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Prelude

The Birch

The arabesque of a poet's dreams would not show finer branches, give itself more easily to the wind, nor rise into the blue with greater glory. Tender, young and over slender you let your light, long branches droop, a little timid, letting them move with every breath of air. Moving gently as you sway, the shimmering, shivering movements may bring to mind the tenderness and purity of love's young days. -

Hermann Hesse

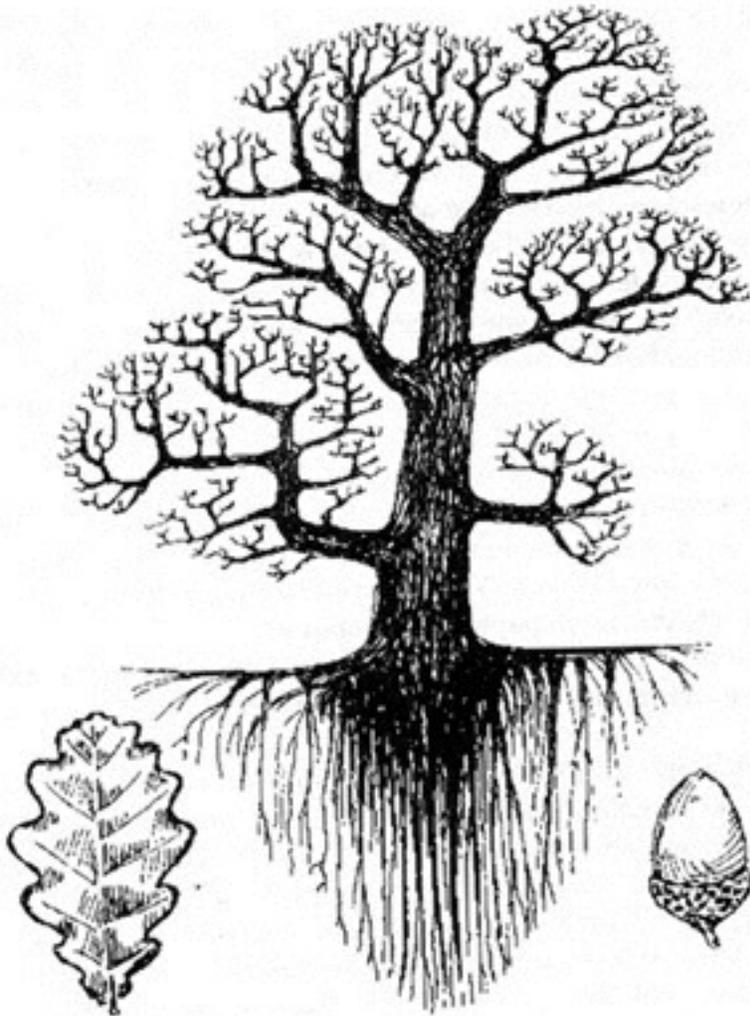
Tree and man

In an herb, a shrub or a bush, the observer takes greatest delight in the flowers. We relate differently to a tree. We are impressed by the tremendous size, characteristically made possible by doing without the energy-consuming abundance of flowers. A tree fills us with awe. It occupies a space far greater than that occupied by a human being and has a life span well beyond that of human life. It is not for nothing that large individual trees are put under protection as "natural monuments." Like the monuments of civilization, they go far back into the past. We can experience ephemerality in the life cycle of an annual plant; thinking about a tree we are made aware of the time-bound nature of our own existence. Goethe, who described the development of a "typical" herbaceous plant in his *Metamorphosis of Plants*, was well aware of the special position trees hold in the plant world. In his work on morphology, he wrote in the chapter entitled: "Our Objective Is Stated": If one looks at plants and animals in their most rudimentary stages, they are scarcely distinguishable from one another. Such nuclear organisms - whether rigid, mobile, or semi-mobile - are just barely perceptible to our senses. Whether these first beginnings could be conclusively traced in opposing directions, to the plant through light and to the animal through darkness, I do not make bold to decide, although opinions and analogies are not lacking on this subject. This much we can say: creatures, emerging gradually from a relationship in which they can scarcely distinguish between plant and animal, are perfected anti- thetically: the plant being ultimately glorified, fixed and rigid in the tree, and the animal, with utmost mobility and freedom, in mankind.

Birch and oak - polar opposites as tree forms

The birch (*Betula pendula*) is a member of the *Betulaceae* (birch family), the oak (*Quercus robur*) of the *Fagaceae* (beech family). The two families make up the order Fagales (beech-like), the main woodland trees of Central Europe. Wolfgang Schad published his fundamental paper on the biology of the morphology of Central European beech-related trees in 1967. We are able to draw on this for the morphological aspects. Later, Thomas Goebel sought to make this bear fruit for the choice of mistletoe host trees for medicinal purposes. His work has provided further insights as well as the two illustrations reproduced in this paper. Let us attempt to study and compare the configuration of these two trees.

The oak penetrates deep into the soil with its mighty roots.



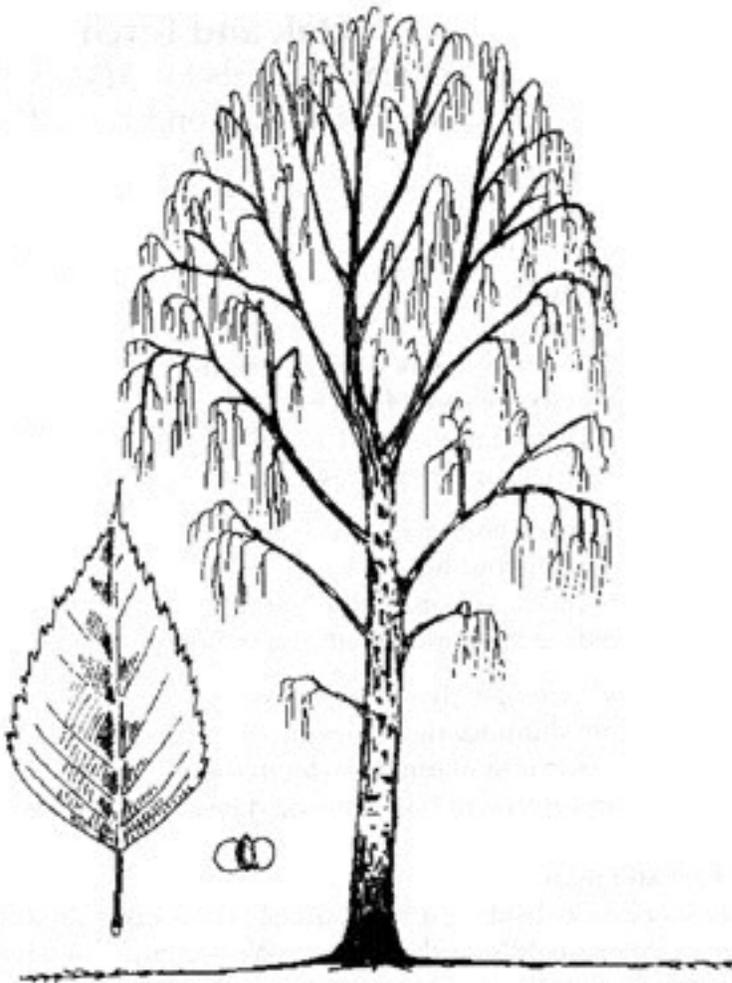
Its tap root is said to go down as deep as its crown extends up into the

sky. In spite of this, it does not exhaust the soil but rather tends to improve it. It does, however, require a certain soil quality and maturity before it will grow. Pliny thought it a particularly remarkable observation concerning the strength of an oak root when he wrote:

The coast of Germania is lined with oaks growing most luxuriantly. Washed out by floods and pushed by the wind they take large islands with them, holding them fast with their roots, thus floating upright and in balance.

Oaks do well on lime and avoid really acid soils. They also grow in the warm Mediterranean regions - the cork oak (*Quercus suber*) is cultivated there, its bark regularly removed to provide cork stoppers for jars and bottles.

The birch hardly dares to connect with the soil.



It produces a "plate" root that only takes hold of the soil superficially. It will grow in poor soils but depletes them even further. This is why other plants find life hard growing near birches, though there would

certainly be no lack of light. Birch is an out-and-out pioneer plant. When people abandon a house, birches soon grow from roof and windows. The tree also appears early on newly graveled areas and waste land. It became a colonizer when the glaciers receded after the last ice age in Europe. Oaks seek warmth, while birches show an ability to cope with cool climates. Their distribution now goes well up into Norway though they are not found in Mediterranean regions. This also explains why birch does not play a role in the medical texts of antiquity, but has regularly appeared in the German literature since Hildegard von Bingen's day (12th Century).

Whereas oaks prefer lime, birches like acid soils and even grow on the edges of peaty, boggy waters, where the white bark is in marked contrast to the usually blackish, dark water. The relatively fragile bark of particular birch species was "harvested," the light color making it a good paper substitute. Birches normally shed their bark of their own accord, having a "ringed bark," as it is called. The unusually light bark also gives the tree its name, which derives from the Indogerman *bherag*, "shiny" or "white." It is the stem of "bark" and probably first used for birch bark.

Compared to birch bark, oak bark is dark and firmly adherent to the trunk. If a decoction is made and a small amount of iron salt (e.g. $FeCl_3$) added, the solution turns greyish black. This was used as ink in the old days and could be used to write on "birch paper," for instance. The main trunk of a birch can usually be seen all the way up into the crown. It rises steeply, while the branches are pendant and easily set in motion by the wind.

Oak trunks branch early, so it is not always easy to determine which is the main trunk, in some situations, the trunk may divide at soil level. The Ravenseye oak in Erie near Dorsten, believed to be more than 1,500 years old, developed into two trees over the centuries. The lateral branches often bend sharply, like a knee, to come upright again as a secondary element. They look rigid and offer resistance to the wind - "he stands like an oak" is a popular German saying. Oak was therefore always seen as a male tree, assigned to Mars, and used as a symbol for the power of the State (especially by National Socialists). The victor's crown might be made of oak leaves or the classical laurel. Birch was considered feminine ("lady of the woods"), belonging to Venus, and stood for fresh, light-hearted love, for wooing a bride (May tree).

Oaks may reach a venerable age. A birch, on the other hand, will live scarcely beyond 100 years and therefore was seen as a symbol of youthfulness and renewal.

Birch leaves are doubly serrated and pointed. The foliage always seems open by nature, with the tree not casting much of a shadow. Birches produce their leaves early, their light green a harbinger of Spring. At this time, holes drilled in the trunk yield sap rich in sugar that is said to help hair to grow and is still used in hair tonics today. Use of the leaves for "Spring cures" is a popular tradition. Birches drop their leaves relatively early in the Fall starting from the inside so the last yellowy leaves flutter from the tips of the branches.

Oak leaves are coarsely lobed, their tips looking flattened. They often curl under slightly in the margins. It is quite dark beneath an oak. They bud later in the year and keep their leaves longer than birches do. A few leaves will persist throughout the Winter months on branches inside the crown.

Many animals seek shelter in the crown of an oak. 200 insect species have been counted that absolutely depend on this tree. Gall wasps enter into close symbiosis with a particular oak species (*Quercus infectoria*) which will be discussed later.

Birches are rather removed from the animal world. Only one beetle depends on them; magpies nest in them - not surprisingly building their own "roof" above their nests.

Humans have also sought protection from oaks, which have always been given preference as wood for building. If there was a shortage, at least the front door, as the most endangered part of the house, would be made of oak.

Birches pollinate very early, as do elder and hazel. Pollen from these trees, as from grasses, is the major cause of hayfever. Oak pollen scarcely plays a role as an allergen; quite the contrary, suitable oak preparations may be medicinal in acute allergic reactions.

After pollination, small, butterfly-shaped fruits develop on birches. The wind carries them far and wide in Spring. These "fly weights" have no nutrient value. Oaks bear heavier fruit, the acorns, which drop to the ground in the Fall and provide food for doormice and squirrels. People have traditionally roasted them as a coffee substitute, and in times of need a flour made of them was used to bake bread.

Farmers have always driven their pigs into the woods to fatten them up. Hieronymus painted a swineherd and his lively charges beside an

oak tree in his 1546 herbal. The acorns produced thus played an important role in determining the value of a woodland area.

Wolfgang Schad coined the terms "creation of individual space" and "openness to surrounding space" to contrast space occupancy for oak and birch. The dark crown of an oak harbors and feeds a rich variety of life, while the open, mobile birch remains a plaything of the winds.

Constituents and medicinal properties of oak

The bark of oaks is mainly used for medicinal purposes as are oak galls. These are spherical structures that grow in response to gall wasps laying their eggs in young leaf buds of *Quercus infectoria* and the growing larvae. Oak bark and, even more so, oak galls have a high tannin content. The best way of getting to know this substance is to make a concentrated decoction of oak bark and rinse one's mouth with it for some time. A furry, sometimes slightly numbed, distinctly astringent effect is soon noted. Compared to the astringent effect of lemon juice, for instance, it is not "sharp" and "light" but "dull" and "dark." It is important not to be misled by the term "tannic acid," though it is correct in terms of chemical structure and was also used by Rudolf Steiner.

Tannins were widely used in the past to make animal skins durable, i.e. produce leather. They have the ability to form more or less stable complexes with proteins. This gives them their anti-inflammatory, astringent, mildly local-anesthetic and drying effect on mucosa and skin. They stabilize the "limiting surface" of human beings, which is always unstable and becomes too permeable, too close to metabolism, in weeping eczemas. Skin cells go through a dying and drying process as they migrate from the stratum basale to the stratum corneum. This alone makes them able to function as limiting structures, a function performed by the bark in perennial woody plants. Goethe realized that peripheral dying processes are a precondition for internal vitality, putting it as follows in the chapter entitled, "Our Objective Is Stated":

As we now observe this magic structure, and acquire greater insight into the way it lifts itself upward, we again encounter an important principle of organization: that no life can operate on an exposed surface or exercise its reproductive power there; that instead all life activity demands a covering to shield it against the outward rough element, be it water, air, or light, and to safeguard its delicate existence, in order that it may fulfill the specific function of its inner nature. Whether the covering has the appearance of bark, skin, or peel, everything that emerges into life, everything that has a vital

function must be enveloped. Thus, too, everything that is turned to the outside is gradually and prematurely subject to death, to decomposition. The bark of trees, the skin of insects, the hair and feathers of animals, even the epidermis of humans, are coverings which are eternally detaching themselves, sloughing off, resigning themselves to death, behind which new coverings are constantly forming, and under which, near the surface or deeper, life weaves its creative webwork.

The "signature" of tannin actions immediately suggests its use in allergic conditions, but little use has been made of it so far in herbal medicine or homeopathy, though it appears that tannin (a special form of tanning agent) was given by i.v. injection to treat urticaria and allergic edema "with good results" in Hungary after the Second World War, with "clinical results . . . largely resembling those of antihistamine preparations."

Apart from tannins, oak bark contains calcium.

Pharmacology of calcium

Calcium has been used to treat allergic conditions since 1996. The discovery was primarily connected with serum treatment of diphtheria. In the early years, it caused exanthemata, as the serum had not been adequately purified. Wright in England was the first to treat such patients by giving calcium by mouth.

Calcium treatment soon found its way to the Continent, with the originally weak doses progressively increasing. Calcium was also given intravenously for severe allergic reactions including anaphylactic shock and angioneurotic edema. Intramuscular injections were given to get a depot effect, and long-term elevation of serum calcium levels.

Capillaries were believed to be the main point of calcium attack, and this led to the idea, which is still around, that calcium sealed the capillaries (though pharmacologists do not find it adequate). It is interesting that the early users of calcium spoke of a "long-distance astringent action," so that even the terminology established a parallel to the astringent quality of tannins. Calcium also played an important role in the treatment of hemorrhages - certainly a plausible indication in view of the central role calcium plays in the coagulation cascade. Increasingly massive doses of calcium caused local reactions with parenteral use, and the search for more easily-tolerated calcium compounds held center stage for years.

Only one man. Professor Hugo Schuiz of Greifswald (1853-1932), the only German pharmacologist to show open interest in homeopathy -

low potency - and attempt to give it a scientific basis, advised caution with calcium dosage, actually believing high doses to be counterproductive: "As I told you, gentlemen, you should use calcium in low doses if you want it to be really effective." It is evident from his lectures on inorganic medicinal substances that he had a real idea of the "boundary-forming" quality of calcium and was therefore skeptical toward the unending efforts to increase doses even further: *We also encounter calcium under very different conditions, when it is a kind of protective against tissue irritation, especially highly vascular tissues. Chronically inflamed vessels - you know this from pathology - have the peculiar and highly interesting tendency to deposit often quite considerable amounts of calcium in their walls. We also see such calcium deposits elsewhere. Let me just remind you of the calcification of old tubercular nodes, the forming of calcium deposits in chronically inflamed lymph glands, in the walls of old abscesses. Another highly characteristic phenomenon occurs when Trichinae penetrate into muscle and become encapsulated there. This happens because of the peculiar reflex action evoked by their presence in muscle tissue.*

Composition of Calcium carbonicum/Cortex Quercus

This preparation, developed under the aegis of Dr. Margarethe Hauschka in 1952, is designed to combine the active principles of calcium and tannin, creating a new whole.

On one hand, oak bark goes through intense decoction to release tannins that are not easily soluble. On the other hand, the bark is heated to incandescence to obtain pure calcium oxide (CaO). This combines with carbon dioxide from the air to CaCO₂ (calcium carbonate). The tannin extract and the calcium preparation are then potentized together up to the 6x.

The idea for this preparation may have come from the 5th lecture in Rudolf Steiner's *Agriculture* course where he spoke of oak bark as one of the 6 compost preparations. He said emphatically that the calcium must remain within the sphere of life if it was to have "healing qualities." Nothing could be done with ordinary calcium carbonate. He spoke of oak bark as the source of such "live calcium." Goethe's perception of the beginnings of a dying process in bark may also be found with Steiner: *And it is, above all, the bark of oak which is a kind of intermediate product between plant nature and living soil, wholly in the way I have spoken of concerning the relationship between living soil and the earth. With reference to the calcium principle that shows*

itself here, the calcium structure found in oak bark is the most ideal. The skull of a domestic animal was to be used for making the compost preparation. Elsewhere Steiner would be very definite about the kind of animal to be used (e.g. the bladder of a red deer, which will no doubt often be difficult to get); here, he said briefly, "It hardly matters from which of our domestic animals." What matters, clearly, is the "skull principle," an exo- skeleton providing a firm protective envelope. The skull filled with oak bark is buried in soil well soaked with rain water and left to winter over. Rudolf Steiner added one might "put plant matter there that will always ensure that plant sludge is present." A transition from living to dead matter is, therefore, created to match the situation in which oak bark develops. The "composting" and, therefore, partial mineralization of oak bark is taken to a higher level in pharmacy by ashing. If one lives for a time with the image of a skull wintering over in damp, "muddy" soil, it can become the counter image of the allergy sufferer who is flowing apart under innumerable sensory stimuli in Summer.

Calcium Carbonicum /Cortex Quercus is available in 1 and 10 ml ampules and impregnated pilules. The 10 ml ampules have proved particularly effective in controlling acute allergic reactions, which is in accord with experience gained in conventional calcium therapy. Highly positive results have also been seen with marked pruritus of non-allergenic origin, e.g. in pregnancy. Mothers-to-be tolerate the injections well, as they are highly effective. Calcium carbonicum/ Cortex Quercus may also be considered for acute hayfever attacks when Citrus/Cydonia (Gencydo) on its own proves insufficient. The 1 ml ampules and pilules serve mainly to continue the treatment of acute conditions and for more chronic situations. More recently, the solution for injection has been used in inhalations to treat asthma, also in combination with Levico 3x. This merits attention in view of growing advocacy of anti-inflammatory basic treatment for asthma. It needs systematic investigation and development, as do all inhalation treatments using anthroposophical medicines. The use of 10 ml ampules of Calcium carbonicum/Cortex Quercus to treat hemorrhages also requires closer investigation, and work needs to be done on differential treatment (e.g. as an alternative or complement to Stibium met. prep. 6x).

It is interesting to note that the styptic properties of calcium were discovered no later than the end of the 18th Century, while its anti-allergic properties were only noted by Wright 100 years later. Apart

from the "ex-ternal" aspect of serum treatment, this no doubt also has a deeper reason. The allergy problem appears to have become genuinely topical around the turn of the century, with the term "anaphylaxis" first used by Charles Richet and Paul Portier in 1902. Clemens Pirquet introduced the term "allergy" in 1906, having interpreted serum sickness as an antigen-antibody reaction a year earlier. Finally, Henry Dale and Patrick Laidlaw established the pharmacology of histamine in 1910, showing the similarity between histamine-induced and anaphylactic shock. Reading Rudolf Steiner on the Citrus/Cydonia composition (1920s) one also gets the impression that hayfever in its massive form was a "new" syndrome at the time. Other oak preparations for use in dermatology include Quercus Essence, Quercus comp. Ungt. and Quercus Hemorrhoidal Suppositories.

Acute inflammatory changes in patients who may be said to be "too young" are the domain of the oak. Overall, the indications for oak bark preparations are fairly well defined. This is not yet the case with birch bark. A paper to be published shortly may encourage others to try it on a wider scale.

Postlude

Lopped Oak

How much they have cut you back, tree so that you stand there alien and strange! And you have suffered many, many times, leaving you nothing but defiant will! I am like you, for a life cut back and oft tormented did not break me. Day after day I raise my brow again into the light though I've been roughly treated. The world has scorned to death in me all that was tender once and delicate. But nothing shall destroy me; I am contented, reconciled, patiently bringing forth new leaves from branches split apart a hundred times. Defying all the pain, I'll always be in love with a demented world. - Hermann Hesse

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