

“The Global Forest: 40 Ways Trees Can Save Us” by Diana Beresford-Kroeger

Diana is a botanist and medical biochemist who lives in Ontario surrounded by her research garden. She delves into the inner workings of plants and their relationships to each other and to the other life forms around them. She goes deeper into this than other books I have read on the subject. She makes a case for trees and why we should value and protect them. I have listed some excerpts from the book to give an idea of what it is about.

Crataegus pommes are edible and are sweetest after the first killing frosts. Their nutlets were ground and made into a coffee by the aboriginal peoples. The mature leaf of this tree produces a hormone that has a direct impact on the growth and development of the caterpillar. The leaf also holds biochemicals that make high-energy adenosine triphosphate which is the fission fuel firing the energy for migration itself. She also points out that there is a chemical in the hawthorn that keeps human hearts healthy. A lot for just one species of tree.

Monarda didyma produces bergamot, an oil that is dispensed with a carrying aerosol. This delightful fragrance opens out the lungs as a bronchodilator when the pollen levels are seasonally high in the forest. This sweet smelling native keeps the lungs clean and healthy. A fragrance, an odor, a stink, or a fume all function in the same way. The chemical that is released becomes airborne like a balloon. This can be light or heavy. If it is light it will climb into the winds and fly. If it is heavy it will not go far.

For the most part food-producing trees such as the walnut, oak, pine, pea, ginkgo, mulberry, rose, beech and custard apple families have not been genetically modified and hopefully they never will be. However, they have not been systematically searched and selected for natural hybridization to induce hybrid vigor for larger crops of bigger and better nuts and fruits. There are no full collections of these trees in botanical gardens or in arboreta across the world. Neither the finances nor the will are in place for their absolute protection.

Each plant species of the hedgerow has about forty species of insects on it. This is the biodiversity of the hedgerow and the insect species are predominantly beneficial. They in turn amplify other native life up to the songbirds and butterflies. Many small and larger mammals move into this area of plenty and the raptors float by too. This symphony of biodiversity also takes the annual monocrop of the farmer's field into its balance of predation and prey.

Trees copulate in copious amounts. Plants have had the good fortune of being outside of the rigors of religion, so they do as they please, when they please, and much more important, how they please. They are plants after all and everything goes in the plant kingdom. One example of this diversity of many that Diana cites is this: trees can divide up the family household into the sexes, where the female followers are designated a tree of their own. These are the female trees. Males are moved out into separate male or pollen-bearing trees. In this dioecious style of life, polygamy is seen in more numerous male trees. The female species is more elite and seen less often in the forest.

The sun performs a molecular miracle for the birds. In an ordinary average spring day the flight feathers of a bird become greasy. Dissolved in the grease is a precursor form of Vitamin D, a fat-soluble and essential vitamin. The energy in the sun's photons breaks a double bond in the precursor vitamin D, changing it into a full and functioning form of vitamin D itself. The bird then preens itself. In cleaning its

feathers the bird ingests its quota of vitamin D. This vital ingredient for egg laying sets down the best foundation for reproduction for a bird, a successful hatch.

The microscopic world of the leaf within the tree canopy acts like a fine-toothed comb for the air. Some trees have leaves with a downy undersurface composed of thousands of fine hairs, all only a few microns in size. These hairs are multiplied in the full canopy into billions of fine hairs. The particulate pollution of the air becomes caught mechanically like dandruff in this microscopic world of hairs. Sometimes the particles, which hold a charge, can get grounded on the tree. The leaf hairs numbering in billions clean the air of these tiny particles. These particles get swept down the trunk by rain and are detoxified by the hungry microbiota of the living soil.

The book really does make you think about trees on another level. It encourages us all to think about what we can do to sustain the trees around us even if they require work on our part.

The Global Forest: 40 Ways Trees Can Save Us is available for loan from the SSGC library. Reminder: Limit of 6 books checked out at a time. Overdue books are charged at \$1 per book per month.

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