

A TYPICAL FLOWER

When a flower has the four whorls, it is said to be complete, but if one of the parts is lacking, the flower is said to be incomplete. Stamen and pistil are regarded as the essential parts of the flower because both must be present either in the same or different flowers in order to have sexual reproduction and the resultant formation of seeds. If any of them (stamen and pistil) is missing in a flower, the flower is said to be imperfect while if both are present the flower is said to be perfect regardless of whether sepals and petals are present. Therefore all complete flowers are perfect, incomplete flowers may either be perfect or imperfect depending on whether or not both stamen and pistil are present. There are two types of imperfect flowers: 1. Pistillate and 2. Staminate.

Pistillate are flowers bearing only pistil while staminate are those bearing only the stamens.

Based on the relative positions of the ovary to the floral parts, a flower may be hypogynous, perigynous or epigynous.

1. Hypogynous flower:- In a hypogynous flower, the thalamus is either conical, convex, flat or slightly concave, and the ovary occupies the highest position on the thalamus, while the stamens, petals and sepals are separately and successively inserted below the ovary. The ovary is said to be superior e.g. cassia flower, hibiscus and mango flowers.

Drawing

2. In a Perigynous flower:- the thalamus is cup-shaped with the gynoecium at its centre. The sepals, petals and stamens are found around the ovary. The ovary is also said to be superior e.g. pea, bean and also common in the family Papilionaceae e.g. Bauhinia.

Drawing

3. Epigynous flower:- In an epigynous flower, the ovary of the gynoecium is completely enclosed in the thalamus. The sepals, petals and stamens are on the top of the ovary. In this case the ovary is said to be inferior e.g. guava flower, cannalily and all members of the sunflower family. It is also common in the Rubiaceae family.

Drawing

FLORAL FORMULA

Hermaphrodite

Calyx = K

Corolla = C

Gynoecium = G

Family

Leguminaceae

Sub-families

1. Mimosaceae = $K_{(5-4)} C_{(5-4)} A \& 10, 8 \text{ or } 4 G1$
2. Caesalpiniaceae
3. Papilionaceae

This symbol is used to represent irregular, zygomorphic or asymmetrical flower, while is for regular, actinomorphic or symmetrical flower.

4. Verbenaceae

SYMMETRY OF THE FLOWER

Symmetry of the flower means the way in which the floral parts are arranged, particularly the petals and the sepals.

IRREGULAR/ZYGOMORPHIC/ASYMMETRICAL FLOWER (.1.):- A flower is said to be irregular/zygomorphic/asymmetrical, when it can only be cut into two halves through one plane e.g. *Bauhinia Crotalaria* flowers. The symbol .1. is used to represent this type of flower.

REGULAR/ACTINOMORPHIC/SYMMETRICAL FLOWER:- A flower is said to be regular/actinomorphic/symmetrical when it can be cut through many planes. This is possible because of the similarity of the petals and the sepals of such flower. Examples of such flowers is hibiscus. The symbol used to represent this type of flower is ..

CALYX (sepals)

The word calyx is the collective name used to describe the sepals of a flower. Generally, calyx is greenish in colour, and when this is true in a flower, it is said to be SEPALOID. But when the calyx has other colours, it is said to be PETALOID. In some flowers, the sepals stand alone, are not united together. Such calyx is said to be POLYSEPALOUS, but when the calyx are united it is said to be GAMOSEPALOUS e.g. *Bauhinia*, hibiscus etc. Calyx of some flowers are modified hairs or scale. In this case they are called PAPPUS. This is common with the flowers of the plants in the composite family.

Immediately the flower bud opens, in some flowers, the calyx will fall off. Such calyx are said to be CADUCUS. In other flowers, the calyx fall off later when the flower is mature. Such calyx are said to be DECIDUOUS.

In some flowers, the calyx will still be attached to the fruit after the formation of the fruit. The calyx is said to be PERSISTENT. E.g. *Eugenia* and *Tomato*

2. COROLLA (Petals)

Petals of flowers are collectively called COROLLA. Usually the corolla is coloured other than green and contribute to the brightness of the flower. The odours of flowers are caused by essential oils and other chemical substances that are formed in special secreting cells usually of the petals. If nectarines secreting a sugary liquid are present, they are often located at the bases of the petals on their inner surfaces but they may occur at other places. The colour of the flower is usually as a result of the presence of anthocyanin or carotenoid pigments. Colours and odours may be of importance in attracting insects that effect pollination.

There are different shapes of corolla.

1. **BELL-SHAPED/CAMPANULATE COROLLA**

When the shape of the corolla resembles that of a bell, as in bell flower (companula), gooseberry (Physalis) etc.

It is said to be campanulate.

Drawing

2. **TUBULAR COROLLA:-** When the corolla is cylindrical expanded from base to apex, as in the central florets of sunflower, it is said to be tubular.

Drawing

3. **PAPILIONACEOUS/BUTTERFLY-LIKE**

The general appearance is like that of a butterfly. It is composed of five petals, of which the outer-most one is the largest and known as the STANDARD petal, the two lateral ones, partially covered by the former, are somewhat like the two wings of a butterfly and known as the WINGS. The two inner most ones are the KEEL petals e.g. Crotalaria, Papilionaceae family e.g. bean, pea, gram, butterfly pea etc.

Drawing