Journal of Biomedical Sciences
Research Article Peer-review, Open Access

Structure of Trees

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Abstract

Trees are morphologically diverse and consist of parts such as roots, stems, branches, leaves, etc. They differ in height, width of branches, structure of roots, leaves and flowers. They are divided into the following categories: first-sized trees, second-sized trees, third-sized trees, low trees, tall shrubs, medium-sized shrubs, and short shrubs.

Key words: Flower, seed, fruit, root, stem, tree, morphological, willow, tree, dome, low, high, meter, life form, morphological, variety, bush, trunk, branch, branch.

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Trees and shrubs in the period of evolutionary development and in different natural conditions, their various life forms have appeared. According to morphological characters, the variety of forms can be very high. The local spruce species growing in Uzbekistan also have in nature the color, length, and shape of the branches, which are upright, spherical, and conical.

It is accepted to divide tree plants into the following categories:

- trees of the first size — trees taller than 25 meters (pine, tilogoch, black pine);
- trees of the second size — trees with a height of 15-25 meters (white pine, poplar, maple, alder);
- trees of the third size — trees with a height of 7-15 meters (maple, oak, birch, white acacia);
- low trees — trees with a height of 5-7 meters (pistachio, willow, shumtol, juniper);
- tall bushes - 2.5-5 meters high (small, coral);
- medium-sized bushes - 2.5 meters high (namatak, zirk, irgay, sylvi);
- low bushes 0.5-1 meters — bushes grow up to 0.5 meters high.

A lot of trees and **the main type** is single-stemmed trees. They have a conspicuous and well-developed single body, which branches at a certain height and forms branches.

The second most common type of tree plants are multi-stemmed trees, their height is 10-20 meters, and their diameter reaches 0.3-10.6 meters. This type of tree differs from single-trunk trees in that their main trunk stops growing after a few decades and does not form a tall and large tree trunk.

Monocot and multicot tree forms are passed from generation to generation as hereditary traits, but in some cases they can change under the influence of external conditions. For example, the copies of many trees (pine, poplar, oak) growing in the forest and in the open areas differ from each other: the trunks of the trees growing in the open areas are large, strongly branched on the sides, and yi will not be very tall, on the contrary, the trees growing in the forest will grow strong and have a tall and straight developed body due to internal competition for survival. One of the important biological features of monocot and polycot trees is that they are viable and long-lived in relation to the branches of their bodies, so the life forms they create are preserved throughout their life.

The third type includes shrubs, which grow from 1 meter to 4-5 meters in height and are prone to vegetative reproduction.

The fourth type is bushes. Their height is around 20-50 cm, and they differ in their slow growth and short life cycle.

Root - At the time of primary seed germination, the shoot is at the base of the root and grows underground. The main function of the roots is absorption, strengthening of plants in the soil, accumulation of nutrients, synthesis of hormones, amino acids, alkaloids for the growth of the surface part of the earth and ensuring the movement of the connective tissue, contact with microorganisms and fungi living in the soil. 'lish and others include. The tip of the roots is divided into 4 zones: 1) division zone surrounded by the root sheath - its cells are meristematic and constantly divide; 2) elongation zone - in this zone, cells are strongly elongated, but cells do not divide; 3) absorbent zone - in this zone rhizoderm cells form small hairs and absorb water in the soil and mineral salts dissolved in water; 4) conduction zone - water and mineral substances absorbed through this zone reach other organs of plants with the help of conduction tubes.

Metamorphosis of roots - Roots have different forms depending on their function. Such roots are called metamorphosed roots. Examples of these are carrots, radishes, beets, and radishes. The roots of some plants live symbiotically with fungi in the soil, that is, the fungi live around the root tip from the outside.

Pulling roots - these roots are very firmly attached to the soil and pull the plant into the soil (onions, tulips, gladiolus, etc.).

Aerial roots are found in tropical epiphytes belonging to orchids, aroids, bromeliads. These roots are adapted to absorb rain and dew water while hanging in the air.

Respiration roots are well developed in tropical trees that grow on the muddy shores of oceans. The root system is very complex is an example of swamp cypress. At the ends of these roots, there are holes connected with aerenchyma, and air passes through these tissues to the underwater organs.

Columnar roots are well developed in the banyan tree of India, appearing as adventitious roots on the horizontal branches of trees and hanging down into the soil. These roots act as a support in strong growing trees.

Branch - helps to hold the above-ground branches of trees and shrubs. As a result of the growth process of the seedling, young lateral branches grow in it and they also begin to branch, as a result of such incessant branching, the branches of the tree are formed. The stem consists of three parts, the joint of the leaf, the joint between two joints, the angle formed between the leaf and the stem at the joint of the stem, and the leaf axil. is called Buds are located at the highest point of the branch and in the axils of the leaves. According to the location on the branch, the buds are divided into tip and side buds. The branch formed from the top bud has the characteristic of growing tall. Lateral shoots form lateral branches and branches are formed. As a result, branches of order I, II, III, etc. appear.

and function of the apical meristem of shoots . At the tip of the bud, the tip meristem of the branch is located and is called apcx. All organs and primary tissues of the branch are formed from it.

Arrangement of leaves on a branch. The arrangement of leaves in the main axis of the branches is called phyllotaxis. The leaves are spiral (alternately) at the joints of the stem (stem) (vine, apple, cotton, etc.), opposite - two leaves at one joint

A leaf is an organ formed as a result of adaptation to conditions when plants begin to live on land. It develops in the initial bumps of the stem. A leaf consists of a leaf blade (plate), leaf band, leaf blade and leaflets. But all these parts may not always be present in the leaf. But the leaf plate is one of the permanent parts.

The leaf blade has a system of bundles of conducting tubes that are branched many times. They are called leaf **veins**. Leaf veins can be open or closed. In open vasculature, the ends of the veins remain open without connecting to each other near the edge of the leaf. If the ends of the veins split into two near the edge of the leaf, it is called dichotomous veining. In the case of a closed type of vascularization, the bundle of conducting tubes is feather-like and claw-like, and the ends can be united. Monocotyledonous plants are characterized by parallel and arcuate vascularization types.

Simple and complex leaves . If a leaf consists of one leaf and a band, it is called a simple leaf, and if the leaves are joined to a common leaf band with bands, it is called a compound leaf. Compound leaves can be double or triple compound. A compound leaf is derived from a simple leaf, for example in maples and hemlocks, leaves are simple when young and become complex over time.

The leaves are curly (corn), thorny (cactus), phyllodia (Australian acacia), lanceolate (juniper) and can change shape. The change in the shape of the leaves is due to their adaptation to less evaporation of water (in cacti). The leaves of some plants growing in deserts and hills have shrunk to thin leaves, and the plant appears to be leafless (red).

The stem is the axial part of the branch. The main axis of the branch is the tip It grows and expands at the expense of the lateral meristem, and at the expense of the cambium . Stems are mainly cylindrical, triangular, rectangular, polygonal, in which tissues are located in radial symmetry. The main function of the stem is permeability and support. It connects the leaf and the root. Nutrients are stored in the stems of most plants. Young stems with chlorenchyma at the base of the epidermis take part in the process of photosynthesis.

The structure of the stems of monocotyledonous plants . One of the distinctive features of the

anatomical structure of the stems of monocotyledonous plants is the absence of cambium tissue. In them, bundles of conducting tubes are of the closed type without cambium, formed from procambium and secondary tissues do not appear. The veins of these leaves enter the stem of plants with developed leaves without cambium and spread to the entire cross-section of the stem.

The structure of the stems of dicotyledonous plants. Stems with a secondary structure are surrounded by secondary and tertiary covering tissue periderm and pods from the outside. At its base, together with elements of lube, primary and secondary bark, cambium, thick wood and core are located.

Structure of wood. The composition of wood: living cells, except conducting tubes, tracheids and wood fibers (libriform) , wood parenchyma, core rays, fibrous tracheid, divided into transverse (from the middle part into several) fibers, substitute fibers are included.

Bud. A bud is an initial stem. It consists of alternate primary leaves, stem, tip and leaf composed of lateral shoots in the axilla. During the formation of branches from the bud, the branches are formed by the constant division of the third bud cone, the emergence of young leaves from it one after the other, growth, and the lengthening of the joint intervals. Branches that grow from a bud during one growing season are called annual branches.

The structure of the flower. The flower is a reproductive organ formed from the mcristem at the tip of the stem and the axil of the leaf. A flower has an anther, which houses anthers, pollinators, and seeds. A seed consists of one or more seed leaves (carpels). It consists of a node, a column and a spout. After the flower is pollinated and fertilized, the node turns into a fruit, and the bud turns into a seed. Flower tips or flowers emerge from the axils of the petals. They will be busy and unoccupied. Flowers are straight - actinomorphic, curved - zygomorphic or asymmetric. Flowers depending on the presence, absence and structure of the saffron: 1) homochlamyd - the safflower consists of simple sepals or corollas of the same color (tulip, onion, etc.); 2) heterochlamydia - saffron is complex, consists of calyx and petals (corn, namatak); 3) akhlamid - bare without safflower (willow, shumtol).

Flowers. Branches that produce flowers in angiosperms and thus change their shape are called inflorescences. Inflorescences are simple and complex depending on the branching. In the main axis of simple inflorescences, flowers are located singly (zubturum), and in the main axis of complex inflorescences, simple inflorescences are located.

Fruit is one of the main generative organs of angiosperms. After fertilization of the mother cell, it develops in the nodule and forms a seed . In addition to the seed, the tuber and the tuber are involved in the development of the fruit. Usually, the fruit is formed on the walls of the node, and it is dry and hard (nut shell), or seret (plum, cherry). Morphologically, the fruits have a different shape: simple, false fruit, clustered fruit or small fruit, cluster fruit. A normal fruit developed from a single seed present in a flower. Aggregate fruits or fruitlets are formed by the development of some fruits from each of several fertile seeds present in the flower. A false fruit is formed by the growth of the lower node of the flower and the stamen and sepal.

A seed is a reproductive organ of a plant, which usually develops from a seed pod after fertilization of an egg cell. It is located inside the fruit in closed seeds. A seed consists of a seed coat, a bran, and a reserve of various nutrients. In angiosperms, the seed is laid open in the capsule. For example, this is the case with pine, spruce, tilogoch, and white pine. Just as trees and shrubs are different, their seeds have different shapes, sizes, colors, and germination abilities. For example, the seeds of trees and shrubs such as willow and poplar are very small, in contrast to walnuts, black and manchurian walnuts, false chestnuts, oaks and hazelnuts. the fruits are large.

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