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TOPIC: Euphorbiaceae
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Family—Euphorbiaceae:

Distribution: There are about 283 genera and 7,300 species in this family. The plants of this family are found throughout the world. However, they are not found in arctic regions. In India the family is represented by several genera such as, *Euphorbia*, *Ricinus*, *Phyllanthus*, *Croton*, *Pedilanthus*, etc.

Habit:

The plants may be herbs, shrubs or trees. *Euphorbia hirta*, *E. thymifolia*, *E. helioscopic*, *E. peplus*; *E. heterophylla*, *E. cristata*, *E. elegans*; *Phyllanthus niruri*, *Croton sp.*, *Acalypha indica*, etc., are annual or perennial herbs. *Euphorbia pulcherrima*, *E. splendens*, are beautiful shrubs. *Pedilanthus sp.*, and *Jatropha sp.*, are shrubby plants.

Root:

Tap and branched.

Stem:

Herbaceous or woody, erect, very rarely climbing. The species of *Xylophylla* possess flat phylloclades. The stem is branched. It may be cylindrical, angular or flat. Usually solid but sometimes hollow as in *Ricinus communis*. Many stems possess spines. In many *Euphorbia sp.*, the stems become fleshy, green and cactus like in appearance.

Leaves:

The form and position of leaves are variable. The arrangement is usually alternate but sometimes they are opposite, e.g., *Euphorbia hirta*. Usually the leaves are simple but in some they are deeply incised, e.g., *Ricinus*, *Manihot*, etc. In many Euphorbias the leaves are scaly and caducous. In many cases the leaves are reduced to spines. In few cases the leaves are replaced by cladodes. Usually the leaves are stipulate. In *Jatropha sp.*, the stipules become branched and hair-like. In many *Euphorbia sp.*, they are represented by glands or spines.

Inflorescence:

The inflorescence varies greatly. It may be racemose or cymose or sometimes complex. In *Euphorbia*, the inflorescence is peculiar but very characteristic and known as cyathium. This is the modification of a cyme. In cyathium inflorescence a large number of male flowers each represented by a stalked stamen are found arranged around a central stalked female flower. The female flower consists of gynoecium only. The bracts are being arranged like a perianth. The bracts are so united that they form a cup-like structure.

Flowers:

The flowers are always unisexual. They are much reduced and may be monoecious or dioecious. In *Euphorbia sp.*, each male flower is represented by a single stalked stamen. The flowers are incomplete, regular, actinomorphic and hypogynous.

Perianth:

Occasionally, both calyx and corolla are present, e.g., *Croton*. In majority of cases either calyx or corolla or both are absent. In *Ricinus communis* the calyx is present and the corolla absent. In *Euphorbia hirta* both the whorls of calyx and corolla are absent. In *Jatropha sp.*, both calyx and corolla are present.

The perianth consists of 4 to 5 petals. The calyx and corolla consists of 4 or 5 sepals or petals. The aestivation is valvate or imbricate.

Androecium:

The number of stamens varies from one to many. Usually as many stamens are present as many perianth leaves. In *Euphorbia* a single stalked stamen represents a single male flower. In *Ricinus sp.*, usually five stamens are present, each stamen is profusely branched. In *Jatropha* they are arranged in two whorls each of five stamens. In many the stamens are indefinite, e.g., *Croton*. The filaments may be free or united. The anthers are ditheous. They dehisce either by apical pores or by transverse or longitudinal slits.

Gynoecium:

Three carpels (tricarpeal), syncarpous; the ovary is trilobular, superior. Each locule contains one or two pendulous, anatropous ovules. The placentation is axile.

Fruit:

The fruits are schizocarpic. The fruits break violently and dehisce into one seeded cocci. Such type of fruit is termed regma which is characteristic of *Ricinus sp.* The sp., of *Trewia* and *Bridelia* bear drupe fruit. *Phyllanthus emblica* also bears drupe.

Economic Importance

1. *Acalypha hispida* is an ornamental herb.

2. *Bischofia Javanica*; (Eng.-Bishop wood; Verna-Bhillar)- A tree. A red dye, obtained from the bark is used to stain rattan baskets. The bark is also used as a tan. The wood is extremely resistant to water effect and therefore, largely utilized in the construction of bridges and boats.

5. *Cleistanthus collinus*' (Verna-Garari)-A small tree, found in Tamil Nadu, Malabar, Bihar, Orissa and Madhya Pradesh. The bark, leaves and green fruits are used as tan.

6. *Croton aromaticus*; An aromatic shrub or small tree found in Andhra Pradesh produces a gum-resin, which is used in varnishes.

7. *Croton oblongifolius*; (Verna-Chuka) – The seeds yield an oil, which is used as a purgative and also as an insecticide.

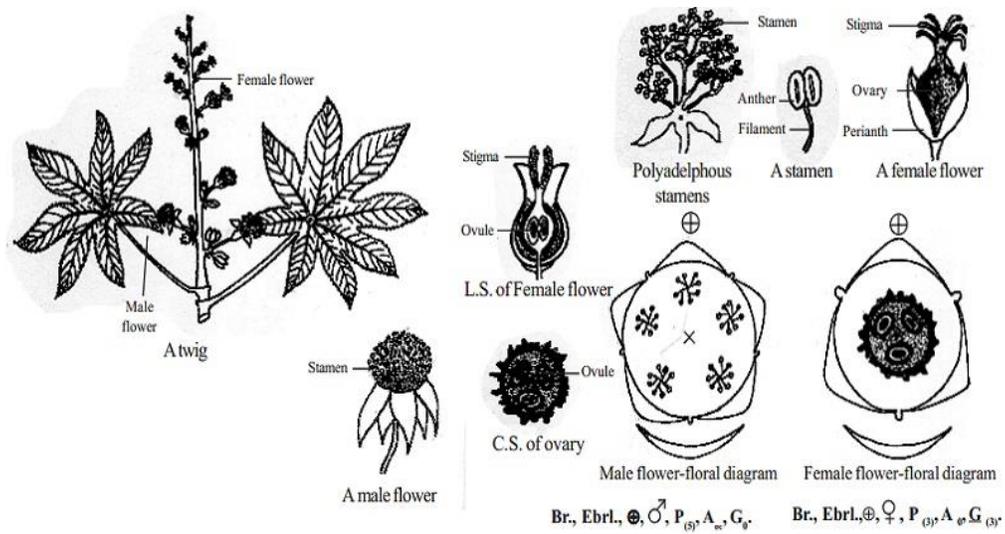


Fig. Ricinus communis

Fig: Euphorbiaceae Ricinus communis