Key to the Families of Angiospermic Plants of Baroda and Environs

Classification

Embryo with two cotyledons. Leaves usually reticulately veined. Flowers typically penta - or Tetramerous. . . . . Class I DICOTYLEDONES

Embryo with one cotyledon. Leaves usually with parallel veins. Flowers typically trimerous. . . . . Class II MONOCOTYLEDONES

Class I DICOTYLEDONES

Calyx and corolla present. Petals free. . . . . Subclass I Polypetalae

Petals united into a gamopetalous corolla. Stamens few, epipetalous. . . . . Subclass II Gamopetalae

Calyx and corolla not differentiated. Perianth mostly sepaloid and rarely petaloid. . . . . Subclass III Monochlamydeae

Subclass I POLYPETALAE

Sepals free. Ovary superior. Thalamus small, convex or elogated, not expanded. . . . . .Series I Thalamiflorae

Thalamus thickened or expanded into a fleshy disk. . . . . Series II Disciflorae

United sepals enclosing or adnate to the ovary. Petals and stamens inserted on the rim of the calyx tube or around the top of the ovary. . . . .Series III Calyciflorae

Series I Thalamiforae

1. Gynoecium apocarpous or monocarpellary by reduction:
   2. Aquatic plants. . . . . Nymphaeaceae (in part)
   2. Terrestrial plants:
      3. Flowers unisexual; climbing or trailing shrubs. . . . . Menispermaceae
      3. Flowers bisexual:
         4. Herbs or soft wooded climbing plants. . . . . Ranunculaceae
         4. Woody plants:
            5. Sepals and petals imbricate; Fruits dry. . . . . Magnoliaceae

5. Sepals and petals valvate; Fruits fleshy. . . . . Annonaceae

1. Gynoecium syncarpous:

6. Flowers irregular:

7. Stamens never more than 10:

8. Petal spurred. . . . . Violaceae

8. Petal not supurred. . . Polygalaceae

7. Stamens more than 10; Fruits a gaping capsule. . . . . Resedaceae

6. Flowers regular:

9. Stamens 15 or more:

10. Ovules not on well-defined placenta; placentation superficial. . . . . Nymphaeaceae

10. Placentation parietal:

11. Ovary raised on a gynophore. . . . . Capparidaceae (in part)

11. Ovary not on a gynophore. . . . . Papaveraceae

10. Placentation axile:

12. Stamens distinct:

13. Red-seeds in a loculicidal showy capsule. . . . Bixaceae

13. Not as above. . . . . Tiliaceae (in part)

12. Stamens monadelphous:

14. Anthers bilocular. . . . . Sterculiaceae (in part)

14. Anthers unilocular. . . . . Malvaceae

12. Stamens polyadelphous. . . . . .Bombacaceae

10. Placentation free-central or basal central:

15. Plants herbaceous; leaves fleshy. . . . . Portulacaceae

15. Trees; leaves coriaceous. . . . . Guttiferae

9. Stamens less than 10:

16. Plants with scale-like, alternate leaves; seeds winged. . . . . Tamaricaceae

16. Plants with well-developed leaves and not as above:

17. Placentation parietal:

18. Stamens 6; tetradynamous. . . . . Cruciferae

18. Stamens not tetradynamous. . . . . Capparidaceae

17. Placentation axile:

19. Stamens basally united into one bundle. . . . .Sterculiaceae

19. Stamens distinct; not united:

20. Leaves alternate (rarely opposite), sepals valvate... . . . . Tiliaceae

20. Leaves opposite; sepals imbricate. . . . . .Elatinaceae

17. Placentation free-central or basal-central:

21. Sepals 2; Petals 4-5; leaves fleshy. . . . . Portulacaceae

21. Sepals and petals 5 each; Leaves not fleshy. . . . Caryophyllaceae

Series II Disciflorae

1. Climbing plants:

2. Tendril climbers:

3. Fruit a berry. . . . . Vitaceae

3. Fruit an inflated capsule. . . . . Sapindaceae (in part)

2. Tendrils absent. . . . . Malpighiaceae (in part)

1. Erect or prostrate herbs:

4. Fruits spiny. . . . . Zygophyllaceae

4. Fruits not spiny:

5. Leaves compound, flowers yellow. . . . . Oxalidaceae

5. Leaves simple, flowers blue. . . . . Linaceae

1. Trees or shrubs:

6. Fruit a very much elongated capsule. . . . . Moringaceae

6. Fruit not as above, dry or fleshy:

7. Styles 3-4, quite free. . .Malpighiaceae

7. Styles more or less connate or solitary:

8. Leaves gland-dotted.....Rutaceae

8. Leaves not gland dotted:

9. Stamens monadelphous. . . . . Meliaceae

9. Stamens free, distinct:

10. Ovules usually 1 in each cell:

11. Leaves simple:

12. Lateral veins usually parallel.. . . . . Ochnaceae

12. Lateral veins not conspicuously parallel:

13. Plants armed with stipular spines. . . . . .Rhamnaceae

13. Plants unarmed:

14. Fruits winged. . . . .Sapindaceae (in part)

14. Fruits not winged... .Anacardiaceae (in part)

11. Leaves compound:

15. Flowering branches generally leafless. . . Anacardiaceae

15. Not as above:

16. Flowers regular; Styles 2-5. . . . . Simaroubaceae

16. Flowers irregular; Style simple, sometimes divided above.... Sapindaceae

10. Ovules usually 2 in each cell, sometimes many:

17. Flowers brownish-red in clusters of 2-3. . . . . .Burseraceae

17. Flowers white, numerous in axillary cymes. . . . . Celastraceae

Series III Calyciflorae

1. Gynoecium apocarpous or nearly so or monocarpellary:

2. Flowers irregular:

3. Corolla papilionaceous; posterior petal biggest and outermost. . . Papilionaceae

3. Corolla not papilionaceous; posterior petal smallest and innermost. . .Caesalpiniaceae

2. Flowers regular:

4. Plants succulent. . . . . Crassulaceae

4. Plants not succulent:

5. Inflorescence an head or spike. . . . . Mimosaceae

5. Inflorescence not as above. . . . . Rosaceae

1. Gynoecium syncarpous:

6. Tendril - bearing plants:

7. Ovary superior on a gynophore. . . . . Passifloraceae

7. Ovary inferior. . . . . Cucurbitaceae

6. Plants without tendrils:

8. Soft-wooded trees with milky latex. . . . . Caricaceae

8. Trees, shrubs or herbs but without milky latex:

9. Flowers regular; stamens definite:

10. Ovary usually superior, free from the calyx:

11. Plants with sticky glands. . . . . Saxifragaceae

11. Plants not as above:

12. Flowers concealed in a petiolar pouch. . . .Aizoaceae (Ficoidaceae)

12. Flowers not as above:

13. Water-loving plants . . . . . Lythraceae (in part)

13. Plants usually of dry habits. . . . . Molluginaceae

10. Ovary inferior or half-inferior:

14. Plants growing in or near water:

15. Fruit a large, spiny nut. . . . . Trapaceae

15. Fruit a capsule. . . . . Onagraceae

14. Plants totally terrestrial:

16. Ovary 1-celled:

17. Ovule 1, pendulous. . . . . Alangiaceae

17. Ovules 2-6, suspended from the apex of the ovary. . . . . Combretaceae

16. Ovary 2-celled; One ovule in each cell. . . . . Umbelliferae (Apiaceae)

9. Flowers regular or irregular; stamens indefinite:

17. Armed, succulent shrubs with jointed phylloclades; leaves reduced or 0. . . . . Cactaceae

17. Unarmed shrubs or trees; leaves well-developed:

18. Leaves glandular-punctate. . . . . Myrtaceae

18. Leaves not glandular-punctate. . . .
. . . . . Lythraceae

Sub-class II GAMOPETALAE

1. Ovary inferior:

2. Flowers in capitulum; ovary 1-celled; anthers united. . . . . Compositae

2. Flowers not in capitulum; ovary more than 1-celled; anthers not united. . . . . Rubiaceae

1. Ovary superior or free:

3. Flowers regular, rarely slightly irregular:

4. Ovary usually of more than 2 carpels:

5. Plants with milky juice. . Sapotaceae

5. Plants without milky juice:

6. Flowers usually unisexual. . . . . .
. . . . . Ebenaceae

6. Flowers usually bisexual:

7. Ovary 1-celled with 1 ovule. . . . . .
. . . . . Plumbaginaceae

7. Ovary 1-celled with many ovules. . . .
. . . . . Primulaceae

4. Ovary usually of 2 carpels (rarely 1 or 3):

8. Flowers regular or slightly irregular:

9. Leaves generally alternate:

10. Ovules many in each cell:

    11. Style usually deeply 2-cleft. . . . . Hydrophyllaceae

    11. Style linear or not deeply 2-cleft. . . . Solanaceae

10. Ovules definite in each cell:

    12. Style usually terminal; fruit capsular:

        13. Plants leafless, total parasitic... . . . . Cuscutaceae

        13. Plants usually twining. . . . . Convolvulaceae

    12. Style terminal or gynobasic; fruit not capsular:

        14. Fruit a drupe; trees . . . . . Ehretiaceae

        14. Fruit 4, 1-seeded nuts or pyrenes; herbs or shrubs. . . . . Boraginaceae

9. Leaves generally opposite, very rarely alternate:

    15. Plants with milky latex:

        16. Gynostemium present:

            17. Filaments free from each other; anthers without horny wings; pollen granular in tetrads, transported on a spathulate carrier. . .Periplocaceae

17. Filaments united, often very short; anthers with more or less horny wings; pollen waxy in masses, transported by means of a horny corpuscle to which they are attached by caudicles of varied form and size. . ... Asclepiadaceae

16. Gynostemium absent. . . . . Apocynaceae

15. Plants without milky latex:

18. Stamens generally 2 . . . . . Oleaceae

18. Stamens 4 or 5:

19. Small trees or shrubs; petals free or connate at the base. . . . . Salvadoraceae

19. Herbs; corolla gamopetalous. . . . . Gentianaceae (ex. irregular corolla of <u>Canscora</u> and alternate leaves of <u>Nymphoides</u>)

3. ~~8~~. Flowers truly irregular (personate, bilabiate etc.) or rarely apparently regular; carpels 2-4:

20: Total or partial root parasites:

21. Ovary 1-celled; placentation parietal. .. . . . . Orobanchaceae

21. Ovary usually 2-celled; placentation axile. . . . . Scrophulariaceae (in part)

20. Plants not parasitic:

    22. Placentation free-central. . . . . Lentibulariaceae

    22. Placentation not free-central:

        23. Fruit quite long; seeds winged; leaves compound. . . . Bignoniaceae

        23. Fruit not elongated; seeds not winged:

            24. Bracts conspicuous. . . . . Acanthaceae

            24. Bracts minute, not conspicuous or absent:

                25. Flowers with extra-floral glands at the base of pedicels; fruits commonly spiny or with hard, hooked processes:

                26. Placentation axile. . . . . .Pedaliaceae

                26. Placentation parietal. . . . . Martyniaceae

                25. Flowers without glands at the base; fruits commonly not spiny: . . . .

                27. Ovules many in each cell.. . . . . Scrophulariaceae

                27. Ovules 1 or 2 in each cell:

                28. Ovary entire; style terminal. . . . . Verbenaceae

28. Ovary 4-lobed; style gynobasic. . . . . Labiatae

Sub-class III MONOCHLAMYDEAE

1. Partial stem-parasites. . . . . Loranthaceae

1. Submerged aquatics. . . . . Ceratophyllaceae

1. Plants terrestrial:

2. Flowers all bisexual:

3. Ovary superior:

4. Leaves exstipulate:

5. Trees. . . . . Proteaceae

5. Herbs or shrubs:

6. Fruit an achene enclosed in the perianth. . . . . .Nyctaginaceae

6. Fruit a berry. . . . . Phytolaccaceae

6. Fruit usually a membranous utricle:

7. Flowers bracteate, the bracts and sepals hyaline, membranous. . . . . Amaranthaceae (in part)

7. Flowers ebracteate, or when bracteate, bracts not hyaline, membranous; sepals green. . . . . Chenopodiaceae

3. Ovary inferior or 1/2 inferior:

8. Flowers irregular; gynostemium present; plants usually climbing or twining. . . . . Aristolochiaceae

8. Flowers regular; gynostemium absent; small tree. . . . . .Santalaceae

4. Leaves with ocreate stipules. . . . . Polygonaceae (inconspicuous in Antigonon leptopus)

2. Flowers unisexual or polygamous:

9. Male and/or female flowers in catkin or spike:

10. Plants with milky juice. . .Moraceae (in part)

10. Plants without milky juice:

11. Fruits 1-seeded, crowded into a cone. . . . . Casuarinaceae

11. Fruit a membranous utricle. . . . . Amaranthaceae

9. Flowers not in catkin or spike (ex. in Acalypha):

12. Ovary 3-celled with 1 or 2 ovules in each cell. . . . . Euphorbiaceae

12. Ovary 1-celled:

13. Fruit multiple; syconus or sorosis. . . . . Moraceae

13. Fruit simple:

14. Fruit a samara. . . Ulmaceae

14. Fruit an achene. .. Urticaceae

Class II MONOCOTYLEDONES

1. Stems not developed; plant reduced to a small, undifferentiated, flat, floating frond. . . . . Lemnaceae

1. Stems well-developed; plants not reduced as in above:

    2. Carpels 1 or more, usually distinct:

        3. Inflorescence not a true spadix:

            4. Perianth none, or when present, bristle-like or scale-like; endosperm present:

                5. Rhizomatous herbs; flowers in dense, terminal spikes. . . . . .Typhaceae

                5. Woody plants; flowers often crowded on the axis. . . . . Pandanaceae

            4. Perianth sepaloid or petaloid or none; endosperm absent or very little:

                6. Ovary inferior. . . . . Hydrocharitaceae

                6. Ovary superior:

                7. Pistils 1-ovuled:

                8. Perianth showy, composed of calyx and corolla. . . . Alismataceae

                8. Perianth inconspicuous, or none:

                9. Flowers crowded in spikes. . . . . Potamogetonaceae

                9. Flower solitary, a few together, axillary. . . . .Najadaceae

7. Pistils 2-many ovuled:

9. Flowers in spike inflorescences; ovules basal. . . . . Aponogetonaceae

9. Flowers in involucrate umbels; ovules superficial. . .Butomaceae

3. Inflorescence a true spadix:

10. Leaves plicate in bud; spadix compound. . . . . Palmae (in part)

10. Leaves not plicate in bud; spadix simple. . . . . Araceae

2. Carpels united into a syncarpous ovary:

11. Foliage of palm-type, i.e. large, stiff, palmate or pinnate leaves; ovary 3-celled, 3-ovuled. . . . . Palmae

11. Foliage not palm-like:

12. Flowers much reduced, not in the least showy, in the axils of dry, chaffy scales (glumes), arranged in spikelets:

13. Stem solid, triangular; fruit an achene. . . . . Cyperaceae

13. Stem hollow, cylindrical; fruit a caryopsis. . . . . Gramineae

12. Flowers usually showy, rarely, inconspicuous, not in the axil of dry chaffy scales:

14. Ovary inferior, or nearly so:

15. Flowers regular or slightly irregular:

16. Flowers unisexual. . . . . Dioscoreaceae

16. Flowers bisexual:

17. Flowers in large panicles or racemes; corona absent. . . . . Agavaceae (in part)

17. Flowers umbellate or solitary at the top of the scape; corona present or not. . . . . Amaryllidaceae (in part)

15. Flowers very irregular:

18. Gynostemium present; one of the inner perianth, forming the labellum. . . . . Orchidaceae

18. Gynostermium absent:

19. Fertile stamens 1-2, the other often becoming petaloid staminodes or forming the labellum:

20. Anthers 2-celled. . . . . Zingiberaceae

20. Anther 1-celled. . . . . Cannaceae

19. Fertile stamens 5. . . . . .
. . . . . Musaceae

14. Ovary superior:

20. Outer segments of perianth sepaloid and differentiated from the inner petaloid or membranous segments:

21. Plants with basal, grass-like leaves. . . . . .Eriocaulaceae

21. Leaves not grass-like; flowers usually subtended by boat-shaped spathes. . . . . Commelinaceae

20. Outer and inner segments of perianth essentially alike, either all sepaloid or petaloid:

22. Aquatic herbs; inflorescence subtended by spathe-like leaf sheath. . . . . Pontederiaceae

22. Terrestrial plants; inflorescence not subtended by a leaf sheath:

23. Flowers umbellate at the top of the scape, subtended by membranous bracts. . . . . .
. . . . . Amaryllidaceae

23. Flowers not umbellate:

24. Leaves mostly fibrous and thick or fleshy; plants very xerophytic. ..
. . . . . Agavaceae

24. Leaves usually not fibrous and thick; plants not or slightly xerophytic. . . . . Liliaceae