Atmospheric pressure can support a column of water up to 10 meters high.

But plants can move water much higher, the sequoia tree can pump water to its very top, more than 100 meters above the ground.

Until the end of the nineteenth century, the movement of water's in trees and other tall plants was a mystery.

Some botanists hypothesized that the living cells of plants acted as pumps, but many experiments demonstrated that the stems of plants in which all the cells are killed can still move water to appreciable heights.

Other explanations for the movement of water in plants have been based on root pressure, a push on the water from the roots at the bottom of the plant.

But root pressure is not nearly great enough to push water to the tops of tall trees, Furthermore, the conifers, which are among the tallest trees have unusually low root pressures.

If water is not pumped to the top of a tall tree, and if it is not pushed, to the top of a tall tree, then we may ask.

How does it get there? According to the currently accepted cohesion-tension theory, water is pulled there.

The pull on a rising column of water in a plant results from the evaporation of water at the top of the plant.

As water is lost from the surface of the leaves, a negative pressure or tension is created.

The evaporated water is replaced by water moving from inside the plant in unbroken columns that extend from the top of a plant to its roots.

The same forces that create surface tension in any sample of water are responsible for the maintenance of these unbroken columns of water.

When water is confined in tubes of very small bore, the forces of cohesion (the attraction between water molecules) are so great that the strength of a column of water compares with the strength of a steel wire of the same diameter.

This cohesive strength permits columns of water to be pulled to great heights without being broken.