

**Ministry of Higher Education and Scientific
Research
University of Baghdad
College of Science
Department of Biology**



Plant Taxonomy **مادة التصنيف الحياتي النبات العملي**

المرحلة الثانية/ الدراساتين الصباحية والمسائية
الفصل الدراسي الثاني

كادر مادة تصنيف النبات

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Stem : the main axis of plant ,bearing nodes, leaves ,buds and flowers .

Arial stem : stem occurring above ground or water .

Subterranean stem : stem occurring below the surface of the ground .

Herbaceous stem : stem With characteristics of an herbs , not woody.

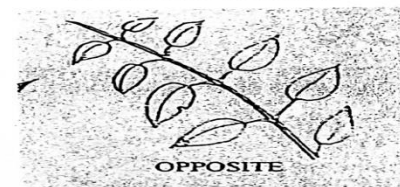
Leaf: An expanded , usually photosynthetic organ of a plant .

Phyllotaxy : the arrangement of the leaves on the axis .

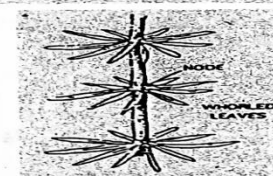
Alternate: arrangement of the leaves placed singly at each nod on the axis .



Opposite : : arrangement of tow leaves placed at one nod on opposite side on the axis .



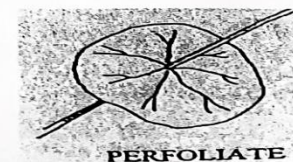
Whorled : : arrangement of three or more leaves placed on one nod in whorls on the axis .



Ligule : A strap-shaped organ or body , projection from the top of the sheath in grasses leaves .



Perfoliate: Leaf with margins entirely surrounding the stem .



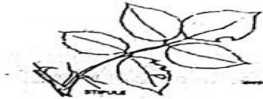
Sessile leaf : attached directly to the stem without petiole .

2"



Stipule : A basal appendage of petiole . it have many type :-

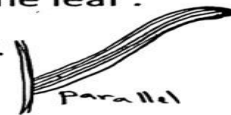
Leafy , Spiny , Adnate , Scaly ,and membranous .



Venation : the arrangement of the veins .

Parallel v. : veins arranged parallel to each other on the leaf .

Reticulate v. : veins arranged in the form of a network.

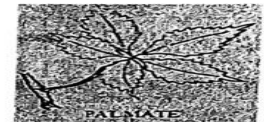


Compound leaf : a leaf separated in to two or more distinct leaflets .

Compound pinnately : the leaflets arranged on opposite sides of an elongated axis .



Compound palmately : the leaflets arising from a common point , like the fingers of a hand .



Compound trifoliate : leaf with three leaflets .



Leaf indumentums: any covering , such as hairs , wool, scales , etc.

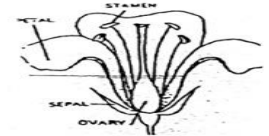
Stellate hair : star- shape , hairs with several to many branches radiating from the base.

Tomentose : with a covering of short , matted or tangled , soft , wooly hairs .

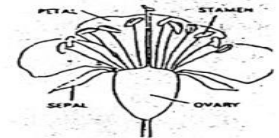


The flower : an axis bearing stamen , pistil , calyx , and corolla/.

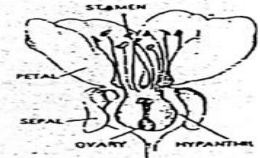
Hypogynous f. : with stamens , petals , and sepals attached below the ovary , the ovary superior to the other floral parts



Epigynous f. : with stamens , petals , and sepals attached to the top of the ovary , the ovary inferior to the other floral parts.



Perigynous f. : with stamens , petals , and sepals born on a calyx tube (hypanthium) surrounding , but not actually attached to .



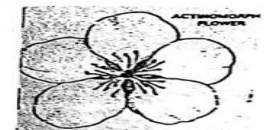
Complete F. : flower with perianth floral parts (Calyx , corolla) and fertile floral parts (Stamens , pistil) .

Incomplete F. : lacking one or more of the parts of perianth , and fertile .

Perfect F: with both male and female reproductive organs (Stamen , pistil) .

Imperfect F: lacking one of reproductive organ .

Actinomorphic F: said of flower divisible in to equal halves in more than one plan .



Zygomorphic F: said of flower divisible in to equal halves in one plane only .



Tepal: A segment or unit of those perianths not clearly differentiated in to typical corolla and calyx .

Polysepalous : A calyx of separate sepal .

Polypetalous : A corolla of separate petal .

Gamosepalous : A calyx with sepals united , at least partially .

Gamopetalous : A corolla with petals united , at least partially .

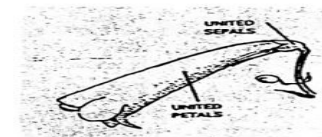
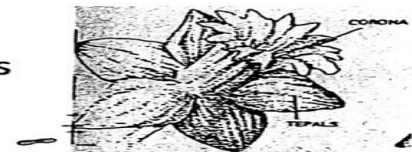
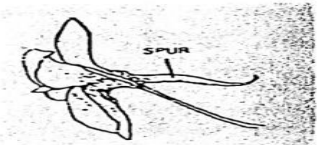
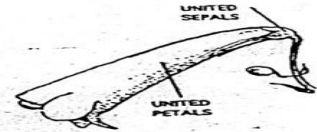
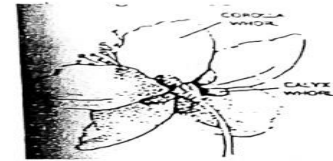
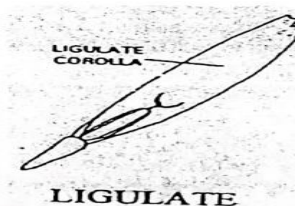
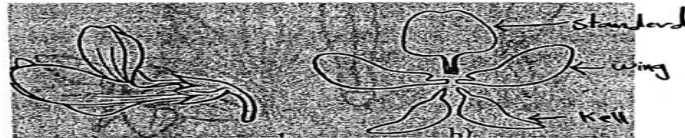
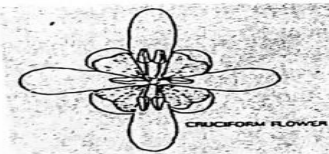
Petaloid calyx : petal like , in color and shape .

Spur : a tubular or sac –like projection from sepals or petals , it usually contain a nectar secretory glands .

Epicalyx: small green leaf or scaly leaf posited in the base of calyx .

Corona: crown, any appendage or extrusion that stands between the corolla and stamens or on the corolla .

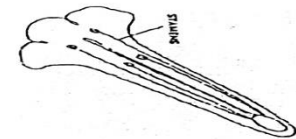
Flower (perianth shape)



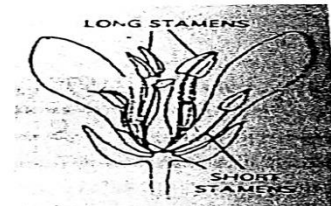
Anther dehiscence : the method or process of opening of the anther .



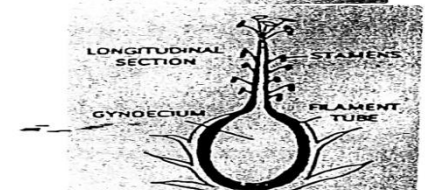
Tetrandria : an androecium of 4 stamens , 2 longer than the outer 2 , as in most Labiatae .



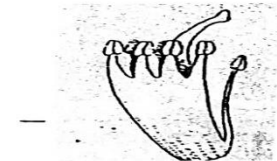
Hexandria : an androecium of 6 stamens , 4 longer than the outer 2 , as in most Cruciferae .



Monodelphous : stamens united by the filaments and forming a tube around the gynoecium .



Didelphous : Stamens united in to two groups , often unequal, sets by their filaments .



Placentation : the arrangement of the placenta and the ovules in the ovary .



Parietal placentation



Axial placentation



Central placentation

Inflorescence : the flowering part of a plant ,or the arrangement of the flowers on flowering axis ,consist of peduncle ,axis or rachis , pedicel , flower or florets , and bracts .

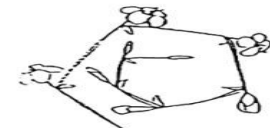
Cymose (determinate)

Simple Monochasium : its consist of tow flowers , the first terminal and the other borne below laterally .



MONOCHASIUM

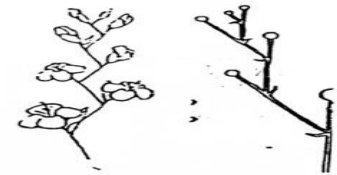
Helicoid : its compound monochasium infl. Distinguished by bearing the flowers in one side of the axis and the bracts on the other , the axis called sympodium ..



HELICOID CYME

Scorpioid : it's a comound monochasium infl. , distinguished by arrangement of flowers and the bracts alternately on the both sides of a sympodium , the sympodium usually looked zigzag .

Sympodium :



Simple dichasium : its consist of three flowers , the first terminal and the other tow borne below laterally .

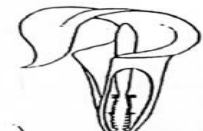


Racemose (indeterminate)

Spike: un branched , elongated indeterminate infl. Which flowers sessile , congested , and bisexual .



Spadix : thick or fleshy spike with small flowers crowded on a thickened axis , surrounded by spathe .



Spathe: the bract surrounding a flowers cluster on spadix , its sometimes colored and flower like .

Cymba :woody , boat like spathe that encloses the infl.

Raceme : simple elongated indeterminate infl. With pedicelled flowers or stalked flowers .

Corymb : short and broad , flat topped indeterminate infl. , the outer flowers opening first , and the lower pedicels longer than the upper .

Umbel : indeterminate infl. , often flat – topped whose pedicels and peduncles (rays) arise from a common point , like umbrella .

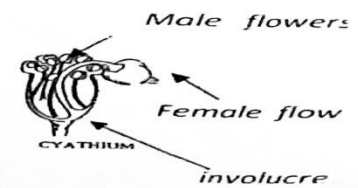
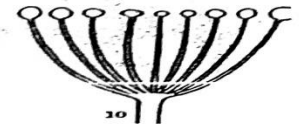
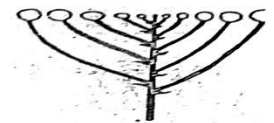
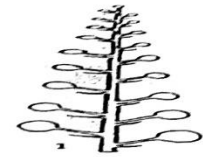
Head : dense cluster of sessile or sub sessile flowers(radial and disc flowers), surrounded by the involuclral bracts .

Catkin: in determinate infl. With small congested flowers , unisexual , and lacking their corolla .

Mixed infl. : infl. With cymose and racemose branches .

Verticillate : mixed infl. With axis growing continuously (racemose) and boring the flowers in whorls (cymose) .

Cyathium : the infl. In the genus *Euphorbia* , consisting of a cup-like involucres containing a single pistil (female flower) and many male flowers with single stamen.



The fruit : mature ovary with its contains , fruits often have pericarp differentiated to 3 zones :

- 1- Epicarp or exocarp
- 2- Mesocarp
- 3- Endocarp

Berry : fleshy fruit resulting from single pistil (simple or compound) with superior or inferior ovary , containing one or more seeds .

- 1- Exocarp = membranous or lathery
- 2- Mesocarp = fleshy
- 3- Endocarp = membranous



Drupe : fleshy fruit resulting from single pistil (simple or compound) with superior or inferior ovary containing one seed.

- 1- exocarp = membranous or lathery
- 2- mesocarp = fleshy
- 3- endocarp = stony



Hesperidium : fleshy fruit resulting from compound single pistil with superior ovary

- 1- exocarp = lathery and glandular dotted
- 2- mesocarp = spongy
- 3- endocarp = membranous with juice sacs



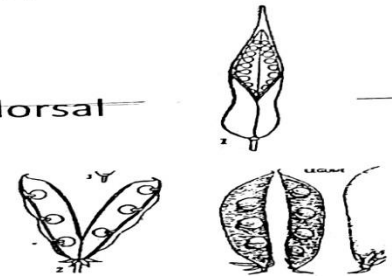
Pome ; fleshy fruit resulting from compound single pistil with inferior ovary , consisting of a modified floral tube (receptacle) surrounding a core .



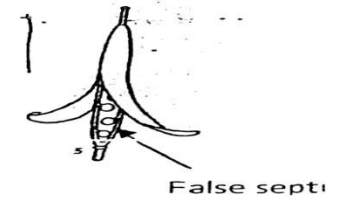
Capsular fruit : dry fruits resulting from maturity of compound ovary (superior or inferior) , usually opening at maturity by one or more line of dehiscence .

Follicle : dry , capsular and dehiscent fruit resulting from maturing of simple and superior ovary , opening only on dorsal suture .

Legume : dry , capsular fruit resulting from maturing of simple and superior ovary , opening on both suture .



Silique : dry , capsular and dehiscent fruit resulting from maturing of compound (2 carpels) and superior ovary which is separated to two chambers by false septum , this fruit opening by two valves from down to up .

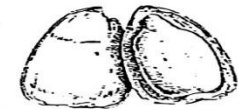


Porous : dry , capsular and dehiscent fruit resulting from maturing of compound and superior or inferior ovary , opening by numbers of pores on the top of the capsule .



Achenial fruit : small dry indehiscent fruit with one seed with thin pericarp .

Cypsela : its achenial fruit resulting from inferior ovary (2 carpels) , with thin lathery pericarp or lathery – woody . these fruit always having apappus calyx on above .



Caryopsis : its achenial fruit resulting from superior ovary , with seed coat fused to the pericarp .



Samara : achenial winged fruit .

2nd STAGE

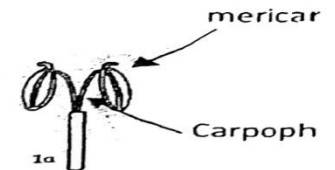


Nut : achenial fruit resulting from superior or inferior ovary with one chamber or more ,this fruit having strong – woody **pericarp** separated from seed coat , the fruit basal may surrounded by cupule (small bracteoles) .



Schizocarpic fruit : dry multiple seeds fruit splits in to 2-many parts each one named **mericarp** .

Cremocarp : schizocarpic , 2-seeded fruit , each half a **mericarp** borne on a hair like **carpophores** , this fruit resulting from inferior ovary with 2 carples .



Carcerulus : schizocarpic dry fruit split by many splitting longitudinal line, equal to chambers number of the ovary :

