

Chapter 3

Vegetative propagation

SOME PLANTS PROPAGATE BETTER VEGETATIVELY THAN FROM seed. This chapter deals with different kinds of vegetative propagation in detail.

■ Soft-tip cuttings

Most plants with a soft, herbaceous growth habit are worth trying to propagate using soft tip cuttings. Many plant families provide visual clues as to whether they will root or not, for example, adventitious roots formed at the nodes.

- Cut a shoot that includes the first four nodes: two nodes for the shoot and two nodes for the roots.
- Trim off about half to two thirds of the leaves and use a sharp knife to cut the stem below the base of the lowest node at right angles to the stem.
- Dip the cutting into rooting hormone used for rooting softwood cuttings. (Examples of softwood or herbaceous plants that root without rooting hormone are *Plectranthus* and *Impatiens*).
- Make a hole in the rooting medium with a dibber.
- Place the cutting in the hole and tamp the medium back firmly against the stem.
- Water the cutting to help settle it down and wait for it to root. Depending on the plant species, rooting time varies from about ten days to a few weeks.
- Keep damp at *all* times under a mist system or under water-proof sheeting.

■ Hard-wood cuttings

Most shrubs and trees can be propagated from cuttings. It is preferable to take evergreen plant cuttings at the beginning of the growing season, during spring or early summer. Deciduous plant cuttings should be taken before the end of winter, when the sap is rising, and the buds are about to swell.

Deciduous cuttings should be rooted in a protected, but not too moist environment, such as a cold frame. Evergreen cuttings can also be rooted in cold frames, as long as the stems are not too soft. Cuttings should be taken from healthy shoots from the previous season's growth. Choose cuttings that are about as thick as a pencil, but not thicker than your finger. Set these according to the same principles as soft tip cuttings.

A giant form of hardwood cutting is called a truncheon. This is a large branch with a diameter of more than 40 mm. This method works very well for succulent plants and certain tree families, including Anacardiaceae, some



▲ Preparing a soft-tip cutting of *Gazania rigens*

◀ Cutting of *Plectranthus* being placed into florist foam for rooting.

Fabaceae, Euphorbiaceae, Burseraceae, and Bombacaceae.

In rural areas where piped water is a luxury, this is the best way to propagate figs. I have observed this method of propagation successfully applied to figs and other trees, such as the Marula (*Sclerocarya birrea* subsp. *caffra*), the Powder Puff Tree (*Barringtonia racemosa*), and the Coast Coral Tree (*Erythrina caffra*). The Common Coral Tree (*Erythrina lysistemon*) and Wood's Corkwood (*Commiphora woodii*) are used for fencing posts.

The best time to use this method is in late winter or early spring. Root establishment can take up to a full growing season. Bury one-third of the truncheon in soil, while leaving two thirds exposed to produce new growth.



▲ top Heel cutting showing the stripped "heel" when pulling the side branch off the parent plant; bottom Leaf cuttings of Haworthia (left) and Gasteria (right).

▼ Commiphora woodii truncheons used as fence poles.



▲ Leaf cutting of Haworthia growing out as a new plant.

■ Heel cuttings

Heel cuttings are often the most successful type of cutting for the propagation of shrubs and trees. This form of

cutting involves removing a short, actively growing, side shoot from the main stem. A side shoot is torn off the supporting (main) stem and a part of the main stem is left attached to the base of the cutting. This is called the heel. The roots will appear at the callus tissue that forms around the heel. Again, the process of setting these cuttings is similar to the process followed for hard and soft cuttings.

■ Leaf cuttings

Some families will produce roots from leaves. This is a slow method, but does work with a little bit of patience. It is important to let the wound at the leaf-base dry before planting the cuttings in coarse, well-drained river sand. Another method is to place the leaves on the surface and let the roots develop above ground. Do not keep the sandy medium too wet.

The following genera are all capable of producing new plantlets from the leaf bases:

Streptocarpus, African violet (*Saintpaulia*), *Sansevieria*, *Gasteria*, *Haworthia*, *Crassula*, and *Kalanchoe*

Southern African Begonias tend to have tuberous rootstocks and they root better from normal cuttings. Mesems, including *Lithops* and *Conophytum* will all divide from leaves if they are carefully separated from the parent plant.

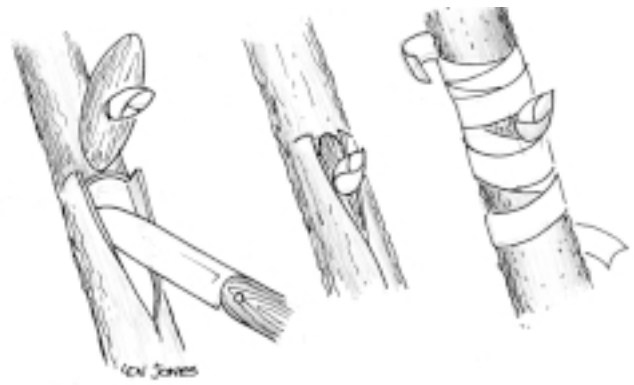
Euphorbia will grow from stems that resemble leaves. Dry out the cut stem for at least a week before striking it in a cutting bed.

■ Budding, grafting, and layering

These three forms of vegetative propagation are not as popular in southern Africa as in the temperate parts of the northern hemisphere. In commercial horticulture, budding and grafting are used in the production of citrus and nut plantations where superior fruiting varieties or clones are budded or grafted onto tough rootstocks that will support the better cultivars.

There has been a certain amount of grafting work done on the genus *Adenium*, but in Africa, it is far simpler and quicker to grow these plants from seed.

▼ **inset** Young rootstock seedlings being grown on in an insect-proof shade house to prevent insect vectors spreading virus pathogens to the rootstocks; **main photo** Young grafted plants with new shoots of the preferred variety of citrus on tough rootstocks. The main shoot visible here is still that of the rootstock and will be removed once the buds have grown a little larger.



▲ Budding. (Drawing: Len Jones.)

Budding

I have included one method of budding only—the T-bud method is most commonly used for citrus in this country. Bud-wood of specific varieties is shipped to a grower and the buds are removed from the bud wood twigs. These are inserted into the rootstock or scion citrus, usually a very vigorous species that does not produce good fruit. A T-shaped cut is made on the stem of the rootstock and the young bark is pulled away to form a pocket or flap into which the bud is inserted. The stem and bud areas are wrapped tightly with budding tape to seal the wound, prevent drying out, and keep pathogens from entering. It takes about 4–6 weeks for the wound to heal. The young bud will have calloused and fused its cambium with that of the scion. The bud is left exposed to grow.

