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— TREE SCHOOL —

THIRST IS HARDER for trees to endure than hunger, because they can satisfy their hunger whenever they want. Like a baker who always has enough bread, a tree can satisfy a rumbling stomach right away using photosynthesis. But even the best baker cannot bake without water, and the same goes for a tree: without moisture, food production stops.

A mature beech tree can send more than 130 gallons of water a day coursing through its branches and leaves, and this is what it does as long as it can draw enough water up from below.[20] However, the moisture in the soil would soon run out if the tree were to do that every day in summer. In the warmer seasons, it doesn't rain nearly enough to replenish water levels in the desiccated soil. Therefore, the tree stockpiles water in winter.

In winter, there's more than enough rain, and the tree is not consuming water, because almost all plants take a break from growing at that time of year. Together with belowground accumulation of spring showers, the stockpiled water usually lasts until the onset of summer. But in many years, water then gets scarce. After a couple of weeks of high temperatures and no rain, forests usually begin to suffer. The most severely affected trees are those that grow in soils where moisture is usually particularly abundant. These trees don't know the meaning of restraint and are lavish in their water use, and it is usually the largest and most vigorous trees that pay the price for this behavior.

In the forest I manage, the stricken trees are usually spruce, which burst not at every seam but certainly along their trunks. If the ground has dried out and the needles high up in the crown are still demanding water, at some point, the tension in the drying wood simply becomes too much for the tree to bear. It crackles and pops, and a tear about 3 feet long opens in its bark. This tear penetrates deep into the tissue and severely injures the tree. Fungal spores immediately take advantage of the tear to invade the innermost parts of the tree, where they begin their destructive work. In the years to come, the spruce will try to repair the wound, but the tear keeps reopening. From some distance away, you can see a black channel streaked with pitch that bears witness to this painful process.

And with that, we have arrived at the heart of tree school. Unfortunately,