

Position :- Dicot, Polypetalae, Thalamiflorae, Ranales
acc to Bentham & Hooker. But Hutchinson Herbaceae
Ranales.

Engler & Prantl :- Archichlamydeae, Ranales.

Acc to Willd - 40 genera + 700 sps.

Rendle - 30 genera + 1200 sps.

Mostly distributed in temperate & cooler regions of the
world.

Habit :- Mostly herbs which are annual a perennial
It may be shrubs & erect, climber sps are also found.
Compound leaf, undershrub climbing, climber &
Chararichia Mostly found in marshy places.

Leaf :- Exstipulate, single simple, Rarely comp'd. Alter-
nate, sometimes opposite, Radical, mostly uniseriate.
Lobes with sheathing leaf bases. stomata - Renouculon
type (No subsidiary cells)

Inflorescence :- Usually cymose, a Racemose, rarely sol-
itary.

Flower :- complete, Regular, (Actinomorphic) Rarely
irregular (Zygomorphic) e.g Delphinium, usually Peri-
sexual, rarely unisexual e.g Thalictrum, Dichlamydeous
often Homochlamydeous, flowers are cyclic or hemicyc-
lic, protandrous.

Perianth :- Generally no differentiation in calyx
and corolla. can be differentiated, Perianth are
simple & petaloid often free. 4 to ∞ .

Calyx - 5, free.

Corolla :- 5 to ∞ , free sometimes corolla is absent e.g
Clematis.

Nectary or Honey leaves :- metamorphosed of petal or
stamens various forms of nectaria are present bet-
ween perianth & stamens which secretes honey.

Androecium :- Stamens usually ∞ , spirally arranged on
elongated receptacle free, polyandrous, Anther - Exserted
Adnate enther Distichous

usually flower is protandrous
eg. Helleborus - Protogynous

Anemone - Homogamous.

Synocentrum - usually 5 to 8 spirally arranged but in

Actaea + Delphinium - one.

on elongated receptacle, multicarpellary or polycarpellary of apocarpous, but in Nigella - carpel is syncarpous superior. Placentation - Marginal + Basal
Ovule - few to many, may be unitegmic or bitegmic
Autotropous.

Fruit - Aggregate of achenes or follicles. Rarely berry eg. Actaea.

Seed - Endospermic.

Pollination - Entomophilous.

F.E. Delphinium $\rightarrow \frac{1}{2} \text{ } \overrightarrow{\text{K}} \text{ } \overrightarrow{\text{C}} \text{ } \text{A} \text{ } \overrightarrow{\text{G}}$

Ranunculus $\rightarrow \text{ } \overrightarrow{\text{K}} \text{ } \overrightarrow{\text{C}} \text{ } \text{A} \text{ } \overrightarrow{\text{G}}$

Nigella $\rightarrow \text{ } \overrightarrow{\text{P}} \text{ } \text{A} \text{ } \overrightarrow{\text{G}} (\text{5 to 8})$

Clematis $\rightarrow \text{ } \overrightarrow{\text{K}} \text{ } \overrightarrow{\text{C}} \text{ } \text{A} \text{ } \overrightarrow{\text{G}}$

Range of floral structure.

1. Typical flower is pentamerous - xanthoxylis

2. 4 Aquilegia $\text{K}_5 \text{C}_5 \text{A}_{5+5+5} \overrightarrow{\text{G}} (5)$

3. Generally Sepal + Petal are present but in Nigella - Petals absent, presence of honey.

Cephal. No honey leaves, cephalic carpel secretes.

Netteries

Clanthus - no separate honey gland, petals secrete honey leaf are merged into petal + stamen.

Helleborus - Stamens metamorphosed into Nectary

Ranunculus + Helleborus - number of stamens indefinite are arranged in spirally one on a elongated receptacle

Carpel/S - usually 5 free but in Actaea + Delphinium single carpel but Nigella - 5 to 12 in Aconitum 5 to 12
Carpels are apocarpous generally but in Nigella

Syncarpous. Again in Ranunculus & Helleborus the arrangement of carpel is spiral.

Generally actinomorphic, Regular but rarely zygomorphic, irregular e.g. Delphinium, Aquilegia & Aconitum are irregular.

Generally bisexual but in Thalictrum - unisexual &

Anatomical character

as dicot. Arranged in ring but several ring occurs in Thalictrum & Cimicifuga, but scattered also so the genus shows the characters of monocot. In some sps. medullary bundles are also found e.g. Anemone japonica.

Common plant

1. Ranunculus ~~fulva~~ sceleratus
2. Anemone pulsatilla.
3. Aconitum napellus.
4. Nigella arvensis
5. Delphinium ajacis.
6. Staphylegia.
7. Thalictrum flavum.
8. Adonis vernalis.
9. Hydrocotyle vulgaris.
10. Clematis flammula.

Aggr. Ranunculaceae

Ranunculaceae is most primitive in dicot cleto Bentham & Hooker, Westw. et al. put it in legum. of dicot but Engler is called it is advance of dicot.

This family show certain relationship with Magnoliaceae, Calceolariaceae, Papaveraceae, Rosaceae & mono. Magnoliaceae.

Magnoliaceae - Similar with Ranunculaceae in floral construction of flower but stipulate & woody habit leaf but in Ranunculaceae is herb. habit of herbaceous habit.

Colombioidae - Nymphaeaceae - generally stamens.

Leaves are dimorphic generally Ranunculaceae.

Hydrophyte, Papaveraceae

Papaveraceae: Stamens are numerous & carpels are numerous milky latex, cyclic arrangement of numerous sepal but absence of in Ranunculaceae. 2+2.

Rosaceae: Stamens indefinite & carpels indefinite. Perigynous flower by cyclic arrangement of the stamens.

Monocot

1/ Formation of Rhizome 2. Development of sheathing leaf 3/ presence of caprous endosperm.

Indefinite stamen carpels like Anemaceae.

Helobiae, R. ficaria - one cotyledon only.

Lactarium & L. micifuga - v.B are scattered.

Economic Importance.

Not so valuable due to weeds. Some are valuable some are medicinal.

Alkaloid

- Aconitum
- Delphinium Stephylogria
- Hydrostys canadum
- acuminifuga racem

Ornamental of Delphinium ajacis.

