

Codonocarpus attenuatus. Bell tree A tree of 8 to 10m with grey, smooth bark and numerous pendulous slender branches with long, lance-shaped leaves. It is usually found growing on the high dry river banks of the Brisbane river in the south to Central Queensland. The tree is worthy of garden cultivation mainly for its weeping growth habit and the unusual bell-shaped seed capsules it produces in masses along the branches. These capsules are about 3cm in length and 2cm in diameter. When ripe they break open like layers of a paper Christmas bell to release a small kidney-shaped, hard, black seed. The seed is used for propagation. Although seeds are numerous, germination is poor. Best results have been obtained by burning over the seed. To my knowledge cuttings of this plant have not been tried.

Davidsonia pruriens. An attractive single or multi-trunked upright rainforest tree to 8 to 12m with large pinnate leaves and elliptical leaflets to 20cm. Natural distribution is from northern New South Wales to North Queensland in rainforest areas. The flowers produced on 30 to 35cm pendulous panicles are insignificant, but are followed by clusters of large plum-like fruits that turn deep purple when ripe, usually in late summer to early winter. The fruit has rich, red edible flesh and is used for jam making. The new foliage and fruits are covered with a thin coating of short brown hair which causes irritation to some people. Useful as a garden plant and for indoor use while still young. It has been grown as far south as Melbourne.

Evoida (Euodia) elleryana. This attractive dark green, trifoliolate-leaved rainforest tree is ideal as a garden specimen tree in tropical and sub-tropical climates. It requires moist conditions and grows 8 to 15m in open cultivation. In its natural habitat from the Richmond River, New South Wales to North Queensland and Papua, New Guinea, it can reach a height of 30m. The pink to mauve flowers are borne in dense panicles along the branches at each leaf node on last season's growth. The flowering period is during the summer months for about 6 to 8 weeks. The flowers are followed by attractive green seed pods which remain on the tree until early winter when they split to reveal a shiny hard, black seed. This seed germinates readily if sown in late winter to early spring. Tip cuttings in summer are also successful.

MACHINE PREPARATION OF HARDWOOD CUTTINGS

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I am sure many plant propagators still measure each individual cutting and still use secateurs (pruning shears). All the secateurs I have used in the past bruise the ends of every hardwood cutting and tend to split them, especially when the cutting material is of a large diameter, e.g. *Platanus* (plane tree).

I believe that better and more uniform cuttings can be produced by sawing; this is practicable even for small growers, especially for those who grow hardwooded plants, such as plane trees. Sawing of hardwood cuttings is clean and fast and leaves no bruising of the ends of the cutting.

The experience I have had with hardwood cuttings includes the following plants:

roses (stock)	quince stock
plum (stock)	<i>Lagerstroemia</i>
poplar trees	<i>Hibiscus mutabilis</i>
plane trees	<i>Ligustrum</i> (stock)
<i>Fraxinus</i> (stock)	mulberry (Hick's)

I have been sawing rose cuttings for 10 years.

I would like to point out some of the normal methods where each cutting is made individually with secateurs.

First — time is, of course, the first disadvantage (time is money)

Second — the hard work involved. It is constant and tiring on wrists (although air machines have eased this burden).

Third — the size of the wood used for cuttings can be increased when high speed saws are used.

The saws generally used are very high speed and are usually fitted with blades having 9 to 10 teeth to the inch without any set of the saw. The saw I have chosen is a standard Makita 9", single phase, 3,500 to 4,000 rpm. A firm bench with a moving section or table has been built around this saw. This allows the cutting material to be held on either side of the saw and well away from danger. The saw has no respect for fingers — great care should be taken at all times.

Many hours of grading can be saved by developing a handling system. If you take the first cut off the bundle of wood the cuttings produced are No. 1 grade. The next cut gives the No. 2 grade and so on. The grading is fairly even and a good idea of the number of cuttings made can be obtained if they are placed in a simple wooden box such as that in Figure 1A. These boxes are inexpensive; they also keep cuttings in a confined area, make them easy to handle, are used to bind the cutting material and, again, save on hand methods.

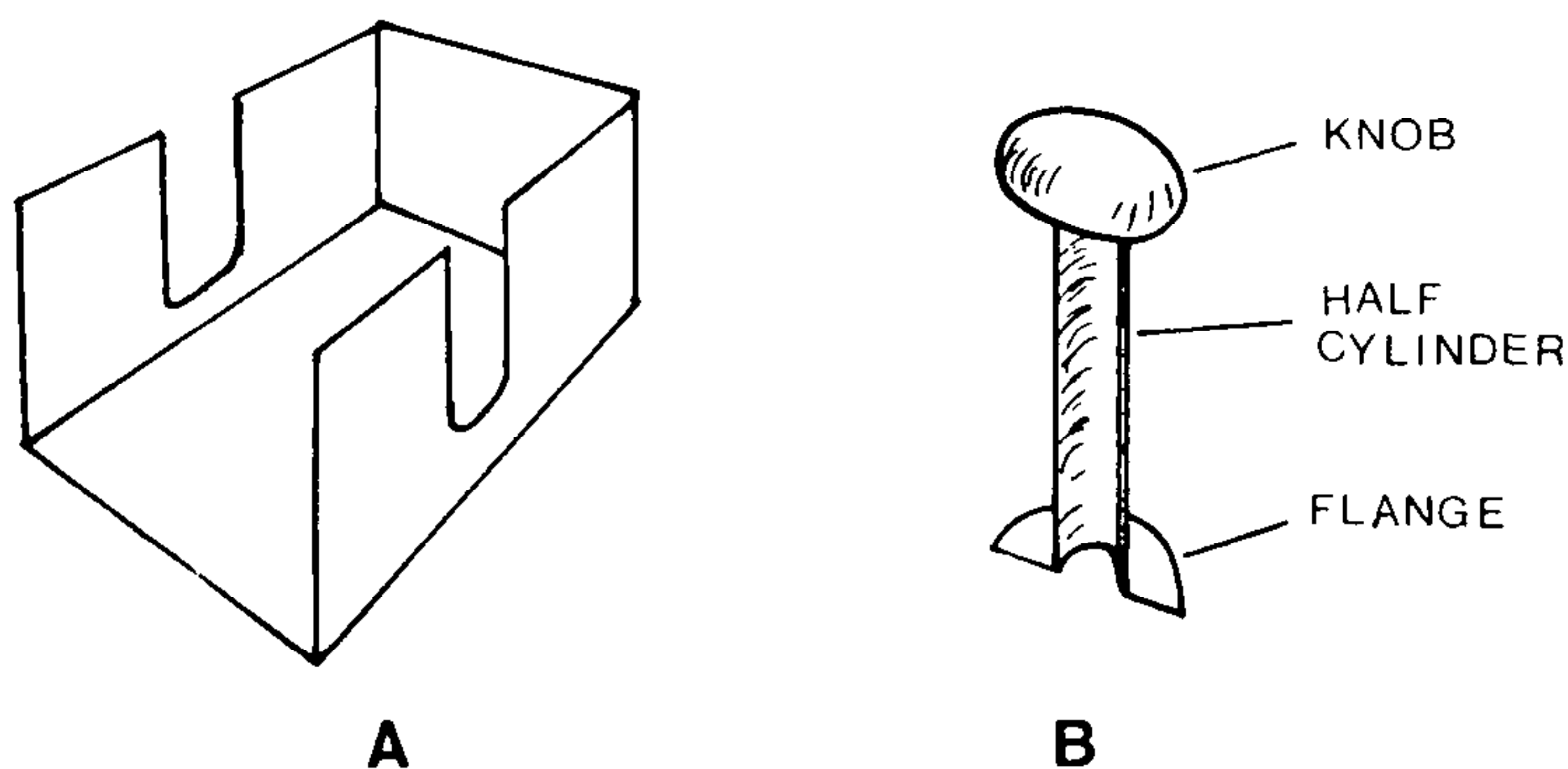


Figure 1. Aids for preparation and planting of cuttings A Open-ended box to hold cuttings during preparation and to speed tying. B Planting aid to save palms of operator's hand and to ensure uniform depth of planting

The next step in the preparation of cuttings is their storage until planted and this is very important.

If boxes are to be used they should always be treated with 1% sodium hypochlorite (used in swimming pools) and stored about ground level, well lined with clear plastic and unprinted paper inside the plastic liner.

After cuttings have callused they can be machine-planted or hand-planted. Hand planting can be assisted by the use of a small tool (Figure 1B) to save palms of the hand and to keep cuttings at the one depth for the task of budding, where necessary. All of the hardwood cuttings are planted through tar paper which is laid several months prior to planting. This paper is laid by machine and pre-punched for correct spacing of cuttings. The paper creates a capillary action and keeps the base of the cuttings moist.

GETTING DOWN TO BUDDING

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One problem that all nurserymen who grow their plants in the open fields have in common is that they have to do much of their work at ground level. Planting, weeding, shaping, budding, heading off, etc. all involve getting down to ground level by bending, squatting, kneeling, crawling, or, if you are lucky, sitting. Before long, every one of these positions becomes insufferably uncomfortable, and you are left wishing that you were growing your plants at bench height in the comfort of an air-conditioned propagating room.

Some of the faster "ground-bound" operations, such as planting and digging can be done by tractor-mounted rigs, but the slowest of all operations, that of budding, seems to have defied all efforts to make the job tolerably comfortable. And a comfortable working position, by its nature, makes for greater efficiency and higher morale.

Some people will argue that by growing the product in containers it will overcome all of these difficulties in one fell swoop, but it seems to me a very radical cure to have to change the whole cultural technique if the only problem is the comfort (or lack of) for the working position.

Many budding positions and aids have been tried. The most common, and the fastest, is to stand feet astride the row and bend from the waist. Other positions are to kneel on one knee, to