

The roots of plants grow continuously from the end. The older part remains stationary in position and only increases in size. This is convenient, as it could not move easily in the ground. Then, too, it would be difficult for the plant or tree to keep its stability if the roots were changing their position.

The stem grows by successive joints; the old joint continues to grow after others have formed beyond or above it; the whole moving upward together, as its position in the air enables it freely to do.

Each part of the plant has its peculiar function necessary for the well being of the whole organism. The functions of the roots are to give a fixed support by going deeply into the ground and at the same time to take up moisture and mineral substances from the earth around them. These are sent upward in the sap to supply the plant with these essentials to its growth.

The sap is the blood of plants, and has a motion which is its circulation. It is the carrier connecting the parts and conveying materials to and from them.

The leaves breathe for the plant. They are its lungs. They take the water and other mineral substances from the atmosphere (principally carbonic acid gas, $C O_2$, and ammonia, $N H_3$), and by the aid of solar light the chlorophyll builds these substances up into starches, sugars, fats, etc. These results of their work are added to the plant as it grows larger or are stored away in the seed pods to nourish the young plant when it is too undeveloped to get food from its surroundings.

The function of the flower is by the union of its elements to form a seed that shall grow under proper conditions into a new plant similar to the parent. It is necessary that the pollen from stamens shall fall upon the pistil in order that the seed shall germinate.

The functions of the seeds are to sprout and nourish the young plant until it has strength and form to enable it to get its nourishment from without.

This store for its young is generally the part or a part of the plant that is valued by man and animals for food. It is the seeds of the cereal grains rice, peas, beans, nuts, etc., that we value most highly as food products.

355 West 14th St., New York.

NOTE—This article is based on a paper of the same title read before the New York Agassiz Assembly at its regular Quarterly Meeting held in Friends' Seminary, 3rd mo. 31st, 1890.

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