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For this gardener, what's underground can't be ignored

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You'll never look at trees, shrubs, even annuals and vegetables again without thinking about what's below the surface after reading Robert Kourik's new book, "Roots Demystified" (Metamorphic Press, \$25, 165 pages).

Simply put, Kourik explains why the root of most gardening problems is, well, roots.

Who would have thought, for example, that a turnip's roots could insinuate themselves through 100 cubic feet of soil, that a cucumber taproot could grow an inch a day or that a year-old apple tree could produce as many as 17 million root hairs with a combined length of more than a mile?

Did you know that a 6-year-old asparagus plant develops a massive root system that can extend nearly 8 feet wide and 11 feet deep? Or that when you pull a carrot from the ground, you leave behind a complex system of root hairs that can go 7 feet deep and 4 feet wide?

Kourik takes readers from a root's beginning as a plant sprouts, how each type of root feeds the plant, and how they grow into the soil. It's a fascinating and sometimes humorous journey into the hidden side of plant growth. He also covers such topics as how to buy ball-and-burlap trees, what trees do well and which to avoid in a lawn, and how to succeed with fruit trees.

Kourik uncovers for readers the work of John Ernest Weaver (1884-1966), a professor of plant ecology at the University of Nebraska. Weaver excavated and literally mapped the roots of dozens of prairie plants and common vegetables as carefully and meticulously as an archaeologist unearthing precious prehistoric bones.

Kourik made detailed drawings of what he found, and he includes 25 of these drawings in his book. The drawings are as beautiful and fascinating as they are educational.

Weaver discovered, as did Kourik in his landscape maintenance work, that what's below the ground – the roots – does not exactly mirror what's above the ground. In fact, Kourik says, "about 90 percent of a tree's roots are to be found in the top 18 inches of soil beneath and around it."

Kourik goes on to say that most gardeners actually keep their trees imprisoned in a small portion of soil. "They keep the tree in bondage when they put the water, compost, fertilizer and mulch near the trunk because roots, in one sense, are lazy, and don't like to go anywhere else if they find a stash of food in one place."

The book is full of tips and advice on watering, mulching and selecting healthy plants.

After reading Kourik's book, I know I'll think about roots more often when working in the garden and will be especially careful when planting or repotting not to damage or disturb the roots any

more than necessary.

"Roots Demystified" is available at the Rudolf Steiner College Bookstore, 9200 Fair Oaks Blvd., Fair Oaks, or online at www.robert-kourik.com.

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