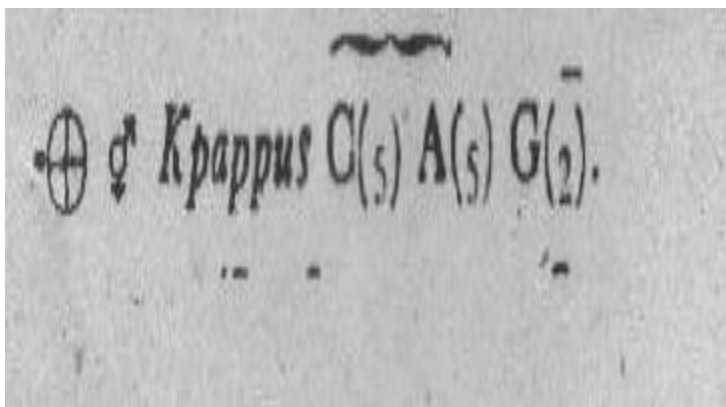


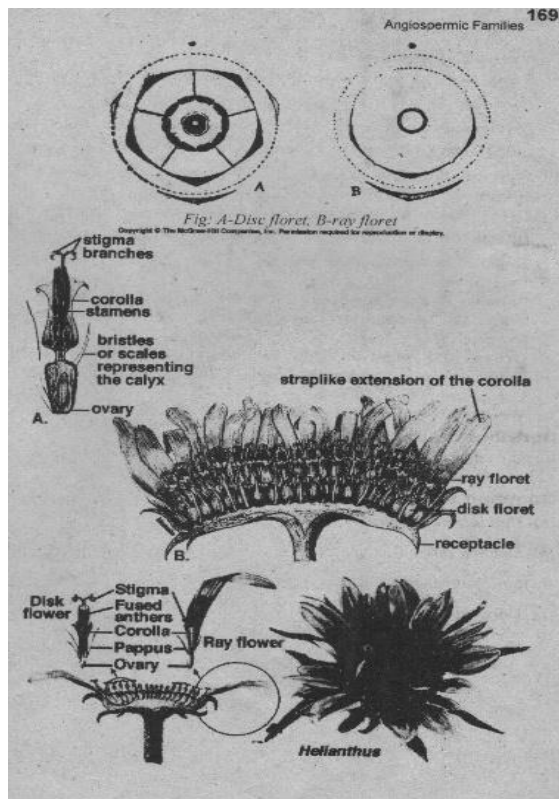
FAMILY: ASTERACEAE (COMPOSITAE)
(Sunflower Family)

Diagnostic characters

1. **Habit:** Annual or perennial herbs or small shrubs or small tree or climbers.
 2. **Roots:** Fibrous tap root
 3. **Stein:** Herbaceous; spiny or without spines; cylindrical, hairy.
 4. **Leaves:** Petiolate; alternate or opposite; simple; exstiputate;
 5. **Inflorescence: Capitulum** surrounded at the bases by a group of **involucre**s. The receptacle is flat. The flowers in the receptacles are florets. There are two types of florets:
 - **Homogamous:** In this case, all flowers are of same kind.
 - **Heterogamous:** In this case, two types of flowers are present in the capitula. Example: Sunflower. Sunflower has two types of small flowers, **disc florets** and **ray florets**. The disc florets are present in the central region. They are tubular and bisexual. The ray florets are present towards the periphery. They are pistillate or neuter.
 6. **Flower:** Sessile; ebracteate; actinomorphic or zygomorphic; pentamerous Regular or irregular; complete or incomplete; unisexual Or hermaphrodite; epigynous;
 7. **Calyx:** **Poorly** developed; generally represented by ring of 5 small teeth. They may be present in the form of small scales or hairs or bristles.
 8. **Corolla:** Gamopetalous; tubular with 5-5 lobed or ligulate with 3-4 teeth. Sometimes bilabiate;
 9. **Stamens:** 5 stamens rarely 4; epipetalous; **syngenesious** (filament free anther united); formitig a tube which encloses style.
 10. **Carpel:** Bicarpellary; syncarpous; stigma bind ovary inferior; placentation basal.
- It **Fruits:** Achenial one seeded **cypselM**
12. **Seed:** non-endospermic seed.

Floral formula and floral





Economic Importance

1. **Food:** Some plants of this family are used as food. Some of these are lettuce (leafy), roots and leaves of chicory.
2. **Medicinal:** *Artemisia* yields a drug **santonine**. It is useful for round worms. Lettuce has properties resemble to opium (rill).
3. **Oils:** Sunflower and *Helianthus*, and many other species are cultivated for extraction of oil. This oil is used as cooking oil.
4. **Dyes:** The flowers of *Chrysanthemum inulorhiz* yield a yellow dye.
5. **Insecticide:** The flowers of *Chrysanthemum (Lop jf)* are ground to produce a powder. It has insecticide called **Pyrethrum**.
6. **Poisons:** A large number of members of this family like rag weeds and golden rods cause **hay fever**. Certain plants are poisonous to livestock.
7. **Ornamental plants:** Many members of this family are cultivated as ornamental plants. These are sunflower, Chrysanthemum, Zinnia etc.
8. **Weeds:** Some plants act as weeds like *Sonchus*.

Distribution pattern

It is the largest family of Angiosperms. It has more than 1000 genera and 93000 species. It is distributed all parts of the world.

Common species

- *Helianthus annuus* (sunflower)
- *Lactuca saliva* (Lettuce)
- *Sonchus asper*
- *Chrysanthemum indicus*