

Fig. 1 Structure of a basic flower: **a** from above; **b** expanded flower, showing the series of parts; **c** side view

Name that Flower

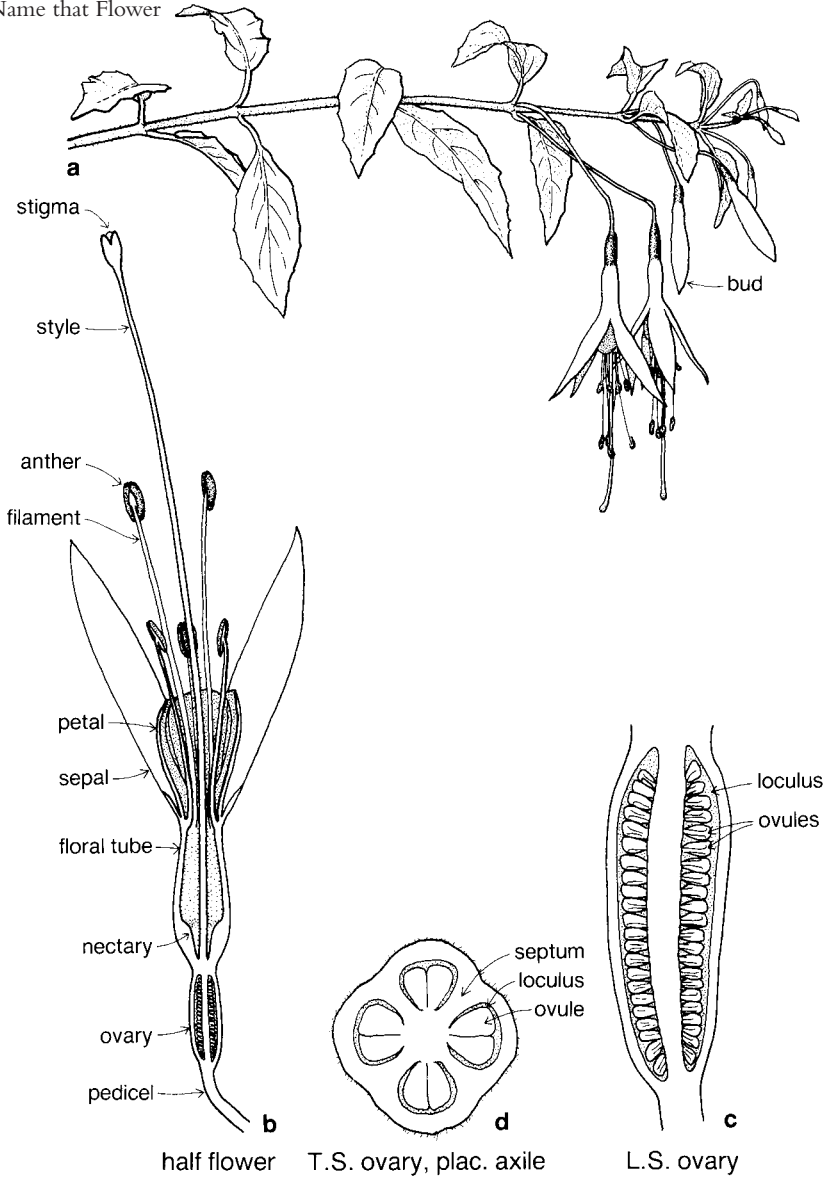


Fig. 14 *Fuchsia magellanica* (fuchsia) Onagraceae

K(4) C4A4+4 G(4)

floral tube present

Erect shrub to 2 m, branchlets drooping. Leaves opposite, ovate-lanceolate, to 8 cm long, margins serrate. Flowers red and purple, in upper axils. Sepals united to a small degree. Nectary present at the base of the floral tube. Introduced from South America and commonly grown, sometimes escaping from cultivation, as in the Otway Ranges, Vic. Flowering summer and autumn. (a $\times 0.7$, b $\times 2$, c $\times 7$, d $\times 12$)



The Structure of Flowers

There are many ways in which the various flower parts can be arranged to make up the structure we recognise as a 'flower'. Consequently, it is difficult to reduce this floral variation to one or a few basic flower 'types'.

This chapter sets out to describe the structure of a simple flower, and then discusses some of the variation commonly encountered. Chapter 8 includes some more complex examples.

We have described floral structure under the following headings:

- Structure of a basic flower
 - The perianth
 - The reproductive organs
- Variation in floral structure
 - Arrangement of parts
 - The perianth
 - The calyx
 - The corolla
 - Symmetry
 - Aestivation
 - The reproductive organs
 - The androecium
 - The gynoecium
 - Placentation
 - The style and stigma
 - Discs
 - Relationships of parts in the flower
 - The floral tube
 - The number of parts per whorl
 - Unisexual flowers
 - The floral formula

Structure of a basic flower

A basic flower (Fig. 1; Pl. 1a) has four series of parts arranged in concentric **whorls** (or rings) on the **receptacle**, which is the name given to the expanded end of the **pedicel** (flower stalk). The two outer whorls are together known as the **perianth**, and are not directly involved in reproduction. The male and female reproductive structures are located in the inner whorls.

The perianth

The outer whorl, known as the **calyx**, is composed of two or more parts called **sepals**, which are often green in colour and enclose the rest of the flower in the bud stage. Inside the calyx is the **corolla**, made up of **petals**, which are usually white or brightly coloured. It is usual for the sepals and petals to be equal in number.

The reproductive organs

A whorl of **stamens**, called the **androecium**, lies inside the corolla. Each stamen has a slender **filament** (stalk) and, at the top, an **anther** in which the **pollen** is produced. The pollen grains carry the male reproductive units.

In the centre of the flower is the **gynoecium**, made up of **carpels**. Each carpel has three parts: an expanded basal part called the **ovary**, in which the **ovules** are produced; a central stalk-like section called the **style**; and a terminal **stigma**. The ovules contain the female egg-cells and the stigma surface is specially adapted to receive compatible pollen. The ovules, after fertilisation and further development, become seeds and the mature carpels with the enclosed seeds develop into the fruit.

Figure 1b illustrates an expanded flower with the various whorls separated from each other. This places the receptacle at the bottom of the diagram, with the other parts laid out in sequence moving from the outside to the centre of the flower. Figure 1a shows the flower from above and illustrates the way in which the parts in adjacent whorls usually alternate with one another. The same flower from the side is illustrated in Figure 1c.

Variation in floral structure

Arrangement of parts

Although the majority of species have their flower parts arranged in whorls, others have numerous parts arranged spirally on a more or less club-shaped receptacle, for example, in the genus *Magnolia* (Fig. 10).

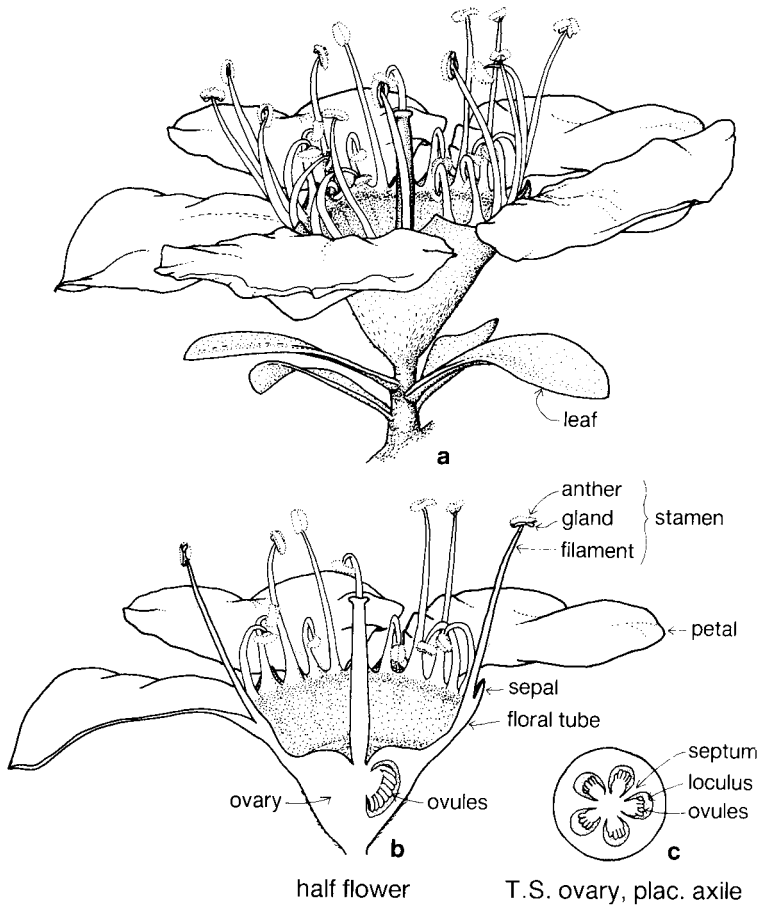


Fig. 86 *Leptospermum myrsinoides* (silky tea-tree) Myrtaceae

K5 C5 A ∞ G(5) floral tube present

Shrub to 2 m tall. Leaves oblanceolate, up to 1 cm long, concave, dull green, and glabrous. Flowers numerous, white or pink, terminal on short lateral branchlets. Fruit a non-woody capsule. Widespread in heathlands and sandy forests, mainly coastal in Vic., SA and NSW. Flowering in spring. See also Pl. 3d. (a-c $\times 7$)