in zero weather, but the passage of water from the roots up the trunk is retarded until Winter relaxes its hold. The largest roots anchor the tree to the soil and do but little else. The slender rootlets and the tips of the large roots collect all that part of the tree's food which comes from the ground.

Trees eat and drink through the leaves and the rootlets. While they breathe all the time, day and night, rain or shine, as steadily as we do, they feed only part of the time. They sleep in the night, during rainy weather and throughout the winter. The growing season is very short, ending by mid-summer. The Summer droughts cut off or diminish the supply of water. The leaves are battered and eaten by insects.

A long period of rest is essential that twigs may harden and the wood ripen. Careful preparation for Winter takes the place of further thickening of the trunk or lengthening of the limbs. The twigs and stems and roots must be stocked with food. The tree strives to take in all nutritious parts of each leaf before it casts it off. When Winter comes it generally finds the tree ready. The lenticels are sealed during the Winter to prevent the breathing away of the tree's moisture.

Each leaf is a laboratory, where minerals and gases, water and sunshine are made into nourishment for the living tissue, from which comes wood, cork, flower, fruit and a large number of gums, oils, essences and perfumes which have become indispensable in art, manufacture and medicine.

The leaves take charge of the nourishment of the tree as soon as they open. They prepare food only in the daytime and in the presence of the sunlight; the more warmth the more work. They make a complex substance known as starch, containing carbon, oxygen and hydrogen. The tree finds its growing season inaugurated when it is supplied with foliage. Each leaf is a builder. A large sugar maple is estimated to have 432,000 leaves, presenting to the sunlight an area of half an acre.

The closing of the leaflets at night reduces evaporation, which is a cooling process and enables the tree to save much of its heat. The cause of the brilliant foliage in the Autumn is the chemical decomposition of the useless mineral subtance in the leaves when the living substance is withdrawn. No two of the untold millions of leaves in the forest are exactly alike.

The wood of the tree is not alive, neither is the bark. But between the bark and the wood is a peculiar cellular substance known as cambium, which is the living part of the tree, from which new tissues are developed. This ministry, by the leaves, is what lengthens the branches and roots and adds to the tree's diameter. The upward mounting of the sap remains one of the unexplored mysteries of plant life.