



Heathers 9

Yearbook of The Heather Society 2012

Editor
Dr E. Charles Nelson

Assistant Editors
Anne Small & Barry Sellers

ISSN 0440-5757

The Heather Society
c/o Tippitiwitchet Cottage, Hall Road, Outwell, Wisbech



DAME FELICITY LOTT CBE is affectionately known as Flott. In 2009, during The Heather Society's visit to Mary and David Bowerman's garden, Champ's Hill, a new sport from *Erica cinerea* 'Blossom Time' was chosen to be named in her honour. Dame Felicity was presented with a basket of young plants of *E. cinerea* 'Flott' at Champ's Hill in 2011. (Photograph © Richard Cannon, reproduced by permission; courtesy of Mary Bowerman.)

Arctic Outflow Wind: a cold killer

DAVID WILSON

6605 Hopedale Road, Chilliwack, V2R 4L4, British Columbia, CANADA.

On 19 November 2010, Environment Canada issued an “Arctic Outflow” warning for the Fraser Valley, including Chilliwack, predicating wind-chill temperatures of -20°C during the daytime and at night.

This warning, broadcast on our Weather Network television channel, came as no surprise to anyone who has lived in the Fraser River Valley for some time, especially those who make a living from its abundant and productive farmland. This triangular valley at the mouth of the Fraser River is shared by Canadians living in the south-west corner of British Columbia and Americans living in the north-west corner of Washington State. Just 65km (40 miles) wide on its western edge between Bellingham, USA and Vancouver, BC, the valley narrows dramatically to the east. Here, 160km (100 miles) inland at the historic gold-rush town of Hope, the Fraser River pours from the rugged Fraser Canyon.

This small area of BC, along with the Gulf Islands and the southern tip of Vancouver Island, has a climate heavily moderated by the prevailing winds and weather systems from the Pacific Ocean. We enjoy the mildest winter climate in our country, and are thought of by the rest of our citizens as spoiled and unprepared for cold weather, struggling hopelessly with the slightest snowfall. In some years, even a few in a row, winter can indeed be very gentle: a skiff of snow, a few frosty nights. Those years, we can only complain about too much rain and too little sunshine. But, occasionally, we face the worst of winter weather conditions – an “Arctic Outflow Wind” – when we just hold on and try to get through it. In November 2010, we did just that.

For 35 years or so, Irene and I have been growing heathers in Chilliwack. Here, 90km (60 miles) from the coast, the Fraser Valley is a narrow fertile plain 10km (6 miles) wide, with the Cascade Mountains rising on each side to 1,800 metres (6,000ft). At one time, dairy farming was the main industry, but now modern farms of all kinds surround us; corn (maize), blueberries, raspberries and vegetables are the main crops. There is a large horticultural industry as well. Greenhouses and field crops flourish, but all growers and farmers are well aware of our possible winter threat.

At our nursery the heathers spend winter inside plastic-covered greenhouses, with the sides and ends left open to provide good ventilation during our grey, damp winter days and long nights. When necessary, the houses are closed tight and heated to just above freezing, giving just enough protection for the plants. We have ten houses, a total of 4,700 sq.m (50,000 sq.ft), each house with slightly different requirements.

The Cape heaths and tree heaths need more protection, as do the two propagation houses. Our collection of nearly 800 cultivars and stock plants

needs to be somewhere safe and cozy. But the spring-blooming *Erica carnea* and *E. × darleyensis* are not kept too warm; we don't want them to be finished flowering before the spring sales of February, March and April. In other houses, the "spring tipped" *Calluna*, grown for their colourful new growth, are gently forced with a little heat to prepare them for sales in March and April.

All of our heather plants are grown outside from March to November. This is where heather should be grown – in the open, with bright light to bring out the best colour of foliage and flowers. But, if we want to ensure the survival of our potted plants and our business, they should not be outside in winter.

In our garden, things are different and the demands of producing tens of thousands of plants in a nursery seem very far away. We view the inattention given the plants in the garden as a strategy, a way for us to watch the plants grow without clipping, spraying, feeding, grading, and being sent off to other homes.

Many of the heathers are maturing nicely after a major replant seven years ago. Some pockets of *Calluna* and summer-flowering *Erica* were planted more recently to provide colour for visitors from the 2007 International Heather Conference in Victoria. The garden is framed by a number of dwarf conifers



Looking south-east to the Cascade Mountains. Flowering *Erica × darleyensis* in mid-April 2011 and the empty space where *Calluna* had flowered last autumn.

and other shrubs, and now, after more than 30 years, they have achieved a size that offers some protection to the plants within. *Erica* × *veitchii* rises 2.5m (8 ft), *E.* × *griffithsii* ‘Heaven Scent’ and ‘Jacqueline’ are 1.2m (4ft), and even the gold form ‘Ashlea Gold’ stretches 1m (3ft) into a rhododendron. Unclipped *E.* × *darleyensis* are waist-high and an unnamed *E.* × *williamsii* seedling, now 26 years old, unclipped and happily neglected, is 2m (6ft) across.

Now, in April 2011, other *Erica* species are shaking off the effects of the difficult winter just past. *E. carnea* and *E.* × *darleyensis* are in full bloom. Growing nearby are *E.* × *oldenburgensis*, *E. vagans*, *E.* × *krameri*, *E. cinerea*, *E. tetralix*, *E. scoparia* ‘Minima’, *E.* × *watsonii*, *E. arborea* ‘Alpina’ and even one *E. erigena*, normally an unlikely survivor here in any winter. But, gone from the garden, not one sprig left alive, are all cultivars of *Calluna*, victims of the 19 November 2010 Fraser Valley Arctic Outflow wind.

What happened on 19 November 2010?

The weather conditions during autumn 2010 were considered normal, and this seemed to offer hope for garden plants. The average night-time temperature for October was 3°C (37°F) and, on the night of 11 November, it had dropped to 2°C (35°F). There had not been any prolonged warm spells and plants growing outside seemed to be ready for the forecasted La Niña winter. During La Niña, sea-surface temperatures in the eastern Pacific are cooler than normal by 3–5°C, while above-average precipitation and below-average temperatures can be predicted for the Pacific North West.

Because of the influence of the Pacific Ocean, winters along the northern Pacific coast of North America are milder than its latitude (49°N–62°N) would indicate. The moderating effect on air temperature produces a small annual temperature range that, at sea level, will average only a few degrees above freezing. Meanwhile, each winter, under nearly sunless skies, the interior regions of Alaska, the Yukon, northern British Columbia and Alberta fill with frigid, Arctic continental air masses – cold, dry and dense. The ground receives little heat at the surface as the ice and snow radiate heat away. The temperature falls, and continues to fall as the days pass, often chilling the air in contact with the surface to below than –40°C (–40°F).

Arctic air masses are very dry and their low vapour content permits the loss of more heat from the surface. Because of their great cold, these air masses are very dense and create very high surface pressures that, when combined with their great size, cause them to vacate their spawning ground and move toward the Equator. Most often, their path remains on the eastern side of the Rockies, pouring over the central plains and the Great Lakes. But, on occasion, these Arctic air masses will fill the valleys of the Rocky Mountains and the Coastal Mountain Range. This broad flood of Arctic air is channelled and squeezed down the coastal river valleys at great speed toward the sea, producing gale-force winds often as high as 115kph (70mph), with extremes to 185kph



Erica × *darleyensis* flowering in April 2011. *E.* × *williamsii* seedling and *E.* × *griffithsii* 'Ashlea Gold' in the foreground. In the centre, freeze-dried *Carex* (sedge).

(115mph). This then becomes our Fraser River Arctic Outflow Wind. We knew it was coming and we were prepared.

For us, being prepared means doing all we can to protect our crop. All the greenhouses are sealed and secured, all but one entrance to each house bolted, all heating equipment checked with back-ups, and the generator serviced and ready. The heather plants in all the greenhouses are well watered just in case they should become exposed or we lose our water supply; we know a plant that is dry will not tolerate the cold as well as one that is moist. We also make emergency plans. How do we evacuate 1,000 trays of cuttings if we should lose the cover on a propagation house, and how do we do that very quickly?

The plants in the garden are left to fend for themselves and given no extra covering. At times in the past, I have protected special plants, especially if they have been recently planted. Evergreen branches seem to be the best and most manageable for a quick cover: they are easy to put on, easy to take off and heavy enough to stay in place. If they have to be left on for any length of time, the airy branches of spruce, pine or fir are preferred to the dense, heavy foliage of western red cedar.

There are so many resources for weather information these days that no one

should be caught by surprise in any season. On 18 November 2010, we saw the weather change from gray drizzle to clearing skies and felt the first gentle and steady east wind. It was a good day to make final preparations, a perfect day – above freezing, bright and sunny – a chance to enjoy the clear views of the mountains capped with fresh snow.

Then, throughout the early morning of 19 November, we listened to the increasing roar of the east wind. It was very difficult to wait for first light before going out to make certain all our hard work had been worthwhile and things were holding fast.

For the next 85 hours, the average wind speed was 73kph (45mph) with the average gust speed 88kph (55mph), and maximum gusts recorded at 102kph (64mph). For the remaining 60 hours of the event, average wind speed dropped to 53kph (33mph) and average gust speed to 68kph (42mph). There is no pause during an Arctic Outflow; not for a moment does the wind stop. During this time, actual temperatures were not that cold, beginning at -5°C (23°F) on the first day and only dropping to -11°C (12°F) five days later. However, humidity levels dropped into the teens and this, combined with the wind chill, can be very destructive.

On 26 November, we were back above freezing and our familiar grey skies and drizzle replaced the very welcome sunshine of the previous few days. The Arctic Outflow Wind was gone, leaving behind damage to trees and power lines, and drifts of debris at every corner. Our greenhouses were fine; all was well inside and the plants were happy to have had the extra heat and sunshine. But, in the garden, things were quite different. There was damage to some of the *Erica*: the larger stems of *E. vagans* and some *E. × griffithsii* were split. Nevertheless, this is not uncommon here in most winters, and our cool, wet La Niña spring will help the plants to heal. However, all *Calluna* were dead.

There are members of The Heather Society who know and understand the science of why and how plants are killed in the extreme conditions of a rapid freeze exaggerated by severe wind. If anyone has a theory or speculation about what might have occurred, I'd like to encourage them to share their ideas. If losses had occurred in a greenhouse, I could easily explain how the cold got in, or why the heat got out. What is difficult to comprehend is why only *Calluna* should be damaged, and so completely that none will have a chance to recover. *Calluna* died while being given shelter by what we believe to be less cold-tolerant *Erica*. These survivors will now have more room to grow, but must face the next weather challenge alone.



This low-profile propagation greenhouse is less susceptible to wind damage. In April 2011, 150,000 cuttings are ready for spring potting.



Wilson's Nursery Ltd in July 2012, looking south; Kaylee, a student worker, with *Calluna* beds grown for fall sales.

Postscript: October 2011

As predicted, La Niña affected the Pacific northwest coast of North America for the entire spring of 2011. Pleasant weather arrived at last on our national holiday, Canada Day, 1 July. With it came the expectation for farmers and gardeners that there was still time to sow, plant and harvest. Until then, it had been difficult to notice any seasonal change; since Christmas, the weather had been cool, grey and wet. For the first half of 2011, daily temperatures, hours of sunshine and precipitation amounts were all recorded on the unfavourable side of normal averages. However, many garden plants injured in November 2010 recovered nicely in the gloom of our long, winter-like spring. The split stems of *Erica vagans*, *E. × griffithsii*, and *E. × oldenburgensis* were replaced by vigorous new branches. The crisp, freeze-dried leaves of *Ilex × altaclerensis* 'Lawsoniana', *Zenobia pulverulenta* and *Lonicera nitida* 'Red Tips' disappeared under a flush of new growth. But, in my garden, still waiting for attention are those areas where losses were whole, and finding suitable weather conditions to cultivate, replant and renew empty spaces has been difficult. In the nursery, sales of *Erica* and *Calluna* were strong. Gardeners, always full of hope, pushed into garden centres for shelter and a taste of spring. Most realized it was not a season to return home with trays of forced polyanthus, pansies and vegetable plants, and



Mixed *Erica cinerea*: 'Bucklebury Red', 'P. S. Patrick', 'Celebration' (golden foliage), with *E. × griffithsii* 'Valerie Griffiths' in background.



Mixed planting of St Dabeoc's heaths, including *Daboecia cantabrica* f. *alba*, 'Atropurpurea', 'Waley's Red' and 'Arielle'.

many turned instead to the durable colours of flowers and foliage offered by our favoured plants. By mid-summer, the first whispers were heard of a La Niña encore, a repeat of the below-average temperatures and above-average mountain snow levels of this winter past. Television weather broadcasters, few of who are meteorologists, are now proclaiming the perils ahead. Those who love mountain recreation will be delighted and our ski resorts may have another super year. Gardeners, on the other hand, may be cautious and wait for spring to spend and plant. We in the business of growing plants will do all we can to suggest the opposite and encourage people to take advantage of fall planting. Autumn, in many ways, is the ideal time to plant heathers on the west coast when most winters, and perhaps even the one ahead, can be forgiving, despite the predictions.

Clematis and heathers

RAYMOND J. EVISON

The Guernsey Clematis Nursery Ltd, Domarie Vineries, Les Sauvagees, St Sampsons, Guernsey, GY2 4FD.

One of the most successful plant associations that I have been aware of is the use of *Clematis viticella* cultivars to grow over winter-flowering heathers, an idea used by John Treasure in his garden at Burford House in south Shropshire and inspired, I believe, by Christopher Lloyd. A large bed of winter-flowering heathers is splendid from late winter onwards; but the flowers of the heathers then fade away, leaving a rather uninteresting carpet of fresh green foliage until the next flowering season. With the use of *viticella* cultivars, the green carpet can be transformed into a very pretty patchwork of colours from midsummer until early autumn.

Clematis viticella itself varies in the wild from differing shades of bluish mauve to white. It was introduced in the sixteenth century from Italy to British gardens and has since given rise to many splendid small-flowered cultivars. The ones most worthy of garden use for planting with heathers are as follows.

'Abundance': slightly less vigorous than many in this group, having pale green foliage and deep pink-red, 4–5cm wide flowers that are truly produced in great abundance.



Clematis viticella 'Alba Luxurians' (© R. J. Evison)

'Alba Luxurians': a fascinating white cultivar with a black centre and sepals that reflex, most sepals having a green tip. The flowers, held on slender stems, nod and therefore dance around in the breeze like a white butterfly.

'Black Prince': raised in Christchurch, New Zealand, by Alistair Keay. Its flowers are so dark that it needs the background of golden foliaged heathers to show it to its best advantage. Semi-nodding, deep claret reddish purple flowers, 5–9cm across, with a maroon centre.

BONANZA™ ('Evip031'): raised in Guernsey by Evison® & Poulsen®, only growing to about 1.5m, with 7.5cm wide flowers produced in great profusion, so ideal for a smaller bed of heathers. Blue-purple flowers with a pale yellow centre.



Clematis BONANZA (© R. J. Evison)

'Carmencita': an ideal cultivar for golden foliaged heathers with stunning semi-nodding, satin-textured, carmine flowers. The 5cm wide flowers have a black centre.



Clematis 'Etoile Violette' (© R. J. Evison)

'Etoile Violette': raised in France by Morel in 1885 but still one of the most free-flowering *viticella*. A little vigorous, so best for the larger bed of heathers. Semi-nodding violet-purple flowers, 7.5cm wide, with a contrasting yellow centre. Due to its deep flower colour it is ideal for a very sunny location.

'Hägelby White': introduced in 1998 and found in Hägelby Park, Stockholm, Sweden. Dainty, nodding, white flowers 5cm across, which are produced in great abundance.

'Kermesina': raised in France by Victor Lemoine in 1883 but still a very good performing plant. Semi-nodding, rich, deep red flowers, 6cm across, with four blunt sepals which recurve and have green tips early in the season.

'Little Nell': a charming plant with 5cm wide, delicate creamy white flowers with overtones of mauve; not over vigorous so ideal for the smaller garden.

'Madame Julia Correvon': a great favourite of mine, with semi-nodding, rich red sepals; the 7.5cm wide flowers have a pale pink reverse with a white central bar and pale yellow centre. The flowers are also rather gappy, each sepal twisting and having a recurving tip: a plant with a great charm.

'M. Koster': somewhat criticized for its rather gappy flowers. The semi-nodding, deep mauve-pink flowers, 10cm wide, have sepals that roll back on themselves, the tips also recurve giving the flowers an untidy but attractive look.

'Minuet': another plant for the smaller bed of heathers; produces an abundance of 5cm wide flowers which are semi-nodding and have a white background with mauve veins at the margins. An ideal plant for the dark-flowered, summer-flowering heathers.

PALETTE™ ('Evipo034'): raised by Evison® & Poulsen®. its delicate veined flowers will blend perfectly with white-flowered, summer-flowering heathers or grey-foliaged ones. The 5cm wide flowers have blue-edged sepals fading to white, with blue veins on the inner parts and a contrasting blackish centre. Again, ideal for the small garden and area.

'Polish Spirit', raised by Brother Stefan Franczak in Poland, is a marvellous plant but a little too vigorous for use as a ground-cover plant as after a few years it would smother its host. So again it is best for a small tree, or if your heathers have passed their sell-by-date you could cover them with 'Polish Spirit'!

'Royal Velours': a *Clematis* with stunning flowers, they are so dark that a light background is needed to show them to their best advantage. The full rounded, 6cm wide, semi-nodding flowers have deep velvet-purple sepals with a satin sheen and a greenish-red centre. Raised in 1914 by Morel, France.



A selection of *Clematis* for growing with heathers: 'Madame Julia Correvon' (upper right), 'Venosa Violacea' (middle) and 'Royal Velours' (lower left) (© R. J. Evison).

'Venosa Violacea': another great favourite of mine which has the largest flowers of all the *viticella* cultivars, was raised by Lemoine, France, before 1884. It looks most pleasant with pale green or golden foliaged heathers. Its semi-nodding, 10cm wide flowers have boat-shaped sepals which are white with purple veins, becoming more intense towards the edges of the sepals. During hot summer weather the sepals become almost purple throughout; black anthers.

My list is rather extensive but I believe the ones described are some of the best for using with winter- or summer-flowering heathers.

I believe the *viticella* cultivars with double or semi-double flowers are not so well suited to use with ground-cover plants, they are much more useful for growing up into small trees such as *Sorbus* (mountain ash) and *Syringa* (lilac).

The method for planting *Clematis viticella* amongst heathers is quite straightforward. The *Clematis* need to be planted approximately 2 metres apart and it may be necessary for a heather plant to be removed on an established bed. Soil preparation is important. However, *Clematis* are not particular about soil pH, so soil suitable for heathers is also suitable for *Clematis*. If *Clematis* are to be planted into an established bed of heathers, it would be useful to refresh the soil. Dig a 30×30cm hole, about 30cm deep, and replace the soil with well-rotted garden compost at the base and fork this in well. Then back-fill with old potting compost and re-use any good top-soil. A handful of blood, fish and bone meal should be forked into the refilled hole. Make sure the *Clematis*, still in its nursery pot, is placed into a bucket of water for 20 minutes before planting so the root-ball is well saturated. When planting, remove the cane support allowing the top growth to flop over the heathers. It is also important to bury the root-ball 5cm deeper than it was when growing in its nursery pot. Water in the newly planted *Clematis* and make sure it gets plenty of water until it is truly established.

Clematis, when grown over heathers in this manner, should be pruned back hard in early winter to allow the heathers to start their flowering at the correct time and also to prevent rain-soaked *Clematis* leaves sagging on to the heathers causing harm to their foliage and possibly spoiling their flowers. The amount of *Clematis* growth during the summer months is not sufficient to cause harm and the heathers will not become spoilt or smothered. Due to the earlier-than normal pruning of the *Clematis*, new growth may appear early the following year if the winter is at all a mild one. If this is the case, and there are also mice present in the heather border, damage may occur to the young fresh growth. I have used short land-drains to put over the crown of the *Clematis* allowing the stems to grow up through the drain. This worked very well but looks rather unsightly. However once the *Clematis* became established the land-drains were removed.

In gardens that are very exposed to strong winds, it is important to peg down new growth in the late spring and early summer with a bent piece of thick wire, so that the stems of the *Clematis* are not all blown into an untidy heap.

Clematis viticella cultivars are equally successful when used to enhance the flowers of the summer-flowering heathers; and in addition to *C. viticella*, *C. texensis* cultivars and *C. × durandii* may also be used to give many interesting flower and colour combinations.

The fascinating **PETIT FAUCON**[™] ('Evisix') with its semi-nodding, deep royal blue flowers with yellow anthers and its non-clinging habit to about 1 metre also looks very, very dramatic when grown through heathers.

My up-to-date knowledge of the best heathers to use is rather lacking but I am sure readers will have far greater knowledge and be able to select the very best to use. However, I am certain that those who follow John Treasure's planting combination idea will be truly rewarded with lots of colour from the winter-flowering heathers and their summer-flowering cousins, enhanced by the very colourful *Clematis viticella* group.

Have fun and paint a picture as an artist but with *Clematis* and not a paint brush.

Clematis 'The President' at Rose Cottage



Clematis 'The President' (© D. Plumridge) is grown by Rita and David Plumridge over winter-flowering heaths in their garden near Consett, County Durham. Its compact growth is not overpowering, and the Plumridges find it ideal for growing with heathers.

What can heathers tell us about the origins of biological diversity?

MICHAEL D. PIRIE

Department of Biochemistry, University of Stellenbosch, South Africa.

In *Heathers* 8 (2011), Ted Oliver described a field trip during which we collected species of *Erica* in Madagascar. This expedition was a part of a continuing research project on *Erica* in which Dirk Bellstedt (also at the University of Stellenbosch) and I are working with Ted to ask one of the most fundamental questions in biology: that is “What are the origins of biological diversity?” or, put another way, “How do species (such as our own, *Homo sapiens*) come into existence?”

If we want to address this kind of question, we have to look back in time, deep into the evolutionary history of life. The box-office takings from *Jurassic Park* illustrate a human fascination with lost, ancient worlds (or at least some of the toothier aspects of them). Whilst that particular scenario may be a little far-fetched, real evolutionary biology is, in a way, still an attempt to reconstruct the ancient past. The discipline is not all retrospective, though. Evolution is a dynamic, ongoing process, and the relevance of the answers we can get extends from the past to our present and into the future. For example, we might learn about the impact on biodiversity of past phenomena, such as climate change and mass-extinction events, and use this knowledge to predict the future impact of similar, human-mediated, current events (of which we are all too aware).

I have come to exactly the right place to look for these answers, because if you want to study the origin of species you should go somewhere where it has been happening a lot. And here I am – right in the middle of the Cape Floristic Region (CFR; Figure 1), an area of unparalleled biological richness choc-a-bloc with plant species found nowhere else on earth.

The south-western corner of the African continent is blessed with a Mediterranean-type climate with warm, dry summers and mild, wet winters. It is not just ideal for producing wine and having braais (South Africa’s variant on the barbecue): the CFR is botanically remarkable. Its area is tiny, but in the 90,000 sq. km (an area smaller than Portugal but a little more than Ireland), there are around 9,000 species, 70% of which are endemic – without human intervention they do not grow anywhere else in the world. To put it in context, this kind of diversity is more what you would expect in the hyper-diverse wet tropics close to the Equator; whilst the endemism is comparable to that of isolated oceanic islands (Linder 2003).

To evolutionary biologists, the CFR is like a giant natural laboratory. To better understand what drives the process of speciation in general, we can ask “What is it that has made the CFR so species-rich?” and set about testing plausible hypotheses. This we can do using the vast source of data represented by the

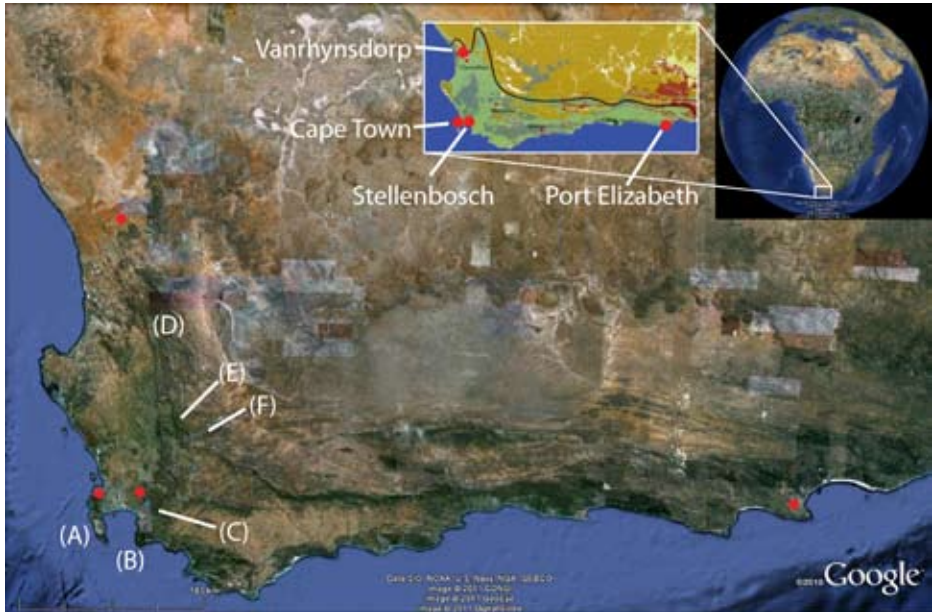


Figure 1. The Cape Floristic Region (CFR). The red dots correspond to Vanrhynsdorp in the North-West, Port Elizabeth in the East, and Cape Town and Stellenbosch in the South-West. A = Cape Peninsula; B = Hottentots-Holland; C = Kogelberg (South-West region); D= Cedarberg; E = Ceres; F= Hex River Mountains (North-West region). Satellite images are from Google Earth. Data SIO, NOAA, US Navy, NGA, GEBCO; Image © 2011 TerraMetrics; Image IBACO © 2011 Cnes/Spot Image.

CFR's numerous species. And, if the CFR is our lab, then our fattest "lab rats" are the disproportionately big Cape plant groups: the so-called "Cape Clades", just 33 of which together represent around half of the species richness of the CFR (Linder 2003). In the CFR, the iris family is very diverse (just two subfamilies, Ixioidae and Nivenioideae, include 516 species), as is the Restionaceae (the Cape reeds; 340 species) and, of course, the Proteaceae (264 species) including the archetypal *Protea*. By a long way the largest of the lot, and therefore offering the biggest single source of data, is the genus *Erica*. The most up-to-date figure for species numbers in the CFR is 692.

The process of speciation can basically be summarized as the divergence of one interbreeding group of individuals to become two or more reproductively exclusive new groups. How might this occur? One possibility is that the groups became physically isolated – by chance dispersal of an individual to somewhere remote, or by the appearance of a new barrier – a mountain chain, or a desert or rising ocean caused by climate change, for example. The groups may "drift" genetically over time and eventually become sufficiently different that they are no longer reproductively compatible, even if they do subsequently meet again

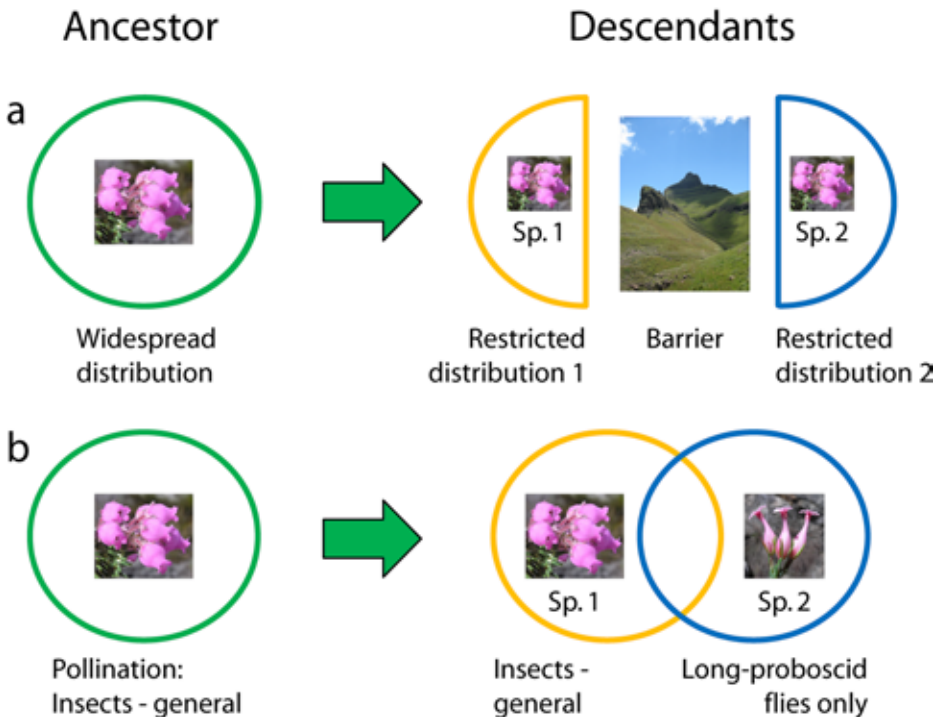


Figure 2. Two potential modes of speciation: **a** by the splitting-up of a geographically widespread species into two daughter species with more restricted distributions; **b** by specialization of one daughter species to a different pollinator.

(Figure 2a). Another possibility is that the way in which plants reproduce might change – a change for example in the way a flower is structured might attract a different pollinating insect, effectively isolating groups that might live amongst each other, simply because of the restricted way the pollen travels (Figure 2b).

Both these possibilities are plausible for *Erica*: in the CFR, most species are found in a vegetation type called fynbos which has a highly scattered distribution – from patches on the coast to those spanning the Cape Fold Mountains. One of the remarkable things about fynbos is the way in which the suite of plant species that make up the vegetation changes as you go from place to place; and, as ever, *Erica* is the prime example: there are even individual species found only on single mountain tops. Have those species become isolated and subsequently drifted to become new ones? Might past climatic changes have played a role, causing changes in the distributions of species – moving higher or lower, up and down the mountains with episodes of climatic warming and cooling?

On the other hand there is the immense floral diversity, in particular the apparent differences in pollination mechanism – there are the tiny, dull-coloured

flowers that cast pollen to, and collect pollen from, the wind; a range of general insect-pollinated flower types; those with long, narrow tubes visited specifically by long-tongued flies; the large, brightly coloured, tubular flowers visited by sunbirds (Rebello *et al.* 1985); and even one bizarre species, *E. hanekomii*, that is pollinated by mice (Oliver & Oliver 1999; Turner *et al.* 2011)! How do we set about testing which of these hypotheses are true? Just as in *Jurassic Park*, the key lies in the DNA. The DNA of ancient species is a little more difficult to lay hands on than Michael Crichton might have suggested, so instead we look at the species that are alive today.

The first step is to read the sequence of the DNA code in certain regions of the genome of as many species as possible (Figure 3a & 3b). We then compare these sequences and infer a kind of family tree, otherwise known as a phylogeny, on the basis of shared changes (Figure 3c & 3d). We can then apply a bunch of exciting phylogenetic methodologies to infer, for example, the ages, geographical distributions, and physical characteristics of ancestors (represented in Figure 3d and 3e where the branches of the phylogenetic tree meet). As in any scientific study, our sampling size needs to be large enough to be able to get a statistically significant result. We cannot re-run evolution in order to test our theories (at

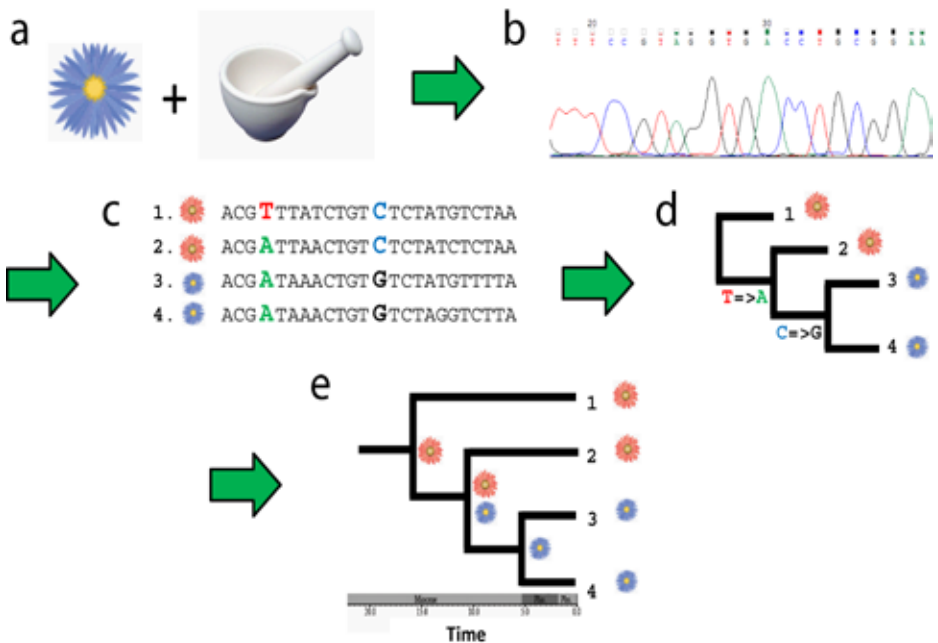


Figure 3. A flow-chart for phylogenetic analysis and evolutionary inference methods: a: DNA extraction and Polymerase Chain Reaction (PCR) amplification of targeted marker regions; b: DNA sequencing; c: alignment of sequences of multiple species; d: phylogenetic analysis; e: molecular dating and ancestral trait reconstruction.

least, not outside the simplified virtual world of a computer), so it is especially important to look at a biological group that exhibits enough of the phenomenon we are interested in. For speciation, *Erica* is the best example in the CFR. So why hasn't anyone tried this before? To understand at first hand the challenges involved, I would thoroughly recommend that you take a walk in the fynbos of the Western Cape and count how many different heathers you can see. If you have a good eye, you might find upwards of 20 species within a few hours of strolling along a path (and a single, well chosen, stride could take you over a handful in one go), by which time you may have no idea whether the one in your hand is new for that day or not. You may need rather longer to put names on them.

As you will probably know, some Cape species are distinctive, but many fall into the notorious "small pink job" category, or are wind-pollinated with tiny flowers and tinier diagnostic characters – if you know what to look for. That, for starters, is why having Ted Oliver on your team is essential. Then you have got to sequence and analyse the DNA. It will be a while before the "next generation" DNA-sequencing technology will be up to dealing with all of the 820-odd species of *Erica*, so this remains a painstaking process. All in all, it is a huge task.

Is it time to give up in disgust and look for an easier project? Of course not! We have done a lot of fieldwork hiking through the fynbos, as well as in heathlands further afield (such as in Madagascar). Numerous friends and colleagues have done the same – for which we are extremely grateful. To date we have managed to lay hands on more than half of all the *Erica* species, which is no mean achievement.

Our first estimate at the phylogeny of *Erica* (Pirie *et al.* 2011) is based only on a single DNA region and is therefore a preliminary result, but from it we can already draw a number of interesting conclusions. Firstly, it is immediately apparent that there were a lot of changes in flower types as the species of *Erica* originated. For example, many of the bird-pollinated species are more closely related to insect-pollinated species than they are to other bird-pollinated ones.

Secondly, there is evidence to suggest that common ancestors of today's *Erica* species dispersed out of Europe onto the African continent. As well as making the giant leap down to the southern tip of Africa, they managed to colonize the mountains of tropical East Africa, and those of Madagascar and a few other islands in the Indian Ocean. In contrast to this impressive record in long-distance dispersal, there are some species-rich groups that did not manage to break out of restricted areas, such as the regions south-west and north-west of the Cape Fold Mountains. The South-West (which includes the Cape Peninsula, Hottentots-Holland and Kogelberg) and North-West (including the Cedarberg, Ceres and Hex River Mountains) regions (see Figure 1) have long been recognized as areas of high endemism (Oliver *et al.* 1983). Our results indicate that many of those unique species originated where they now grow. For



a



b



c



d

Figure 4. *Erica* species of the NW-clade:

a: *E. arachnocalyx*; b: *E. cetrata*; c: *E. lavandulifolia*; d: *E. inflata* (© Petra Wester); e: *E. plumosa*; f: *E. oresigena*; g: *E. senilis* (© Berit Gehrke); h: *E. totta* (© Berit Gehrke); i: *E. rubens*; j: *E. thunbergii* (unless stated otherwise © Ted Oliver).



e



f



g



h



i



j

illustration I have put together a number of (mostly) Ted Oliver's photographs of species of the North-West group (Figures 4 & 5). Clearly the range of flower forms that they represent is immense, including the remarkable *Erica junonia* (Figure 5 left), with long, narrow flowers pollinated by long-proboscid flies; and the mouse-pollinated *E. hanekomii* (Figure 5 right). This pattern of geographically



Figure 5 *Erica* species of the NW-clade: *E. junonia* (left) and *E. hanekomii* (right) (© Ted Oliver).

clustered, but morphologically diverse groups of closely related species seems to be repeated across the CFR. This could point to an answer to my original question: the origin of species of *Erica* might be driven by shifts between different pollinators. This scenario will need to be tested more rigorously when we have more data. There are also more practical applications for phylogenies, such as the classification of species. Various smaller *Erica*-like genera, such as *Phillipia* and *Blaeria*, were once recognized, but recently were re-classified by Ted Oliver (2000) as belonging to *Erica*. This was actually an unusual move – most taxonomists with only morphology to work with have tended to “split” off unusual species into different genera rather than to “lump” them together. Our results, however, clearly support the taxonomic changes: many species of the former “minor” genera are more closely related to different *Erica* species (in the strict sense) than they are to each other. It is more meaningful just to regard them all as *Erica*.

The huge number of species of *Erica* is, however, a bit of a challenge when it comes to remembering species or retrieving information about them, and hence a classification system has been used to divide up the species into more “digestible” groups. Unfortunately, the sections of George Bentham (1839), and Guthrie and Bolus (1905–1907), used to group the Cape species illustrated in Baker and Oliver (1967) and Schumann and Kirsten (1992), fare rather poorly when compared with our new knowledge of relatedness. This is an almost inevitable consequence of all that chopping and changing in flower types that I have mentioned. Floral morphology provided the main defining characteristics of Bentham's, and Guthrie's and Bolus's sections because flowers present many of the distinguishing characters that are most straightforward to observe.

However, when evolution acts to select the same traits in different organisms then those traits just won't reliably diagnose groups. The classification needs revision, but there is a way to go before that should be attempted.

In the meantime, we hope to learn a lot more about *Erica*, and in so doing to learn more about both the CFR and the process of evolution.

Acknowledgements

Funding for this research project was provided by a research grant from the South African National Research Foundation to Dirk Bellstedt and a Claude Leon fellowship to Michael Pirie. The authors would like to thank Cape Nature and South Africa National Parks for permission to collect plant material.

References

- BAKER, H. A. & OLIVER, E. G. H., 1967. *Ericas in Southern Africa*. Cape Town.
- BENTHAM, G., 1839. Tribus III Ericaceæ, pp 612–694 in CANDOLLE, A.-P. de (editor), *Prodromus systematis naturalis regni vegetabilis*. Volume 7. Paris.
- GUTHRIE, F. & BOLUS, H., 1905–1907. *Erica*, pp 4–513 in THISELTON-DYER, W. T., (editor) *Flora capensis*. Volume 4 (1). London.
- LINDER, H. P., 2003. The radiation of the Cape flora, southern Africa. *Biological reviews* **78**: 597–638.
- OLIVER, E. G. H., 2000. Systematics of Ericaceae (Ericaceae-Ericoideae): species with indehiscent and partially dehiscent fruits. *Contributions from the Bolus Herbarium* **19**.
- OLIVER, E. G. H., LINDER, H. P. & ROURKE, J. P., 1983. Geographical distribution of present-day Cape taxa and their phylogeographical significance. *Bothalia* **14**: 427–440.
- OLIVER, E. G. H. & OLIVER, I. M., 1999. *Erica hanekomii*, a new prostrate species from the Western Cape, South Africa. *Yearbook of The Heather Society* **1999**: 36–42.
- PIRIE, M. D., OLIVER, E. G. H. & BELLSTEDT, D. U., 2011. A densely sampled ITS phylogeny of the Cape flagship genus *Erica* L. suggests numerous shifts in floral macro-morphology. *Molecular phylogenetics and evolution* **61**: 593–601.
- REBELO, A. G., SIEGFRIED, W. R. & OLIVER, E. G. H., 1985. Pollination syndromes of *Erica* species in the south-western Cape. *South African Journal of Botany* **51** (4): 270–280.
- SCHUMANN, D. & KIRSTEN, G., 1992. *Ericas of South Africa*. Vlaeberg.
- TURNER, R. C., MIDGLEY, J. J. & JOHNSON, S. D., 2011. Evidence for rodent pollination in *Erica hanekomii* (Ericaceae). *Botanical journal of the Linnean Society* **166** (2): 163–170.

The successful use of heathers in containers

JOHN HALL

Whitehall Nursery, Red Lane, Headley Down, Bordon GU35 8SR, Hampshire.

Heathers are great plants to brighten up any container, pot, trough, barrel, window box or hanging basket, and very simple to plant up. Plan your selection of varieties to provide the flower and foliage colour for the period required. This could be to brighten up part of the garden during the bleak winter months or in a large container use more varieties to provide all-year-round flowers and foliage.

I have a friend in Wales who has two old wheelbarrows planted up with winter- and spring-flowering, and two more planted up with summer- and autumn-flowering heathers. At this time of the year the winter- and spring flowering wheelbarrows will be sitting proudly at the entrance to his house, in full flower, offering a warm welcome during the bleak winter. As soon as the spring flowers are tiring, they are trimmed back hard, top-dressed with granular fertilizer, and retired to the back garden to recover. The other two wheelbarrows, full of sensational summer and autumn heathers are then pushed out to take centre stage. When these tire the process is repeated. To my knowledge the same plants have been performing non-stop for over ten years.



Figure 1. Terracotta pot with heather planted by John Hall (© E. C. Nelson).

Containers need drainage holes to allow excess water to escape, as continually waterlogged soil will kill heather roots. It is easier to add water to container soil than to take it away. Larger containers benefit from putting coarse materials (brick rubble, broken up polystyrene, etc.) in the bottom to act as a sump. The use of ericaceous compost should suit all. Select plants for the required flower and foliage colour. For small containers use slower growing varieties, more vigorous ones can be used in larger containers, such as barrels.

For the Home Counties Group meeting of The Heather Society at the RHS Garden Wisley in late September 2010, I showed two terracotta planters containing a collection of heathers for year-round colour. These were prepared quickly without a lot of preparation, and were much admired. The heathers I selected were *Erica arborea* 'Estrella Gold' (centre), *Calluna vulgaris* 'Dark Star', 'Spring Cream', 'Spring Torch', *Erica cinerea* 'C. D. Eason', *E. × darleyensis* 'Kramers Rote' and 'White Perfection' with the intention of having flower and foliage colour for most of the year. Alternate the seasonal flowering period around the container. As flowers tire they are trimmed back hard to allow their neighbour to flourish. Regular top-dressing, as well as attentive watering, will maintain vigour.

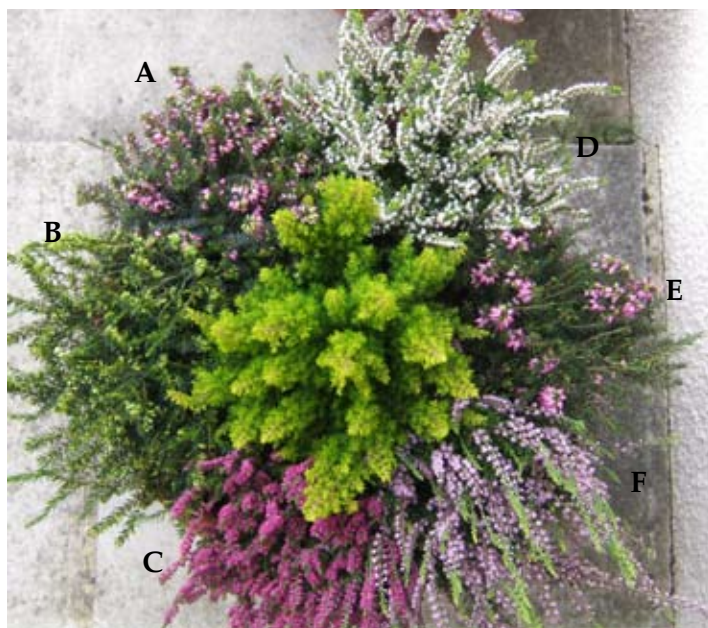


Figure 2. Vertical view of one of the pots with *Erica arborea* 'Estrella Gold' in centre (© E. C. Nelson).

A. *E. × darleyensis* 'Kramers Rote', B. *E. × darleyensis* 'White Perfection', C. *Calluna vulgaris* 'Dark Star', D. *C. vulgaris* 'Spring Cream', E. *E. cinerea* 'C.D. Eason', F. *C. vulgaris* 'Spring Torch'



Figure 1. A blue *Calluna*? © Sten-Börje Sörensson (reproduced by permission).



Figure 2. A blue “painted heather”: the heather lover’s nightmare (© E. C. Nelson).

Blue heathers – myth or reality?

JOHN GRIFFITHS

Preston Lodge, Little Preston, Leeds LS26 8UR

As every heather enthusiast knows, true blue flowers in *Erica* and *Calluna* are unknown, and so a photograph from Sweden showing what appeared to be a pale blue flowered plant of *Calluna vulgaris* was greeted with great surprise and incredulity when it was first seen by members of The Heather Society at the 2011 Annual Gathering in Cumbria. The plant in question (Figure 1) is a seedling that was raised in 2006 by Sten-Börje Sörensson, a Swedish member of the Society and a keen grower and photographer of heathers. His photograph shows flowers with delicate pale blue sepals and petals and contrasting with bright red bracts, which, together with yellow-gold foliage, make for a unique and very attractive plant. The vagaries of subject exposure and lighting mean that the accuracy of colour reproduction in photographs is always open to some doubt, but Börje is an experienced heather grower and does consider the flowers to be a true blue. He intends to seek another member's opinion and to provide plants for wider study. He comments that the colour fades as the flowers age, and it will be interesting to know how the plant performs under different soil and climatic conditions and if it will prove to be a stable and reproducible colour break. Apart from its potential scientific importance – genetically it would be the equivalent of a blue rose occurring naturally – this discovery could herald a new era in heather cultivation. Time only will tell, but one immediate effect of this fascinating report was to stimulate much musing about the whole concept of blue-flowered heathers. Could naturally blue heathers ever become a horticultural reality, perhaps replacing those artificially coloured travesties now regrettably so common in garden centres (Figure 2)?

It is interesting to speculate why heathers have never been known previously to produce blue flowers, even though lavender, purple and mauve cultivars are relatively commonplace. The study of flower colour is a very complex area, but in simple terms one can say that flower pigments fall into two broad groups: the **carotenoids** (so named because they provide the colour of carrots) which are yellow and orange, and the **anthocyanidins** which provide the reds, purples and blues of flowering plants. It is well known that yellow pigments are lacking in the flowers of the European heathers, but can be found in those of various Cape heaths. As far as all the hardy *Erica* species and *Calluna* are concerned, flower colours arise solely from anthocyanidin pigments, there being no yellow carotenoids in the petals. In 1976 an analysis of anthocyanidin pigments in flowers from 39 species of *Erica*, mainly Cape heaths, but also including *E. carnea*, *E. erigena* and *E. cinerea*, was undertaken (Crowden and Jarman, 1976). It was found that, depending on the species, there could be up to five different anthocyanidin pigment types present, but in the case of *E. carnea*, *E. erigena* and *E. cinerea* only two

were detected, namely **cyanidin** and **malvidin**, cyanidin being the more dominant of the two. Cyanidin generally gives reds, and malvidin usually provides purple and mauve colours. For blue flowers the pigment **delphinidin** (so named as it is found in delphinium flowers) is normally required, and the absence or very low level of this in these three hardy heather species helps explain why these have never been known to produce blue flowers.

However, no Cape heath has ever produced blue flowers either (Rebello and Siegfried, 1985), despite the fact that Crowden and Jarman found significant amounts of delphinidin in the flowers of several species of these. So we have to conclude that whereas the absence of delphinidin usually means that a flower will not be blue, the presence of delphinidin is no guarantee that it will. Flower colour is therefore not simply a matter of which pigments are present or absent, although admittedly it is the most important controlling factor. Other factors must be playing a part. Another example that demonstrates the complexities of flower colour is provided by the blue cornflower. The flowers of this plant contain no delphinidin and yet they are a striking blue. The blue is in some way provided by the normally red cyanidin pigment

To try to rationalise these complexities let us consider what actually controls flower colour. There are five principal factors involved:

1. *The chemical class of pigment present in the petals.* The pigment itself is of course the primary source of the colour. As already mentioned, usually yellows and oranges originate from carotenoids and other colours from anthocyanidins. Within the latter group, it is known that reds are normally provided by cyanidin, reds to mauves by malvidin, and blues by delphinidin. If no plant pigments are present then the flower will be white.

2. *The internal pH of the petal.* All anthocyanidin molecules have the ability to change their colour from red, through purple, to blue as the pH of their environment changes from acidic towards alkaline. Thus they are pH indicators, just like the well-known indicator litmus, which is red in acid solution and blue in alkaline solution. This chameleon-like property of anthocyanidins can easily be demonstrated with the juice from the red cabbage, which is deep red due to the presence of cyanidin. Addition of a little baking powder (sodium hydrogen carbonate) to the juice will make the solution alkaline (pH greater than 7) and will turn the colour intense blue. The original red colour can be restored by acidifying the solution to a pH below 7 by adding a little vinegar. Delphinidin shows a similar colour change to cyanidin, but requires less of a rise in pH to achieve this, and in fact the switch from red to blue only requires a near neutral pH of about 6–7. This is presumably why it is nature's pigment of choice for blue flowers – such a pH is much easier to produce in a living system. The lack of blue in Cape heaths may then be due to an unfavourably acidic pH in the petals.

Blue is in fact a very rare colour in the family Ericaceae and only the genus *Rhododendron* provides blue flowers, and this by a very small number of species. Most blue garden rhododendrons are selections of these species or hybrids and

in reality the colours tend more towards violet than pure blue. Even the so-called blue mountain heath, *Phyllodoce caerulea*, another member of the Ericaceae, is in reality purple. Research into producing blue roses by genetically implanting delphinidin (which roses lack and so never produce blue flowers in nature) has only been partly successful, as rose flowers are quite acidic (pH 3.7–5.8) and despite the successful introduction of delphinidin into the flowers, only a bluish mauve colour has so far been achieved (Katsamuto *et al.* 2007). If the flower pH in one of these genetic modifications could be raised to nearer 6–7 then a true deep blue rose would be the much coveted prize.

The effect of pH on the colour of flowers is also demonstrated very nicely with the lungworts (*Pulmonaria*), many of whose flowers change from pink to blue as they age. The main flower pigment is delphinidin and it starts off pink because young flowers have an acidic pH (5.6), but as the flowers age their pH increases and the delphinidin changes gradually from red to purple (pH 6.0) and finally to blue (pH 6.7) (Lokar and Poldini, 1978).

3. *Chemical modification of the anthocyanidin.* This is where the chemistry gets rather more complicated, but in simple terms sugar molecules can be attached by a chemical bond to parts of an anthocyanidin molecule to produce what are known as *glycosides*. This has the effect of modifying the pH sensitivity of the colour somewhat and this in turn influences the colour of the pigment within the petal.

4. *The presence of copigments.* Copigments are colourless biomolecules that associate with the anthocyanidin pigment within the petal so modifying its pH sensitivity and colour. They can also help make the colour more resistant to fading.

5. *Complexation with metal ions.* Under certain conditions anthocyanidin pigment molecules can form strong chemical bonds with metal ions, such as those of iron and aluminium. This results in a colour change that is similar to that produced by adding alkali: that is, a normally red pigment will become blue, with the difference that the blue colour will be stable and permanent and will no longer be affected by the pH within the petal. The classic example of this is provided by *Hydrangea macrophylla*. Its flowers contain delphinidin but because they are acidic their normal colour is pink. However, the plant has the ability to take up aluminium salts from the soil and at sufficiently high levels of aluminium in the flower the delphinidin molecules bond with the aluminium ions to generate an intense blue delphinidin-aluminium pigment, which renders the flowers permanently blue. The uptake of aluminium is very dependent on soil pH, so the “blueing” of hydrangeas requires an acidic soil pH as well as a source of aluminium. Mention has already been made of the fact that the cornflower owes its intense blue colour to cyanidin, and in this case iron is the metal involved – an unusual complex between iron and cyanidin providing a stable intense blue pigment.

Although Crowden and Jarman did not detect any delphinidin in the three

hardy heathers that they studied, this does not necessarily mean that there was none present at all, and cultivars of these species selected for intensely purple flowers may have increased levels of this pigment. If Börje's *Calluna* does prove to be a true blue mutation then it is possible that a genetic change has produced a higher flower pH than the norm, and if the flowers also have a reasonable level of delphinidin present then this would lead to a blue. The blue colour could of course arise by other genetic changes, involving for example malvidin. Whatever the source of the blue, the paleness of the colour means that the level of the relevant pigment must be quite low, and also the levels of any other non-blue pigments must be even lower, as any significant amounts of non-blue pigments would muddy the colour. For example, when "blue" roses were attempted by introducing the delphinidin gene, care was taken to use white-flowered plants with no red cyanidin present in order to maximize the chances of producing a clear blue. In the event, it was the natural acidity of the rose flower that prevented this ambition being fully realised,

In the case of heathers the effect of pH on flower colour has never been investigated, and so this prompted some simple experiments to see if blue flowers could be produced from purple or red heathers by simply making their pH alkaline. The most promising species to study is *Erica cinerea*, as the reddish purple flowers of the type are already somewhat bluer than the flowers of other hardy heather species, and cultivars that have been selected for deep purple colours could be even better candidates. The most direct and simple way to increase the internal pH of a flower with minimal interference to its structure would be to expose it to ammonia vapour. Ammonia molecules penetrate tissue very easily and once dissolved in cell sap should produce a strongly alkaline pH. A bell heather, *E. cinerea* 'Purple Beauty', was chosen as the guinea pig for the first experiment because of its intense purple flowers. Flower spikes were suspended in the vapour above a 20% solution of ammonia. It was found unnecessary to immerse the flowers in the liquid itself to produce an effect.

It was observed that the flowers responded rapidly to the vapour, and within 30–45 seconds the purple flowers had turned an attractive gentian-blue (Figure 3). On removing the flowers from the ammonia and allowing them to stand for an hour there was some slight reddening as the absorbed ammonia evaporated, but the flowers remained a distinct violet-blue for several days, accompanied by gradual fading and browning.

The experiment was repeated with three other purple-flowered heathers. *Erica cinerea* 'Golden Drop' gave identical results to 'Purple Beauty', and *E. × watsonii* 'Claire Elise' also gave a good blue colour, although slightly muddier than that of the two bell heathers. However, the purple ling, *Calluna vulgaris* 'Darkness', gave a curious result, with younger flowers at the top of each spike turning deep violet with patches of the original purple, whilst older flowers were a mixture of blue and grey. The *Calluna* flowers took noticeably longer to change colour in comparison with the bell heathers.



E. cinerea Purple Beauty 45 seconds exposure to ammonia vapour 1 hour later

Figure 3. The effect of ammonia vapour on *Erica cinerea* 'Purple Beauty'.

When the experiment was repeated with various pink- and red-flowered cultivars no blue coloration was observed. Thus *Erica cinerea* 'Pink Ice', *E. vagans* 'Mrs D. F. Maxwell', *E. × griffithsii* 'Jacqueline', *Calluna vulgaris* 'Tib', 'Red Beauty', 'Allegro' and 'J. H. Hamilton' showed only a darkening and muddying of the original colour. All three pigments cyanidin, malvidin and delphinidin change to blue in ammonia, although not at exactly the same pH value, so the different behaviour of the various cultivars to ammonia exposure presumably reflects the different proportions of these pigments present and the different states in which they are found within the flowers (in other words, factors 3 and 4 above).

These simple experiments do not offer an immediate direction in which we might go for producing blue heathers, as, after all, ammonia is highly toxic to plants. However they do indicate that the potential is there in some heathers for blue flowers to be generated under certain circumstances. The results do suggest that if the internal pH of purple heather flowers could be increased naturally, for example by spontaneous mutation, to a sufficiently high value then permanently blue flowers might result in favourable cases.

There is also the intriguing possibility that introducing aluminium or iron salts to the flowers might also produce stable blues, much as is done with hydrangeas. This would occur with delphinidin and/or cyanidin if the state in which they are bound within the petal is favourable (malvidin does not complex in this way). Interestingly, there is now strong evidence that this approach may be a real possibility. David Plumridge noticed earlier this year that in a bed of *Erica cinerea* 'Cindy' – another intense purple-flowered bell heather – some plants were producing blue flowers (Figure 4). The shade of blue is remarkably similar to that produced by 'Purple Beauty' when it is exposed to ammonia (*cf.* Figure 3). He



Figure 4. Blue flowers on *Erica cinerea* 'Cindy': ©David Plumridge (reproduced by permission).

observed the effect again more recently when a bed of *E. cinerea* was watered with a dilute solution of iron sulphate (a commonly used lawn-moss killer) in order to control a build-up of moss, and within 24 hours the flowers had developed a blue colour. The previously observed blue coloration on 'Cindy' was then attributed to a drift of lawn-sand which had been applied to the lawn around that time. It is not unreasonable to assume that in both instances the plants had taken up the iron salt, and within the flowers the metal ions had reacted with the anthocyanidins to produce a blue pigment. Obviously more controlled experiments need to be undertaken, if only to see how reproducible the phenomenon is and how different cultivars behave, but at least such experiments will be relatively simple to carry out, and should be well within the capabilities of the average heather grower. So why not take a look at the effect of iron sulphate on your *E. cinerea* next season and let us know how you get on? I will certainly be doing so.

If metal complexation proves to be a viable route to blue heathers, one can visualise a group of heather cultivars that "blue" readily with iron or aluminium salt solutions being marketed in a pre-blued form as true blue heathers. Or alternatively such heathers could be sold in their "unblued" state with a sachet of blueing salts, so allowing gardeners to choose their own colour scheme. As "blueing" is already commonplace with the garden hydrangea and does no harm to the plants or the environment, there is no real reason why heather lovers should object to such a process. One might argue that it is an artificial blue, but it is certainly not as artificial or objectionable as painted heathers. The vision of a swathe of (relatively) natural blue heathers through heather beds of pink, red, purple, silver and gold is a very attractive prospect, and I for one look forward in anticipation to further developments.

Acknowledgements

I would like to thank Sten-Börje Sörensson for use of his photograph, and David Plumridge for his valuable input and his photograph.

References

- CROWDEN, R. K. & JARMAN, S. J., 1976. Anthocyanins in the genus *Erica*. *Phytochemistry* **15**: 1796–1797.
- KATSUMOTO, Y., FUKUCHI-MIZUTANI, M., FUKUI, Y., BRUGLIERA, F., HOLTON, T. A., KARAN, M., NAKAMURA, N., YONEKURA-SAKAKIBARA, K., TOGAMI, J., PIGEAIRE, A., TAO, G.-Q., NEHRA, N. S., LU, C.-Y., DYSON, B. K., TSUDA, S., ASHIKARI, T., KUSUMI, T., MASON, J. G., & TANAKA, Y., 2007. Engineering of the rose flavonoid biosynthetic path way successfully generated blue-hued flowers accumulating delphinidin. *Plant cell physiology* **48** (11): 1589–1600.
- LOKARA, L. C. & POLDINIA, L., 1978. Studio sulla colorazione da antocianidine in alcune specie della flora italiana. *Giornale botanico italiano* **112** (56): 327–336.
- REBELO, A. G. & SIEGFRIED, W. R., 1985. Colour and size of flowers in relation to pollination of *Erica* species. *Oecologia* **65** 584–590.



Figure 1. View of the completed, award-winning BHGA garden, entitled “Heathers in Harmony”, at the RHS Hampton Court Place Flower Show 2011 (© Rebecca Hall).

BHGA Small Garden at the RHS Hampton Court Palace Flower Show 2011

WILL QUARMBY

Moat Farm Granary, Newsham Road, Thirsk, North Yorkshire YO7 4DB
email: will@quarmbylandscaping.co.uk



Figure 2. Will Quarmby's plan for the BHGA garden (© W. Quarmby).

The aim of our garden was to promote the use of heathers, by illustrating their diversity in flower and foliage, colour, texture, height and spread, with the additional benefits to wildlife. We wanted to build on the success of the 2009 garden by raising the awareness of this underrated plant.

When I was approached by the British Heather Growers Association to design and build the garden at Hampton Court I was excited about the project and was really looking forward to working with them.

The brief that I received stated that the garden must be made up of summer- and winter-flowering heathers and that I must also show how they work well as companion plants alongside more familiar plants that the public will be more used to using in their gardens. The garden also had to be relatively low-maintenance, aesthetically pleasing, and offer the average family a functional space in which to entertain. It should be sustainable, make use of recycled materials, offer biodiversity, and feature wildlife. The older generation have been brought up on heathers; the aim was to try and attract a younger audience wanting a low-maintenance garden that offers all-year-round flower and foliage colour and encourages wildlife.

There are a few different aspects that come together to make a successful show garden which I had to consider when designing the garden including plants, overall impression and scale of endeavour. These are all taken into consideration when the judges are scoring the garden.

The garden evolved into a space that played out over three levels, the first being the entrance. You entered the garden at ground-level, walking on a path that led you towards the first of two bumblebee lodges that sat at the bottom of the Verti-grow wall of winter-flowering heather which spanned the length of the garden creating a green backdrop in the summer and a perfect habitat for birds and insects.

We planted the heather wall with various cultivars of winter-flowering heathers which helped to provide some much needed colour in the colder months and food for the bumblebees. Below the heather wall was a drystone wall that flanked the two lower levels of the garden and instinctively worked in harmony with the heathers.



Figure 3. Bee lodge in "Heather in Harmony" (© Barry Sellers).

The pathways were constructed out of aggregate which is permeable and created a pleasing sound underfoot and a very practical boundary to all of the planting areas simplifying maintenance in the garden. Two water troughs either side of the steps add a wonderful reflective element to the garden as well as filtering sound, not to mention valuable moisture to wildlife during hot and often dry summer months.

On the lowest level in the garden there was a dining area where you could entertain friends and shelter from the elements. The different levels within the garden create the illusion of space whilst the boundary walls provide protection for the planting.

When “Judgement Day” came we were all stood beside the garden waiting for the medals to be handed out. There was a strange atmosphere as all of the designers and sponsors stood alongside their hard work and waited.

We were approached by three judges who had come to us to tell us that we had been awarded a gold medal, the “Best Garden” in our category (which was “Small Gardens”), and we had also been awarded the Most Creative Garden in the 2011 Hampton Court show. We were all stunned and delighted as we had not expected to achieve a gold, let alone a further two awards. As a designer winning the Most Creative Garden award at Hampton Court Palace was a huge accolade and one I will treasure forever.



Figure 4. John Hall, Chairman BHGA (left), and Will Quarmby, designer (right), sitting in the “Heathers in Harmony” garden; on the table are the two awards for Best Small Garden and Most Creative Garden (© Rebecca Hall).



Figure 1. Title page of the 1911 catalogue with Samuel Doncaster's signature. This is from a copy acquired by the late Albert Julian (reproduced by courtesy of Jean Preston).

Who was “Our Mr Richard Potter”?

† DAVID McCLINTOCK

Reprinted from *Yearbook of The Heather Society* 3 (9): 17–18 (1991).

All we knew was in the very special leather-bound production entitled *Erica carnea, winter-flowering* issued by James Backhouse & Son, of York. It contained colour photographs (§ see p. 40) of the twelve *E. carnea* cultivars “Selected by our Mr Richard Potter during his Continental botanical rambles”, which were introduced at the time of the 1911 Coronation. To Potter’s eternal credit, all these twelve are still in the trade, 80 years later. The long-established and respected firm of Backhouse has ceased to exist; the archives at York had material about it, but nothing on Potter. Enquiries in suitable journals elicited nothing.

Until eventually I was sent by Susan Schnare, an American studying, by chance, at York, (to whom I am most grateful), a photocopy of pages 30–32 from the Royal Horticultural Society’s publication *Rock gardens and rock plants* of 1936, with a paper by Mr R. W. Wallace (1867–1955), of Wallace & Barr of Tunbridge Wells. And therein was most of what I can now set out.

Potter proves to have been “the most able lieutenant of James Backhouse of York, a great student of alpines in their native habitats, constantly visiting Switzerland to gain experience from what he saw in nature”. He had a great following and trained up a most enthusiastic band of foremen, who worked under him. He it was who constructed the large rock garden at Warley Place for Miss Ellen Willmott (1858–1934); and he helped Sir Frank Crisp (1843–1919) of Friar Park, Henley, plan his stupendous rock garden. Wallace constantly met him at Warley Place. That I have come across no mention of him in any account of that garden or of its formidable owner is said to be because in those days such men, however capable, were never mentioned: it was the firm alone that mattered.

However there is one such garden where he is, just, mentioned. The Director of Birmingham Botanical Gardens kindly sent me a copy of pages 62–63 of *An oasis of delight* (1983) by Phillida Ballard, an account of that garden. In it is described the alpine garden, built in 1894–1895, “The work supervised by Mr Potter, the firm’s garden architect”, tout court. But in the interesting minutes of the General Committee for 1895 sent me by the City Archivist, about the difficulties of the undertaking, it is written that the work was “under the general supervision of Mr Richard Potter, Backhouse’s general contractor”.

There seems to be nothing to be gleaned from other undertakings that Wallace refers to, Friar Park, the large rock garden at the York Nurseries and Mr Samuel Doncaster’s at Sheffield, despite local enquiries.

Tantalizing, isn’t it? – all the more since he seems to have been an excellent fellow. Or can anyone add anything, even when he was born or died? We know no such personal details of him, except that there is a photo of him and his wife in the RHS publication

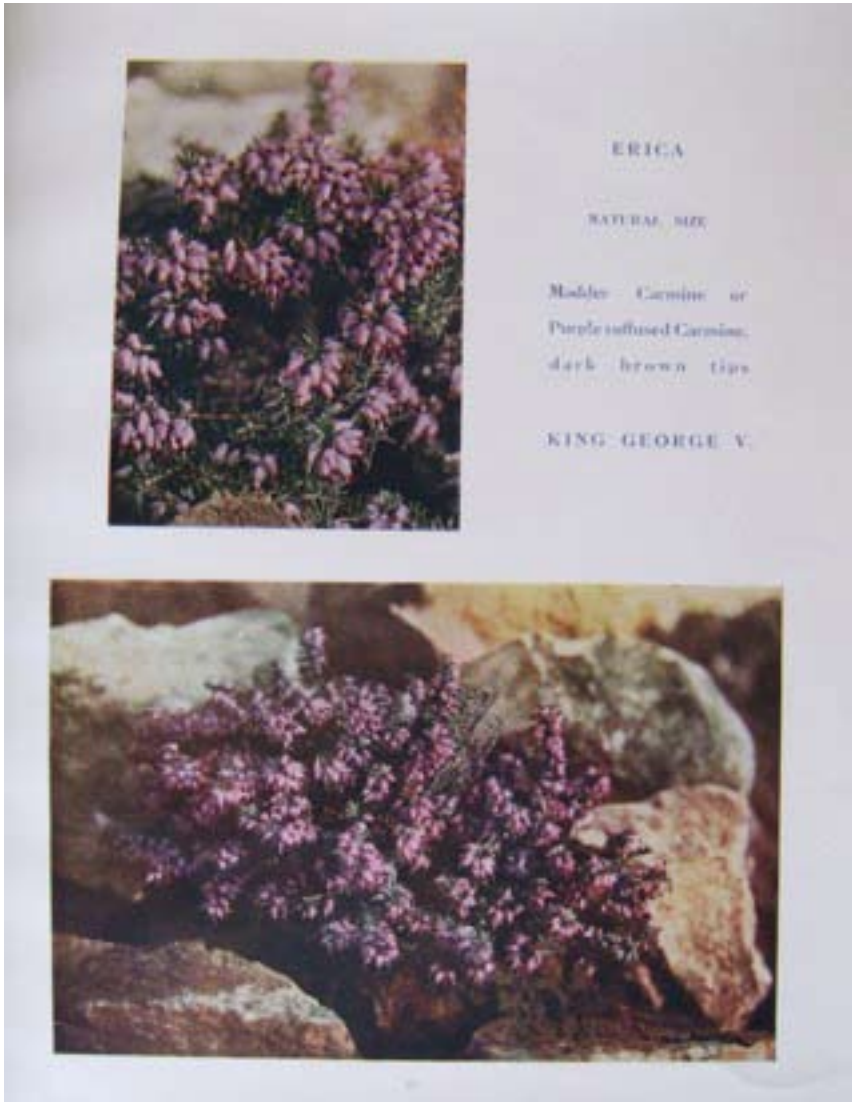


Figure 2. A page from the 1911 catalogue (reproduced by courtesy of Jean Preston).

§ The colour photographs in the Backhouse publication were almost certainly made by the tricolour carbonyl process which required great skill on the part of the photographer. The colours were produced from a black and white negative by the use of filters and pigments, and were hence controlled by the photographer while making the finished print. (A. W. Jones)

This Was “Our Mr Richard Potter”

JEAN SHARPE (later JULIAN, now PRESTON)

Reprinted from *Yearbook of The Heather Society* 3 (10): 32–36 (1992).

Before becoming a member of The Heather Society, I had assisted Albert Julian in his search for information on Richard Potter by following up various leads in my home town York, the home of the now defunct but still famous Backhouse Nurseries.

At my first Conference at Winchester, I teamed up with Peter Vickers and Albert Julian in order to intensify the work that was already in hand. I fear that having little spare time, our efforts were somewhat protracted, but by Christmas significant progress had been made. I visited the York Central Library on a few occasions, but drew a blank. They had the Backhouse Nursery catalogues, a copy of “The Backhouse Nurseries, a Northern Kew”, a typescript by York Archives, books on European birds and travel written by James Backhouse and memoirs of James Backhouse by his sister Sarah, but no trace of a reference to Potter could be found.

Making enquiries in the Acomb/Holgate areas of York where the Backhouse Nurseries were situated, I was put in touch with David Lodge, a local historian, and with an Askham Bryan Horticultural College lecturer whose students had worked on a Backhouse Nursery project. Each one led me to Daphne Hamilton, the sole survivor of the family who took over the nursery in 1923 when Backhouse ran into financial difficulties. She was to be of little help in our search. Subsequently David Lodge produced a copy of an article from the *York illustrated* of 1894 in which it stated that “Mr Backhouse was admirably seconded in his work by Mr R. Potter”. He also produced the same excerpt from *Rock gardens and rock plants* (1936) which Susan Schnare, a postgraduate student at York University, had given David McClintock for his article “Who was “Our Mr Richard Potter”?” in the 1991 *Yearbook*.

Having exhausted practically all avenues of enquiry, it was decided to send a letter to the local newspaper, *The Yorkshire evening press*, asking readers for information and, if this was to fail, to write personally to all the Potters living in the vicinity of the nursery site. It would have been a mammoth task, however, as Potter is a fairly common name in North Yorkshire.

Nurseries plea

Please may I request some help from your readers. I am searching for information on a Mr Richard Potter, a member of the staff of the famous Backhouse Nurseries around 1911.

The James Backhouse Nursery of York was one of the most prestigious in the north of England during the period from 1816, when it was acquired from Telfords, until 1923 when the Backhouse family ceased to have an interest.

In 1911, the year of the Coronation, Backhouse produced a commemorative

catalogue in which were illustrated 12 new *Erica carnea* cultivar introductions among which were: 'King George V', 'Queen Mary', 'Prince of Wales', 'Queen of Spain' and 'Praecox Rubra', priced at three shillings each. Most of the 12 are familiar names to this day and can be found in private gardens and on sale in many garden centres.

Backhouse's Mr Richard Potter, when on his Continental botanical rambles, discovered these now famous winter-flowering heathers and this is acknowledged in the 1911 catalogue.

No further mention of him can be found in the nursery literature nor in the relevant writings of the period and we, in The Heather Society, are anxious to know more of the family history, horticultural and other activities of one who has made such a significant contribution, to heather lore.

Richard Potter is likely to have lived in Acomb or Holgate area around 1911. If any of your readers have any information about him or his activities I should be very grateful if they would communicate with me at the address below.

This drew a response from Geoffrey Hodgson, another local historian, who concerned himself with eighteenth- and nineteenth-century history of the Holgate area, and a friend of David Lodge. He had looked up the 1871 and 1881 censuses (1891 not yet available) and found details of our man's occupation and addresses for which we had been searching. Geoffrey had a special interest, for, by coincidence his grandfather lived next door to Richard Potter's house in Poppleton Road, and Geoffrey himself was born there. He enthusiastically pursued his search by studying local directories and records, even calling at the Leicestershire Record Office to find details of Richard's birth and parents.

Now we know, from St John's Church records, that Richard was baptized in January 1845 in Whitwick, a Leicestershire coal-mining town, that his father was Richard Potter, a Whitwick butcher, and his mother Susanna Sharp. His father is further described as publican at the baptism of his sister, Elizabeth, in 1848, and in the 1851 census he is occupying 18 acres of land. So it would appear that he was farming on a small scale and combining this with keeping a public house.

The 1851 census also records a brother John, an agricultural labourer, aged 20 years, sisters, Susanna a schoolgirl aged 8 years and Elizabeth 3 years.

In the 1871 census he is unmarried, employed as a nurseryman and lodging with John Botterill, a Backhouse nursery propagator, at 12 Poppleton Road, Acomb. The 1881 census tells us that he is married and living in his own house (? rented) at Severus Place. This is now 69a Acomb Road, Holgate. This census also tells us that he was born in Whitwick in 1844, his wife's name was Frances and she came from York. They had a son, Richard F. Potter, born in Holgate in 1877. Richard senior is described as "collector and manager of alpine and herbaceous department, Holgate nursery" and it is interesting to learn that John Botterill was living at 71a Acomb Road, next door to Richard.

The 1893 Kelly's Directory gives his address as 3 St Paul's Square, which is in a superior residential district of Holgate, and his occupation as commercial



Figure 3. Richard Potter and one of his wives (her name is not known); from *Rock gardens and rock plants* (1936).

traveller. Voters' lists and various directories name Richard, and in his absence, his wife as the occupier. His absence could be accounted for by working out of town on garden construction or plant collecting on the continent. Our last record is in the voters list of 1898, and shows the Potters were still in residence in St Paul's Square. A Mrs Race was in occupation in 1905.

Incidentally by a further coincidence, Susan Schnare now lives next door to number 3 St Paul's Square.

It is very likely that Richard was alive in 1911 as the Backhouse catalogue of that year refers to "Our Mr Potter" and not the late Mr Potter. We have conducted a thorough search of the York cemetery Index but could discover no reference to Richard or his son. The York Probate Office is undergoing reorganization so they will not allow full access to their records. For the time being they will allow a search only if one can give the approximate date of death. However we can make our search when they resume normal service which it is hoped will be sometime in 1992.

The photograph of Richard and his wife which appeared in the 1991 *Yearbook*, page 56, was taken, I believe at a house in Holgate Road which is now an hotel. It occurs to me that he may have moved to this house after leaving 3 St Paul's Square.

I must express my gratitude to Geoffrey Hodgson for his marvellously thorough detective work, and hope that this will not be the end of the story.

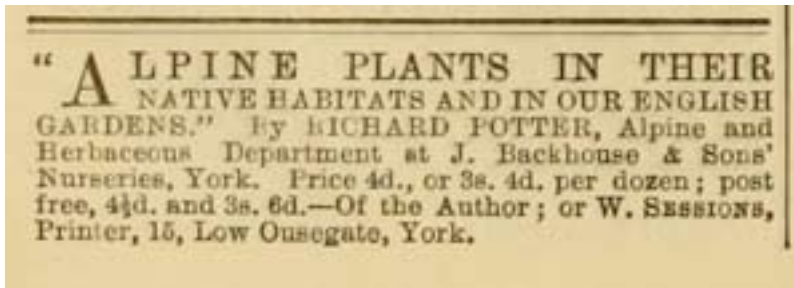


Figure 4. Advertisement for a booklet by Richard Potter, from *The garden* (see p. 46).

Continuing the quest for Richard Potter (1844–1922)

E. CHARLES NELSON

Tippitiwitchet Cottage, Hall Road, OUTWELL, Wisbech PE14 8PE.

There has been a revolution in the availability of genealogical resources, and in the capacity to search countless printed sources, thanks to the world-wide web and search-engines such as Google, during the last two decades, and so it seems worthwhile to try to complete the life history of Richard Potter. This was slightly complicated by the deliberate or accidental alteration of names: for example, references found to a “Robert Potter” working in J. Backhouse & Son’s clearly were intended to refer to Richard Potter, while his wife is listed as “Fanny”, not Frances, in some sources.

“Our” Richard Potter was born on 30 March 1844 in Whitwick, Leicestershire. The certified copy of his birth certificate named his father as Richard Potter, butcher, and his mother as Susanna Potter “formerly Hatton” (not Sharp as given elsewhere; see above p. 42). He was baptized on 25 January 1845 in St John’s Church, Whitwick. On the day when the 1851 census was taken, his father was away from home but his mother, three younger sisters and a very much older brother John (aged 20), were all at home. By the time of the 1861 census, when Richard was 16 years old, he had moved from his home town into digs at 25 Haymarket, St Margaret, Leicester, and was an apprentice pawnbroker and clothier, living with the Taylor family – Peter Taylor (38) was a pawnbroker and clothier.

Within the next decade, Richard Potter had decided against a life as a pawnbroker, had moved north to York and become a nurseryman, that being the occupation listed for him in the 1871 census. He was still single then, but married Frances Ann Kay in York on 27 August 1873. (Frances was born in 1838, and is listed in the 1841 census as aged 4, but later census returns, which were made every ten years, often give her age incorrectly.) The couple had a son in 1877: he was educated, according to the 1891 census at The Academy in Ilkley, but Richard F. Potter then vanishes from the records and cannot be traced with certainty.

“Our” Richard Potter evidently was highly regarded by James Backhouse II and James Backhouse III, the proprietors of the Holgate nursery, and was allowed to go, or was sent, on plant-hunting expeditions. While almost nothing is recorded directly about these trips, I have traced some plant records accorded to him. In 1879, in the Alpes Maritimes, Potter found *Adonis pyrenaica*, the Pyrenean pheasant’s-eye, in bloom:

L’intéressante découverte de cette espèce nous a été communiquée en 1879 par M. Richard Potter, envoyé dans les Alpes marit. par la maison Backhouse et fils d’York pour y récolter des plantes vivantes. M. Potter a trouvé cet Adonis entre le pas des Muletiers et le col des Champs, tandis que nous l’avons observé entre

ce dernier passage et les aiguilles de Pelens. [É. Burnat, *Flore des Alpes Maritimes*, vol. 1: 16.]

In fact, Reverchon has collected the pheasant's eye in September 1876 (*Revue générale de botanique* 1: 650), but without flowers or fruits, so Potter's find was the first verifiable report of the species in this new locality (it is also known from the Pyrenees, as its name indicates, and Cordillera Cantábrica). He also reported *Viola cenisii* and *Cytisus hirsutus* var. *polytrichus* to Émile Burnat.

We have no information about the origins of Potter's interest in alpine plants and he seems not to have had a horticultural background. However he must have been exploring the southern European mountains before the mid-1870s for in January 1876 he was able to write about finding saxifrages at altitudes of 6,000ft, and in 1878 an advertisement was printed in *The garden for Alpine plants in their native habitats and in our English gardens* by Richard Potter, priced at fourpence, and available from "the Author; or W. Sessions, Printer, York" (I have not yet seen a copy of this booklet). He was also a frequent contributor to horticultural periodicals, including *The gardener's chronicle*, and *The garden*, and he was one of the named contributors to William Robinson's famous book *The English flower garden* first published in 1883.

The 1881 census return has Richard (37) and Frances (43) with their young son living at 34 Severus Place, Holgate – his occupation is not recorded but it seems it was misplaced by the census enumerator because two spaces above his entry (and opposite the name of a neighbour) is written "Collection Manager of Alpine & Herbaceous department Holgate Nursery".

Moving ahead another decade, on Census day 1891 Frances and Richard Potter were staying at Rose Cottage, The Dimple, Matlock, a hydro or hotel run by Aaron Redgard (hydropathist). There were eight other visitors. Frances' age was given as 49 (although she was 53). Richard's (47) profession was given as landscape gardener but what this apparent change of occupation signifies is not known. He was certainly still connected with the Backhouse Nurseries as his work at Birmingham Botanic Gardens indicates. In addition to Warley Place and Friar Park (noted by David McClintock), Potter is explicitly credited with creating the seven-acre rock garden at Grey Towers, Nunthorpe (*The gardener's chronicle*, series 3, 36: 116. 1904).

The scattered traces of Potter in the 1890s indicate that he and his wife continued to live in Holgate. A letter about *Campanula raineri* (*The garden* 46: 537. 29 December 1894) provided his address as 3 St Paul's Square, York: this accords with the voters' register information that Jean Preston obtained for her 1992 article (although there the date 1898 was misprinted as 1889). A much later letter, about *Saxifraga luteo-purpurea*, published in *The garden* 58: 336 on 3 November 1900, has a different address: Charterville House, Witney, Oxfordshire. And, indeed, the 1901 census listed Fanny A. Potter at Charterville House, Burford Road, Minster Lovell, a village in the Rural District of Witney. Richard was away from home that night staying in a small hotel kept by William Rosier on

Botley Road in Oxford.

Further confirmation that the Potters had moved to Oxfordshire was found in R. I. Lynch's *Book of the iris*: referring to *Oncocyclus irises*, he wrote:

I then bethought me of what I had heard before, which tended the same way. Mr Potter, the foreman of Messrs Backhouse at York, has to do with two gardens, one in Oxfordshire and the other in York. In the former of these two gardens (at Witney, I think) *Iris iberica* grows like a weed; in the other it does not grow at all: and he can only account for it by saying, in the one place it meets with plenty of lime, in the other it has none ...

Frances Anne ("Fanny") Potter died at Minster Lovell on 25 October 1903; her death certificate stated she had suffered from heart disease for seven year. Richard's occupation was given on the certificate as "Landscape Gardener"

The 1911 census surprised us. Richard had married a second time and was living with his second wife, Amelia, in Charterville House. This unexpected complication raises this question: Is the lady, sitting on the chair in the doorway beside Richard, seen in the photograph published in 1936 Fanny or Amelia? Could the photograph have been taken at Charterville House rather than in Holgate, as Jean Preston suggested?

Richard Potter survived his first wife by 19 years. He passed away, aged 89, on 30 December 1922, also at Minster Lovell. In his will, dated 1 January 1920, he left everything to Amelia, "for her own use and benefit [*sic*] absolutely". No obituaries were published, as far as I can trace, in horticultural or other periodicals: by the early 1920s Richard Potter was not remembered by his peers in the gardening world, not even by the Backhouse family.

Thus, "our Mr Richard Potter" was indeed alive in 1911 when his winter heaths were named and advertised by Backhouse of York. We will probably never know whether he was involved in the naming of his selections, nor whether he grew them in his garden in Oxfordshire, nor their exact origins.

Acknowledgements

My thanks are due to Jean Preston for her comments and invaluable local information; to Dr Colin Rogers for assistance with tracing census and probate records; to the Register Office in Leicestershire and Oxfordshire for certified copies of birth and death certificates. The websites www.findmypast.co.uk and freebmd were the principal sources utilized, as well as Biodiversity Heritage Library which provides free access to many important periodicals and other works.

One hundred recommended heathers 2012

Descriptions by **R. A. CANOVAN, R. J. CLEEVELY, B. SELLERS & † D. J. SMALL**

Edited by E. C. Nelson, The Heather Society, c/o Tippitiwitchet Cottage, Hall Road, Outwell, Wisbech, PE14 8PE.

This describes a choice of heathers selected from the large number of named cultivars (cultivated, or garden "varieties") which are listed in nurserymen's catalogues. It updates, but retains the relevant descriptions from, the list originally compiled by Ron Cleevely and the late David Small and published in booklet form in 1999. New recommendations are indicated by * after the name.

These 100 heathers are recommended by The Heather Society as a collection of the best heathers. They have been carefully chosen as a result of wide practical experience in different parts of the world and after taking into account the findings of The Heather Society's Trials at Harlow Carr during the 1970s, the National Collections® at the Royal Horticultural Society's Garden, Wisley, Surrey, England, and those which were formerly established at Cherrybank Gardens, Perth, Scotland and the Royal (formerly Northern) Horticultural Society's Garden at Harlow Carr, Yorkshire, England, the trials by the Royal Boskoop Horticultural Society in The Netherlands after 1990, and experience in other gardens in North America and elsewhere.

Although some old favourites have been omitted, a serious attempt has been made to combine the outstanding old varieties with those newer introductions which have clearly proved their garden-worthiness or offer outstanding colour breaks, taking into account availability and climate change.

They provide a wide choice for different soils, with varied foliage and flower colours and habits suitable for ground cover, containers, rock gardens and other purposes.

Choosing heathers for your garden

Heathers are so versatile that no hard and fast rules can be laid down for choosing plants, or for planting heather to achieve the best effects.

Before making a choice of plants, it is important to remember that most of the summer-flowering heathers need acid soil conditions. A decision has to be made as to the style of heather garden that is required. Beds can be planted to give a dazzling spread of colour for a limited time, or groups of cultivars with different flowering periods will produce a prolonged, if less striking, display. It is possible to make a choice of heathers which will give flowers throughout the year, and by inter-planting coloured foliage varieties with the flowering cultivars, added interest will be provided in the non-flowering periods. In a large garden drifts of 20 or more plants of one cultivar can give a dramatic effect, but it is generally accepted that plantings of groups of 5 or 7 plants will

give very satisfactory results. A quite different effect can be created by planting a mosaic of one, two or three of each cultivar in a patchwork pattern. This is more suitable in the setting of a small garden, and because of their compact habit, the winter-flowering *Erica* are best for this type of planting.

As a general guide, allow five plants to the square metre (or four plants to the square yard) but always aim for variation in height and form by including a tree heath, taller heathers, slow-growing or dwarf conifers or other ericaceous shrubs.

THE RECOMMENDED LIST

This list gives basic details of flower colour, height, average spread and flowering season, to help in the planning of a heather garden.

There are many other good cultivars which can be used to augment or replace those in the list, to make the heather bed an individual creation.

The Heather Society will continue to evaluate new heathers. If worthy and when generally available, they will be included in subsequent recommendations (the list is also available to download from The Heather Society's website: www.heathersociety.org).

CALLUNA VULGARIS: LING

'Alicia'

Masses of white buds which fail to open, resulting in a long "flowering" period, from August to December. It has bright green foliage and a compact upright habit, up to 30cm high and 40cm broad.

'Amilto' *

Deep magenta flowers in late summer, with yellow foliage in summer turning bronze to orange-red in winter; spring growth is bronze yellow. Broad upright habit. Very hardy and requires a harsh environment for maximum foliage colour.

'Annemarie'

An outstanding heather producing long sprays of double rose-pink flowers in early autumn on dark green foliage, reaching a height of 50cm, spreading to 40cm.

'Anthony Davis'

The green-grey foliage makes a good foil for the long sprays of white flowers in late summer, reaching 45cm high and 50cm wide. An ideal plant for flower arrangers.

'Athene' *

Upright with stiffly erect shoots, to 40cm tall, with dark green foliage throughout the year; the flower buds never open and are red to cerise (H5–H6) from September into November. Similar to 'Aphrodite' and 'Alexandra', but the buds are redder.

'Con Brio' *

This has an erect habit (35cm tall, 45cm spread) and ruby flowers in late summer with a noticeable and pleasant scent. The gold-green summer foliage turns bronze in winter and brilliant red in cold weather making this one of the few with such foliage colour and deep flowers.

'County Wicklow'

One of the best compact double-flowered cultivars, bearing masses of beautiful pale shell-pink flowers in late summer on dark green foliage. It grows to a height of 25cm and spreads to 35cm.

'Darkness'

Masses of attractive crimson flowers, in late summer, in dense spikes on dark green foliage. This neat, compact, upright plant reaches a height of 35cm with a spread of 35cm.

'Elsie Purnell'

This outstanding plant has beautiful long stems of double lavender flowers in late summer on grey-green foliage. Ideal for flower arranging as it reaches a height of 50cm and spreads to 75cm.

'Firefly'

The lovely terracotta foliage in summer turns to a striking brick red in winter. The deep mauve flowers in late summer give a peach effect when viewed from afar. A distinctive upright habit, 45cm in height and spread of 50cm.

'Kerstin'

The colourful tips of pale yellow and red in spring give a very pleasing effect on the downy, deep lilac-grey foliage. As the tips disappear they are followed by mauve flowers in late summer. A very hardy, vigorous, upright plant reaching 30cm in height and spreading to 45cm.

'Peter Sparkes'

The superb long spikes of double rose-pink flowers in early autumn on dark green foliage makes this an outstanding plant which grows to 40cm spreading to 55cm.

'Red Beauty' *

Upright heather with erect shoots; foliage dark green; flowers "double" in dense, long "spikes". Similar to 'Dark Beauty' but with lighter green foliage and redder flowers.

'Red Favorit' *

This very hardy plant has double crimson flowers over dark green foliage in late summer and early autumn. It has a spreading habit with a height of 25cm and a spread of 50cm.

'Robert Chapman'

A very popular plant with striking golden orange summer foliage, turning flame-red in winter with a height of 25cm and a spread of 65cm. It has lavender flowers in late summer and early autumn. The plant has a rounded compact habit.

'Silver Queen'

Outstanding downy silver-grey foliage in summer, turning dark grey in winter with lavender flowers in late summer. The 40cm high plant is broad and spreads to 55cm.

'Silver Rose'

This plant with its delicate stems of silver-grey foliage is outstanding with its lilac-pink flowers in late summer. It has an upright habit reaching to 40cm and spreading to 50cm.

'Sister Anne'

This semi-prostrate, compact plant has mauve flowers in late summer on grey-green foliage, which turns to bronze in winter. A low spreading habit, height 10cm, breadth

25cm.

'Spring Cream' *

This compact plant has yellow tips to the mid-green foliage in winter and bright cream new growth in spring, with white flowers in late summer and early autumn; height to 35cm and spreading to 45cm.

'Tib'

A distinctive plant with double heliotrope flowers from early summer to early autumn on a background of dark green foliage. A rather open spreading habit which grows to 30cm high and spreads to 40cm.

'Velvet Fascination'

An outstanding plant with striking silver-grey foliage, topped with white flowers in late summer. An erect habit reaching a height of 50cm and a spread of 70cm.

'White Coral'

Spectacular double white flowers in late summer on bright green foliage, which stays bright all through the winter. This plant is compact only reaching a height of 20cm and a spread of 40cm.

'Wickwar Flame'

A sturdy plant with gold foliage in summer, turning superb shades of orange then red in exposed conditions in winter. The flowers in late summer and autumn are mauve. This vigorous plant reaches a height of 50cm and spreads to 65cm.

'Yvette's Gold' *

The bright yellow foliage sets off the white flowers from late summer to mid-autumn. It has a robust erect habit reaching 30cm high with a spread of 60cm.

DABOECIA CANTABRICA: **ST DABEOC'S HEATH**

'Blueless' *

Clear rose-pink (without a trace of blue) flowers throughout summer and early autumn, on a compact spreading plant to 30cm tall and 45cm wide. This beautiful plant has dark green foliage and will thrive in an alkaline soil as long as it is free-draining.

'Cinderella' *

This attractive plant has abundant, large white flowers, flushed shell-pink at base, over dark green foliage from early summer to the autumn frosts. It has an upright habit reaching 30cm tall with a spread of 35cm.

'Charles Nelson'

This fascinating plant has mauve flowers from early summer through to early autumn on mid-green foliage. It is unique in that although the first flowers of the season are single, the later ones are double and do not drop when finished. It has an open, sprawling habit growing to 30cm high and spreading to 45cm.

'Hookstone Purple'

This long-flowering plant has large amethyst flowers from early summer through to late autumn on mid-green foliage. It is useful for tall ground-cover as it reaches 45cm in height and spreads to 85cm.

'Waley's Red'

The deep glowing magenta flowers from early summer to early autumn have a slight trace of blue, with mid-green foliage. It reaches 35cm in height and has a spreading

habit, reaching 50cm.

DABOECIA × *SCOTICA*: **HYBRID ST DABEOC'S HEATH**

'Katherine's Choice' *

Corise flowers from late spring to mid-summer, over mid-green foliage. Compact, erect habit, reaching 20cm tall with a spread of 25cm.

'William Buchanan'

The deep crimson flowers during summer and early autumn on dark green foliage, make this a popular plant. It will continue flowering until the first frosts, and grows to 35cm with a spread of 55cm.

ERICA ARBOREA: **TREE HEATHER**

'Albert's Gold'

A spectacular tree heather growing up to 2m high with bright gold foliage in winter becoming golden green in summer. The few white flowers are displayed in late spring. Spreading to 80cm.

'Estrella Gold'

This tree heather with a height of 1.2m, has white flowers in profusion during late spring, on lime-green foliage. The new growth is tipped yellow in spring and early summer. Broad, compact habit, spreading to 75cm.

ERICA AUSTRALIS: **SPANISH HEATH**

'Riverslea'

An outstanding tree heath with a height of 1.2m, spreading to 85cm. The flowers in late spring and early summer are lilac-pink on dark green foliage.

ERICA CARNEA: **WINTER HEATH**

'Adrienne Duncan'

This superb plant has deep heliotrope flowers in late winter on dark green foliage tinged bronze. No more than 15cm high, spreading to 35cm.

'Ann Sparkes'

The orange foliage of this plant turns crimson in very cold weather with bronze tips during the rest of the year. A compact plant up to 15cm, spreading to 25cm, with rose-pink flowers in late winter darkening to heliotrope in early spring.

'Eva' *

Deep pink flowers from late winter until mid-spring over dark green foliage which turns bronze in winter. Compact habit, reaching 15cm tall with a spread of 30cm.

'Foxhollow'

The superb yellow and bronze foliage deepens to orange-red in late autumn and winter. A vigorous, spreading plant reaching 75cm high and 40cm broad. Shell-pink blossoms in late winter and early spring.

'Golden Starlet'

The golden yellow foliage glows in summer and turns lime-green winter. The white flowers in late winter and spring make this plant shine. A neat 15cm-high carpet of

colour spreading to 40cm.

'Hilletje' *

Deep lilac-pink flowers, throughout winter, with greenish gold summer foliage that turns a beautiful orange in winter. Compact habit, to 15cm tall and spreading to 30cm, this plant is disease-resistant tolerating humid heat as well as severe cold.

'Isabell' *

Abundant white flowers in late winter and spring; bright green foliage. Erect, spreading habit reaching 10–15cm in height and with a spread of 45cm.

'King George' *

An old favourite with masses of pink flowers from early winter to early spring over dark green foliage. This reliable plant has a neat, compact habit to 15cm tall, spreading to 25cm, and tolerates hot humid conditions.

'Loughrigg'

An outstanding plant with rose-pink flowers in late winter and early spring on dark green foliage tinged with bronze. A vigorous plant which grows to 75cm and spreads to 50cm.

'March Seedling'

An excellent free-flowering plant with pale heliotrope blooms in spring on mid-green foliage. It grows to 15cm high and spreads to 50cm.

'Myretoun Ruby'

The outstanding deep magenta flowers in late winter and early spring on dark green foliage make this plant an excellent companion to any of the white-blossomed *E. carnea*. It reaches 15cm high and 45cm wide.

'Pink Spangles'

An excellent plant displaying large shell-pink blooms in late winter and early spring, on mid-green foliage. A vigorous, spreading habit, reaching 15cm high and spreading to 45cm.

'Rosalie'

Bright pink flowers in winter and early spring with bronze-green foliage. The low, upright flowering stems make it suitable for growing in pots. This plant reaches a height of 15cm and spreads to 35cm.

'Rotes Juwel' *

An excellent plant with bright, beetroot flowers from late autumn into early spring over dark green foliage which turns bronze in winter. It has a compact habit 15cm high with a spread of 30cm making it ideal for rock gardens and edging.

'Springwood White'

Masses of white flowers in winter and spring, with bright green foliage. Vigorous, trailing habit making it ideal for hanging baskets, reaching 15cm high and spreading to 40cm.

'Westwood Yellow'

An excellent, compact plant with yellow foliage throughout the year, with a few shell-pink flowers, deepening to heliotrope, in late winter and early spring. It reaches 15cm high with a spread of 30cm.

'Winter Snow' *

Masses of white flowers, blooming later than most whites from late winter to late spring. The foliage is bright green and it has a bushy, spreading habit reaching a height of 20cm with a spread of 45cm.

'Wintersonne'

This distinctive plant with bronze foliage produces attractive buds in late summer and autumn which open to display lilac-pink flowers darkening to magenta in late winter and early spring. The plant reaches a height of 15cm and spreads to 35cm.

ERICA CILIARIS: **DORSET HEATH****'Corfe Castle'**

This distinctive plant produces long spikes of large, bright rose-pink flowers during late summer on mid-green foliage. It reaches a height of 20cm and spreads to 35cm.

'David McClintock'

Very distinctive bi-coloured flowers, white at the base with pale beetroot tips, in late summer and early autumn on grey-green foliage. Loose, open habit, reaching 30cm high and spreading to 45cm. Suitable for planting in a tub with ericaceous compost.

'Ram'*

An excellent plant with beautiful magenta flowers, in late summer, over light yellow-green foliage. It has a neat habit reaching 15cm tall with a spread of 40cm.

ERICA CINEREA : **BELL HEATHER****'Celebration'**

Intense golden foliage in summer and autumn, turning lime-green in winter, with white flowers in late summer. An interesting plant owing to the rare combination of white flowers and yellow foliage in this species. Prostrate habit, reaching 20cm high and spreading to 40cm.

'Cevennes'

A very good carpeter with mauve flowers in late summer and early autumn on mid-green foliage. Compact spreading habit reaching 30cm high by 65cm wide.

'C. D. Eason'

The bright magenta flowers, in mid- to late summer, glow against the backdrop of dark green foliage. It provides neat ground-cover, reaching a height of 25cm and spreading to 50cm.

'Eden Valley'

A lovely plant with mid-green foliage, displaying bi-coloured lavender flowers shading to white at the base in late summer and early autumn. It has a tidy, prostrate habit growing to 20cm high and spreading to 50cm.

'Lime Soda'

An outstanding plant with soft lavender flowers in profusion during summer and early autumn on lime-green foliage. A very attractive plant, reaching a height of 30cm and spreading to 55cm.

'Pentreath'

The beetroot flowers look superb against the dark green of the foliage. The plant is a neat carpeter, reaching 30cm in height and spreading to 55cm.

'Rosita'*

Compact, bushy, upright heather, about 30cm tall and with spread of about 40cm, with rose-pink bells throughout summer, and grey-green foliage.

'Stephen Davis'

The intense magenta flowers are produced in profusion throughout the summer on

dark green foliage. An erect, compact plant, reaching 20cm high and 45cm broad.

'Velvet Night'

The striking combination of deep beetroot flowers and dark green foliage make this a colourful summer-flowering plant of erect habit. It reaches 25cm in height and spreads to 55cm.

ERICA × *DARLEYENSIS*: **DARLEY DALE HEATH**

'Arthur Johnson'

Beautiful long stems of pink flowers which deepen to heliotrope throughout winter and early spring. The flowers are slightly scented. The mid-green foliage is tipped cream in spring. A tall bushy plant which reaches 60cm and spreads to 75cm.

'Eva Gold' *

Magenta flowers from mid-winter into spring are borne over bronze-gold foliage that holds its colour throughout the year. This attractive plant has a spreading habit attaining a height of 35cm and a spread of 50cm.

'Furzey'

An outstanding plant with lilac-pink flowers, deepening to heliotrope, in late winter and early spring. The dark green foliage is tipped with cream, pink and red in spring. Bushy habit, reaching 35cm high by 60cm wide.

'Jenny Porter'

The pale lilac flowers in winter and early spring are followed by pronounced pale cream young growth on mid-green foliage. The plant reaches 45cm in height and 60cm spread.

'J. W. Porter'

Heliotrope flowers in winter and spring on dark green foliage, which is tipped with cream and red new growth in spring. A spectacular plant which reaches 25cm high by 40cm wide.

'Kramers Rote' [KRAMER'S RED]

An outstanding heather with magenta flowers in winter and spring with dark bronze-green foliage, brightening the darkest of winter days. It reaches a height of 35cm, spreading to 60cm.

'Lucie' *

This outstanding plant was the first heather granted The Heather Society's Premier Award. It has magnificent, large, brilliant magenta flowers in broad spikes from early winter to late spring, over dark green foliage. A bushy, erect habit reaching 45cm high and spreading to 60cm.

'Moonshine' *

This has outstanding bright golden foliage which does not scorch or go bronze in winter, with brilliant yellow new growth in spring; The shell-pink flowers, from early winter to spring, deepen with age. It has a dense bushy habit with a height of 25cm and a spread of 45cm.

'Silberschmelze'

An attractive plant with ashen white flowers from early winter to late spring on dark green foliage, reaching a height of 35cm and a spread of 80cm.

'Spring Surprise' *

This beautiful plant has masses of deep rose flowers throughout spring, on dark green foliage. It has a broad, upright habit reaching 40cm tall and 60cm across.

'White Perfection'

An outstanding plant with pure white flowers from early winter to spring, with bright green foliage tipped yellow in spring. A vigorous plant, with an erect habit, reaching 40cm high and spreading to 70cm.

ERICA ERIGENA : **IRISH HEATH****'Irish Dusk'**

A very attractive plant with salmon buds opening to rose-pink flowers in winter through to late spring on grey-green foliage. It has a bushy upright habit and attains a height of 60cm and spreads to 45cm.

'Thing Nee' *

An outstanding yellow-foliage plant with a broad, erect habit reaching 2m tall (after 27 years) with a spread of 1m. The dense foliage remains golden throughout the year. This Irish heath bears mauve flowers from late winter to mid-spring.

'W. T. Rackliff'

This plant makes an attractive rich green rounded bush, completely covered in white flowers in spring. It is slow growing and reaches 75cm high and spreads to 55cm.

ERICA × *GRIFFITHSII* : **GRIFFITHS'S HEATH****'Jacqueline' ***

This attractive plant produces long spikes of scented, lilac-pink flowers from mid-summer to mid-autumn, over dark greyish green foliage with an erect habit reaching 1m tall with a spread of 60cm.

'Valerie Griffiths'

The yellow foliage in summer deepens to a golden yellow in winter, with pale pink flowers in summer and early autumn. A tall bushy plant growing to 40cm high and spreading to 55cm.

ERICA LUSITANICA : **PORTUGUESE HEATH**

An elegant, erect shrub with mid-green foliage. The pink buds open to white flowers from late winter to spring. It reaches a height of 1m and spreads to 70cm.

ERICA MACKAYANA : **MACKAY'S HEATH****'Galicia' ***

This attractive free-flowering plant has deep magenta blooms from mid-summer to mid-autumn that darken to amethyst with age. The foliage is dark green, and it reaches a height of 30cm spreading to 55cm.

'Shining Light'

Masses of large white blossoms in late summer and early autumn on mid-grey-green foliage. It reaches a height of 25cm and spreads to 55cm.

ERICA × OLDENBURGENSIS : OLDENBURG HEATH**'Ammerland'**

This very attractive plant has soft pink flowers carried on erect spikes during spring with mid-green foliage. The new spring growth is vivid orange. It has a compact habit and reaches a height of 70cm and spreads to 70cm.

ERICA × STUARTII : PRAEGER'S HEATH**'Irish Lemon'**

A neat rounded plant grown for the brilliant lemon colour of its new spring foliage, which persists until after flowering starts. The large mauve flowers are borne from late spring to early autumn. It reaches a height of 25cm and width of 50cm.

ERICA TERMINALIS : CORSICAN HEATH**'Thelma Woolner' ***

This erect evergreen shrub is hardiest of all the tree heaths. It has lilac-pink flowers from July to November on mid-green foliage. The faded bells provide an attractive russet hue all winter. It grows to 1.5m tall and spreads to 1m. This is an ideal plant for a decorative hedge.

ERICA TETRALIX : CROSS-LEAVED HEATH**'Alba Mollis'**

Attractive white flowers in summer and early autumn on grey-green foliage tipped silver-grey. This compact upright plant grows to 20cm and spreads to 30cm.

'Pink Star' *

This plant is unusual having the flowers held horizontally rather than hanging downwards. The lilac-pink flowers show up well against the grey-green foliage. Flowering from early summer until early autumn, the plant has a compact habit reaching 20cm tall and with a spread of 35cm.

'Riko' *

This is an attractive, compact plant reaching 40cm in height with a spread of 35cm, with grey-green foliage. The new growths have silvery tips. The striking ruby flowers that appear in summer are its outstanding feature.

ERICA VAGANS : CORNISH HEATH**'Birch Glow'**

An outstanding plant with masses of deep rose-pink flowers in late summer and autumn, with dark green foliage. It reaches a height of 30cm and spreads to 50cm.

'Fiddlestone'

Superb deep cerise flowers during late summer and early autumn on mid-green foliage, reaching a height of 30cm and a spread of 60cm.

'Golden Triumph'

A very attractive plant with mid-green foliage which has bright golden tips in spring. The flowers in late summer and early autumn are white. The height is 40cm and

breadth 65cm.

'Kevernensis Alba'

This plant has abundant creamy white flowers from late summer until mid-autumn over bright green foliage. The short flower spikes and good neat habit make the faded blooms less conspicuous; reaches 25cm tall with a spread of 40cm.

'Mrs. D. F. Maxwell'

A most attractive plant bearing masses of deep rose-pink flowers in late summer and early autumn, with dark green foliage. It reaches a height of 35cm and spreads to 45cm.

'Yellow John' *

A showy plant with a dense, bushy habit and bright yellow foliage, forming a neat dome around 45cm across. The lilac flowers appear from late summer into autumn.

ERICA × *VEITCHII* : **VEITCH'S HEATH**

'Exeter' *

This very floriferous plant has sweetly scented white flowers throughout spring over light green foliage. A tree heath up to 2m high with a spread of 65cm, it makes a strong architectural statement in the heather garden, but needs protection from very cold winds.

'Gold Tips'

The bright green foliage of this tree heath is tipped gold in spring. The white flowers appear in late spring and early summer. It reaches a height of 65cm and spreads to 60cm.

ERICA × *WATSONII* : **WATSON'S HEATH**

'Claire Elise' *

A compact plant reaching 20cm tall with a spread of around 45cm. The deep magenta flowers appear from mid-summer into autumn, while its deep red ‡, springtime shoot tips are striking.

'Pink Pacific' *

A most attractive plant with a spreading habit, to 25cm tall spreading 35cm across, and grey-green foliage. In spring and early summer it has distinctive orange-red new shoot-tips. The salmon-pink buds opening to beautiful clear rose pink flowers through summer and well into autumn.

ERICA × *WILLIAMSII* : **WILLIAMS'S HEATH**

'Ken Wilson'

Clear magenta flowers in summer and autumn, without a trace of blue, fading to shell-pink, with mid-green foliage. Compact spreading habit with a height of 30cm and a spread to 50cm.

‡ When registered in 2006 this was inadvertently stated to have “golden” shoot tips in spring. Thus the original description (see *Heathers* 4: 71 (2007) is erroneous. The tips are red.

The Heather Society's Proceedings 2011

40th Annual Gathering, Crosthwaite, Cumbria, 9–11 September 2011

The 2011 Conference was held at the Damson Dene Hotel, lost in the Lake District between Kendal and Windermere. Yet again Susie Kay, with the support of Alan, had organized a great programme at an attractive venue with excellent catering and accommodation.

Friday 9 September

The Conference was formally opened by our Chairman, David Edge, who introduced Peter Hoggarth, the Co-ordinator of the Holehird Garden. Seeing new members was most welcome, as was greeting stalwart friends including Dee Daneri from USA, and Eileen Petterssen and Egil Sæle from Norway. Some of us remembered the visit to Holehird during the 1997 Conference held near Penrith and it was clear that since then the heather beds had expanded significantly. Peter gave an interesting talk on the history of the Lakeland Horticultural Society, the restoration of the garden and its people, with illustrations of the heather beds and other views of the garden. Almost all the work of the Society is carried out by volunteers and the garden is leased from Holehird Trust. There are National Collections® of *Hydrangea*, *Astilbe* and *Polystichum* (shield and holly ferns). The idea was raised of the possibility of adding a heather collection, prompted by these existing collections and the acquisition of more land, but they could not undertake it at the present time.

Saturday 10 September

After a hearty breakfast, we travelled by coach to Holehird Garden. Fortunately the rain almost stopped for our arrival where we were welcomed by Cynthia Kelsall, Pat Murphy who guided us and gave an introduction, and Val Jeffries who is a member of The Heather Society and had joined us the previous evening. We were taken first to see the hydrangeas, then the heaths and heathers. It was pleasing to see that the *Erica australis* cultivars 'Holehird' and its white flowered sport 'Holehird White' both of which, despite having suffered some damage in the 2010–2011 winter, were recovering well. With the slightly acid soil and wet climate, we saw some interesting differences in performance among well-known heaths and heathers. In particular, whereas *Calluna* 'Firefly' was clearly unhappy in the wet conditions, *E. × williamsii* 'Ken Wilson' was thriving with plenty of bloom and more to come. A few plants were identified by a code or misnamed and we helped by providing the correct names. One example was *E. spiculifolia* (formerly *Bruckenthalia*) *× carnea* DHN10/91, which we now know as a cultivar of *E. × krameri*.

We had a look at the propagation area and a couple of new heather beds. In the Davidia border, there were some good *Trillium* and *Hosta* varieties. *Ophiopogon planiscapus* 'Nigrescens' caught the eye and would make an excellent contrast



Delegates to the Annual Gathering at Holehird Garden (courtesy B. Sellers)



Among the heather beds, Holehird Garden (© P. Joyner)

plant for golden foliage heathers. After such an exceptionally severe December the heathers, hydrangeas and other plants seemed in better shape than may have been expected.

We were then driven south and informed by the coach driver that the *Tales* of Beatrix Potter were used by the Chinese and Japanese to teach English: Miss Potter had a property near Ambleside and left much of her land to the National Trust. Lunch was taken in the Newby Bridge Hotel, at the southern end of Lake Windermere, the owners of which also own the Damson Dene Hotel. We then left for Yewbarrow House Gardens, Grange-over-Sands where, on arrival, we were welcomed by Jonathan Newby, co-designer with Philippa Pearson of the award winning Victorian Aviary Garden at the Chelsea Flower Show in 2010. He guided us around the various gardens and other features developed since he and his family acquired the property in 1999. The gardens which are open in the National Garden Scheme look south-east over the Irish Sea so have a relatively mild, moist climate and overlie limestone. The first to be developed was the Sunken Garden near the house, intended as a level play-area for their children: this revealed an impressive limestone outcrop and had a Chusan palm tree in the middle of the lawn with a *Pinus patula* at the rear.

The Italian Terrace upslope was actually a series of terraces full of interesting plants of which the species *Dahlia* were of special interest and we were shown the tree dahlias. A gravel garden further upslope had some exotic plants. It was especially surprising to see *Yucca rostrata* having survived recent winters. A *Yucca australis* survived whereas cordylines in Grange were killed.

At the top of the slope on the north-western boundary we looked at the wide range of tender exotics in the orangery which is heated through the winter. The *Colocasia* leaves were impressive and remind one of elephant ears so one can understand their other name. It housed a swimming pool. Outside was a mosaic designed by Maggie Howarth with pebbles from North Wales. It is flanked by trial beds with apple and cherry trees, and a flower-cutting garden. We went up into their Prospect Tower which he built to get a view of his native Yorkshire across the Pennines to the east. But it also gave a sweeping view of Morecambe Bay. Then we went into the kitchen garden, a source of local produce not only for his family but, together with the cut flowers, for the South Lakes Group of hotels they own, including our Damson Dene. Leaving that we passed down the Maple Walk through the Japanese Garden across an engraving from William Butler Yeats's poem "Cloths of Heaven":

I have spread my dreams under your feet
Tread softly because you tread on my dreams.

We were treated to delightful afternoon teas and the Chairman thanked Jonathan presenting him with two Cape Heaths with which he was delighted, undertaking to keep them in a container with ericaceous compost and to take them inside for the winter.



At Yewbarrow House; Jonathan Newby talking to members (© Daphne Everett), and (right) with the Society's Chairman, David Edge (© Barry Sellers).

Back at the hotel, Daphne Everett gave a talk on “The Society and its People: a trip through the archives” which looked back to its origins in a meeting in London during the freezing winter of 1963. Many of the influential people we remember through heathers named after them, including Constance MacLeod, Pat Turpin, David McClintock and David Small. Daphne explained how the membership grew and declined over the years, and how decline was so often associated with increases in subscriptions. It is hard today to believe that at one point there was concern that the membership may be rising too quickly! She showed some of the group photographs from gatherings over the years.

After a superb dinner it was Open Forum. We paid our respects to the late David Small who as President, Chairman, Technical Committee member and nurseryman had done so much for heathers, and Anne Small was presented with an Honorary Membership for her outstanding work as Administrator from 1986 to 2006, co-author of the acclaimed *Handy guide* (1992, 1998/99 and 2001 editions) and much more. We exchanged experiences of the effects of the severe winter weather, and David Plumridge gave a talk illustrating the effect of exposure to freezing winds. There was also a discussion of the work being done on updating the Society's list of recommended heathers from which some views emerged on the proposed changes before the Technical Committee met to finalize the list (see pp 48–58). These, with the helpful comments from Ella May Wulff based on her immense experience of heather gardens, and advice on

cultivar qualities regarding reversions, tolerance of humid heat, extreme cold and other factors from Karla Lortz, were welcomed by the Committee.

Sunday 11 September

After breakfast it was the one chore – the Annual General Meeting. The headlines included the fall in membership partly being offset by new members gained through the Society's new website. The really good news was the Gold Award for the BHGA garden at the RHS Hampton Court Show to which the Society had contributed. The BHGA garden also received the Best Small Garden and Most Creative Garden Awards (see pp 34–38). Thanks were due to William Quarmbly for the design, and to those members who distributed some 13,000 leaflets and gave advice to the public. Trials of *Daboecia cantabrica* 'Amelie' are being conducted by members. There was a presentation to Jean Preston who retired as Honorary Secretary after 10 years of sterling work to be replaced by Richard Bowater. Phil Joyner agreed to stay in post as Honorary Treasurer until a successor was agreed.

After a quick visit to Cath's Garden Plants at Heaves Hotel, Levens, we spent the afternoon at Holker Hall and its 25 acres of gardens at Cark-in-Cartmel near Grange-over-Sands. This is the family home of Lord and Lady Cavendish of Furness. After lunch members explored the west wing of the house as well as the gardens. The west wing was destroyed by fire in 1871 and had to be rebuilt but the main part of the house, built in red sandstone, dates back to 1640 since when it has never been sold, with each generation making an impression on the house and gardens. The gallery was full of interest, not least a nursery yacht for children that dated from 1852 and would probably have contravened today's health and safety requirements. From the ornate ceilings to the furniture, everything seemed to have been looked after. A painting by Vennet in the west wing summed up the weather well: an angry sky with waves crashing but the rain eased for us. An engraving of part of Shakespeare's poem "Under the Greenwood Tree" by the dovecote was equally apt:

Here shall ye see
No enemy
But winter and rough weather

The gardens are partly formal and Victorian, partly woodland and have the National Collection® of Styracaceae. The giant Holker Great Lime tree, one of 50 greatest in Britain selected for Queen's Golden Jubilee, and planted in the seventeenth century is over 70 feet high. The rhododendrons looked excellent and we could only guess at the spring display but 'Polar Bear' was partly in bloom. There have been many changes in recent years notably the Sunken Garden redesigned in the 1980s and the Elliptical Garden dating from 1993 based on a design by Lady Cavendish. The water cascade was eye-catching and we saw the excavations for the new Pagan Grove project to be planted with

thousands of spring and autumn bulbs.

After dinner we were entertained first by Alan Kay explaining what it was like to be an under-gardener, getting the framework in place for planting. We were shown some pictures of heathers, including a *Calluna* with blue flowers submitted by Börje Sorensson (see p. 26) and David Plumridge then showed us how blue his *Erica cinerea* 'Cindy' was (see p. 32). We were left to ponder whether this was real or an optical illusion (the subject is fully discussed in this issue by Professor John Griffiths; see pp 26–33). The book sale raised some useful funds. Then Egil gave us a couple of songs to round off the evening before the Chairman declared the conference closed. It had run smoothly and members' thanks were extended to Susie and Alan Kay for all their work in bringing it to fruition.

R. A. Canovan

In memoriam
JOS FLECKEN

This tribute was originally published in Dutch in *Ericultura* no. 162.

A friend has gone from among us! Certainly, many feel this way.

Jos's passion for heaths and heathers touched countless people. The garden around his house always looked like a splendid picture with a huge assortment of plants, and he knew the names of every one. His knowledge of the family Ericaceae was remarkably comprehensive; even experienced nurserymen learned from him. Foreign heather societies knew and respected Jos, and his name was familiar outside Holland. He put great effort into writing articles, illustrated with beautiful pictures, for *Ericultura* and, as editor, always ensured the magazine was full.

In recent years he battled against cancer, but he died on 7 July 2011 and his funeral, which took place from the Church of St Antony of Padua in Kerkrade to the cemetery of Bleijerheide, was attended by his family and friends including members of Nederlandse Heidevereniging "Ericultura". As a tribute to Jos, a wreath composed mostly of heathers was provided by *Ericultura*.

Jos was 69 when he died. He was a sociable person, an active singer in the male-voice choir as well as being a lover of heathers. His death is a great loss for his family, especially for Mary, his wife. We wish them strength at this time of sadness, and hope that Mary, her daughters, sons-in-law and grandchildren, will find a way of living without Jos.

Ericultura has lost a great plantsman and connoisseur of heathers. *Jos we missen je, Adieu.*

Dick de Bruin



Erica carnea 'Ryan', a chance seedling in his garden, was the last cultivar that Jos Flecken registered (® E.2008.07) and named. The young shoots have striking red tips while the mature foliage remains greenish gold throughout the year. (© J. G. Flecken)

Heather cultivars associated with J. G. Flecken

Calluna vulgaris

'Colette' (® no. 121): seedling found in his garden at Kerkrade in 1983; introduced in 1988, and named his daughter.

'Glasnost' (® C.2007.03): seedling from Kurt Kramer; selected and named by Jos Flecken.

'Jos's Lemon' (® no. 122): seedling found in his garden in 1983; introduced in 1991.

'Jos's Whitie': seedling, perhaps from 'Whiteness', found in his garden in 1991.

'Little John' (® no. 123): seedling found on his father's grave at Kerkrade in October 1984; introduced in 1988 and named after his father, Johan.

Daboecia cantabrica

'Johnny Boy' (® no. 173): seedling found in 1998 in his garden at Kerkrade, and named after his son-in-law, John Doveren.

'Valvinsan' (® D.2007.01): seedling found in 2001 in his garden, and named after his grandchildren, Valerie, Vincent and Sander, daughter and sons of Marina (Flecken) Palmen.

Erica

'Jos's Creeping' (® no. 126): *E. tetralix*: selected from among plants collected at Ploumanac'h, Brittany, France, in 1985; introduced in 1992.

'Jos's Golden' (® no. 124): *E. cinerea*: sport found in his garden in 1988 on a seedling from Lande de Fréhel, France; introduced in 1994.

'Jos's Honeymoon' (® no. 125): *E. cinerea*: sport on 'Honeymoon' found in 1989 in his own garden.

'Marina' (® no. 102): *E. cinerea*: wild-collected at Lande de Fréhel, Brittany, France, in July 1980; introduced in 1984; named after his daughter, Marina, who found it.

'Mary' (® no. 103): *E. x watsonii*: wild-collected at Lande de Fréhel, Brittany, France, in July 1985; introduced in 1990, and named after his wife.

'Ryan' (® E.2008.07): *E. carnea*: seedling found in 2004 in his garden; named after his grandson, Ryan Doveren.

Recent publications and reviews

D. MACKAY (& others), 2011, *A regional heather growing guide*. Northeast Heather Society, Binghamton, NY. US\$7.95 (in USA); \$9.95 (elsewhere). ISBN 0-9786079-9-6.

This is extremely useful to anyone contemplating starting a heather garden from scratch. It is a booklet of 40 pages and the first half establishes the definitions and takes the reader through the basic aspects of cultivation and where and how to create a heather garden. Even experienced growers will benefit from the clear and direct thoughts and instructions. The text was prepared for gardeners in the northeast region of North America but the sections on siting, soil preparation and general husbandry, in particular, would benefit gardeners elsewhere. Four pages of colour plates of gardens in the region will do much to encourage would-be gardeners.

The sections on siting and sun/shade requirements, and soil preparation are particularly well written. The instructions are clear but provide considerable flexibility for the many different situations that can challenge gardeners in this extensive area which stretches from the edge of the Atlantic Ocean to the Appalachian Mountains and the Great Lakes more than 200 miles inland. Advice given is relevant for areas where snow cover can almost always be counted on, but also for more southern areas where frigid winter cold most often hits with little snow protection. Mention is made of the dangers of ice formation and impact of stem splitting particularly in *Erica* cultivars. Included in this section are suggestions about overcoming concerns during summer arising from the continental heat that occurs in moving inland from a breezy coastal area while still striving to provide plants with full-sun aspect.

The discussion of soil preparation of heather beds along with a chapter on chalky soils is a breath of fresh air. Both contain the only four letter word the authors claim should be used in ground preparation: "SAND". For those of us striving to grow on silty/clay coastal plains this is a really meaningful change from the almost universal suggestion of adding rough peat-moss. The use of ground-up bark, along with some peat, is another suggestion not commonly made in gardening articles: I have successfully used bark with plenty of sand in a number of gardens in Atlantic Canada.

Planting is the culmination of any garden-bed preparation and there is a detailed description and numerous suggestions on how to treat the planting of an individual heather. The advice given is sound and well explained although some purists might take exception to encouraging the use of leaf mould or compost at this stage but we should recognize that each garden and each prepared-soil is unique. This section is excellent, too, about slipping one or two heather plants into a mixed bed. What I found wanting was discussion about how to plan a heather bed and select plants for it – a major weakness in the

booklet. There is little mention of the utilization of variation in heights, foliage colour or texture that many of us value so much.

The last few pages I found intriguing yet confusing. The section describing 17 heather plantings spread all over the region and their individual solutions to winter protection would be extremely valuable if expanded, with mention of more cultivars and perhaps grouped into sub-regions within this extensive area. The section on standbys (or recommended?) cultivars may be of interest to some experienced (older) gardeners but newcomers might become confused; likewise with the article on *Erica* × *darleyensis*.

A suggestion (p. 28) of a “Recommended heathers” list for the north-eastern region of North America would be a very good sequel to this booklet. Subdividing the region into three or four sub-regions and encouraging inclusion of cultivars of *Daboecia* and *Erica* – rather than *Calluna* exclusively – would be most beneficial.

John Allen (New Brunswick, Canada)

E. C. NELSON, 2011, *Hardy heathers from the northern hemisphere: Calluna, Daboecia, Erica ... with watercolours ... and line drawings ...*. A Botanical Magazine Monograph. Kew Publishing, Royal Botanic Gardens, Kew. £60. ISBN 978-1-84246-170-9.

My first reaction on receiving a copy and quickly thumbing through the pages was “Wow, just what I had hoped would one day be printed.” Having spent many hours looking at it in greater detail I am more excited at its content and comprehensiveness. It is not a gardening book accompanied by lists and descriptions of numerous cultivars but a very detailed book covering the classification, description, history, conservation and distribution of all *Calluna*, *Daboecia* and *Erica* species and hybrids growing naturally in the northern hemisphere, plus the many artificial hybrids made from them.

The species and hybrids are described in considerable detail with distribution maps and fine, detailed line drawings of foliage and floral parts by Joanna Longhorne and Stella Ross-Craig. There are over 160 photographs and illustrations covering a wide range of related topics and 23 superb coloured plates by the renowned artists Christabel King, Deborah Lambkin, Brita Johansson and Wendy Walsh.

It is however the written content which is the most exciting: a credit to Dr Charles Nelson who has called upon his knowledge and experience from a lifetime interest in heaths and heathers, and detailed outline notes for a similar publication made by the late David McClintock, and other enthusiasts. The 30-page bibliography illustrates the breadth of the research. It is published by Kew as part of their Botanical Magazine Monograph series.

It is not a bedside book being a hardback of 450 pages and weighing 1.65kg but a scientific reference book. Never the less I found myself sitting up in bed until the early hours of the morning captivated by various sections. I started

with “Cultivation – Past and Present” and the short section on “Cultivation and Care” before moving on to the lengthy introduction sections for each genus and species. I lingered on the paintings and photographs before delving back into the book. I was fascinated by the many naturally occurring *Erica* hybrids, and details about chance hybrids from British gardens and nurseries such as *E. × darleyensis*, *E. × griffithsii* and *E. × veitchii*, and artificial man-made hybrids. Appeasement to gardeners is made in the list with descriptions of the various hardy heaths and heathers holding the RHS Award of Garden Merit and those recommended by The Heather Society.

Considerable detail is given over to *Erica platycodon* (*E. scoparia* subsp. *platycodon* and *E. scoparia* subsp. *maderincola*), *E. spiculifolia* (*Bruckenthalia spiculifolia*) and *E. sicula*, the nomenclature and classification being somewhat contentious although the case for the current naming is comprehensively covered.

What I do feel is missing is a simple dichotomous key to the identification of the three genera, species and hybrids. There is far too much information to absorb in one reading, therefore it will be close at hand on my office bookshelf, and should be a book in the library of all heath and heather enthusiasts.

Terry Underhill

J. FAULKNER & R. THOMPSON, 2011, *The natural history of Ulster*. National Museums Northern Ireland, Belfast. £25. ISBN 978-0-900761-49-2.

This volume claims to remedy the current lack of an overarching book covering most aspects of natural history in the area defined as Ulster, the nine counties of the ancient province of Ulster, and not just the six counties of the political unit of Northern Ireland. Two well-known naturalists are named on the title-page, but only Faulkner has contributed the text of the opening and closing chapters. Thompson is named as photographer and book designer. The core chapters were written by eight other experienced naturalists.

Does this publication provide heather enthusiasts with up-to-date information about their current status in Ulster? The index indicates that “heather” is mentioned in six chapters, including “A vegetable blanket: bogs and wetlands”, and “Higher things: from blanket bogs to summits”. There is little detail at these references – everything is far too general. There are three photographs of heathers on p. 254, together with seven lines of text in the blanket bog chapter, but this also contains a full page photograph of a hawk dragonfly which has landed on a spray of heather. Why has this illustration not been cross-referenced to one or other of the discussions about heathers? Several of the other chapters do use cross-referencing, but heathers appear to miss out, and why were the names of the specific heathers omitted?

This is a large book (600 pages) and so its use can scarcely be in the field (too heavy even for a rucksack). The authors claim it will interest “residents, visitors,

and expats”, and I suppose some of their needs are supplied by Appendix 2 which lists recommended sites to visit, and these include eight listing heath, out of a total of 35.

Heather M. Nelson

M. FRASER & L. FRASER, 2011, *The smallest kingdom. Plants and plant collectors at the Cape of Good Hope*. Kew Publishing, Richmond. £28. ISBN 978-1-84246-389-5.

The title refers to the Cape Floristic Region of South Africa ‡, also called the Cape Flora Kingdom, and this book is a narrative account of plant-hunting in the region. It is distinguished by numerous flower paintings by Liz Fraser – her husband wrote the text. Cape heaths painted are *Erica sessiliflora*, *E. lanuginosa*, *E. coccinea* (p. 8), *E. massonii*, *E. thunbergii*, *E. sparrmanii* (p. 64), *E. cubica*, *E. blenna*, *E. fairii*, *E. cerinthoides* and *E. parilis* (p. 152). Alas, some of the paintings are so small (for example, *E. calcareophila* on p. 47; it is not indexed) as to be almost pointless. While Liz Fraser’s paintings are the core of the book, there are numerous other images ranging from facsimiles of manuscripts and photographs of herbarium specimens to modern photographs of plants and people. Other heaths illustrated in these include *E. verticillata* (p. 207) and *E. patersonii* (p. 83 but, contrary to the caption, the specimen cannot be the type, as clear from the label).

The chapters are usually themed around a few plant families – thus, “Crosspollinating in Upper Tooting” (pp 153–165) deals with heathers as well as Proteaceae. Interwoven are the stories of collectors, horticulturists and botanists, often illustrated with their portraits, who made known the Cape’s floral riches or (in the case of the Cape heaths) raised countless artificial hybrids. Aimed at a general audience, *The smallest kingdom* is a book to be admired for its illustrations. For a readable, colourful, up-to-date introduction to the history of the discovery of the Cape flora this is certainly a worthy book, and it is excellent value.

E. C. Nelson

Footnote

‡ See Michael D. Pirie’s article in this issue of *Heathers*: 15–23, especially the Google Earth map on p. 16 which shows the extent of the Cape Floristic Region.

Supplement XII (2012) to *International register of heather names*

Registered names

Calluna vulgaris

‘Ally’

® C.2011.08 registered on 16 September 2011 by Sten-Börje Sörensson, Hono, Sweden.

* Individual leaves less than 1mm long, mid-green, glabrous; very tightly appressed to slender and short (about 1cm long, not more than 1mm wide) side shoots, which are often not branched – the effect is of a mossy shrub; shoots tips paler, yellow-green when young. Flowers solitary on side shoots, buds pink (H8), opening shell-pink (H16); calyx lobes about 3.5mm long, broad; corolla lobes shorter, c. 3mm.

☞ Seedling deliberately raised and selected in 2006 by Sten-Börje Sörensson; Ally was his mother’s second name.

‘Amanda’

® C.2011.05 registered on 12 February 2011 by Kurt Kramer, Edewecht, Germany.

* Bud-flowering, ruby (H5; RHS 59B–60A), darker than ‘Amethyst’, August–November; foliage dark green, new growth mid-green; after 3 years (pruned) 30cm tall × 25cm across.

☞ Sport from ‘Amethyst’ found in Autumn 1999 at Apen, Germany, in nursery of Marohn & Häger.

‘Bollan’

® C.2011.07 registered on 16 September 2011 by Sten-Börje Sörensson, Hono, Sweden.

* Young stems deep crimson; leaves pale yellow-green, some developing very pale creamy tips; to 2mm long, not appressed to shoot but spreading at angle of about 45° so individual shoots are moss-like; young side shoots not branching; flowers usually solitary on short side-shoots, lilac.

☞ Chance seedling found in 2005 by Frideborg Sörensson in her garden in Hönö and named by her son, Sten-Börje Sörensson. Bollan was his mother’s nickname.

‘Dark Pink Angie’

® C.2011.16 registered on 25 November 2011 by J. van Leuven, Geldern-Lüllingen, Germany.

* Bud-flowering, dark pink (H7), bud small, September–December; foliage dark green; habit upright, broad; after 4 years to 50cm × 50cm.

☞ Sport on ‘Moulin Rouge’ found by J. van Leuven in October 2006.

‘Golden White Angie’

® C.2011.10 registered on 25 November 2011 by J. van Leuven, Geldern-Lüllingen, Germany.

* Bud-flowering, white; September–December; foliage golden; habit bushy, upright, after 5 years to 50cm × 50cm.

☞ Sport on ‘White Angie’ found in September 2010 by J. van Leuven: “Goldgelbe Mutation aus ‘White Angie’, aufrechter als ‘Sandy’, sonst farblich ähnlich.”

‘Grüne Silvana’

® C.2011.11 registered on 25 November 2011 by J. van Leuven, Geldern-Lüllingen, Germany.

* Bud-flowering, pink (“hellrosa” H7–H8), September–November; foliage green; habit upright, after 5 years 60cm × 50cm.

☞ Sport on ‘Silvana’.

‘Hellgrüne Angie’

® C.2011.12 registered on 25 November 2011 by J. van Leuven, Geldern-Lüllingen, Germany.

- * Bud-flowering, red (H5-H6), buds small, September–December; foliage bright green; habit upright, broad, after 4 years to 50cm × 50cm.
- ☞ Sport on ‘Angie’ found by J. van Leuven in October 2007.

‘Juliette’

- ® C.2011.01: registered on 16 January 2011 by K. Kramer, Edeweicht, Germany.
- * Bud-flowering, rose-pink (H7), colour between ‘Anette’ and ‘Jette’; buds 4mm × 1.5mm; August–December; foliage light green; habit bushy, after 3 years to 25cm × 30cm.
- ☞ Sport on ‘Anette’ found by Wilfred Holzwardt, Hoisdorf, in Autumn 2007.

‘Linda’

- ® C.2011.06: registered on 12 February 2011 by K. Kramer, Edeweicht, Germany.
- * Bud-flowering, white (RHS 155C-155D), August–October; foliage bright green all year; after 3 years 25 cm × 25 cm (pruned)
- ☞ Sport from ‘Barbara’ found in autumn 2004 at Edeweicht, Germany, by Kurt Kramer.

‘Marcelita’

- ® C.2011:09 registered on 23 September 2011 by H. J. Kuipers, Nijensleek, Holland
- * Flowers double, 6mm long, 6mm across, magenta (H14), late August–mid-October; foliage green; new growth green; habit upright, 60cm tall, 30cm across after 3 years (pruned).
- ☞ Sport on ‘Annemarie’ found in August 2006 by H. J. Kuipers in his nursery. Flowers darker than ‘Annemarie’ and habit more erect.
- ✉ *Ericultura* **163**: 13–14, 15–16 (2011).
- ☛ *Ericultura* **163**: 18 (2011).

‘Späte Angie’

- ® C.2011:13 registered on 25 November 2011 by J. van Leuven, Geldern-Lüllingen, Germany.
- * Bud-flowering, red (H5–H6), buds small; September–December; foliage bright green; broad, upright habit, after 4 years to 50cm × 50 cm;
- ☞ Sport on ‘Angie’ (“blüht drei Wochen später als ‘Angie’”), found by Clemens Keyzers, Kevelaer in October 2010.

‘Weiße Lena’ (‘Weisse Lena’)

- ® C.2011:14 registered on 25 November 2011 by J. van Leuven, Geldern-Lüllingen, Germany.
- * Bud-flowering, white, August–October; foliage green; habit upright, after 5 years to 60cm × 50cm.
- ☞ Sport on ‘Lena’ found by J. van Leuven in September 2011; “sehr frühe Blüte im August, dickere Knospe als bei ‘Loki’, weiß”.

‘Weiße Silvana’ (‘Weisse Silvana’)

- ® C.2011:15: registered on 25 November 2011 by J. van Leuven, Geldern-Lüllingen, Germany.
- * Bud-flowering, white, September–November; silver-grey foliage; upright habit, after 5 years to 60cm × 50cm.
- ☞ Sport on ‘Silvana’, found by Johannes van Leuven in September 2011.

‘Zelena’

- ® C.2011:02 registered on 16 January 2011 by K. Kramer, Edeweicht, Germany
- * Non-flowering clone with light green foliage and upright habit; to 30cm × 25cm (pruned) after 3 years.
- ☞ Seedling raised in 2002; selected in 2008 by Kurt Kramer.

*Daboecia cantabrica***'Stardust Muxoll'**

® D.2011.01: registered on 12 July 2011 by Jens Kjærboel, Bryrup, Denmark.

- * Flowers "double" (densely packed with petaloid segments), white, due to "doubling" the flowers seem whiter than any single cultivar, June–October; pedicels not recurving but remaining erect or sharply ascending (as in *D. cantabrica* f. *blumii*) so the flowers are not pendent at maturity; corolla 9mm long, 9mm diameter, not shed after flowering, broadly urn-shaped; calyx green, sepals to 3mm long; foliage green throughout the year; habit spreading, to 25cm tall, to 35cm across (after 4 years not pruned).
- ☞ Deliberately raised seedling from 'Charles Nelson' (pollen parent) × 'White Blum' made in 1998 by Jens Kjærboel.

*Erica**E. spiculifolia* **'Branka'**

® E.2010.01: registered on 27 March 2010 by K. Kramer, Edeweicht, Germany.

- * Flowers June–July; corolla and sepals cerise (H6); foliage dark green; to 25cm × 25cm after 3 years.
- ☞ Seedling raised by K. Kramer about 2006; propagated by Heidekulturen Marohn & Häger.

E. tetralix **'Pink Enigma'**

® E.2011.01: registered on 17 September 2011 by Brita Johansson, Vargon, Sweden.

- * Bushy dwarf shrub with upright shoots; foliage dark greyish-green; leaves usually in fours, broad, ovate, with a few long marginal cilia, sometimes with red-glandular tips especially those towards the apex of a shoot, otherwise upper surface glabrous, margins recurved, lower surface exposed, whitish green; leaves towards the tips of "abnormal" shoots may have pink tips or varying and increasing amounts of pink tissue resembling that of the corolla; in extreme examples, the upper portion of the shoots have no green leaves but have variously shaped pink, petaloid "bracts" which are longer and broader than the leaves; flowers may be formed and seem "normal", or the flowers are grotesquely malformed. On shoots with flowers, leaves arranged in evenly spaced whorls of four, spreading, but becoming more widely spaced below inflorescence and also tending to become more erect and more appressed to the stem; flowers with densely hirsute ovary.

- ☞ We do not know where or how this plant originated. Its known history commences when Brita Johansson was given a young plant by Jack Platt who, as past yearbooks show, was a very keen collector of new clones which he cultivated for a few years in his garden before replacing them with newer ones. Platt informed Mrs Johansson that he had obtained the plant from Ray Warner. Brita Johansson grew 'Pink Enigma' in her garden in Sweden, propagated it and passed a plant to Sten-Börje Sörensson who still cultivates it. It is apparently very hardy and was not affected by the extremely cold winter of 2010–2011.



Pink Enigma (© Sten-Börje Sörensson)

E. cinerea ‘Sandford Heritage’

® E.2011.02: registered on 4 October 2011 by Dr J. F. Wright.

- * Flowers without stamens, corolla obovate with very narrow mouth through which the malformed style protrudes, corolla
- ☞ Wild-collected; and aberrant form found on 28 September 2009 on Sandford Heath (SY 93727 90374), near Wareham, Dorset, by Dr J. F. Wright; the original plant is still alive at that place, 2 October 2011.
- ☒ *Sandford heritage news* no. 2: [3] (October 2011).
- ☒ *Sandford heritage news* no. 2: [3] (October 2011).

**Other names not previously recorded**

‘Sandford Heritage’

Calluna

- ‘CKPINK 2’ ☒ *Blatt für Sortenwesen Sortenregister*: 79 (April 2011).
- ‘CKPURPLE 1’ ☒ *Blatt für Sortenwesen Sortenregister*: 79 (April 2011).
- ‘CKPURPLE 2’ ☒ *Blatt für Sortenwesen Sortenregister*: 79 (April 2011).
- ‘CKRED 1’ ☒ *Blatt für Sortenwesen Sortenregister*: 79 (April 2011).
- ‘CKRED 2’ ☒ *Blatt für Sortenwesen Sortenregister*: 79 (April 2011).
- ‘CKREDDIAM’ ☒ *Blatt für Sortenwesen Sortenregister*: 79 (April 2011).
- ‘CKSILWHITE’ ☒ *Blatt für Sortenwesen Sortenregister*: 79 (April 2011).
- ‘CKWHITEXL’ ☒ *Blatt für Sortenwesen Sortenregister*: 79 (April 2011).
- ‘CKYEL 1’ ☒ *Blatt für Sortenwesen Sortenregister*: 79 (April 2011).
- ‘CKYEL 2’ ☒ *Blatt für Sortenwesen Sortenregister*: 79 (April 2011).
- ‘CKYEL 5’ ☒ *Blatt für Sortenwesen Sortenregister*: 79 (April 2011).
- ‘CKYEL 6’ ☒ *Blatt für Sortenwesen Sortenregister*: 79 (April 2011).
- ‘CKYEL 7’ ☒ *Blatt für Sortenwesen Sortenregister*: 79 (April 2011).
- ‘CKYEL 8’ ☒ *Blatt für Sortenwesen Sortenregister*: 79 (April 2011).
- ‘CKYELSPOT’ ☒ *Blatt für Sortenwesen Sortenregister*: 79 (April 2011).
- ‘Dineke’ ☒ *Blatt für Sortenwesen Sortenregister*: 79 (April 2011).
- ‘Ella’ ☒ *Blatt für Sortenwesen Sortenregister*: 79 (April 2011).
- ‘Irina’ ☒ *Blatt für Sortenwesen Sortenregister*: 79 (April 2011).
- ‘Jolanta’ ☒ *Blatt für Sortenwesen Sortenregister*: 79 (April 2011).
- ‘Lucia W’ ☒ *Blatt für Sortenwesen Sortenregister*: 79 (April 2011).
- ‘Margarita’ ☒ *Blatt für Sortenwesen Sortenregister*: 79 (April 2011).
- ‘Merubelle’ ☒ *Blatt für Sortenwesen Sortenregister*: 79 (April 2011).

‘Miss Prissy’

- * Flowers lavender-pink, August–September; foliage gold-green in summer turning orange in winter; habit compact, 6–8in × 12in.
- ☞ From Ken Hutchins, Mossyrock, Washington, USA.
- ☒ Heaths & Heathers Nursery, USA, website (accessed 22 December 2011).

“Mullion variegated”: this name is here formally rejected because it has been used for a similar sport of different origin.

- ☞ A sport on ‘Mullion’ propagated by Heaths and Heathers Nursery and for sale in USA “for many years”.
- ☒ Heaths & Heathers Nursery, USA, website (accessed 21 December 2011).

'Paulina' ☒ *Blatt für Sortenwesen Sortenregister*: 79 (April 2011).

'Penepole' ☒ *Blatt für Sortenwesen Sortenregister*: 79 (April 2011).

This is the spelling used in the cited publication.

'Red Star Auslese' ☒ *Vergleichsanbau bei Calluna vulgaris (2. Versuchsjahr) . . . Versuche im deutschen Gartenbau*.

'Red Sun' ☒ *Blatt für Sortenwesen Sortenregister*: 80 (April 2011).

'Salsa' ☒ *Blatt für Sortenwesen Sortenregister*: 80 (April 2011).

'W 12' ☒ *Blatt für Sortenwesen Sortenregister*: 80 (April 2011).

'W 13' ☒ *Blatt für Sortenwesen Sortenregister*: 80 (April 2011).

'Weiß Spät Bull' ☒ *Vergleichsanbau bei Calluna vulgaris (2. Versuchsjahr) . . . Versuche im deutschen Gartenbau*.

'WINK 12006' ☒ *Blatt für Sortenwesen Sortenregister*: 80 (April 2011).

'WINK 22006' ☒ *Blatt für Sortenwesen Sortenregister*: 80 (April 2011).

'WINK 32006' ☒ *Blatt für Sortenwesen Sortenregister*: 80 (April 2011).

'WINK 42006' ☒ *Blatt für Sortenwesen Sortenregister*: 80 (April 2011).

'WINK 52006' ☒ *Blatt für Sortenwesen Sortenregister*: 80 (April 2011).

'WINK 62006' ☒ *Blatt für Sortenwesen Sortenregister*: 80 (April 2011).

Daboecia cantabrica

'Mary Robinson' ☒ *Blatt für Sortenwesen Sortenregister*: 80 (April 2011).

Erica carnea

'Columbia' ☒ *Blatt für Sortenwesen Sortenregister*: 81 (April 2011).

'Polly Bigguns'

* Large shell-pink flowers, darkening with age to deep pink, January–May, with medium green foliage; vigorous spreading habit 6in tall × 24in across.

☞ Sport of 'Pink Spangles' found by Ken Hutchins, Mossyrock, Washington, USA.

☒ Cascade Heather Society (electronic) newsletter (July 2011); Heaths & Heathers Nursery, USA, website (accessed 21 December 2011).

'Weiße Lena' ☒ *Blatt für Sortenwesen Sortenregister*: 81 (April 2011).

Erica cinerea

'Gruß an Bremen' ☒ *Blatt für Sortenwesen Sortenregister*: 81 (April 2011).

'Gruß aus Verden' ☒ *Blatt für Sortenwesen Sortenregister*: 81 (April 2011).

'Ruby Chalice'

* Ruby flowers, June–October, with gold foliage with orange tints in winter. Compact and tidy, 10in × 18–24in. Slow growing. Unique flower and foliage combination in this group.

☞ Sport found by Ken Hutchins, Mossyrock, Washington, USA

☒ Heaths & Heathers Nursery, USA, website (accessed 21 December 2011).

Erica × darleyensis

'Alice'

* Flowers red, large, January–April; foliage dark green; bushy; 18in × 24in.

☒ Heaths & Heathers Nursery, USA, website (accessed 29 January 2011).

'Coral Bells'

* Large soft pink flowers, January–April; dark green foliage; 18in × 24in.

☞ Raised by David Wilson, Chilliwack, Canada, and named and introduced by Karla Lortz (Heather and Heathers Nursery, Washington, USA).

☒ Heaths & Heathers Nursery, USA, website (accessed 29 January 2011); Cascade Heather Society (electronic) newsletter (July 2011).

'Perfect Polly'

- * Larger flowers than 'White Perfection'.
- ☞ Sport on 'White Perfection' in Ken Hutchins's garden, Mossybank, Washington, USA.
- ☒ Heaths & Heathers Nursery, USA, website (accessed 21 December 2011).

'Pretty Polly'

- * Large, dark lilac-pink flowers, November–May; bushy plant, 15in × 24in.
- ☞ From Ken Hutchins, Mossyrock, Washington, USA.
- ☒ Heaths & Heathers Nursery, USA, website (accessed 21 December 2011).

CAPE HEATHS (*Erica*)

'Ron's White'

- * With translucent, tubular milky white flowers, in summer; grows upright to about 4ft in height.
- ☞ Chance seedling in the South African garden 'Ron's White' (courtesy of Ron Arruda ©). at the Arboretum, University of California Santa Cruz, California, USA; discovered by Ron Arruda, former South African garden curator. First released at a plant sale in October 2010.
- ☒ *The Bulletin: quarterly publication of the Arboretum Associates* 34 (2): 2 (Summer 2010).
- ☒ *The Bulletin: quarterly publication of the Arboretum Associates* 34 (2): 6 (Summer 2010).

E. gracilis

- 'Christine': ☒ *Blatt fur Sortenwesen Sortenregister*: 81 (April 2011).
- 'ESH 02103': ☒ *Blatt fur Sortenwesen Sortenregister*: 81 (April 2011).
- 'ESH 08103': ☒ *Blatt fur Sortenwesen Sortenregister*: 81 (April 2011).
- 'Friederike': ☒ *Blatt fur Sortenwesen Sortenregister*: 81 (April 2011).
- 'Juliana': ☒ *Blatt fur Sortenwesen Sortenregister*: 81 (April 2011).
- 'Letizia': ☒ *Blatt fur Sortenwesen Sortenregister*: 81 (April 2011).
- 'Marie': ☒ *Blatt fur Sortenwesen Sortenregister*: 81 (April 2011).

'Mary': this name is already in use in the denomination class *Erica*.

☒ *Blatt fur Sortenwesen Sortenregister*: 81 (April 2011).

NOTE: Because this name has been accepted by a statutory plant registration authority (see ICNCP 2009, Art. 31.2) it may not be rejected. To distinguish this cultivar of Cape heath from the earlier, still cultivated selection of *E. × watsonii*, the names of the raiser/finder should be added (under ICNCP 2009, Art 30.5). This the name should be written *E. gracilis* 'Mary' (Holz 2011), to distinguish it from *E. × watsonii* 'Mary' (Flecken 1992).

- 'Mr Lunax': ☒ *Blatt fur Sortenwesen Sortenregister*: 81 (April 2011).
- 'Mr Ronello': ☒ *Blatt fur Sortenwesen Sortenregister*: 81 (April 2011).
- 'Rot Gold A03': ☒ *Blatt fur Sortenwesen Sortenregister*: 81 (April 2011).
- 'SFTA 30': ☒ *Blatt fur Sortenwesen Sortenregister*: 81 (April 2011).
- 'Ute': ☒ *Blatt fur Sortenwesen Sortenregister*: 81 (April 2011).
- 'Weisse Perle': ☒ *Haslo Ogronomiczne* 4/2005.

E. sparsa

- 'Amelie': ☒ *Blatt fur Sortenwesen Sortenregister*: 81 (April 2011).
- 'Savannah': ☒ *Blatt fur Sortenwesen Sortenregister*: 81 (April 2011).

Ericultura 163 (December 2011)

The final issue of the quarterly publication of our sister society in the Netherlands has been published because Nederlandse Heidevereniging "Ericultura", the Dutch Heather Society, ceased its activities after 40 years at the end of 2011. It is sad that the Society and its publication could not continue.

Ericultura has been an excellent quarterly with informative articles on all aspects of heathers and other genera of the Ericaceae. A striking feature of the final issue was the description of several new cultivars of *Calluna* and *Erica*, among which are three *Erica* clones named by J. Baron using terms pertaining to the Dutch tradition of peat-harvesting and Dutch heathlands (see also his cultivars of *E. tetralix* named 'Meerstal' (@E.2005:06), 'Opschof' and 'Stikker'). Among the new plants is the first white-flowered cultivar of Praeger's heath. To highlight the outstanding contribution made by our Dutch friends to the cultivation and study of heathers, and to bid farewell to *Ericultura*, these cultivars are summarized here.

Calluna vulgaris: these have received medals by the Royal Boskoop Horticultural Society (KVBC).

'Golden Dwarf'

- ☞ Silver medal, KVBC September 2011; a seedling found by Herman Geers in his garden in Boskoop in 2006; propagated by Jan van der Lip, Hazerswoode-Dorp, The Netherlands.
- ✉ *Ericultura* 163: 14-15 (2011).
- ☛ *Ericultura* 163: 19 (2011).

'Fiënné'

- ☞ Bronze medal, KVBC September 2011; a sport on 'Stefanie' (one of Kurt Kramer's introductions) found by Jan van der Lip.
- ✉ *Ericultura* 163: 15 (2011).

Erica × *stuartii* 'Bolster'

- * Flowers white; foliage green with yellow tips into autumn; habit spreading.
- ☞ Artificially created hybrid from *E. tetralix* 'Alba' × *E. mackayana* 'Shining Light' made in 2005 by J. Baron. The first white-blossomed clone of Praeger's heath known.
- ✉ *Ericultura* 163: 14 (2011).
- ☛ *Ericultura* 163: 14 (2011).
- E Bolster is the Dutch term for a bog containing "grey peat" ("... is een turf van grauveen (witveen)").

E. tetralix 'Stoeke'

- * *E. tetralix* f. *stellata*: flowers beautiful dark pink; foliage grey-green; height 25cm.
- ☞ Found in 2004 by J. Baron as a seedling in his garden in Nieuw-Weerdinge, Netherlands.
- ✉ *Ericultura* 163: 14 (2011).
- ☛ *Ericultura* 163: 14 (2011).
- E "Stoeke is een aantal van 10 turven twee bij twee opgestapeld" (... is a quantity of peat, ten turves stacked two by two).

E. tetralix 'Zwille'

- * Foliage grey; height 15cm after a few years ("na een aantal jaren"); flowers sparse ("Bloemen spaarzaam soms hier en daar een bloeiwijze."
- ☞ Found in 1999 by J. Baron as a seedling in his garden in Nieuw-Weerdinge, Netherlands.
- ✉ *Ericultura* 163: 14 (2011).
- E "Zwille is een turfhoop van 5000 turven." Zwille is a Dutch term for a quantity of 5,000 turves of peat.