

TREES ARE OUR ROOTS¹

by Ron Taven

How can one explain that young spiders know how to spin the geodesic geometry of their webs, except by instinct? Is it possible that we have an instinctive nostalgia for trees?

We have to admit that we will never know fully what happened to our ancestors in the journey towards modern humanity; the evidence is too sparse. According to the best evidence, some 180 million years ago, the conifers, which abounded like arboreal cathedrals during the age of the reptiles, were becoming mixed with magnolia, walnut, beech and plane trees. About 100 million years ago a primitive, small, ape-like creature, who gave rise to us and the living apes, moved dexterously from tree limb to tree limb of its forest home. Perhaps about twenty million years ago, a gradual change of climate thinned the forests and that tree-dwelling, protohuman primate left the forest and embarked on a more adventurous life on the sun-baked savannahs of eastern Africa. About twelve million years ago, this ancestor of man slowly learned how to stand erect to scan the horizon for prey and foes, a necessity in the life of a hunter on open ground. And as time draws closer to the present, this thinly scattered former acrobat of the forests and runner of the open plains settled down to multiply unto the ends of the earth. This was the beginning of a drama that led from hunting and gathering to farming about 10,000 years ago. The rest of the story is quite clear, from the sonatas of Beethoven to the internal combustion engine and the exploration of the moon.

In the bestseller, *The Dragons of Eden*, author Carl Sagan ponders if "after we returned to the savannahs and abandoned the trees, did we long for those graceful leaps and ecstatic moments of weightlessness in the shafts of sunlight of the forest floor?" He wonders, "is the startle reflex of human infants today to prevent falling from the treetops?" Is our most frequent night time dream, that of falling, connected with our arboreal origins

when our ancestors misjudged the distance of a limb? Is our daytime passion for flight and aerial thrills an ineradicable link between the present and our evolutionary past? Is our infatuation with Tarzan an atavistic fantasy to return to those days in the branches of the forest?

Just what is this thing we call tree? Exactly what is the very treeness of the tree? When is a tree a tree? A living tree has an anchoring and absorbing root system creeping snakelike into the earth, an upright stem that defies gravity, a multiplicity of leaves. It produces flowers, fruit with seeds, responds to its environment, lives its appointed span and dies. But so does a cornstalk, a rose and a sunflower. A tree resembles these plants far more than it differs from them. Yet trees seem different from the rest of plants in several important respects. In an artistic, inspirational and practical sense, trees belong in a world apart. They are the predominant feature of most landscapes, and by their very size arrest our attention, while small plants are passed unnoticed or crushed underfoot. Have you ever considered how much it adds to the looks of a river to have water in it? One might say the same thing of trees in the landscape. Even so astoundingly simple a word as "tree" is not easy to define, though I am not at all sure a definition is necessary. For those not burdened by dictionary definitions, may we say that a plant is a tree when it stands by itself and can be climbed in. Many vines can be climbed up, but not in, nor do they grow upright without support. Many plants grow tall and tree-like, such as the largest cactus on earth, the grotesque Saguaro, but it cannot be climbed in. But once a plant has acquired the necessary size, shape and rigidity to permit boys and girls to climb about its branches, then it is, unequivocally, a tree.

Trees seem more resigned to the way they have to live than other things do. Except for the nine months before he draws his first breath, no man manages his affairs as well as the tree does. From

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the time they germinate, until the time they die, trees are inescapably rooted to one spot. Hence, they are far more than animals, creatures of their environment. In a sense they are a living incorporation of their environment, and cannot be understood unless the environment is also understood. Trees are endlessly fascinating, endlessly gracious, endlessly handsome, strong, persistent and adaptable. They are perfect architectural forms; more delicate, elegant, flexible, sturdy or massive than any structure man has yet constructed. A tree is a structure with foundations, pillars, arches and roof, a constantly growing, self-rejuvenating structure, symbolic of life rising from the darkness of the soil into the light. The structure of a tree is a result of the typical form it tends to develop as programmed by heredity, and the modification or distortion it may develop as a result of its specific environment. To speak of natural form is incomplete. We must ask, natural form where, under what conditions? The single pine in the open, the pine crowded with others in a dense grove, and the pine on an exposed mountaintop will scarcely be recognizable as belonging to the same species. Trees of unusual form are living sculpture, an organic piece of sculpture. In some plants the sculptural quality is natural or inherent, such as the picturesque, animalistic weeping mulberry. Sometimes nature in the form of wind, drought, lightning, snow, hail, disease or insects does the drastic shaping. The result may be a wind battered pine on a seacoast or at timberline on a mountaintop where summer pays only a fleeting visit. Their beauty is in their structure, a structure which symbolizes the strength they have to survive difficulties of violent proportions. Life forms in nature tolerate and accommodate, if they are to last; the secret of immortality is adaptability.

Trees suffer from familiarity. We take their miracles too much for granted. If you have never really seen them before, look again, and then tell yourself to see. Put your hands on a massive tree trunk and look up through the soaring complex of branches and leaves stretching aloft for sunlight. Reflect that this is not a cold inanimate object like a stone, but a viable organism, quick with protoplasmic life in every part; from the tenderest

leaflets in its crown to the minute filaments of the hidden root system. As far as we know, trees are insensate and have no consciousness as animals do, but a tree has circulation, respiration and a cycle of growth and decline, which while far slower, is no less inexorable than an animal. Old trees like a very old man seem to die of nothing except death itself. Of all organisms living on earth, a tree is one of the few which may be handsome as a dead specimen. There is something mysteriously beautiful about a dead tree, as it stands no longer resisting the winds that strip its bark and twist its trunk. It seems to suggest a power long after life has gone. The old log in the woods will never be a great tree again. Things never go back. Yet lying there, covered with moss, it is creating new life, which will be gentler, richer, purer. Everything that comes alive seems to be in trade for something that dies, cell for cell.

What are you for, tree? What can I do with you? The answers to that question are deeply rooted in history and prehistory. It must be admitted that there are many points of view about trees: the botanist sees their cellular anatomy under a microscope; the ecologist in delicate balance with their environment; the lumberman as so many board feet; the developer as a green thing that stands in the way of progress and profit. A chain saw snarling into a tree has a very final sound; the propagator as something to create. As long as there are trees in tiny seeds there will be miracles on earth; the nurseryman sees trees as younglings for embellishing and shading the urban landscape; the arboriculturist as something to be watered, fed, protected, pruned and extravagantly admired because trees in our man-made environments require our intelligent attention; the topiary artist as something man has to assert his dominance over in order to be attractive; the electrical engineer as creosoted trunks to hang wires on; the sentimentalist as a bouquet of flowers; the child as a place to climb, play and hide and build tree houses, to create wonderful fantasies. When children draw pictures of their home, they invariably exaggerate the importance of trees and flowers, unknowingly acknowledging the power of plants over the human spirit; the city forester or arborist as relief from city stoniness, recapturing the

great cyclical changes of nature in the devegetated urban environment; the sensitive landscape designer thinks of trees as something to use as a painter uses paint and the sculptor uses stone, to form and enrich pleasantly livable places in the landscape. In the humanized landscape trees become the greatest single element linking us visually and emotionally with our surroundings and our primeval past. Other manifestations of nature, great canyons, deserts, the ocean, mountains, stir us, fill us with awe, make us fearful because of our inability to relate to their immensity. But a tree we understand and we can allow it to become a part of us. As man is drawn to water, so man instinctively is drawn to trees, to the inviting volumes they shape and define. Trees live with us in the air space of the landscape, resisting and eluding gravity in the upward aspiration of their growth.

If people can be taught to look up, a new experience is available to them. A great deal of literature describes trees as they appear in outline, who but who writes of the sensual pleasures of looking up into them? Belatedly, it is time to review, describe and select trees that are fascinating when viewed from below. Go lie beneath a tree and gaze up into the crown. There you may find peace and contentment, feeling less alone than with a crowd of people. There you may discover light so soothing you could almost splash it on your face or pat it on like soft powder.

Seldom has man been able to devise anything as beautiful as the sky. It has been said that if man were permitted to view the sky but one day and one night of his life, he would count it his most memorable earthly experience. What is more remarkable to behold than a lurid western sky silhouetting trees? A calmness consumes you, a calmness felt rather than understood.

Close contemplation of a tall tree can arouse animal awe, if not reverence, in the most heedless mind. Trees can teach us something of grace, patience, serenity and respect. They become part of human hopes and expectations. Men are puny compared to a tree's strength, age and endurance. Far longer than our own life is the life of most trees. We humans, like a candle, burn ourselves up with our living. Whatever isn't grow-

ing, wears out. Trees hoard their power, calmly increasing it year by year. Some trees simply have no old age. Few other organisms can approach the life span of some of the oaks; nothing comes close to the gnarled, burlled and bent bristlecone pines, growing for more than 4,000 years under inhospitable conditions. It is hard to understand why the most tormented of the species seem to live the longest. No tree living today has soared farther upward than the great and grandiose coast redwood; 368 feet, equal to a 35-story skyscraper. It was one of Henry David Thoreau's uncanny insights when he wrote: "It is with men as with trees, you must grow slowly to last long."

Who would deny that trees are beautiful. Trees are like people; alike in so many respects, but each so different, so varied, so singular, so strange. A tree must have a trunk. The trunk is that part of the tree which greets you face to face as you walk about. Its size, configuration, color and texture expresses the character of the entire tree. The massive trunk of a majestic tree is a structure as functional and stately as any classical column.

Perhaps the most interesting and wonderful parts of the whole tree are the leaves. These are the flesh, as the limbs and branches are its skeleton. Red and green are the primary colors of life. The red of blood and the green of chlorophyll. If the animal flaunted his blood as vegetation flaunts chlorophyll, it would be intolerable. Imagine what a nightmarish world it would be if the foliage were red rather than green.

We know the seasons by the state of trees. Spring is sooner recognized by trees than by man. The swelling buds are harbingers for the resurgence of life. Spring glistens with a frothy haze of green light of new and tender leaves, an ethereal fantasy. In summer the leaves form parasols of shade and there is no shade like the cool shade of a tree. Beneath the irenic shade of trees, moist air currents circulate through the ravelled loom of foliage, giving off tons of water, using heat in the process so that the entire area beneath is made cooler. Heed the ancient Chinese proverb: "No shade tree? Blame not the sun, but yourself." In high summer the woods grow silent. It is nature's period of quietness and contemplation, the season of approaching

ripeness of fruit that delights the eye of man and provides nourishment for all creatures of earth. Autumn is the second spring when every leaf is in flower. The familiar greens put on a spectacular parting performance, giving way to all the hues of a sunset sky until the flaming woodland is as awesome as a forest fire. At the very end of their usefulness, leaves become their most vivid, noticeable and individual. The colors are not of living, but of dying. Perhaps we feel somewhat uneasy when they fall to the ground, for we are reminded that for us too, such a time will come. In winter, the trees are the elemental shape of life and enduring growth. When the landscape becomes jeweled with ice, every twig will glow and glisten. Oh, the wonder of it all, how snowflakes form and drop to the earth, clinging to every twig and needle, until all is soft and white and fresh.

To see the greatness of a tree, one must keep one's distance; to understand its form, one must move around it and under it; to experience its moods, one must see it at sunrise and sunset, at noon and at midnight, in sun and in rain, in snow and in storm, and in all the seasons of the year. He who can see the tree like this comes near to the life of the tree, a life that is as intense and varied as that of a human being. Trees grow and decay, they breathe and pulsate with life, collecting energies from the air and soil. Trees generate active life around them, give shelter and food to innumerable things. Such is the greatness of trees.

Trees speak to us, if we will only listen. Can we understand the message of the trees? Modern

man, whose ancestors swarmed forth from along evolution in the trees, is now funneling into the nonliving, motionless forests of concrete, glass and steel. What we see mirrored in the man-made structures is a realization that we are losing something vital to us as sentient, questioning creatures whose roots were hammered out on the anvils of human evolution over millions of millenia. Having emerged from a fostering blanket of trees, we are not far removed by a clothing of civilization. It is packed into our genes. Perhaps we sense that we have lost something which we could call peace of mind and spirit, a satisfaction of the heart. A great lassitude comes upon us sometimes, an aversion to the stormy and trivial burdens of everyday life, an uneasiness and a dissatisfaction with ourselves, or with that part of ourselves, which searches for a deeper meaning to our existence, an understanding how everything is so much a part of everything else, how much a part of everything we are. We could well find it among the trees. A tree's peace can flow into you as sunshine into leaves. Planting, tending or watching a tree grow strong is learning what it means to be rooted in the earth, stirring deep within us long forgotten ties to the earth, our home. We could well find peace, tranquility, serenity and contentment among the trees, perhaps hearing the subtle and quiet voices that speak of deeper and forgotten things.

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ABSTRACT

SHURTLEFF, M.C. 1979. **Sprays for diseases of non-woody ornamentals.** *Grounds Maintenance* 14(8): 45-46, 48, 50.

This is the last in a series of articles begun in the May issue of *Grounds Maintenance* listing chemical treatments for diseases affecting ornamentals. The chart lists fungicides and bactericides by common name or by names of representative proprietary products. The chart lists the diseases and their control chemicals for the following host plants: hollyhock, hyacinth, iris, lily, marigold, narcissus, peony, periwinkle, petunia, phlox, snapdragon, sweet pea, tulip, and zinnia.