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Blue Mountain Azaleas

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Blue Mountain Nurseries was established by my father Stanley Hughes in 1932. His interests were strongly associated with the growing of plants beginning with quick crops, such as vegetables and bedding plants. With his primary interests being ornamental plants, it was not long before perennials, bulbs, cut flowers, and floristry became an appreciable part of his business. The war years saw vegetables returning to the forefront of his endeavours and elite plants were always kept to produce seeds for the following crops or for dividing and naming.

Examples of these were:

- Winter and spring harvesting cauliflowers.
- *Psylliostachys suworowii*—red form. This form does not seem to be available now.
- *Helichrysum bracteatum*—pastel pink forms. This has become common in seed lists.
- *Polyanthus* "Pacific Strain"—a selected seed strain with a wide mixed colour blend.

- English iris in an assortment of colours.
- Narcissus.
- *Scabiosa caucasica* 'Blue Mountain' and 'Mount Cook'.
- *Gaillardia* 'Hughes Yellow', 'Hughes Red', and 'Judy Hughes'.
- *Pyrethrum* 'Otago' and 'Southland'.
- *Chamaecyparis lawsoniana* 'Hughes'.

It is from this background that I went into horticulture and studied at Lincoln College. As a student, on Saturdays I helped in the Molly Coker garden at Ilam in Christchurch, and it was here that I was introduced to the breeding and selection of Ilam azaleas. Through my father I was also aware of the work of Dr. Yates both with azaleas and lilies.

After leaving Lincoln I sourced my first azaleas from the Coker garden and later imported azaleas from England. It was while acclimatizing imported azaleas from England that a lucky break took place. As often happens with a plant under stress, a usually double-flowered form produced single blooms. My first thoughts were that I had received an incorrect cultivar, but pollinated the flowers with an Ilam azalea anyway. Three pods of seed ensued producing just over 300 seedlings. When these flowered over half were double, most in various shades of pink. While growing these seedlings for many years and observing their growth characteristics, much of what is good and bad in deciduous azaleas has been polarized. This has enabled me to form a list of desirable attributes for evaluating deciduous azaleas. These attributes are:

- 1) The dainty double flowers are appreciated by the public. Unfortunately the ones the public admired most generally did not have other important desirable traits.
- 2) Compact bushy plants. The larger flowers are produced on the taller plants. (Large flowers on compact bushy plants seem to be diametrically opposed.)
- 3) No seed. This is great for gardeners as deadheading is not required. But from a breeder's point of view the best plants are the end of the line.
- 4) High health. Resistant to mildew and leaf spotting. This is a new addition to the selection process as these diseases are relatively new in New Zealand.
- 5) Clear popular colours. This would appear to be quite a fashion-driven selection criteria and hard to follow with a long-term crop like azaleas.
- 6) Ease of propagation. There is no use having the best plant in the world if it cannot be propagated.
- 7) Extended flowering season, October to December.
- 8) Large ball-shaped trusses. Short pedicels prevent the rain and wind from causing the flowers to be broken off.
- 9) Large wide funnel flowers.
- 10) Flowers of good substance. These will last well and be fine for floral art.
- 11) Flowers that are colour-fast or fade beautifully.
- 12) Bright autumn foliage.

In the first generation there were three plants of particular note. One, a double white (No 44) which has most of the attributes required, we have named 'Pavlova'

and now have PVR rights for. It is healthy, free flowering, and responds well to tissue culture. Hence we had this one on the market well ahead of other selections. It is becoming known, and is very popular with those gardeners who grow it.

This year we are releasing double apricot no. 12, a nice compact low-growing double apricot, reasonably early flowering (end of October in New Zealand) considering its siblings. We have named this one 'Sunray' and it has been propagated up to commercial numbers by conventional cutting methods.

Another important F1 is nicknamed 'Ballet Girl'. Nice as this one is, in its own right, we do not intend to propagate or sell this clone, but it is very important to us as it produces seed readily. We crossed it in 1989 with all the very best of the Ilam strain available and from the 10,000 seedlings produced we have been selecting, using the above criteria, and test propagating.

At the moment we have reduced these 10,000 to between 200 and 300 seedlings which are very promising in a wide range of colours. We have some at Exbury Garden in England being trialed with their Exbury selections. All the F2 generation, Blue Mountain azaleas as we call them, have large double flowers and are resistant to black spot and mildew. They are also vigorous and easy to grow, propagating readily from cuttings and have a good full flower truss.

It is interesting to note that in the first generation all flowers were pastel coloured but in the second generation with such a wide range of pollen parents they gave their progeny a wide range of colours.

Flower form is also extremely varied. In the double Blue Mountain azaleas the stamens are absent and five petals are present instead (hose-in-hose flowers).

Also, these petals tend to be pointed and this is certainly the dominant flower form, but rounded or frilled petals are also present. The frilled flowers tend to look like carnations. The doubling may be in multiples of 5 as you would expect, e.g., 5 single, 10 hose-in-hose, 15, and 20. However, a few plants have multiples of 6 and I suspect these may be tetraploid plants, e.g., 6 single, 12 hose-in-hose, 18, and one plant has 24-petalled flowers.

If flower form or colour were the only selection criteria it would be very easy to make decisions of which to name. But with all the other criteria evaluated at other times of the year it has made selection difficult. To aid in selection we have designed a labelling system. I usually do much of my evaluations when showing others through the seedlings. With this in mind green labels mean healthy foliage in the autumn, and orange labels mean double flowers. If after 5 years they still look great, a tall bamboo pole is placed beside the plant so that it can be readily found for test propagation. The numbers allotted to the selected plants are for example: 84-90-21

- The first two the year of hybridizing.
- The second two the year of selection.
- The last two the number selected that year.

The selected plants are then test propagated and the resultant strike rate is determined. These propagules are then trialed under our azalea production methods and the resultant plants are evaluated once again.

As an example we had a very good pastel double pink built up to 100 plants. These performed admirably in all respects so 5000 cuttings were struck and in due course planted out in beds. Unfortunately for us, this coincided with the introduction of azalea mildew into New Zealand and this selection was particularly susceptible. It is a very painful experience, both financially and psychologically to cultivate in 4500

saleable azaleas.

The next release will be called 'Softlights', a fully-double, large, soft peachy-cream-flowered form. This azalea is very healthy in growth and foliage producing copious flowers. Our staff and ourselves are very confident of this selection (no mildew).

If all goes well it takes 5 years to evaluate seedlings, a further 5 years of trials, and 5 years to build up a commercial number of plants for sale, a total of 15 years. It probably takes a further 10 years for the gardening public to become aware of a new introduction. However, with tissue culture, 1 year is adequate to build up commercial numbers and with a good advertising budget 1 year to promote a new cultivar to the public. With this in mind, initial evaluations of plants have become of paramount importance.

Now that we have almost completed the selection and evaluation work from the 1984 hybridizing, parents are now being selected for further breeding. Reds, in particular, are being targeted, even though this colour is not fashionable at present. What of the future? We would like to some day find a frilled red, carnation-like azalea flower with the substance to last a full month. The foliage would be a healthy lush green with bright autumn colours late in the season.

Learning To Identify Plants

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I am currently teaching a group of students to identify plants. I begin by teaching the "easy" plants, then move on to plant genera that have less obvious features. The first signs of confusion come when they are shown the two species of native *Fuchsia*. How can *F. excorticata*, a small tree with pale stringy bark be related in any way to the small-leaved ground creeper *F. procumbens*? It is not until these plants flower that the students can see why.

One group of plants that is of particular interest to learn to identify is deciduous trees. When in a deciduous state, one tree looks much the same as another, but even when in this state each genus has very distinctive characteristics. These include differences in bud size and shape, stem colour, branch patterns, leaf arrangement, and bark colour and texture. For example, *Fagus* spp. have long slender pointed buds, *Aesculus* spp. have large sticky buds, the bark of *Platanus* spp. comes off in big flakes, the buds of *Acer* spp. are always in opposite pairs and the buds of *Alnus* spp. sit up on short stalks. To be able to recognise trees in a deciduous state is particularly useful to persons working on an open-ground nursery as winter is the time these trees are being handled the most.

Another group of plants of particular interest is the conifers. Most conifers that are commonly grown fall into one of several main families, within which the genera have common identifying features. For example, all members of the family Pinaceae have needle leaves, but take this one step further and look at the distinctive differences between the genera *Pinus* and *Picea*. *Pinus* species all have their needles arranged in small groups which are joined at the base, and large characteristic cones. *Picea*