Technical description of Angiosperm Plant

The natural abode or locality of plant, i.e., whether cultivated as an ornamental plant, a food crop or occurs in a wild state.

HABIT

Herb:Plant with no persistent parts above ground, as distinct from shrubs and trees. e.g.. *Ranunculus* of Ranunculaceae.

Shrub. Perennial woody plant, typically with several stems arising from or near the ground, e.g. *Capparis* of Capparidaceae.

Tree. A perennial woody plant with a single trunk, e.g., *Melia* of Meliaceae.

Annual. Plant that completes its life-cycle, from seed germination to seed production, followed by death within a single season, e.g., *Brassica* of Cruciferae.

Biennial. Plant that continues its growth from year to year. In herbaceous perennials serial parts die away in autumn, replaced by new shoots in the following year from underground structures, e.g., *Delphinium*; in woody perennials, permanent woody stems above ground from starting point for each new year's growth, a characteristic that enables some of them to reach a large size, e.g.. shrubs and trees.

Parasite. Plant living in or on another plant (its host) from which it obtains food, e.g., *Cuscuta* of Convolvulaceae.

Epiphyte. Plant attached to another plant, not growing parasitically upon it but merely using it for support, e.g..*Vanda* (an orchid) of Orchidaceae.

Mesophyte. Plant growing under average conditions of water supply.
Hydrophyte. Plant whose habitat is water or very wet places, e.g.. *Ranunculus aquatilis* of Ranunculaceae*; Neptunia oleracea* of Mimosoideae.

Xerophyte. Plant of dry habitat abl to endure conditions of prolong drought, e.g.. *Capparis decidua* Capparidaceae.

Saprophyte. Plant which obtain organic matter in solution from dead and decaying tissues of plants (or animals) e.g., *Monotropa.*

Root. That part of vascular plants that usually grows downwards into the soil, anchoring plant and absorbing water and nutrient salts.

Tap. Root system with a prominent main root, directed vertically downward and bearing smaller lateral roots, eg most of dicots; *Cajanus* of Papilionate

Adventitious. Root developing from part of plant other than roots, e.g., from stem or leaf cutting; of buds, developing from part of plant other than in axil of leaf, e.g., from root, most of monocots.

Fibrous. A fibrous root system consists of a tuft of adventitious roots of more or less equal diameter, arising from stem base or hypocotyl and bearing smaller lateral roots, e.g., wheat, strawberry.

Prop. Hanging aerial roots of *Ficus.*

Stilt. Such roots arise from the nodes of the stem above the soil, e.g., *Saccharum*.

Aerial. Hanging aerial roots, e.g., *Orchids.*

Climbing. The roots that help in climbing of plants, e.g., *Tecoma, Piper, Pothos.*

Respiratory. Spongy roots, e.g., *Jussiaea.*

Pneumatophores. Special root branch produced in large numbers by some vascular plants growing in water in tidal swamps, e.g., Mangrove: grows erect, projecting into the air above and contains well developed intercellular system of air spaces in communication with atmosphere through pores on aerial portion.

Tuberous. Irregularly swollen roots laden with starch, e.g., *Ipomoea batatas* of Convolvulaceae.

Parasitic. The sucking roots of parasites, e.g., *Cuscuta. Dendrophthoe Viscum, Orobanche.*

Epiphytic. Hanging aerial roots of Orchids.

Assimilatory. The aerial roots with chlorophyll, e.g., *Tinospora.*

Aquatic. The roots found in water plant. They do not possess root caps and root hairs, e.g., *Pistia.*

Conical. Cone like fleshy roots. e.g., Carrot.

Fusiform. e.g., fleshy root of radish (*Raphanus sativus* of Cruciferae).

Fasciculated. Clusters of fleshy roots, e.g.. *Asparagus.*

Napiform. e.g.. fleshy root of turnip.

Nodulated. The nodules of the roots contain bacteria, e.g., Leguminous roots: *Cicer, Arachis, Trifolium.*

Beaded or Moniliform. The roots possessing beaded structures, e.g., *Vitis.*
Annulated. When the root has a series of ring-like swellings on its body, e.g.. *Ipecacuanha*.
Nodulose. When the slender root becomes suddenly swollen near the apex. e g.. *Curcuma amada* (Am-haldi).

STEM

Stem. Normally aerial part of axis of vascular plants, bearing leaves and buds at definite positions (nodes) and reproductive structures, e.g.. flowers.

Erect. Rigid, strong and upright stem. Prostrate. Trailing stem lying flat on the ground, e.g., *Portulaca.*

Twiner. Long, slender and branched stem climbing by twining its body round the support, e.g.. *Cuscuta.*

Climbers. A weak stem attaching itself to any neighbouring support by means of special structures such as rootlets, hooks. leaf tendrils, stem tendrils, stipular tendrils. etc.

Rhizome. Underground stem, bearing buds in axils of reduced scale-like leaves; saving as means of perennation vegetative propagation, e.g., *Zinger, Mentha.*

Bulb. Modified shoot consisting of very much shortened stem enclosed by fleshy, scale leaves, e.g., *Allium cepa.*

Corm. Swollen stem base containing food material and bearing buds in the axils of scale like remains of leaves of previous season's growth, eg. *Colocasia, Amorphophallus, Gladiolus.*

Tuber. Swollen end of underground stem bearing buds in axils of scale-like rudimentary leaves (stem tuber), e.g., *potato.*

Offset. A horizontal, short, more or less apex a tuft of leaves above and a cluster of thickened, prostrate branch producing at the small roots beneath, e.g., *Pistia.*

Stolon. Horizontally growing stem that roots at nodes, e.g, strawberry runner, *Colocasia.*

Runner. Stolon that roots at tip forming new plant that eventually is freed from connection with parent by decay of runner, e.g., *Oxalis.*

Sucker. A creeping stein but growing obliquely upwards directly giving rise to a leafy shoot e.g., *Chrysanthemum.*

Phylloclade. Modified stem having appearance and function of a leaf, e.g. *Ruscus, Cocoloba.*

Cladode. A phylloclade of single internode, e.g., *Asparagus.*

Branched. Stem possessing branches, e.g., Neem tree.

Unbranched. Stem having no branches, eg.. Palm.

Herbaceous. Having the characters of a herb, e.g.. *Ranunculus.*
Woody. Having the characters of a shrub and tree, eg., *Capparis, Melia.*
Solid. Interior portion of the stem is filled up with matter.
Fistular. A stem having hollow interior, e.g., wheat, bamboo.
Cylinderical (terete). Circular stem as seen in T.S.

Angular. A stem shows many angles in T.S., eg., *Cucurbita.*

Flattened. Flat stem in T.S..

Hairy. Stem possessing hairs on its surface.

Glabrous. Smooth stem.

Waxy. Stem having wax coating, e.g., Calotropis.

Spiny. Stem having spines.

Colour. Whether green, grey, etc.

LEAF

Radical. Proceeding from or near the root, e.g., Onion.

Cauline. Pertaining to the stem, e.g., Palms.

Cauline and ramal. Pertaining to the main stem as well as its branches, e.g., Mango.

Alternate. A single leaf arising at each node, eg, *Hibiscus rosa-sinensis.*

Opposite. On different sides of the axis with the bases at the same level.

Opposite decusate. In pairs at right angles to one another, eg, *Calotropis.*

Opposite superposed. A pair of leaves that stands directly over the lower pair in the same plant, e.g., *Guava.*

Whorled. More than two leaves arranged in a circle round an axis, e.g.. *Spergula*.
Petiolate. The leaf blade is situated on the petiole.

Sessile. Without a petiole or stalk.

Sub-sessile. Having short petiole.

Stipulate. With stipules, e.g., rose.

Extipulate. Having no stipules, eg, *Ipomoea.*

Stipules. An appendage of the leaf. Normally two stipules are developed at base of a leaf petiole, they may be leafy (foliacous), e.g., *Lathyrus;* free lateral, eg., China rose; adnate, e.g.. rose; interpetiolar, e.g., *Ixora*: *Spergula*, spiny, e.g., *Acacia*; e.g., *smilax.*

References

1.Sharma, M. P. (2014). Diversity of Seed Plants and Their Systematics.
2.Pandey, B.P. (2008).Course :I Diversity of Seed Plants and their Systematics
Course:II Structure, Development and reproduction in flowering plants.