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Opinions

The subtle communication skills of trees

By **Andrea Wulf** October 7

Andrea Wulf is the author of “The Invention of Nature: Alexander von Humboldt’s New World.”

A walk through a forest might never be the same again after reading this elucidating book, which makes a case for trees as social beings that communicate, feel and help each other. “The Hidden Life of Trees” explains that trees use scent to talk, “agree” to bloom together and take communal action against pests. Bizarre as this might sound, the author Peter Wohlleben is not a New Age disciple who conjured up some crazy esoteric visions but a forester in Germany who underpins (most) of his ideas with hard scientific data. He refers, for example, to studies in which scientists have discovered what one called the “wood wide web” — in which trees “exchange news about insects, drought, and other dangers.”

Umbrella thorn acacias in the African savannah, for example, pump toxins into their leaves when giraffes munch them. Not only that, they also give off a gas to warn nearby trees that then immediately release toxic substances to protect themselves — these are “arboreal early-warning systems,” as Wohlleben explains. Other species in temperate rain forests in North America send chemical distress signals and electrical impulses through the fungal networks at their root tips when under attack from insects, thereby alerting their neighbors to the impending danger.

Wohlleben explains that trees are connected through their root systems and that they not only exchange nutrients but even help sickly neighbors. They are, he writes, “superorganisms with interconnections much like ant colonies.” Together they balance out extreme weather (by creating microclimates), protect one another against storms and pests, store water, and generate humidity. Each member in the community is valuable.

He refers to research at the University of Bonn that indicates that trees have “brain-like structures” at their root tips that analyze toxic substances and soil conditions and then send electrical impulses to redirect root growth. Many scientists doubt that this is enough to be called a brain, but Wohlleben welcomes the idea of blurring the boundaries between plants and animals.

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“The Hidden Life of Trees” caused quite a stir when it was published last year in Germany, where it is still on the bestseller lists. Wohlleben’s Canadian publisher, Greystone Books, now hopes to achieve the same in the English-speaking world — and I think the firm might be right. Since its release in the United States in September, the book has popped up on both the Washington Post and New York Times bestseller lists.

I’m usually not keen on anthropomorphizing nature — and here trees are “nursing their babies” and having “a long leisurely breakfast in the sun,” while “alders flaunt their wealth” and fungus mushrooms are “rascals” who “steal” sugar and nutrients. These cutesy expressions make me cringe. Why can’t we see nature on nature’s terms? But I have to admit that Wohlleben pulls it off — most of the time — because he sticks with scientific research and has a knack for making complex biology simple and thoroughly enjoyable. And frankly, right now, nature needs every little help there is. So, if Wohlleben’s decision to anthropomorphize nature got more than half a million Germans to be excited about trees and ancient forests, I do hope he can do the same for Americans.

He writes about “youngsters,” their “mothers” and light deprivation, which is part of their “strict upbringing.” In an undisturbed forest, the canopies of old trees capture 97 percent of the sun, which doesn’t leave much for the young ones below, but that’s good because trees need to grow slowly in order to live long. Their wood gets denser (the inner cells hardly contain any air), which makes them less prone to breaking and more resistant against fungi and pests.

In one chapter, Wohlleben describes a beech as being very social to its own kind but a bully to others such as the oak. For my taste, it’s borderline anthropomorphic, but he vividly explains the battle between trees: how young beech saplings grow quietly in the shadow of a mighty oak. Below the surface, however, the little trees start using up space and water, which weakens the old tree, but only a little. Then, about 150 years later — as Wohlleben points out again and again, trees “live life in the slow lane” — the beech, which can grow taller than the oak, finally overtakes it and soaks up all the sunlight. The oak now finds itself in the shade, which means that sugar production goes down. And so the old oak starves and dies after a few more decades.

Wohlleben is a passionate advocate for ancient forests because what he describes does not work in plantations, where trees start life with damaged root systems (“the brain-like structures are cut off”) and without “learning” from the older generation. They are “loners,” as opposed to the social beings in undisturbed forests. Wohlleben concludes his book with an evocative description of the transformation of a conifer plantation that begins with the arrival of tiny bark beetles and ends with an ancient forest 500 years later. Patience clearly is a virtue when it comes to forests.

Much has been written in Germany about Wohlleben’s claim that trees communicate with one another — which is fascinating — but “The Hidden Life of Trees” is much more: It’s a declaration of love and an engrossing primer on trees, brimming with facts and an unashamed awe for nature. Most of all it’s a timely reminder that we know very little about trees — and that there is still so much more to learn.

THE HIDDEN LIFE OF TREES

What They Feel, How They Communicate: Discoveries From a Secret World

By Peter Wohlleben

Greystone.

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