Obj. – Morphology of leaf and their modification

Structure and Function: Leaves are thin, flat organs responsible for photosynthesis and transpiration in the plant.

Parts of a Leaf

1. Leaf Base: This is the part where a leaf attaches to the stem.
2. Petiole: Petiole is the long, thin, stalk that links the leaf blade to the stem.
3. Lamina: Also known as leaf blade. It is the green, flat surface of the leaves. It consists of a small branched vein and veinlets. The vein that runs along the middle of the lamina is called midrib.

Modification of Leaves

leaves are specialised to perform photosynthesis. In addition, they also have other significant roles to play, such as support, storage of food, defence, etc.

Storage Leaves

The xerophytic plants and plants belonging to the Crassulaceae family have thick and succulent leaves that store water in their tissues.

Leaf Tendrils

Leaf tendrils exist in plants with weak stems. The leaves get modified into thread-like structures called tendrils. These tendrils climb a nearby stick or wall and provide support to the plant. Ex. *Lathyrus aphaca, Pisum sativum*

Leaf Spines

A few plants have their leaves modified into needle-like structures known as spines. The spines act as defensive structures. They also reduce water loss due to transpiration. Ex. *Opuntia*

Leaflet Hooks

In some plants, the terminal leaflets of leaf get modified into hook-like structures that help them in climbing. Eg., *Bignonia unguiscati*.

Leaf Roots

In a few plants, one of the leaves present at the nodes gets modified into adventitious roots which helps them to float over the water surface. Eg., Salvinia

Insectivorous Leaves

Few plants require nitrogen for their development. In such plants, the leaves are modified to catch and digest insects. Eg.

Leaf Pitcher- In a few plants like Nepenthes, the leaf-lamina is modified into a pitcher-like structure. The insect is digested into the inner walls of the pitcher which secretes a digestive fluid into the pitcher cavity.

Leaf Bladder- In such plants, the segments of the leaves are modified into bladders. These plants are found in water. The inner wall is provided with digestive glands which helps in digesting the trapped insect. For eg., Utricularia

Drosera– The lamina possesses numerous hair with a sticky globule at its tip containing digestive enzymes. The moment an insect sits on the lamina, the hair covers the insect completely.

Parts of a Leaf