

Breathe

By Joan Maloof



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When we discuss what we miss about forests after they have been cut, we usually mention the sight or the shade or the species; but now I was breathing deeply of a forest gift I had forgotten: the air! Americans largely ignore this dimension of the forest's allure, but the Japanese recognize it and have a name for it: *shinrin-yoku*—wood-air bathing. Japanese researchers have discovered that when diabetic patients walk through the forest, their blood sugar drops to healthier levels. Entire symposiums have been held on the benefits of wood-air bathing and walking. I certainly feel better after a walk in the woods, but until I read about it, I didn't know there was a name for my therapy.

What could be in forest air that makes us feel better? Researchers work-

ing in the Sierra Nevada of California found 120 chemical compounds in the mountain forest air—but they could identify only 70 of them! We are literally breathing things we don't understand. And when we lose our forests, we don't know what we are losing. Some of the compounds in the air come from the bacteria and the fungi in the soil, but most are given off by the trees. Trees release volatile organic compounds from little pockets between their leaf cells. A number of theories exist about why they release the compounds. Possibly it is to deter insects. Or possibly the compounds are just metabolic by-products, and this is how trees eliminate them, having no excretory system. The scientific community is still undecided.

I like to think of these enticing fragrances as a sort of mutualistic reward

for humans—a *Botany of Desire* scenario where the trees are using one of the few wiles they have that work on humans, although in some cases, such as that of the sassafras tree, having a pleasing aroma is grounds for decimation. Native Americans used the sassafras medicinally, and European explorers were quick to adopt the fragrant leaves for both medicinal and culinary uses. The first shipment of sassafras was sent back to England in 1602, and sassafras remained the largest export for almost a hundred years.

It is not inconceivable that the trees may be altering our perceptions with their chemicals. The volatile molecules evaporate into the air and come into contact with the sensory neurons in our nasal passageways. The olfactory nerves send messages directly to the limbic system in our brains, which deals with

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instinctive emotions such as sex, memory, and aggression. The limbic system can certainly affect our physical bodies, and all of this can happen even without our perception of having "smelled" anything.

The molecules from the trees don't just go up our noses, however; they are also part of the air that goes into our lungs, and once in our lungs, some of the molecules can enter our blood-streams. So when we walk through the forest inhaling that sweet air, the wood-air, the forest actually becomes a part of our bodies. No wonder that a forest walk evokes the lines from Rainer Maria Rilke's "Ninth Elegy":

Earth, my dearest, I will. Oh believe me, no more of your spring-times are needed to win me over—, one, ah, a single one, is already too much for my blood.

Aromatherapy practitioners call these plant-produced volatile compounds "essential oils" and depend on handed-down folk wisdom to know the effects these various oils will have on the human body. Among the most abundant compounds given off by trees are monoterpenes. Aromatherapists claim that the monoterpenes in pine are antiviral and antiseptic, good for asthma and respiratory infections—but

there is no medical research to back up their claim.

There has been a great deal of research, however, on *edible* monoterpenes, and these *have* been shown both to prevent and to cure cancer. Many chemotherapy drugs contain monoterpenes, but we can also find them in our own kitchens; lemon rinds, in particular, have large amounts of them. Could inhaling monoterpenes be a cancer cure as well? Is *shinrin-yoku* a valid therapy? And a bigger question: Why hasn't the Western medical community been researching the physical effects of inhaling the monoterpenes so abundant in forest air? Might it be because forest air cannot be patented, and consequently no money is to be made from it?

We decry the destruction of tropical rainforests, citing the wonder drugs that may eventually be found in them, but we may have miracle medicines lurking right beneath our own noses. Perhaps someday, when our physician asks us to "take a deep breath," it will be old-growth air that he or she is recommending.

I hope we don't have to drive too far to find it. ■

Excerpted from *Teaching the Trees: Lessons from the Forest* by Joan Maloof (University of Georgia Press, 2005). www.ugapress.org.

