); juice, to make alcohol and wine vinegar (CH) sap as medicine: urinary stones, skin disease (F);

Elm	Flour in famine times (CH), to help sweat & to relief skin burns (P) Medical: antibacterial use, anti-diarrheic, entero-gastric ulcer (GR), as bandage for wound healing in antiquity (GR)		Fodder (CH, F, D, P, GR), to sauerkraut (CH) Medical: herb tea, digestion, sore throat skin inflammation, eczema, psoriasis, acne and furuncle scruff to haemorrhoids (F), healing of bone fracture in antiquity (GR)	Fruits: edible (CH), substitute for hops in beer production (GR)
Lime	Material for baskets, shoes, rope and string (F, D, PL, CH, GR) and also clothes (F, D), rope and string from Poland to Portugal (F, PL, D, CH, P, GR). Natural dye (GR)		For face washing and also as a compress for burns and ulcers (F) Fodder for animals (sheep, goats, cattle) (GR)	Flowers: headaches, cardiac pains, arteriosclerosis, baths used to help nervous tiredness, to bring about calmness and sleep (F, P, GR), brings the basis for perfume (D), to make alcohol (PL, CH), herb tea, (GR), in apiculture (GR)
Sycamore			Sauerkraut (F) and for a syrup (CH) Leaves usually are covered by 'manna' where bees forage (GR)	Sap: basis for sugar (D, GR)
Walnut	To dye wool and hair, (CH, D, Pl, GR); 2000 uses (D); 1001 uses (GR)		Medical: for herb tea, in baths for skin infections, eczema, anaemia, drop, lung disease, unblocking the digestive tracts, reduction of perspiration in hands and feet, nights sweats, activates the growth of eyelashes and eyebrows (F), also for gastric ulcers (Pl), Medicinal uses are endless (GR), insect pests (Pl, D, GR) but also against parasites and worms (D), protect horses, donkeys and mules from animalcules and horseflies (GR) substitute for tobacco (D), Tea of leaves palliates diabetic thirst (GR), reduction of perspiration in hands and feet (GR), In religion ceremonies and along with oil from cherry kernels for the preparation of Holy unction (GR)	Nuts: nut wine, oil for cooking (F, UK, GR), oil for cosmetics as shampoo and soap (P, CH, GR), oil for energy (CH) and liquor (PL, GR), artists oil paint in all Europe, to dye wool and hair (CH, D, PL, GR), To dye wood and leather (GR), flowers in apiculture (GR), the husks for ink production GR), liquor from husks and pickles from immature nuts (GR) Medical: cholesterol lowering affect for circulatory system (CH) to kill stomach worms (P, PL, GR), a preserve made of immature nuts ("karydaki") used against tuberculosis and a liquor made of immature nuts against stomach pain (GR)

Wild Service Tree				Fruits: honey-yielding tree, eaten cooked or raw (F, CH, GR), used for barley beer by Gallic people, hard liquor (CH), alcoholic beverage (GR) Medical: astringent, anti-diarrhoea, healing, anti – haemorrhagic, gall & kidney stones, cough, sweet brandies, fermented drink, vinegar (F), anti-laxative (GR) and herbal remedy for colic and dysentery (D). Bait in bird hunting during antiquity (GR)
Wild cherry	Fabric dyes (GR) Gum from trunk as anti-tussive (GR)		Tobacco (G); leaves after boiling were placed on burns (GR)	Fruits: marmalade kirsch, juice, jelly, liquor and compote all over Europe (D, GR) - Black forest Cherry cake and cherry-schnapps), jam tea alcohol (CH, P), seeds as cooking oil and hot water bottle (D), "resin" from cherries as chewing gum GR) Medical: infusion made of stalks of cherries was used against bronchitis, cough, anaemia and kidney stones; Dissolved in wine to treat gall and kidney stones; Gum from cherries as anti-tussive (GR) Thick, fragrant oil from wild cherry kernels for preparation of Holy unction (GR)

Table 2a:
Comparison of cultural associations of VBT in selected European countries

	Alder	**Ash**	**Birch**	**Cherry**
Finland	Evil tree; charming tree, protect cattle		Feminine tree; sacrificial tree; "good tree"; joy, light and goodness	
France		Divine symbol, young men, fearless warriors; virility. Keeps snakes away	"Purification tree"	Wild cherry wedding

Germany	Tree of evil ghosts, the devil and the witches; tree of fertility, drive away mice	Predict weather; mythology: men derives from ash; ash of live *Yggdrasil*	Spring and growing love; → awakening of spring; proposal for marriage; protect cows	Love, marriage oracles; Barbara twigs on the 4th of December
Greece	Many village and place names;	Mythical and legendary weapons; name of nymphs- associated with blood; Symbol of Nemesis (divine retribution); mean of divine punishment; symbol of human strength; Ancient medicinal remedies; Keeps snakes away	Symbol of Sun and Moon; Symbol of Athena; Symbol of sea nymphs Nereids; tree of all fairies and of the witches	Religion (Holy unction); theme of children's songs, proverbs and sayings, dream-books, folk Cretan couplets, poems, folk songs, nostrums; Symbol of hope; Many village and place names;
Ireland	Many place names; tree of war and death. Irish considered it unlucky to pass an alder tree on a journey	Fertility and healing; first tree to be hit by lightening; driving cattle, protection against witches. Many place names	Many place names.	Youthfulness and beauty and love
Poland		Important tree in holy groves; source of wisdom; healthy, brings regeneration; sacred trees; sun and fire; attract thunder and lightning; magic protection	"Healthy tree" gives positive energy; new life (Christianity); happiness; twigs against moles or pests; magic protection against witches; young peoples graves	
Switzerland	Place and family names; weather lore to predict how much snow winter will bring	Place and family names; German proverb to predict weather	Place and family names; emblem of spring; marriageable lads are used to leave in front of their lovers windows fresh birch branches	Symbol of wealth and joy. Barbara twigs on the 4th of December
UK		Predict weather; seeds for love divination; finding a leaf → success and happiness	Strong fertility connections; emergence of spring; deities Frigga and Freya (love and fertility); cow fertile	North east of Scotland → a witch's tree; associations with the cuckoo

Table 2b:
Comparison of cultural associations of VBT in selected European countries (continued)

	Elm	Lime	Sycamore	Walnut	Wild service tree
Finland			350 place names		
France	Sacred tree, planted next to graves; "tree of justice"	Tree of freedom; hospitability			
Germany	death and sorrow	Freya, goddess of fertility, love and truth; no lightning; place of judicial Thing meetings; > 850 place names	Prevented witches from coming in; branches protected from lightning; branches drove away moles	Protected against lightning; tree that brought misfortune; nut → symbol of fertility	
Greece	Name of nymphs; landmarks and farm boundaries; Many village and place names;	Sacred symbol of many Gods in ancient Greece; Symbol of the female ancestor of human race; name of Centaur Chiron's mother; tree of fairies; Curing sickly children; religion (the tree of Virgin Mary); human behaviour comparison to its wood (light); Many village and place names;	Symbol of Fear or Horror; connected with traditional musical instruments; human character comparison to its wood (strong); Several village and place names.	Home of Gods; name of mythical persons; symbol of Zeus; name of Goddess Artemis and her priestesses; famous weapons; theme of votive epigrams, children songs, folk Cretan couplets, carols, proverbs and sayings; in feasts, mores and traditions (culinary recipes, 1rst of May branch); dream-books; poetic miscellanies; in religious ceremonies; traditional medicine (use of leaves for women to bear children); Under its "heavy" shadow of tree the sleep is deep; Many village and place names;	Symbol of prophesies; its wood as talismans to avoid Fairies; Its fruits (sourva) symbolize wealth and prosperity; in feasts, mores and traditions ("Sourva" is also called the New Year's Eve carols in N. Greece); some place names.
Ireland			Sprigs on May day to ward off evil spirits		

Poland		Holy groves; symbol of women live and of Virgin Mary; symbol of family protection, planted with the birth of a child; many place names	Magic tree; injuring the tree brings misfortune; lovers patron → lovers meet under sycamore trees; many place names		
Switzerland	Symbol of death and sorrow. justice spoken under the elm which stood in front of the feudal manor	Court tree in the farms: stands for quietness and equilibrium; trees of peace and joy; many family and place names; symbol of love and fertility		Weather lore; symbol of fertility. increases the chance of many healthy children. Birth of a boy → walnut tree planted in the garden	
UK	Death and the transition into the Underworld	Many place names			

This publication has only covered a relatively small number of trees and a small number of European countries, yet has amassed a wealth of information. If this project were to be extended so that as many trees as possible and as many countries as possible were included, it would be possible to carry out some interesting analysis, possibly relating the cultural associations, especially folklore, more closely to different cultural or language groups within Europe.

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