* Euphorbiaceae

Classification :-

Kingdom - Plantae
class - Dicotyledonae
series - Unisexuales
Order - Euphorbiales
Family - Euphorbiaceae

Habit :- The plant exhibit great variation in their habit. The plants may be herbs, shrubs or trees. Euphorbia hirta, E. thymifolia, E. crustata, 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 The roots of manihot utilissima and M. palmata are tuberous and rich in starch

Stem :- Herbaceous or woody, erect, very rarely climbing or in a tropical genus Trayia. 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 posses spines. In many Euphorbia sp, the stem 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, eg - Euphorbia hirta. In pedilanthus the leaves are arranged alternately in the lower region of the plant whereas opposite in the floral region.

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 ~~gy~~ gynoecium only.

→ The complete inflorescence looks like a single flower. The bracts are being arranged like a perianth. The bracts are so united that they form a cup like structure. In Acalypha the inflorescence is catkin type. In croton and Ricinus the flowers are arranged in terminal racemes. In Jatropha the inflorescence is of cymose type and the flowers are arranged in terminal cymes. In manihot the flowers are being arranged in racemes.

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 eg. 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.

→ In Acalypha indica the perianth is represented by four minute sepaloid petals. In phyllanthus only sepaloid perianth is present. In Euphorbia the perianth is absent or represented by tiny scaly structures.

The perianth consists of 4 to 5 petals. The to 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 eg. Croton. The filaments may be free or united. The anthers are dithecous. They dehisce either by apical pores or by transverse or longitudinal slits.

Gynoecium :- Three carpels (tricarpellary), syncarpous the ovary is trilocular, superior. Each locule contains one or two pendulous, anatropous ovules. The placentation is axile.

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

Seeds :- The seed is endospermic. In Ricinus caruncle develops from the micropyle. The cotyledons either lie flat or are folded within the endosperm.

Pollination : Usually entomophilous ie. through the agency of insects only cross pollination takes place. In many species the leaves and bracts become coloured and showy to attract the insect.

~~Floral~~

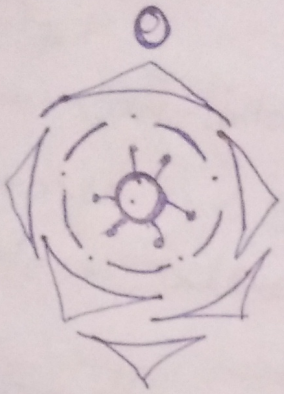
Floral formula :-

① Euphorbia - ♂ K_0 C_0 A_1

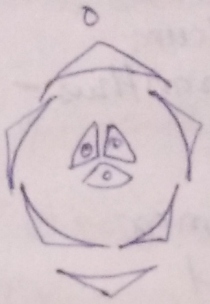
♀ K_0 C_0 $\underline{G_{(3)}}$

(1) Ricinus :- ⊕ ♂ K_5 C_0 A_5 (branched)
⊕ ♀ K_3 C_0 $G_{(3)}$

(1)



Floral diagram of Male flower

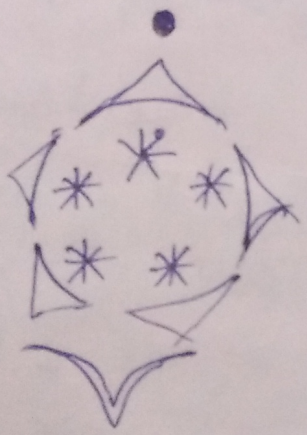


Floral diagram of Female flower

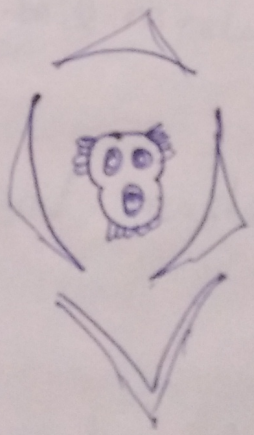
(2) ~~Euphorbia~~

:- Euphorbia hirta

(2)



Floral diagram (Male flower)



Floral diagram (Female flower)

– Ricinus Communis