



TREES AND THEIR WORLD

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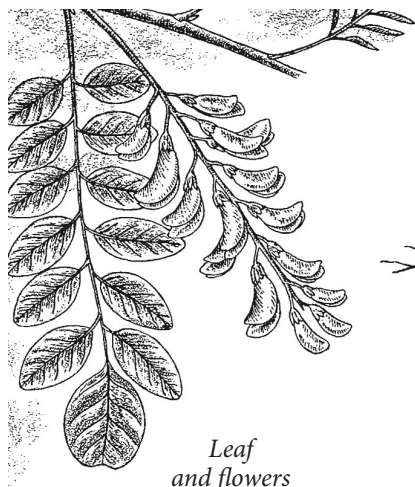
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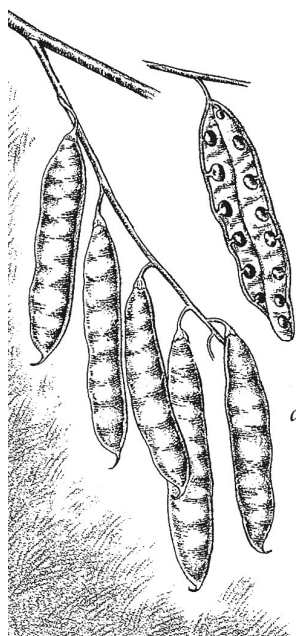
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*Leaf
and flowers*



*Seed pods
and their seeds*



A black locust shows what trees are.



TREES AND THEIR FAMILIES

A locust tree stood on a bare, snowy field. The tree had a straight trunk that grew upward 10 or 12 feet and then divided. The twigs and smallest branches looked smooth, but the bark on the trunk was thick and had cracked into coarse furrows and ridges. The furrows were reddish or yellowish brown, but the ridges were very dark. They showed why this kind of tree is known as the *black* locust.

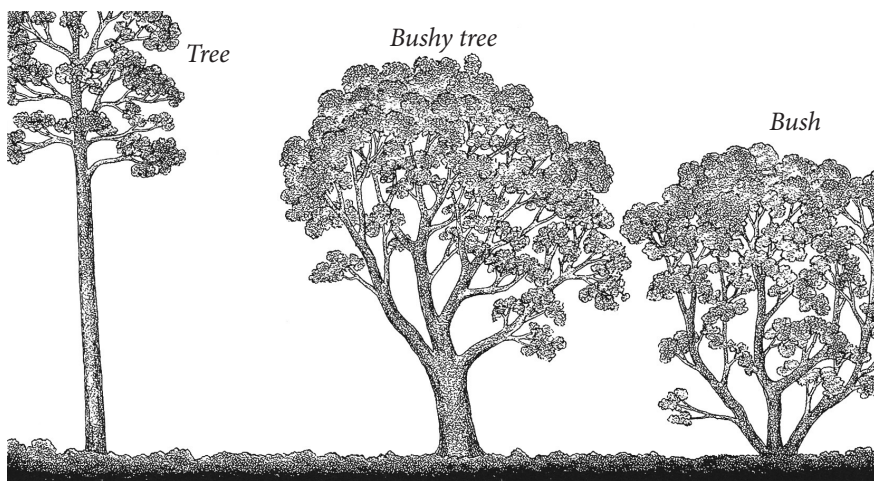
Although the bark on the locust twigs was smooth, sharp spines grew out of it. The twigs also bore clusters of dark brown pods filled with orange-colored seeds. Wind often rattled the seed pods or scraped them against each other.

The black locust seemed to be dead, for it had no leaves. Really, it was only resting during the months of the winter. When spring came, the tree's roots would get water from the ground. Then the inner part of the bark would begin to make wood, and buds on the twigs would grow into leaves. Soon other buds would develop into flowers with a sweet, honey-like odor. Some of the people who smelled the flowers would call the tree a "honey" locust. That name, however, really belongs to trees with smaller leaves, longer pods, and clusters of forked spines that grow on large branches and the trunk.

The leaf buds of most trees are easily seen, for they grow outside the bark. But black locust buds are hidden in it and do not show till they swell in the spring. Leaves that grow from the buds are yellowish green. They are also compound, or made up of several parts. Each leaf has a central stem, with four to eight leaflets on each side and one more at the tip. The whole compound leaf becomes 8 to 16 inches long.

On sunny days the leaflets spread out on both sides of the stem, but they droop, or hang downward, when the sun disappears. We sometimes say the leaves “go to sleep” after sunset and on dull, rainy days.

Black locusts bloom when the leaves are almost grown. The flowers are about an inch long and look like white pea blossoms. They grow along stems that hang near the ends of twigs. Honey locust flowers are smaller and greenish. They also hang from places where leaves grow, not from the ends of twigs.



These drawings show a typical tree with its tall trunk, a bushy tree, and a bush or shrub.

Black locusts grow wild on the Appalachian Mountains, from Pennsylvania to Georgia, and in a few other places. The homeland of honey locusts is much larger. It extends from Minnesota to central Louisiana, and from Virginia to central Kansas.

Black locusts have been planted in many places where they do not grow wild. People like their flowers and leaves, and pigs and cattle eat their seed pods. The roots form tangles that keep soil from washing away, and the trunks of young trees are cut into fence posts. The yellowish wood does not rot quickly in wet weather or when it is put into damp ground.



We use *plants* as a general name for weeds, grass, vines, and vegetables in gardens. The black locust is a plant, too, for it has leaves, stems, and seeds that grow into new trees.

Many seeds grow up, bloom, and die during one spring and summer. Others live almost two years, and many become much older than that. We call them *perennials*, or plants that live through the years.

All trees are perennials, for they have long lives. Trees also are *woody* perennials, for their trunks, branches, and twigs are hard. They can grow much larger and last much longer than stems that are pulpy and soft.

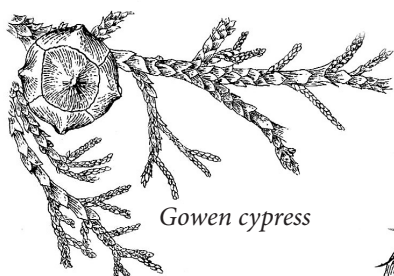
Bushes, which we often call shrubs, are also woody plants. So are long-lived, perennial vines. Many grapevines, for example, have woody stems three or four feet tall. Some grow taller than a man and are hundreds of years old.

We recognize vines because they climb or creep on the ground. But it is not so easy to tell a bush, or shrub, from a tree.

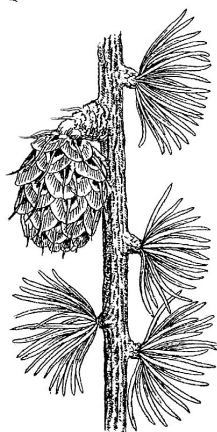
Some books say that bushes are less than 20 feet tall and have stems that branch out near the ground. None of the other stems are big enough to be called a trunk.

Trees are more than 20 feet tall, and they have trunks that do not divide near the ground. But some trees branch so much that they look bushy, and others may be either real trees or shrubs. The sassafras, for example, is a shrub on hills in northern New England, but it becomes a tree in the South. Some sassafras trees are 100 feet tall, and one that grew in New Jersey had a trunk almost five feet thick.

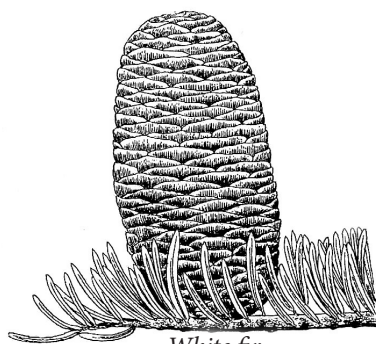
Four members of the pine family. All are conifers, but the Western larch is not an evergreen, since it sheds its needles in the fall.



Gowen cypress



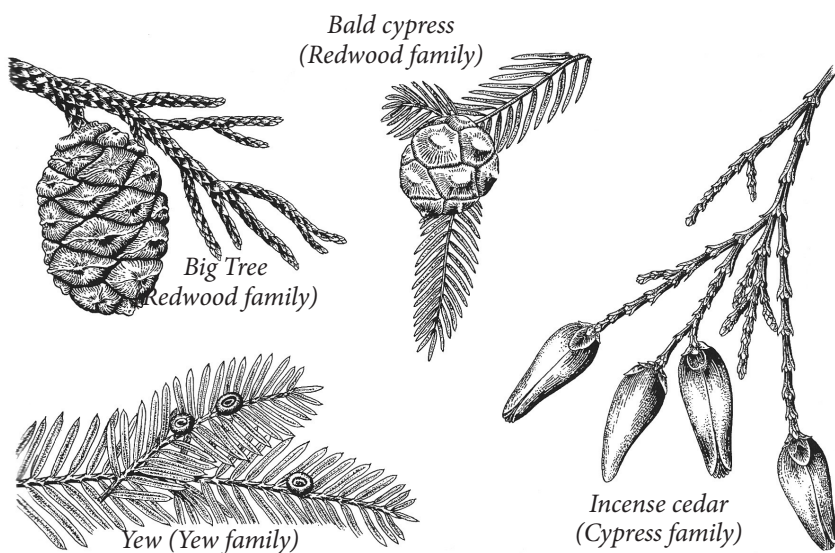
Western larch



White fir



White pine



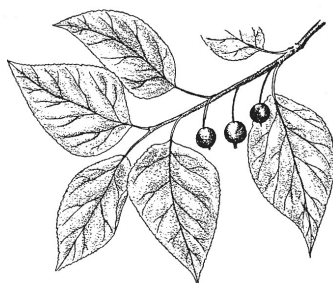
These four trees belong to families which are related to pines.

Trees belong to many kinds, or species, that have various sizes and shapes. Most fir and spruces, for example, grow so tall and straight that they look like green church steeples. Pines branch out and are not pointed at the top. Most elms resemble tall fans or vases, but California laurels are dome-shaped. Different species also have different leaves, as you can tell by looking at the trees in a park or woodland.

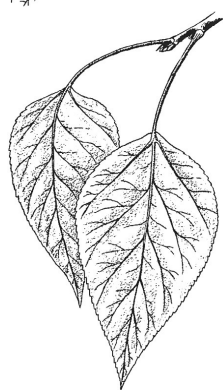
People who look alike are often related, or belong to one family. Trees belong to families, too, and their leaves, bark, flowers, and seeds tell us which kinds are related to which. Thus all pines have leaves so narrow that we call them needles, and their seeds are covered with cones. Pines plainly belong to one family, which also contains firs, spruces, hemlocks, and



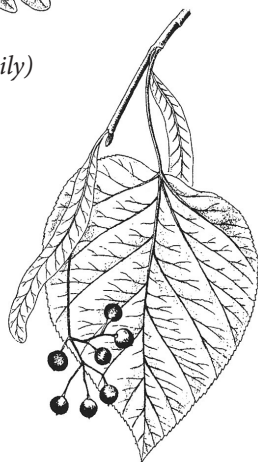
Bur oak
(Beech-oak family)



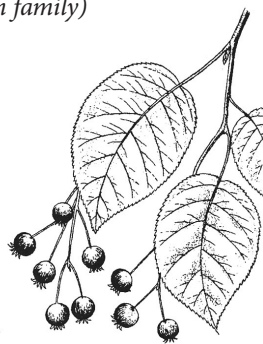
Hackberry
(Elm family)



Black cottonwood
(Willow family)



Basswood
(Linden family)

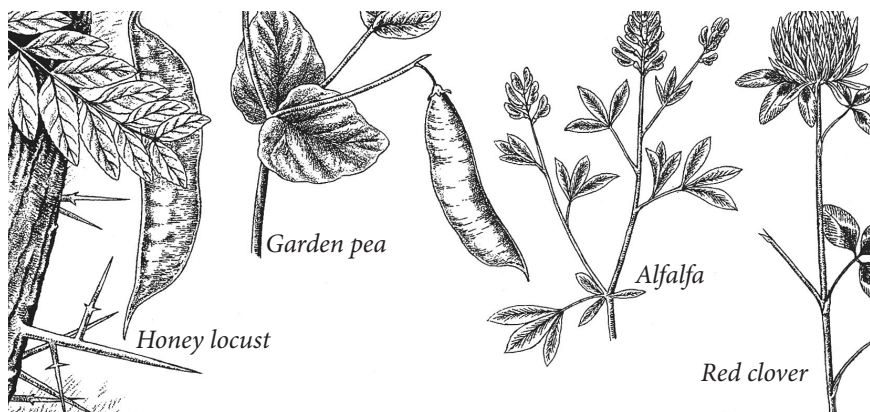


Serviceberry
(Rose family)

These broad-leaved trees belong to five different families.

tamaracks, or larches. These trees, in turn, are related to two families made up of yews, redwoods, cypresses, cedars, and junipers. We sometimes call all these trees evergreens, but *conifers* (which means “cone bearers”) is a better name.

We might think that all trees are related, since they are large and woody. But that would be a mistake. Although conifers belong together, their cones and narrow leaves show that they are very different from locusts, oaks, and other trees whose leaves are thin and broad. Even broad-leaved trees belong to



These members of the pea, or legume, family are related to black locusts.

different families. Oaks are not like locusts or maples, as we can tell by their seeds. Apple trees differ from elms, and basswoods are unlike hickories. Palms are still more different, for the veins in their leaves spread out from the stems instead of branching again and again. Palms are related to grass and lilies, but not to oaks, maples, or locusts.

Black locusts also have relatives that are much too small to be called trees. Locust leaves resemble pea leaves, the flowers look like pea blossoms, and the seeds and pods remind us of beans. We are not surprised to find that locusts belong to the family of peas and beans, or *legumes* (LEG-yoomz). This family also includes peanuts, clover, alfalfa, lupines, and wisteria vines, as well as acacias, palo verdes, and mesquite. Do you know any other plants that belong to this family?