

## PROPAGATION OF ALPINES

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We use modern techniques for alpines where practical but, in some cases, we are going back to some of the older methods of propagation which we find are much more satisfactory from our point of view.

Our nursery is situated near East Grinstead on acid soil and on a very steep north and east slope which suits our alpine plants, and we are sure if they grow with us they will grow anywhere in the country, because we get extreme winter conditions. It is quite normal for us to have several nights in succession of sub-zero temperatures, and occasionally, though we have escaped these past few winters, we get very heavy snow falls. We have been known to welcome the snow, and visitors to the nursery have sometimes been rather astonished to find our staff shovelling snow into our Alpine house to cover the plants, because that's what they are accustomed to in nature. They have a long resting period snugly tucked away under the snow and that is something we cannot offer them very often in this country.

Before I get on to actual propagation of the plants, I would like to share with you something which came to my notice quite recently. You all have heard the old story of, "My Grandmother had green fingers, everything she touched rooted", an old wives tale to believe or not as you pleased. But I was telephoned not long ago by a scientist friend who had no interest in gardening whatsoever, but happened to be working on hormones. He had come across something he felt would interest me as a propagator of plants. He had discovered that the sweat of certain people was rich in plant rooting hormones! Did Grandma, in fact, have that combination of sweaty hands + the correct hormones?!

We grow around ¼ million alpine plants in pots every year, plus heathers, dwarf rhododendrons and dwarf shrubs, especially ericaceous species since our soil suits them. We also go to the extreme and grow some of the world's rarer and difficult-to-propagate high alpine plants. We, therefore, cater to two diverse public interests. Those who wish for quick results and good colour and, because gardens are becoming smaller, they find alpines very good, a large number being able to be grown in a restricted area. Our other clientele are those who seek the rare plants which are difficult to grow and offer a tremendous challenge to any propagator and, you will be

aware, are increasingly difficult to find in commercial horticulture. They are not plants which can be propagated to any great profit, taking a long time to increase and grow. In fact, if we sold any of our rare plants at realistic prices very few people would be able to afford them. It is not unusual for some of the high alpine plants like *Androsace* or *Dionysia* to take five to seven years to produce a saleable plant, incurring considerable production costs. I am, however, trying very hard to preserve a collection of these rare plants.

When garden centres first started I thought that that was the end of us, a highly specialised nursery growing a particular range of plants but, in fact, they have helped us. People go to the centres for plants and most have sales staff qualified to give advice. Their range of plants, though, is of necessity limited. People interested in plants read books and become interested in the specialist plants and then have to come to people like me because we are one of the few nurseries growing the range of rare and difficult alpine plants.

The methods of propagation we use are by seed — a great many plants are from seed — and vegetatively. Our propagation is a very mixed bag. You cannot adopt a “standard” procedure when you have between 8 and 9 thousand different cultivars and species of plants on the nursery. Therefore our propagation tends to be expensive and intensified.

We like to use seeds when we can and we grow a great many species by this method when they can be relied upon to grow true-to-type. Many other plants must be propagated vegetatively from cuttings, particularly the named cultivars.

We use a modern mist unit and, while this is very satisfactory, we are building up a “black list” of alpine plants which do not do well in mist and will not root. There are not many of these, fortunately. I felt that the problem plants would be those with woolly or hairy foliage, but on checking was astonished to find that these are doing well under mist and the problem plants are those with hard, shiny glabrous surfaces! For instance, we find *Lewisia* almost impossible to root from cuttings under mist, but using an old-fashioned cold frame in the open we can get 90% rooting with no trouble.

The modern mist bench took me back to my young days when I spent quite a time on the Continent learning my business. In France we had propagating frames in the full sun with no shading with cuttings inserted in them in sand beds. My job was to hand-spray these frames with a watering can every half-hour — a hand-operated mist unit, the forerunner to today’s electronic controlled unit.

We keep careful records and, over the past six years, have



averaged an 85% strike of the cuttings put through the mist unit.

We like to take cuttings of alpine plants having soft tips. With *Aubrietia* for example, the stock plants are in open beds and are cut hard back after flowering. They quickly throw out a mass of non-flowering shoots which are ideal for cuttings. We don't use a knife on them just pull the shoots out, retaining a small piece of old wood on the base, and insert. They do not need mist but we put them through this as it is faster. In the cold frame they take five to seven weeks, but under mist they can be rooted in two to three weeks. The record for rooting was *Nepeta mussinii*, the common catmint, which was potted two weeks after inserting. We do not wean our plants from mist as we do not use it in quite the conventional manner. We have a long propagating house and keep full ventilation winter and summer, just closing up at night. Soil heating is kept at 70 to 80°F and, with keeping warm roots and cool tops, we find we can pot directly from the mist out into an open frame, as the cuttings have not grown soft.

With some of the shrubby alpine plants we have to make cuttings from the harder wood and include a heel. This applies to *Daphne*, with cuttings taken between June and August, when the wood has ripened. Most of this type of cutting is rooted under mist, but there are one or two *Daphne* cultivars which will only root in the cold frame.

It is very important to take the cuttings at the correct time and this is really a matter of experience. The experienced propagator can tell from the feel of the plant if it is the right time and this can mean the difference between success and failure.

Some alpines are taken from root cuttings, e.g. *Morisia monanthos*, a small yellow-flowered plant which grows on the seashore in Corsica and Sardinia.

If a plant will not root as a conventional cutting we then try every other method and eventually we find one which is successful. This can be illustrated with the herbaceous plant, *Oenothera glaba*, which is sufficiently dwarf to be used on a large rock garden. We could not propagate sufficient plants until our propagator discovered, by accident, that the old withered flower stems, cut into pieces, would root very successfully under mist. Following this, we tried this method with a number of other plants and had success with some. This is contrary to the generally accepted principle of using only vegetative growth for cuttings which, of course, is the correct method for the majority of species. All cuttings are treated with a rooting hormone powder which contains a fungicide.

We do very little grafting, in fact only one plant in the whole nursery, *Daphne petraea*. It is a crevice plant in the mountains and is not easy to root, and, in our own experience, plants on their own roots in cultivation are shy flowering. It used to be grafted on *Daphne mezereum*, but *D. petraea* is evergreen and *D. mezereum* deciduous, and I felt this was a mistake. We now use seedling rootstocks of *D. retusa* and *D. alpina*, which has proved very successful. We do a simple terminal graft, just splitting the stock and inserting the scion so the cambium is touching on each side, and washing over with grafting wax. We get an 80 to 90% take by this method, providing it is done at the right time of year when the flush of growth following flowering has ripened at the base to provide firm scion shoots.

Then there is division. A lot of alphines are mat-forming and lend themselves readily to division. The two principal seasons for this are spring and autumn and, if not early autumn, then it is best left until spring when plants can overcome being torn to pieces more easily. This is an easy method of propagation since many plants root as they run, e.g. Phlox, *Dianthus*, *Saxifraga*. In fact all plants can be used except those which grow from a single neck or crown. It is, however, possible to layer some of these plants particularly where stems grow parallel to the ground, especially if a little sandy soil is placed under the nodes and they are pegged down.

*Daphne cneorum* is not easy to root, but we have had success with a specimen plant by mounding the whole plant up with a mixture of equal parts of peat and sand, leaving just the tips exposed. After six months most stems have rooted and can be pulled off and treated as individual plants. This method produces saleable plants much quicker than conventional cuttings.

We propagate quite a number of bulbs, including lilies, though with imported material disease is a problem. Lilies are propagated by seed and scales. Scales are done in the old-fashioned way in a bag of vermiculite tied and hung in the greenhouse; this method has given us good results.

A major activity is seed sowing of alpiners and other plants. With lilies we used to lay the seed flat on a seed pan and cover with soil, but we now fill the tray with compost and make a groove with a ruler and sow the seed edgewise, achieving 100% germination. This method has produced better results with most flat seeds, e.g. *Gentiana lutea*. We also use unconventional methods for the pasque flowers, *Anemone pulsatilla* (Syn.: *Pulsatilla vulgaris*), which makes a seed with a long awn at the top. This, too, used to be sown flat and was difficult to cover because of the awns. These are now speared



in individually, as are the Geraniums which also have the awns. In nature the seeds more often than not fall upright and the awns twist hygrometrically and drive the seed into the ground, so this was a lesson we learnt from nature, and results are much better than when the seeds are sown flat.

Most seed is sown in January or February in pans in conventional seed compost and covered with  $\frac{1}{4}$  in fine grit and, if possible, left to freeze in an exposed site. The seed is actually sown onto the grit and watered in. This seems to give a more even germination and stops surface liverwort and moss growth, which can strangle young seedlings.

It is important with some alpiners, however, to sow the seed as soon as possible after ripening, e.g. Ranunculaceae, Primulaceae. We have a saying on the nursery for these of "straight from the pod to the pot", since viability of older seed decreases rapidly. *Lewisia* is another example of a plant which needs sowing immediately upon ripening to get good germination.

Seeds of some alpine plants take a long, long time to germinate and we never throw a seed pan away under three years. It is quite common to see a three-year-old seed pan suddenly producing a marvellous crop of seedlings.

Leaf cuttings are also taken of species such as *Ramonda* and, in fact, most of the Gesneriaceae, which root well from leaf cuttings. Again, timing is important, best results being obtained in the spring when growth is just becoming active. The leaf is pulled off with a piece of the old stem and inserted straight or on a slant. With the rarer coloured *Ramonda* this is the only method of maintaining the true colour, since with seed all colours will be present.

J. LAMB: Is it possible to propagate forms of *Anemone pulsatilla* from root cuttings?

W. INGWERSEN: I have been trying to do it for years with mixed results. A lovely pink one, 'Mrs van der Elst', which seems to have almost disappeared now, we used to propagate from root cuttings and were lucky to get 25% success. Theoretically, it should be possible since it belongs to a family which does propagate from root cuttings, and it is still worth trying.

J. LAMB: When propagating *Ramonda* from leaf cuttings, how long does it take to produce a flowering plant?

W. INGWERSEN: Two years.

P. MacMILLAN-BROWSE: An observation on rooting of *A. pulsatilla* from root cuttings. The best results with root cuttings is to take them in their dormant season and, with *A.*

*pulsatilla* which seeds in July, this is August through October. By November it is starting into growth again for Easter flowering.

W. INGWERSEN: This confirms our own experience where best results were achieved when cuttings were taken in August.

B. HUMPHREY: Do the seeds of *Ranunculaceae* and *Primulaceae*, which are sown fresh, germinate before the winter or wait until the following spring?

W. INGWERSEN: They will usually germinate within 2 to 3 weeks if sown really fresh.

B. HUMPHREY: So then you have the problem of overwintering them.

W. INGWERSEN: Exactly. If we cannot sow when we would like, then we keep the seed in a refrigerator kept just above freezing until we can sow them.

## **THE I.P.P.S. ABROAD — HOLLAND AND BELGIUM**

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September, 1980, witnessed the second group expedition of several Great Britain and Ireland Region IPPS members to the continent of Europe. Also in the party to Holland and Belgium was a strong contingent of IPPS members and their wives from the various American Regions, who had previously spent some time visiting nurseries and allied institutions in Britain.

As the theme of this year's conference is "The Gateway to The Future", I shall try to confine myself to some of the features that might be considered reasonably "new" to the nursery industry from the continent of Europe and provide some food for thought and ideas later. From the point of view of those members who participated, this will necessarily be something old; however memories may be jogged and it is quite possible that some of the features highlighted will not now be new to several well-established British nurseries.

I will be discussing items of equipment and one or two techniques that may be of value to the nursery industry in general.

Our tour commenced at the Boskoop Research Station where the Director explained the importance of the Boskoop