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University Finnerty Garden Friends

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Travails of a Hybridiser

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Looking back I have spent most of my life making plant hybrids, starting at the postgraduate level at Durham University crossing Eurasian and North American wood violets. The aim then was to work out their evolutionary relationships, not to produce ornamental plants. This old experience enabled me to recognize that in local gardens a plant often misnamed *Viola labradorica* is in fact a genetically modified version of a common European wood violet, *V. riviniana* (named for the German herbalist/scientist Rivinianus). I wrote this up in an article printed by the Victoria Rhododendron Society and the Victoria Horticultural Society.

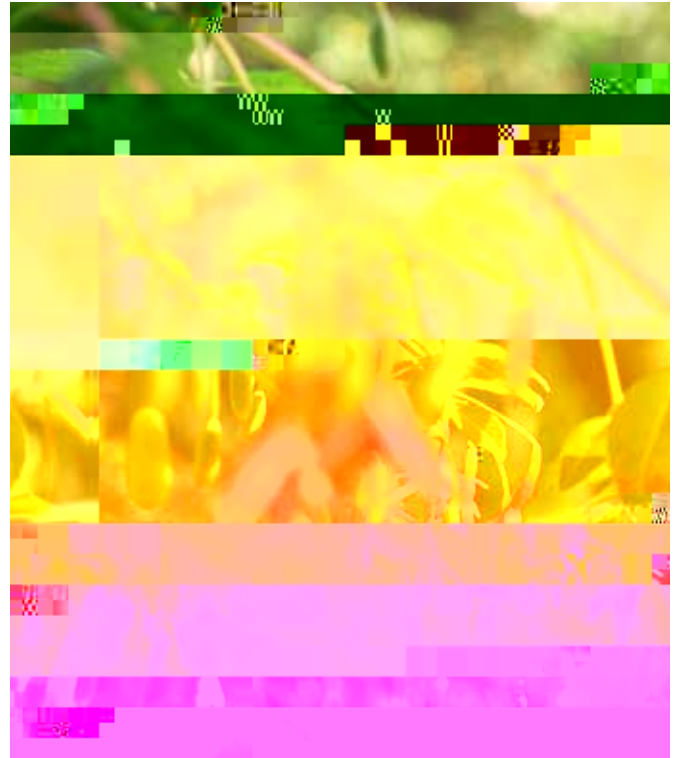
After retiring in 1990, I became more involved with ornamental plants so in this article I will explain my reasons for choosing certain genera, why I abandoned some of them, and the rewards and tribulations these have brought.

To start with, why make hybrids? I like to push the boundaries, produce things that have not previously existed, with the hope that they might be an improvement (however defined) over what currently exists.

Another reason to make hybrids is availability: the hybrid exists but is not available locally. Victoria is on the edge of the horticultural universe, supply of rare plants is a problem (with a tip of the hat to Fraser's Gimble Farms) and tighter import regulations (with which I agree), slow down the importation of new plants. An instance of this is the hybrid skunk cabbage, *Lysichiton americanum x camtschatcensis*. This hybrid cropped up spontaneously long ago in European gardens where both species were being grown adjacently but hybrid plants were not available in Victoria. What to do?

A little dusting with a watercolour brush of the pollen of the white species (contributed by Carmen Varcoe) on the flowers of the yellow one, and the reciprocal pollination, produced seeds and as a result we have this spectacular hybrid growing in Finnerty Gardens along the Long Pond. The details were previously written up in this Newsletter.

Not everything is a horticultural success. My first



attempt with decorative plants, way back in the 1950s, was to cross the two common *Daphnes*: spurge laurel, *D. laureola* and mezereon, *D. mezereum*, the fragrant spring shrublet. I used both the pink and white flowered forms of mezereon. Spurge laurel is of course now a nuisance weed along the West Coast, birds spreading the seeds freely, but in England where I then was it is quite rare. The hybrid was easy to make and vigorous but the appearance was terrible, combining the worst features of each parent. The leaves didn't know whether to stay on or fall off during the winter and the flowers were muddy red from the pink form of mezereon and a dirty brownish green from the alba form. I showed them to Brian Mathew who was at the time the *Daphne* specialist at Kew and he had to agree that they were not exactly a horticultural triumph. A dark leaved plant dubiously purporting to be this hybrid is available in Victoria. Don't bother.

After I moved to Halifax in 1963, I joined various Rhododendron and orchid societies. These societies cover large groups of plants which attract worldwide interest and must have memberships totaling in the multi-thousands. This degree of organization brings great rewards to the membership but presents problems to the amateur breeder since not only is there a couple

of centuries of breeding in these groups but there is an active commercial interest in producing hybrids which makes it difficult for newcomers to break into the market. I eventually dumped my orchid collection of tropical ladyslippers (*Paphiopedilum* and *Phragmipedium*) but found a small niche in the Rhododendron field which may form the subject of a future article.

So to be effective in plant breeding one has to concentrate on groups which are popular—I never sold a single skunk cabbage hybrid—but not so popular that the big commercial guns are trained on them. It helps to have some knowledge of genetics and plant physiology which will get around certain problems such as exactly when to pollinate a flower and how to germinate the seeds, and since I am an amateur breeder with no pressure to produce quarterly profits I can concentrate on plants with slow growth and long life cycles. In fact several of the genera I am currently working on have a two year requirement for the seeds to germinate in addition to needing a number of years to produce flowers. As I am actively pursuing groups such as Japanese maples, Clivia, Magnolia, peonies (tree and herbaceous), Podophyllum, yews and Trillium.

Let me use hellebores to illustrate the evolution of a formerly minor garden feature into a major offering in nurseries and the role that exploration, genetics and technology have played in producing the great diversity of hellebores now available. My own experiences will show the changes and why I have now largely left the field.

My parents grew two hellebores in their garden in the 1930s and these were probably splits from their parents' gardens. There were few nurseries of any size at the time. The two were the Christmas rose, *Helleborus niger* and a Lenten rose then called *H. purpurascens* but now recognized as *H. orientalis* subsp. *abchasicus*. The latter is derived from woodlands to the east of the Black Sea in the region of Georgia named Abkhazia (from which the Abkhazi Garden in Victoria is named). I remember the annual ritual of placing a sheet of glass supported by a couple of bricks over the Christmas rose to keep off the winter rains and black spot fungus. In the 1950s, exploring on my bicycle, I found the stinking hellebore, *H. foetidus* growing wild in a limestone valley nearby and the green hellebore, *H. occidentalis*, in the dry moat of Conisbrough Castle, the remains one presumes of a medieval herb garden. The world was very small then.

Prior to this in 1931 and unknown to most people, J.E.H. Stooke crossed the Christmas rose with pollen from the Corsican hellebore then called *H. corsicus* but now corrected to *H. arguti olius*. He called this hybrid *xnigercors* and it got an RHS Award of Merit in 1971.

This is easy to grow plant is highly desirable, looks like a Christmas rose on steroids but remained a curiosity unknown to the vast majority since it was seed sterile and slow to multiply by division.

In the 1940s Sir Frederick Stern at Highdown in Sussex noticed that his Corsican and Majorcan (*H. lividus*) hellebores had by themselves formed a bunch of hybrid seedlings, these were named *H. xsternii* for him and being seed fertile became slowly available to the public. Several seed strains were developed and have been available in Victoria for many years.

Then Eric Smith, who jointly ran the Plantsman Nursery, put *xsternii* pollen on a Christmas rose producing a series of plants somewhat like *xnigercors* but with varying pink and greenish flushes on the flowers.

These were appropriately named *H. xericsmithii*. Alas these gorgeous plants were, like *xnigercors*, seed sterile and only available to the fortunate and moneyed few from the limited supply of vegetatively propagated plants.

What is left the last remaining combination of the three then available plants to be made: Christmas rose crossed with the Majorcan hellebore, *niger x lividus*, and this was accomplished by Helen Ballard in the 1970s giving us *H. xballardiae*. This is less vigorous combination is a little touchy as regards our local climate and makes a better pot plant protected in the winter. I met Helen Ballard a couple of times at the RHS Spring Shows in the Exhibition Halls at Vincent Square, London. Her exhibit was immensely popular and she won the Polhrre (crossed) TTT (b) G a u (v) yagbit

But the tour was not all about gardens. There were opportunities to take in some of the Maori cultural traditions, visit museums, wineries, hot springs and lake tours, stroll along almost deserted sandy beaches and enjoy the ambience of restaurants incorporating different ethnic origins. In three weeks we covered almost 3000 kilometres in total on North and South Island, eventually returning to Auckland from Queenstown in the south by air for the return flight home.

It is difficult to pick out favorites because each garden had its own individual appeal. But the private gardens created by their owners amazed us most.

Ayrles, south of Auckland, was a sheep farm of thirty-five acres when the owners purchased the land over forty years ago. They horrified their farming neighbours when they immediately planted a mixed shelter belt of fifteen thousand trees to create a backdrop for the gardens. They built lakes, waterfalls and streams and created eleven acres of ornamental gardens with diverse themes. The sophistication of the plant combinations and colours was clearly evident as was the way it blended with the natural

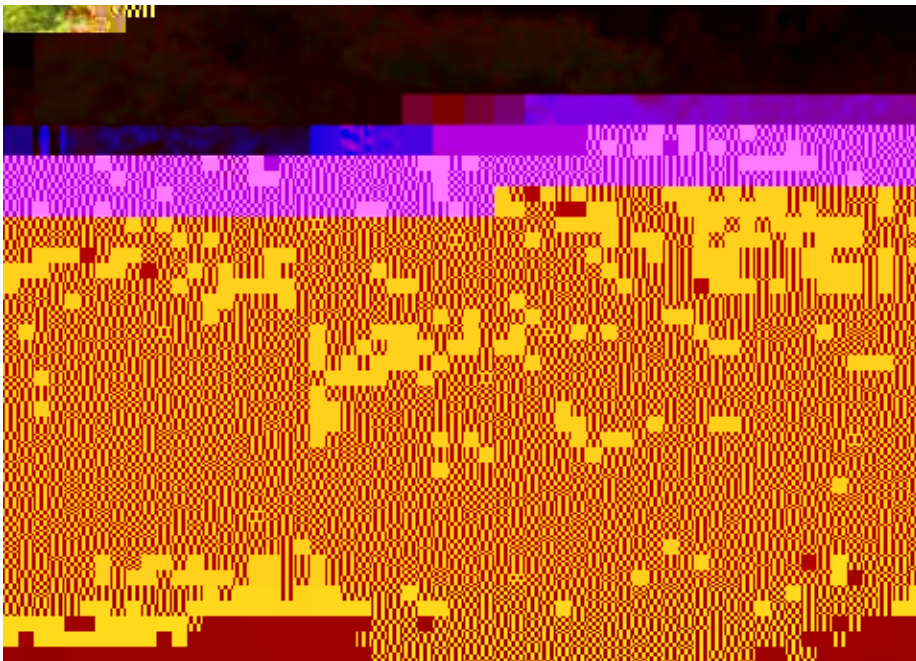
landscape. Bev McConnell is still creating—transforming the wetlands leading into the ocean. The whole estate, tended by just three gardeners, is immaculate.

By contrast, the painter Robyn Kilty's tiny Victorian worker's cottage in Christchurch, known simply as Number Eleven, has a miniature garden which illustrates the artist's boldness by the fusion of the building and plants into a vibrant kaleidoscope of rich colours. We hope her property survived the latest earthquake.

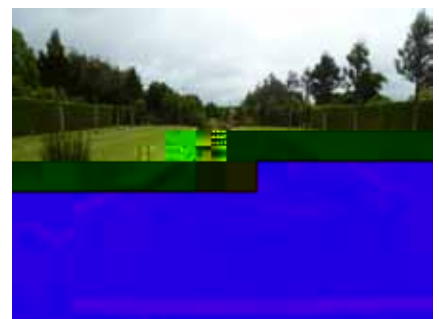
Huguette and husband, George Michel, were born on the French tropical island of Reunion in the Indian Ocean before migrating in 1998 to the Marlborough wine region where George now tends his vines and runs a restaurant whilst Huguette continues to expand her romantic garden. It was Huguette's attraction to the New Zealand hydrangeas that drew them there and both house and garden share the same pastel shades of blue, yellow and white, enhanced by the dramatic backdrop of the Southern Alps.

Paloma Gardens, north of Wellington, was started by frustrated sheep farmer, Clive Higgie, in 1990. This

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show for many years and kept up to date especially from the publications of the RHS whose journals she had bound. I visited her about snowdrops in the 1990s and saw her library. Her tiny cottage on Haliburton Road had not been renovated for years and was subsequently demolished after her death and the land turned into the Doris Page Park as requested in her will.

The Doris Page Winter Garden at Glendale Gardens was set up while she was still living and contains especially her snowdrops and hellebores. Her Lenten roses are improved over what was available to my parents and contain clearer reds, pure pinks and whites with spotting of various degrees on the sepals.

But, back in England, yet more breeding work was being done on Lenten roses especially by Helen Ballard in the 1970s and 80s who incorporated genes from several of the wild species then becoming available from Italy and the former Yugoslavia. By this means she developed a range of colours including blacks—actually very deep reds and glaucous blues and good yellows both clear and spotted. Flower size was increased substantially but she hated doubles and composted any that cropped up in her rows of plants. Doubles later became a fad.

When I retired from academic life and moved to an acreage in Sooke one of my aims was to get involved in the rapidly developing field of hellebore breeding. I was further stimulated by a talk given by Gisela Schmiemann in Victoria and the seeds that she distributed from the Ballard collection from which I was able to extract double and anemone-flowered forms.

But my big plan was aimed at that trio of rare Christmas rose hybrids. The plan was to resynthesise the hybrids and treat the seedlings with the natural drug colchicine (from *Colchicum*, the autumn “crocus”). At the right strength this has the effect of doubling the number of chromosomes in each cell. I wanted to accomplish this because hybrid sterility is often caused by the failure of chromosomes to pair in the process leading to the production of pollen and eggs. Doubling the chromosome number restores fertility, hence seeds can be produced and plants made available.

Things went swimmingly except I never discovered the right strength of colchicines to use and my plants were magnificent but sterile. I gave talks on the subject, most

certainly confusing most listeners by using some of the above names—plants they had never heard of and at the time had no opportunity to acquire. I like to think that one of my talks was of use to Marietta and Ernie O’Byrne when they developed their excellent series of hybrids at Northwest Garden Nursery. I was visited at Sooke by Jim and Audrey Metcalfe from Portland. Jim was a cardiologist who retired to breed hellebores and we had a common interest in developing *xnigercors*. We discussed my plans which, being a scientist, he could understand and he went the alternative route of having one of his plants ‘Honeyhill Joy’ tissue cultured by Terra Nova.

The process was expensive and it took a long time to get plants released to nurseries but it is now available in Victoria.

In the end my scheme to produce seed strains of the sterile hybrids was trumped by technology. Tissue culture enables millions of plants to be churned out cheaply. ‘Ivory Prince’, an *xericsmithii*, the first to be so propagated, was sold initially in Victoria at \$39.99 but a few years later I bought one at a hardware store for \$9.99. Other cultivars followed in quick succession. The contrast in supply with just a few years ago is startling.

Now, many people are working on hellebores. The reputation of the Christmas rose for being a good seed parent has continued; and hybrids with the Chinese hellebore, *H. thibetanus* which is only recently in cultivation; the bladder hellebore from Syria, *H. vesicarius*; and even some strains of the Lenten rose, *H. xhybridus* have been synthesized. None of these have been marketed very extensively and there are hints of problems with weather, vigour and slugs. My own experience is limited but my *niger x thibetanus* was exceedingly slow growing and died after five years without flowering.

The range of colours and the flower quality of the Lenten roses has been improved beyond the imagination of my parents or even Doris Page. I have largely left the field although I still produce a batch of seeds of doubles each year most of which are grown at Brentwood Bay Nursery. All my seeds are the result of careful hand pollination, nothing against bees mind you, they just don’t have much idea of genetics. Other genera call, I am getting excited by my upright growing cut leaved Japanese maples and then there are always new peonies . . .

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