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# 1. AN IDENTIFICATION KEY

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## Artificial key for the identification of some families of Angiosperms.

*This key is based on the Bentham and Hooker's system of classification.*

1. Leaves reticulately-veined; flowers 4- or 5-merous; bracteoles (when present) usually 2, lateral; tap root usually present; embryo with two cotyledons .....2. (Class Dicotyledons)
1. Leaves parallel-veined; flowers 3-merous; bracteoles (when present) usually 1, adaxial; tap root usually absent; embryo with one cotyledon .....3. (Class Monocotyledons)

### Key to Sub-classes of Dicotyledons

2. Perianth of 2 whorls, usually distinguished into calyx and corolla ..... 4.
  4. Inner whorl of perianth (corolla) parts mostly free up to the base (i.e., petals free); stamens not epipetalous .....5. (Sub-Class Polypetalae)
  4. Inner whorl of perianth (corolla) parts mostly united (i.e., petals fused); stamens few and mostly epipetalous .....6. (Sub-Class Gamopetalae)
2. Perianth absent, or of 1 whorl (calyx-like) or 2-whorled with the segments not distinguishable into calyx and corolla .....7. (Sub-Class Monochlamydeae)

### Key to Series of Polypetalae

5. Perianth and stamens usually hypogynous; ovary mostly superior; sepals mostly distinct and free .....8.
  8. Conspicuous disc below the ovary not present ..... 9. (Series Thalamiflorae)
  8. Distinct disc below ovary present ..... (Series Disciflorae)

Stamens twice as many as sepals; in one or two whorls; gynoecium of many carpels, axile placentation ..... Order Geraniales

Leaves generally smooth, gland-dotted and exstipulate; flowers actinomorphic, 4-, or 5-merous; stamens 3-10, free or united into bundles, in one or two whorls, Obdiplostemonous; gynoecium typically of 4-, 5- or numerous carpels..... **Family Rutaceae**

- 5. Perianth and stamens mostly perigynous or epigynous; ovary often inferior .....10. (Series Calyciflorae)

**Key to Orders and Families of Series Thalamiflorae**

- 9. Gynoecium composed of free carpels (i.e., gynoecium apocarpous); stamens usually indefinite; floral parts in whorls or spirals ..... Order Ranales

Herbs or (rarely) climbers; leaves exstipulate; flowers bisexual, actinomorphic (sometimes zygomorphic), floral parts free, generally many and spirally arranged around a torus; placentation marginal or axile; fruit a cluster of achenes or follicles ..... **Family Ranunculaceae**

- 9. Gynoecium composed of united carpels (syncarpous); stamens usually of definite or indefinite number; floral parts in whorls.....11.

- 11. Plants without mucilagenous sacs or cavities; stamens free; gynoecium 2-∞ carpelled; placentation parietal .....12. Order Parietales

12. Herbs with milky or watery latex; flowers actinomorphic or zygomorphic; sepals 2 or 3; petals 4-12; stamens mostly more than 6; fruit not a siliqua or silicula ..... **Family Papaveraceae**

12. Herbs without latex; flowers actinomorphic; sepals 4; petals 4; stamens 6 (rarely lesser) and tetradynamous; fruit a siliqua or silicula ..... **Family Brassicaceae (Cruciferae)**

- 11. Plants with mucilagenous sacs or cavities; stamens united by filaments; gynoecium many-carpelled; placentation axile .....Order Malvales

Flowers actinomorphic; whorl of bracteoles or epicalyx generally present; stamens indefinite and monadelphous; anthers are single-lobed ..... **Family Malvaceae**

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(Key to Orders and Families of Calyciflorae)

## Key to Orders and Families of Series Calyciflorae

10. Gynoecium of 1 or more carpels; (carpels free in bud, afterwards enclosed within the swollen peduncle); ovary superior or semi-inferior, rarely inferior..... Order Rosales

Flowers actinomorphic or zygomorphic; stamens often united; gynoecium one-carpelled; ovary superior or semi-inferior; often stalked; fruit a legume .....

.....13. **Family (Fabaceae) Leguminosae**

13. Leaves bipinnate; spines present; flowers actinomorphic; 4- or 5- merous; corolla valvate; stamens 4 to indefinite, in one to many whorls .....**Sub-Family Mimosoideae**

13. Leaves uni- or bi-pinnate; spines generally absent; flowers zygomorphic; 5-merous; corolla imbricate; stamens generally of definite number (5-10) in one or two whorls .....14.

14. Corolla ascending imbricate; stamens usually free, some reduced to staminodes ....**Sub-Family Caesalpinioideae**

14. Corolla descending imbricate, papilionate; stamens usually mono- or di-adelphous, no staminodes.....**Sub-Family Papilionoideae**

10. Gynoecium of many carpels, syncarpous; ovary semi-inferior to inferior... ..15.

15. Flowers bisexual or unisexual; ovary 1-loculed; placentation parietal; inflorescence not an umbel .....Order Passiflorales

Tendrillar herbaceous climbers; flowers unisexual; stamens free or united into 3 bundles or one synandrium; gynoecium of generally 3 (rarely 4 or 5) carpels; fruit a pepo ..... **Family Cucurbitaceae**

15. Flowers bisexual; ovary more than one-loculed; placentation not parietal; inflorescence a simple or compound umbel. .... Order Umbellales

Aromatic herbs; leaves alternate, often pinnately dissected; petioles with sheathing base; sepals reduced, bicarpellary, syncarpous gynoecium; pendulous ovule in each locule; placentation axile; stylopodium present ..... **Family (Apiaceae) Umbelliferae**

**Key to Series of Gamopetalae**

- 6. Stamens as many as corolla lobes (rarely fewer); Gynoecium 2-∞ carpelled; ovary inferior ..... Series Infracae

**Key to Order and Families of Series Infracae**

Gynoecium of 2 carpels, ovary 1-loculed with one ovule and basal placentation ..... Order Asterales

Herbs or shrubs, often with latex; inflorescence on involucrate head (capitulum); flowers bisexual or unisexual; actinomorphic or zygomorphic; calyx modified to pappus; anthers syngenesious; fruit a cypsella ..... **Family Asteraceae (Compositae)**

- 6. Stamens as many as or generally fewer than the corolla lobes; Gynoecium 2-∞ carpelled; ovary inferior, .....16. Series Bicarpellatae

**Key to Orders and Families of Series Bicarpellatae**

- 16. Latex mostly present; flowers actinomorphic; stamens as many as corolla lobes; gynoecium apo- or syn-carpous ..... Order Gentianales

Herbs, shrubs or trees, leaves opposite; stamens with short filaments inserted at mouth of corolla tube and often surrounded by hairs, scales, etc. arising from corolla tube; nectar secreting disc present below ovary; ovaries free or united; stigma clavunculate ..... **Family Apocynaceae**

- 16. Latex absent; flowers zygomorphic; corolla often 2-lipped; gynoecium syncarpous; ovary falsely four-loculed with one ovule in each locule ..... Order Lamiales

Herbs, sometimes shrubs; aromatic; stem quadrangular; inflorescence verticillaster; style gynobasic; one ovule in each false locule, fruit carcerulus, a cluster of 4 nutlets ..... **Family (Lamiaceae) Labiatae**

## Key to Series and Families of Monochlamydeae

7. Flowers unisexual or bisexual or polygamous; embryo curved; latex not present ..... Series *Curvembryeae*

Herbs or shrubs, leaves exstipulate, covered by hairs; inflorescence with scarious bracts or scales; perianth – membranous, dry, not green, gynoeceium 2-3 carpelled, syncarpous; ovary one-loculed, 1 ovule, basal placentation ..... **Family *Amaranthaceae***

7. Flowers unisexual; embryo not curved; latex usually present ..... Series *Unisexuales*

Herbs, shrubs or trees; leaves stipulate; inflorescence racemose or cymose or cyathium; flowers without perianth or without corolla or calyx; gynoeceium 3-carpelled with 3-loculed ovary; 1-2 carunculate ovules in each locule, fruit a schizocarpic regma ..... **Family *Euphorbiaceae***

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(*Key to Series of Monocotyledons*)

## Key to Series and Families of Monocotyledons

3. Flowers arranged in spikelets, highly reduced, sessile, in the axils of bracts; perianth absent or reduced to scales (lodicules); ovary superior, one-loculed with one ovule, with a basal placentation; fruit a caryopsis or nut or capsule ..... Series *Glumaceae*

Stem terete or compressed, usually hollow; leaves often ligulate with sheathing leaf bases; each flower or floret enclosed by two glumes, and a bract lemma, and bracteole palea; 1-3 carpelled gynoecium; unilocular ovary with one ovule, basal placentation .....  
..... **Family (*Poaceae*) *Gramineae***

3. Flowers not arranged in spikelets; perianth well developed; ovary 3 or more than 3-loculed; fruit not a caryopsis.....17.

17. Ovary inferior .....18. Series *Epigynae*

18. Terminal racemose inflorescence, flowers asymmetrical most of the stamens petaloid, sterile and connate at base, adnate to petals and style; style flat and petaloid, fruit a warty capsule .....  
..... **Family *Cannaceae***

18. Inflorescence umbellate cyme (rarely racemose) or solitary flower on a scape with spathaceous involucre of bracts; flowers symmetrical; most stamens fertile, epiphyllous; style cylindrical and filiform ..... **Family *Amaryllidaceae***

17. Ovary superior .....19. Series *Coronarieae*

19. Leaves basal or cauline; inflorescence racemose often on a scape; perianth homochlamydeous, usually petaloid; staminodes generally absent ..... **Family *Liliaceae***

19. Leaves cauline with closed basal sheaths; inflorescence cymose, perianth heterochlamydeous, staminodes often present.....  
..... **Family *Commelinaceae***