carried out in the nursery but can be done on *P. edulis f. flavicarpa* seedlings which have been established in the field.

Rootstock seedlings are raised in seed boxes and when at the 2 to 3 leaf stage they are pricked into 100mm plastic pots. When they are 40 to 50 cm high they are cleft grafted with the selected scion.

The scion consists of a small piece of vine wood, usually the tip, about 80 to 100 mm long with the older leaves removed. The lower edge is cut to a fine wedge to fit neatly into the cleft in the stock and the union is completely bound with PVC tape. Grafted plants are ready for transplanting into the field after the graft has callused, which normally takes 4 to 6 weeks.

SPECIES THAT I HAVE DIFFICULTY PROPAGATING

ROY WHALAN
Whalan's Nurseries
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Eucalyptus ficifolia. One of the most difficult plants I have attempted to propagate is *Eucalyptus ficifolia*, the prolific and colourful Western Australia native.

This species is usually grown from seed and takes several years to flower. There is no way of guaranteeing the colour of the flower as a tray of seedlings will vary from white to several shades of pink and red, also orange and maroon. Gardeners buy what they believe to be a red or orange coloured *E. ficifolia*, and after waiting for years find that it eventually flowers an entirely different colour and could be white.

I have attempted to propagate these both from cuttings and by grafting. By selecting matured softwood cuttings I have rooted a small percentage.

The low percentage didn't worry me as I have found from experience that the few odd plants from a difficult-to-strike species can be grown on in containers and the cuttings from these will give a better percentage. Cuttings from their progeny will give an even better percentage until eventually the cultivar can become quite domesticated.

However, with *E. ficifolia* I found that when the few that I struck were potted into various soil mixes they lived for a period of time, some of them for several months or even years, but they eventually died.

I grafted *E. ficifolia* onto various rootstocks including *E. robusta* and *E. maculata* and quite a few of the grafts actually took, but the scion never grew. It stayed dormant for varying

periods, in a few cases even years, with the rootstock eventually repelling it. I have never attempted to graft *E. ficifolia* onto seedling *E. ficifolia* stock!

Attempts are now being made to propagate *E. ficifolia* by tissue culture. However, I do believe that if I had a few more years on my side I could eventually successfully propagate *E. ficifolia* by cuttings or by grafting.

Ceylon hibiscus. During the early 1950's the Brisbane city council garden department imported several new hibiscus from Ceylon, introducing many new colours in both singles and doubles. They eventually made these available to the nursery trade and I purchased what I considered to be the best of them.

The hibiscus is such an easy plant to strike, one could drop a cutting on moist concrete and it would form roots. However, we found the Ceylon cultivars of hibiscus were both slow and difficult to strike, so I grafted them onto 'Mrs. George Davis' rootstock. They readily took and grew into nice plants, but the rootstock appeared to be too vigorous for the scion and started to sucker. The more we removed, the more the suckers came.

We tried de-eying the 'Mrs George Davis' cuttings, such as we do for rose briar, but this didn't stop them from suckering.

We eventually returned to growing them from cuttings and found that many that were difficult to strike earlier became quite easy when one selected the cutting material from container-grown plants.

Grevellia 'Robyn Gordon'. One of my greatest upsets was with *Grevellia* 'Robyn Gordon.'

I found this plant quite easy to grow and very easy to strike from semi-hard young wood and I distributed many plants of this cultivar long before it was promoted by a Queensland organisation.

Although my original parent plant is as healthy today as when it was first planted, my cuttings appeared to be affected by a disease that turned the foliage black, stunted the growth, and the plants that I did set out became stunted and died. I tried numerous soil mixes with no success.

I have received a new strain of 'Robyn Gordon' from Victoria and I believe that with the use of fungicides and a coarse, sandy soil mix I have overcome the problem. Before long I will have a strain of 'Robyn Gordon' as good as I grew a few years ago.

Acokanthera 'Variegata'. Acokanthera 'Variegata', better known as varigated *Toxicophlaea*, has proved very difficult.

Hazelwoods Nursery in Sydney was producing this cultivar

by grafting onto green seedling Acokanthera but they couldn't have met with a great success as they only had a few plants and one had to be lucky to purchase one.

I have for years been trying to grow them both from cuttings and by grafting but with very mediocre success.

The few that I managed to strike grew very slowly and made it difficult for me to test my theory (that cuttings from a struck cutting in a container gradually become easier to strike).

I have tried air layering, grafting on to green rootstock, as well as growing them from cuttings.

At present I am trying a new method of taking cuttings. I am of the opinion that the sticky, milky sap makes them very difficult to graft

Fortuniana rose rootstock. When I first went to Perth quite a few years ago I was amazed at the vigor of the roses. They were using a rambling rose named 'Fortuniana' as a rootstock; it was standing up to the heat and was thriving in the sandy soil.

We have a lot of sandy soil areas around Newcastle, where it is difficult to grow good roses, so I decided to try 'Fortuniana' rootstock.

I found it harder to strike than the *Rosa multiflora* that we were using. The plants from the bud stage developed into nice plants, but we found the plants didn't transplant as readily as did those on *R. multiflora* rootstock.

Our main trouble was that we had two different sets of roses on different rootstocks, which were costly in production and marketing, and our customers didn't appear to appreciate that we were trying to do, so we dropped the idea.

Container-grown roses. One of my worst mistakes was with roses.

We were growing thousands of roses each year as potted roses. We budded these during the summer in the open ground and the following winter we dug them and potted them in five-inch pots. About October or November we sold the potted roses in flower

In an attempt to save open ground cultivation and to make work easier for our budders we decided to produce our roses in containers. We planted our briar in September in two-inch tubes and as soon as budwood was ready in October we commenced budding.

The first briars we budded had very little top growth and very little root growth but we got almost 100% take with these. As the season progressed the briars got bigger and stronger and the take got less and less.

We found that the large briars had roots through into the trays and these were broken as they were removed prior to budding. This broke the sap flow and caused a poor take. We reverted to striking our briar in the open ground and budding them there.

Conifers. I have found many conifers difficult, yet the majority are so easy that one could kick a cutting along the footpath and it would grow roots.

Cupressus macrocarpa 'Aurea' (Syn.: Lambertiana Aurea) was once only propagated by grafting onto a suitable green conifer rootstock but by selecting and reselecting suitable parent plants I have found these quite easy to strike from cutting.

Cupressus macrocarpa 'Coneybear' (Syn.: Conybere Aurea') is very difficult to strike from cuttings. I have actually grown the odd plant on their own roots but they are very slow to strike and slow to grow when struck. They are easy to graft onto a suitable conifer rootstock.

Rondeletia speciosa. Many years ago I visited Richards Nursery in Toowoomba, Queensland, where I saw a delightful dwarf shrub in full flower. It turned out to be *Rondeletia odorata* (Syn.: *R. speciosa).*

They gave me the cuttings I wanted. I took soft tip cuttings and planted them as I would any normal softwood cuttings. They stayed alive for nearly a year before eventually one after another they rooted and were potted up. From there they took two years to grow into saleable plants.

This shrub, *Rondeletia odorata,* is still flowering in my garden. It appears to be always in flower producing clusters of vivid orange blossoms. Maybe somebody may be able to tell me how to develop it in less than three years.

JOHN TEULON: We have good success with variegated *Toxicophlaea* treated with 2% IBA.

MARK PETERSON: I suggest that the problem encountered with *Grevillea* 'Robyn Gordon' could be fungal and that spraying with Daconil can control it.

ELECTRONICS IN PROPAGATION

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In the past, moisture-sensing has been carried out in different ways. These include the use of time clocks or balance devices