

Plant Taxonomy Practical

Lab -2-

Vegetative characters

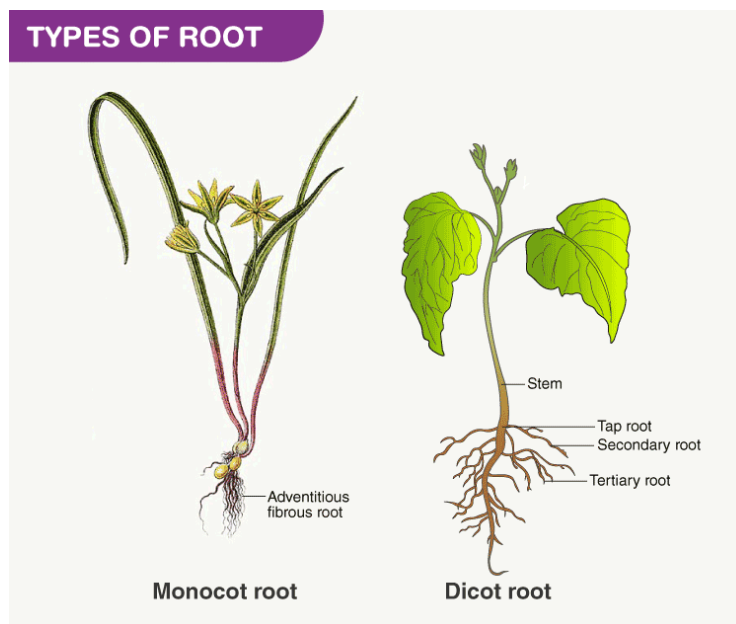
Root: that part of a vascular plant normally underground. Its primary functions are anchorage of the plant, absorption of water and dissolved minerals and conduction of these to the stem, and storage of reserve foods.

- ❖ all plants have their roots underground; some plants have their roots growing above the ground. These are called aerial roots. Few examples of plants with the aerial roots are–Bonsai, Banyan Tree, Mangroves, etc.

Root system

1- Tap Root (in dicot).

2- Adventitious root (in monocot)

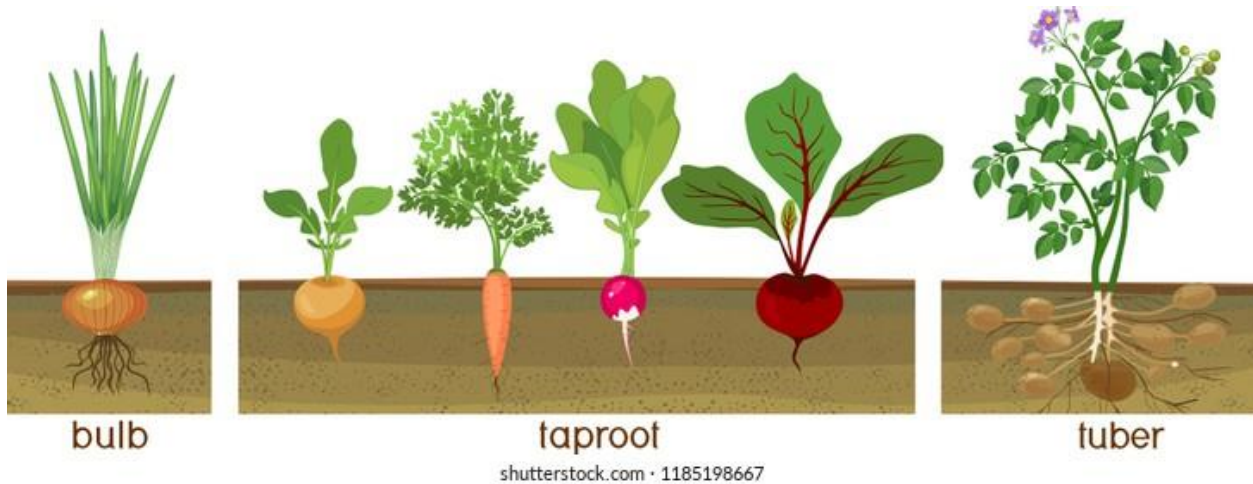


Types of Tap root

1-Normal

2-Fleshy

- **Conical** (tapered, like carrots),
- **Fusiform** (swollen in the middle, like Raphanus),
- **Globoid** (spherical, like Beta).



Types of Adventitious root

1- Fibrous Adventitious root (ex; Triticum).

2- Fleshy Adventitious Roots

- **Tuberous Roots** (ex; Sweet Potato).
- **Fasciculated Fleshy Roots** (ex; Dahlia).
- **Palmate Roots** (ex; Orchis).
- **Nodulose Roots** (ex; Curcuma).



Fibrous roots



Tuberous Roots



Fasciculated Roots



Palmate Roots



Nodulose Roots

stem: an ascending part or an axis of the vascular plant that bears branches, leaves, fruits and flowers.

Types of Stem

1- Aerial stems

- Erect ex; *Phoenix dactylafera*
- Ascending ex ; *Nerium oleander*
- Weak ex ; *Convolvulus*

2- Subaerial Stems ex ; runners in strawberries, stolons).

3- Subterranean Stems

- Rhizome ex ; *Cana indica*, *ginger*
- Bulbs ex ; *Allium cepa*
- Tuber ex ; *Solanum*
- Corms ex; *Cyperus*

4- Aquatic Stems

Common Stem Modifications

- **Thorns :** Hard, sharp-pointed, modified branches for defense (e.g., bougainvillea).
- **Tendrils:** Slender, twisting structures that help plants climb.
- **Bulbils** – It is a modified axillary bud, it stores food and becomes fleshy. It detaches from the mother plant and develops into a new plant.Examples:
Dioscorea
- **Cladode and Phylloclade** – These are modified stems, which are green and perform photosynthesis. They become fleshy. Leaves are reduced to spines. These are commonly found in xerophytic plants to reduce water loss.Examples:
Opuntia, Euphorbia, Asparagus

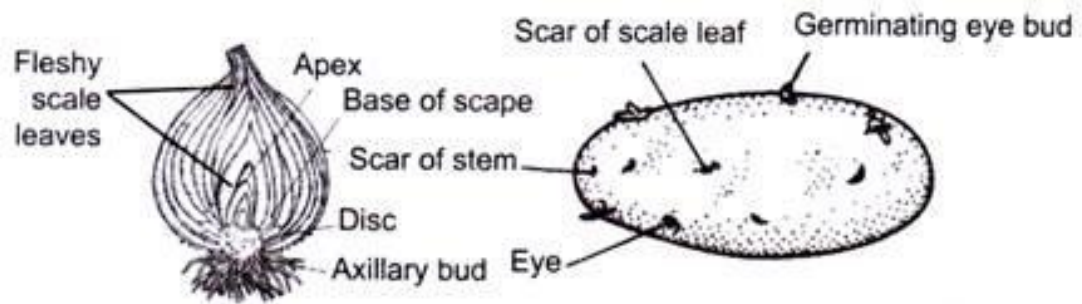


Fig. 4.6. (i) Bulb of Onion

Fig. 4.6. (ii) Tuber of Potato

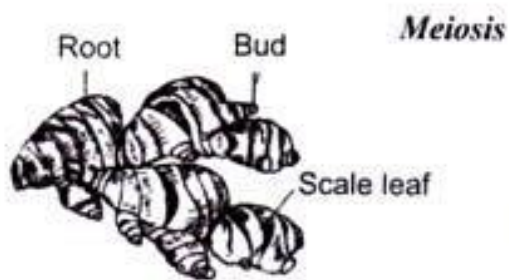


Fig. 4.6. (iii) Rhizome of Ginger

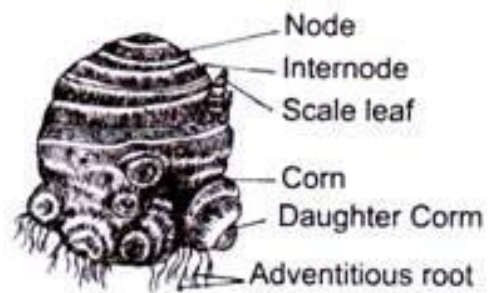


Fig. 4.6. (iv) Corm of Colocasia



Bulbils