

# Where have all the heathers gone?

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## Abstract

Heathers have been cultivated for several centuries, both the hardy heaths (*Calluna*, *Daboecia* and *Erica*) from the northern hemisphere and the more frost-tender species of *Erica* from southern Africa known as Cape heaths. In the late 19th century, a number of heather gardens were created, especially in Britain, and the popularity of heathers as long-lasting garden plants reached its zenith in western Europe and temperate North America in the late 20th century. At about the same time, deliberate breeding and selecting of *Calluna vulgaris* (ling) for flowers that lack normal sexual parts and remain bud-like led to a revolution in heather production with tens of millions of these bud-bloomer *Calluna* propagated each year for an ephemeral trade dominated by throwaway plants. Concomitantly, the diversity of hardy heathers offered by the trade has declined sharply with a small number of artificially raised clones, protected by plant breeders' rights, now dominating the market. In contrast, the discovery of living lineages of a few *Erica* species that are extinct in the wild in South Africa has led to successful reintroduction programmes, particularly of *Erica verticillata*. The Erica Conservation Consortium, inaugurated in 2020, aims to coordinate and prioritise *ex situ* conservation of endangered Cape heaths.

## A brief history of heathers in cultivation to 1900

Some garden plants become too commonplace and so fall out of fashion. Some plants are attacked so thoroughly by diseases and pests that they disappear from cultivation. Other plants challenge gardeners but eventually the expense of caring adequately for them becomes unrealistic and they dwindle away. The fortunes of heathers, both hardy and not so hardy, have waxed and waned, like so many other stalwarts of gardens in western Europe and some other temperate parts of the globe. So where have all the heathers gone? Have they been smitten with an untreatable disease, or been consumed by an ineradicable pest? Surely

not. Mountains, moorlands, fynbos and Mediterranean shrublands are still dominated by hundreds of species of heathers, not just ling (*Calluna vulgaris*) but also around 800 species of *Erica* and two species of St Dabeoc's heath (*Daboecia*). Indeed, what has become of heather gardens?

A horticultural axiom is that gardeners tend to grow plants that cannot be seen or gathered in the hinterlands of their gardens. This certainly applies to food plants, culinary herbs and the simples that formerly provided home-made medicines, and is usually applicable to ornamental plants which apparently have no other horticultural purpose than to be beautiful and interesting. Heathers – mainly, but not exclusively,

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*Calluna vulgaris* – had many domestic uses in past times ranging from the manufacture of besoms to brewing ale but were not deliberately planted for any purpose apart from providing colour and novelty in the flower garden and greenhouse. As Professor Thomas Martyn (1807: *sub Erica*) remarked at the beginning of the 19th century, ‘Notwithstanding the commonness of our British heaths, they deserve a place in small quarters of humble flowering shrubs, where by the beauty and long continuance of their flowers, together with the diversity of their leaves, they make an agreeable variety’.

It is unlikely that the European hardy heathers were deliberately cultivated before the mid-17th century and then only out of curiosity in botanical collections. As that century closed, plants and seeds of the heathers indigenous to the Canary Islands were received at Chelsea Physic Garden in London. The chances are that those Canarian plants were destined for a greenhouse. Hardy native heathers were being grown by discerning garden owners in the later 1700s. For example, Peter Collinson, the Quaker plantsman with an important garden, initially in Peckham but later at Mill Hill in Hendon, outside London, had St Dabeoc’s heath, raised from Spanish seed, by 1765 (O’Neill & Nelson, 1995). Not long afterwards, as documented by a watercolour by Yorkshire-born James Bolton, *Daboecia cantabrica* was imported to Britain from the west of Ireland (Nelson, 2011: 69–70). Heathers were prized plants at Bulstrode in Buckinghamshire, seat of the dukes of Portland, around the same time as they featured among the ‘paper mosaicks’ of Mrs Mary Delany. About a dozen heaths including St Dabeoc’s heath, bell heather (*Erica cinerea*), Dorset heath (*E. ciliaris*), Cornish heath (*E. vagans*) and Irish heath (*E. erigena*) were among the hundreds

of plants Delany ‘copied’ for her collages (Nelson, 2011: 18). Mrs Delany’s ‘vegetable statues’ were celebrated by Dr Erasmus Darwin in the second part (subtitled ‘The loves of the plants’) of his lengthy poem ‘The Botanic Garden’ (Darwin, 1789: Canto II, lines 153–162), and among her admirers were King George III, Queen Charlotte and the doyen of British botanists, Sir Joseph Banks.

The eccentric and irascible Richard Anthony Salisbury (born Markham), who was to produce a remarkable monograph entitled ‘Species of *Erica*’ (Salisbury, 1802) at the beginning of the 19th century, assembled a collection of heaths, among many other plants, in his garden at Chapel Allerton, a village situated between Leeds and Harrogate in Yorkshire, and issued a catalogue of his entire collection in 1796. He grew 62 *Erica* species as well as such variants as white-flowered bell heather (Salisbury, 1796). Given that fewer than a dozen heathers grow wild in Great Britain and Ireland – Ireland has a greater number of wild heathers than Great Britain – the majority of Collinson’s and Salisbury’s collections comprised the so-called Cape heaths, species from the Cape of Good Hope and adjacent parts of southern Africa (and their artificial, European-raised hybrids).

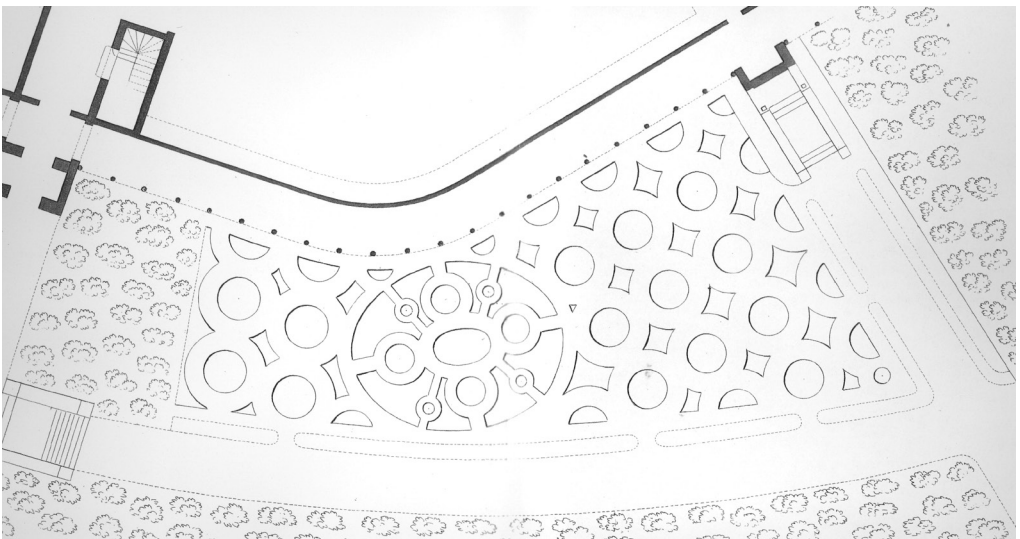
Undoubtedly the fashion for Cape heaths which raged for around half a century from the 1780s stimulated the cultivation of hardy species too. This phenomenal horticultural craze, akin to the previous century’s tulipomania (without the final financial crash), resulted in the production of innumerable artificial hybrids and also a procession of expensive, hand-coloured books portraying them (Nelson & Oliver, 2004). Cape heaths, however, were not easy to cultivate successfully and were slowly squeezed out of gardens in the second half of the 19th

century. That was the first time heaths fell out of favour.

Given the limited palette of hardy northern species, gardeners' attention began to focus on heathers with unusual habits, variously coloured foliage and different floral shades – hardy heathers do not have the medley of floral colours seen in the Cape heaths, just gradations of purple, lavender or pink, and white. Gradually the versatility of hardy heathers was recognised. At Woburn Abbey in Bedfordshire, for example, by 1825 an entire parterre, a curved wedge around 100 feet long and 50 feet broad at its widest (approx. 30 m by 15 m), was devoted solely to hardy heaths (Fig. 1). George Sinclair, the Duke of Bedford's head gardener who was charged with managing the Woburn heather collection, wrote, 'these hardy species, when cultivated, without admixture of other plants, in a parterre, form an interesting feature of the flower-garden' ([Sinclair], 1825). The Woburn parterre was formal, carpet-like, like the gaudy beds stocked with half-hardy plants that were to be so familiar later in the

century. This surely counts as the first heather garden but it was not influential because not many gardeners are known to have copied or even emulated it.

Instead, in most mid-19th-century gardens, hardy heathers were relegated to edging and an occasional flower bed, a method of planting exemplified during the early 1840s in plans by James Lothian for the garden of alpine and rock plants at Ormsary House on the Kintyre Peninsula in western Scotland (Nelson & King, 2007). Lothian ([1845]) constructed a pond surrounded by 'a border ... filled with dwarf American shrubs; and, separating the walk from the border, [was] an edging of *Calluna vulgaris*, or common ling, mixed with the white variety'. Other gardeners, including James Snow at Swinton Park in Yorkshire during the 1840s, promoted the use of 'heath edgings'. Another example was at Trentham Park, Staffordshire, where a bed containing 'American plants' was edged with 'common Heath, thrusting itself luxuriantly upon the lawn'. The effect was 'enhanced considerably



**Fig. 1** Heather parterre at Woburn Abbey, 1825; plan from *Hortus Ericaëus Woburnensis*. Image reproduced from [Sinclair], (1825).

by an irregular patch of wild Heath, which [was] planted in the lawn, a little in advance of the edging' (G., 1848). The idea of beds edged by heather was also promoted by the Irish horticulturist William Robinson (1870) in the first edition of his iconoclastic book *The Wild Garden*: 'These tiny shrubs and their allies in size might form a sort of edging or marginal line round a bed of choice shrubs planted in peat, as they frequently are and must be in gardens.' Robinson also noted the increasing number of heather cultivars that were being propagated: 'from time to time sports have appeared ... which nurserymen have preserved; and thus, where you see a good collection of these, the variety of gay colour is quite surprising' (Robinson, 1870). He continued to applaud heathers in *The English Flower Garden*, yet Robinson was soon to abandon skimpy edgings in favour of massed heaths in large groups.

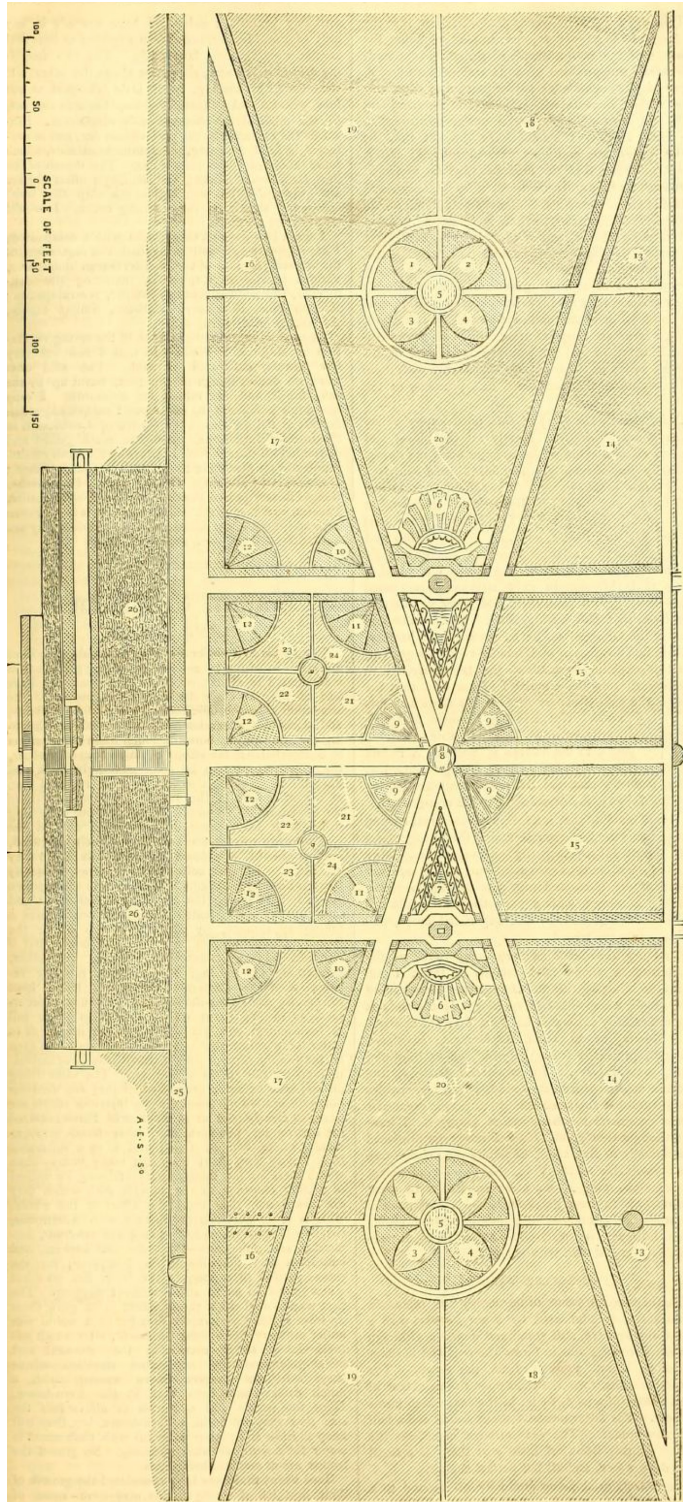
At Alton Towers, Staffordshire, during the early 1870s there was a parterre containing a collection of all the hardy heaths then available in the trade. Alexander Forsyth, the Earl of Shrewsbury's head gardener at Alton Towers, thought the effect of these heathers in the flowering season was excellent, but, because they were not so attractive when flowers were absent, he was ordered to remove the collection (Forsyth, 1873). In Scotland, at Drummond Castle near Crieff in the late 1870s, a parterre of elaborate design was formed, including circular beds containing five different species of hardy heaths planted in a flower-like pattern (Anon., 1877) (Fig. 2). Also during the late 19th century, heathers were used as temporary bedding plants to 'fill in' when tender exotics had passed their best. This was the practice at Heckfield in Hampshire. Heathers and other shrubs were planted in the vacant spaces, and within a few days 'the gay pompadour dress

of the garden' gave place to a 'sombre but more seasonable velvet attire', allowing the garden to stand 'arrayed in fitness but still in exceeding beauty for the winter months' (X., 1884).

## Twentieth-century heather gardens

Towards the end of the 19th century, references to heather or heath gardens become quite frequent in British periodicals. In *The Field*, late in 1888, a writer (very probably William Robinson) recalled that 'We saw last year some very large and effective beds of "heathers" in Sir William Bowman's garden in Surrey: It is the bold artistic arrangement that is called for and not the niggling, dotted botanical way' (The Field, 1888). Heather gardens progressed, and in 1910, William Dallimore of the Royal Botanic Gardens, Kew, remarked that 'Heaths are now included amongst the plants of which a special feature is made in gardens, and the "Heath Garden" is becoming as welcome as the "Bamboo Garden", "Wall Garden" or "Water Garden"' (Dallimore, 1910). Robinson was among the writers who used the term, reporting that a 'singularly pretty Heath garden' had been planted by Sir Philip Currie at Hawley in Hampshire. 'In front of his house he has kept a piece of the Heath land of the district almost in its natural state, save for a little levelling of old pits'. Exactly what Currie created at Minley Manor, his family's estate, is not clear, but 'garden' implies some management if not deliberate planting. Immediately after noting Sir Philip Currie's heath garden, Robinson (1897) commented that where

Heaths abound, there is no occasion to cultivate them, although we cultivate nothing prettier; but certain varieties of



**Fig. 2** Parterre at Drummond Castle, 1877: 'the large circles at either end [were] filled – 1, 2, 3, 4, 5 – with different species of hardy Heaths' (Anon., 1877). Reproduced from a plan published in *The Gardener's Chronicle*, 2 June 1877, p. 689.

these Heaths are charming and deserve a place in the garden or wild garden. In places large enough for bold Heath gardens it would be charming to plant them, but a small place is often large enough for a few beds of Hardy heaths. Once established, they need very little attention.

Admitting that he had begun 'rather slowly and doubtfully' with heathers, Robinson created several separate heather gardens in the grounds of his Sussex home, Gravetye Manor, describing them individually in his chronicle of the making of the garden (Robinson, 1911). He was 'charmed' first by 'the little Alpine Forest Heath' (*Erica carnea*) although he noted that it was 'generally so ill-grown that we seldom see the fine effects it may give'. He was again charmed by some of the 'bright forms of the Grey Heather' (the literal name he used for bell heather, *E. cinerea*):

and so I went on until one cold winter's day, when searching in a nursery for wholly different plants, I saw a beautiful little bush of rosy-tinted flowers, and this was the Portuguese Heath [*Erica lusitanica*]. That settled me as a Heath-lover, and I have planted as much as I could get of it since.

At Gravetye in 1892, Robinson planted 'nearly all obtainable kinds of British Heaths and other hardy Heaths in large beds in ground north of the house, intending to let them, once established, form wild masses, ... and planting hardy bulbs, and things for the wild garden, between them'. Indeed, for heather gardens, Robinson laid down 'rules' which are still followed: 'The larger Heaths ... should be massed in visible groups, and the dwarf ones

seen in dwarf masses only, and not treated as mere specks on "rockeries" or used as edging plants only' (Robinson, 1911).

Thus, Gravetye Manor became the model for others making heather gardens. At nearby Nymans, Ludwig Messel created a heath garden which, it is sometimes claimed, is the first heather garden in England although it cannot pre-date that at Gravetye given that Messel only acquired the property in 1890. Messel was certainly influenced by Robinson who visited Nymans frequently and lauded Messel as 'one of the first to enjoy the charms of a garden of all the heaths hardy in our country', praising the garden as 'a very good one, varied here and there with groups of cyclamens and many of the choicer rock plants' (Robinson, 1918). In about 1905, Mark Fenwick began to make a heather garden covering around a third of a hectare at Abbotswood in Gloucestershire as an adjunct to a garden designed with the assistance of Edwin Lutyens (Everett, 2004). Thomas (2003: 110) recalled the Abbotswood heather garden as 'the biggest surprise of all' within a 'superlative' garden that was 'large and lovely'. In the early 20th century, notable heather gardens were formed also at the Royal Horticultural Society's Gardens, Wisley, in Surrey, and in Scotland at Tynninghame, East Lothian, where the Earl of Haddington's 'special penchant for heaths and heathers of all kinds, and these with rhododendrons and azaleas filled' part of the garden. Coats (1970) asserted that the Tynninghame heather garden was

as well planted as any in Scotland ... Heath gardens have not only great appeal, but sterling qualities too. For if thoughtfully planted, they can provide flowers and colour almost all the year round. They look particularly well in

Scotland, and the view of Tynninghame's pepper pot turrets seen over the rose, grey and sea-green colouring of Lord Haddington's heath garden is a telling one.

These 20th-century heather gardens were all essentially informal. With the heaths massed in broad swathes usually composed of single clones, the heathers were allowed to grow unchecked, leading to a semi-natural appearance. The planted area might meld with surrounding natural heathland, as appears to have been the approach of Mackay Hugh Baillie Scott in Berkshire where a house, appropriately named Heather Cottage, and garden, both to his designs, were under construction in the early 1900s (Scott, 1906): 'Of natural surroundings ... there seems nothing so good as a setting for a house as a dark moorland covered with the purple of the heather, and that lesser kind of gorse which seems to have been clipped into neat round bushes by Nature's invisible shears.'

Robinson's friend Gertrude Jekyll also promoted the heath garden. Hers was not a monoculture of heathers but contained a range of other shrubs and herbs such as *Cytisus* (brooms), *Cistus*, *Helianthemum* (rock roses or sun roses), *Campanula rotundifolia* (harebell) and *Jasione montana* (sheep's-bit). While the range of heathers was restricted, she cautioned that there were far too many heathers available from nurseries

for use in any one Heath-garden; for a good stretch of one kind at a time may make a delightful picture, while a dozen of each of the fifty kinds will only show as a collection of samples; through clever combination, and above all plenty of space, will allow a fair number of varieties. (Jekyll, 1913)

The most diligent exponent of heaths during the first half of the 20th century, apart from a few nurserymen with vested interests, was Arthur Tysilio Johnson at Bulkeley Mill near Conwy in north Wales. Johnson and his wife Nora formed a garden that, according to Thomas (2003: 146), 'was perhaps the most important and original of what are called "ecological" gardens today, where each plant's preferences were studied, bringing into things a wholesomeness and a gentleness new to the [20th] century'. Johnson (1928: 39–40) had written that

in these days of rock-garden and the wild and woodland garden, when most garden-lovers are striving to get away from the formal, to foster a more artistic spirit and create a more natural effect, the Heaths must come into their own, since for all these phases of garden work they are ideal subjects.

## Introducing new heather cultivars

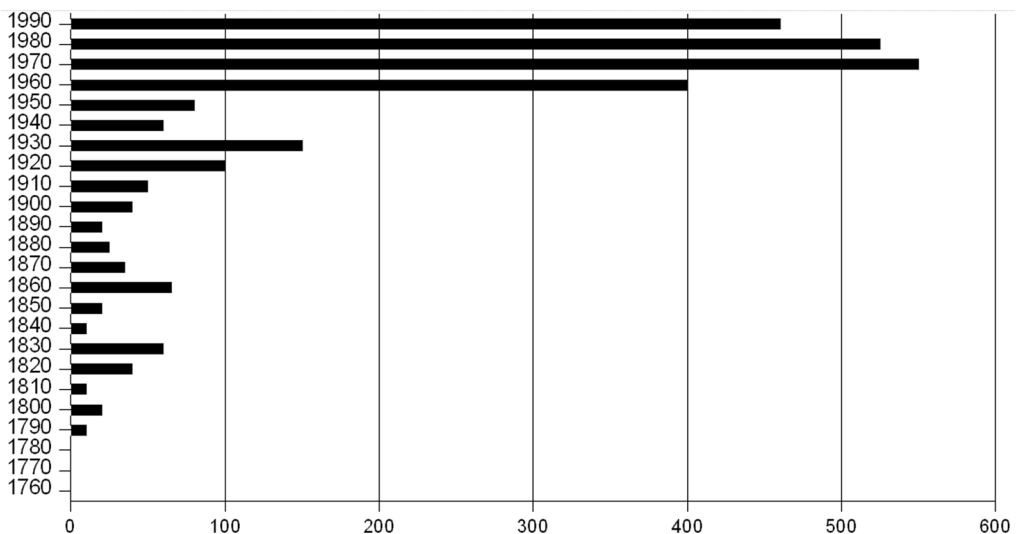
The creation of heather gardens would not have been possible without ready availability of cultivars and non-native species. While nurseries had been propagating hardy heathers on a small scale since the late 1700s, there were few named cultivars (or horticultural varieties) until the late 1800s (Fig. 3). In the 1850s, James Smith of Darley Dale in Derbyshire began marketing newly selected heaths: his nursery is noteworthy as the place where *Erica* × *darleyensis* was first noticed and propagated in the 1890s. Veitch of Exeter was the source of *E.* × *veitchii* in the early 1900s. The Daisy Hill Nursery at Newry in the north-east of Ireland was another that produced novel cultivars in the first decades of the 20th century. James Backhouse & Son of York issued a special catalogue of *E. carnea*

cultivars during 1911 that promoted a dozen named clones that had been selected in the Swiss mountains by Richard Potter (Nelson, 2012). Maxwell & Beale of Broadstone in Dorset specialised exclusively in hardy heathers, listing 63 cultivars in 1926 and 106 the following year.

During the 1960s to 1980s there were several important specialist heather nurseries in Britain, of which Beechwood Nurseries at Beoley, Worcestershire, run by Joseph Weetmen Sparkes, was one of the most productive of outstanding new cultivars. About a dozen of his heathers have held the Royal Horticultural Society's Award of Garden Merit at various times. John Letts had a heather garden and nursery at Windlesham in Surrey, and in 1966 issued his catalogue in book form: *Handbook of Hardy Heaths and Heathers* (Letts, 1966). During the same period, Valerie and Brian Proudley established their nursery, first in the village of St Briavels and later at Blakeney, both within the Forest of Dean, Gloucestershire. They published

*Heathers in Colour* in 1974. Sparkes, Letts and the Proudleys were early supporters of the Heather Society. Other publications promoting hardy heathers as garden plants appeared in the last three decades of the 20th century, of which probably the most notable were Terry Underhill's *Heaths and Heathers* (1971, 1990), Adrian Bloom's *Conifers and Heathers for a Year Round Garden* (1986) and the several editions of the comprehensive *Handy Guide to Heathers* (1992, 1998, 2001) compiled by Anne and David Small.

From its start in 1963 following a meeting in London, the Heather Society attracted members from throughout western Europe. Its membership peaked at around 1,500 between 1982 and 1986. Sister societies soon formed in the Netherlands, Germany and North America (Harringer *et al.*, 2013). All these societies published periodicals, and French, Dutch and German heather enthusiasts also had the benefit of books in their own languages (van de Laar, 1974; Rochefoucauld, 1979; Denkwitz, 1987), while



**Fig. 3** Graphic representation of the progress of introduction and naming of hardy heathers by decade from the 1760s to 1990s. Only horticultural varieties and cultivars were counted. Chart drawn by E.C. Nelson with data derived from Nelson & Small (2000).



Metheny (1991) wrote for North American enthusiasts. More recently, Small & Wulff's (2008) book catered for English-speaking gardeners worldwide.

The Heather Society's activities during its first decades included the management of trials of hardy cultivars. The principal site for these was the Northern Horticultural Society's garden at Harlow Carr outside Harrogate, Yorkshire (Julian, 1994). A large collection of hardy cultivars was also assembled at the Royal Horticultural Society's Garden, Wisley. These trials assessed the garden worthiness of the cultivars then available, and allowed compilation of accurate descriptions of the clones (Vickers, 1976). Similar rigorous trials were conducted by the Koninklijke Vereniging voor Boskoopse Culturen (Royal Boskoop Horticultural Society) in the Netherlands.

The heyday of gardening with heathers in western Europe, and particularly in Great Britain and Ireland, was in the 1970s and 1980s. During this period, botanic gardens in Britain and elsewhere maintained substantial collections of hardy heather cultivars. For example, in the early 1960s, a heather garden was created in the Royal Botanic Gardens, Kew, on a site formerly occupied by roses. The initial planting comprised around 20,000 heathers representing most of the species and hybrids then cultivated in British gardens (Turpin, 1978). The heath garden in the Royal Botanic Garden Edinburgh, first established in 1936, was extensively renovated in 1972–1973 (Evans, 1974). In those decades, heathers were promoted as labour-saving, ground-covering shrubs, eminently suitable for the small, suburban garden. They were planted in island beds often mingled with slow-growing conifers and other dwarf evergreen shrubs, and there left to their own devices (Bloom, 1986; Small & Wulff, 2008). This scheme worked in larger gardens too, as

at Great Comp in Kent, where a spacious vista owed 'its low maintenance and serenity to a concentration of conifers and heathers'. In his books *Colour in the Winter Garden* (1957) and especially *Plants for Ground-cover* (1970), Graham Stuart Thomas joined in extolling the virtues of heathers. In the small gardens of tidy-minded late-20th-century gardeners, as Bisgrove (1990) put it, 'multi-coloured heathers and dwarf conifers provide[d] that firmness and delight so admired in the seventeenth century, while offering a very distant reminder of our heather-clad hills and ... more rugged wilderness'. The heaths and heathers – 'social shrubs of dwarf bushy habit', to quote Thomas (1970) – furnished 'interest of as varied a nature and colouring as any'. Yet, achieving the perfect heather garden, or the perfect combination of heathers with other plants, even slow-growing conifers, is not as simple as it may seem. Thomas (1997) asserted that:

It is no use being small-minded about planting these little shrubs. How often does one see a collection of a dozen or so different sorts planted in a prescribed area, all distinct in colour and growth. This is the worst sort of planting of them, brought about by our acquisitive tendencies and a desire for variety coming to the fore in our minds after a visit to a garden centre.

A further indication of the apparent zenith of hardy heathers was the *Handy Guide to Heathers* (Small & Small, 1992, 1998, 2001). The first edition of 1992 contained descriptions of more than 1,000 cultivars available from more than 100 nurseries from Perth in Scotland and Edewecht in Germany to British Columbia, Washington State and Massachusetts in North America. Revised and updated, the 1998 edition included

more cultivars but fewer nurseries. A third edition, completed in November 2001, was little different in terms of variety of heather cultivars but the number of suppliers had dwindled to around 50. There was no fourth edition, but the *Handy Guides* were important sources leading to the eight-part *International Register of Heather Names (IRHN)* issued between 2000 and 2005 by the Heather Society (Nelson & Small, 2000, 2004–2005) (Fig. 4). *IRHN* accounted for the thousands of names published at all taxonomic levels, including cultivars, for taxa of *Calluna*, *Daboecia* and *Erica* (including all its segregates: see Oliver, 2000) since 1753 (to 2000 for hardy, northern hemisphere heathers and their hybrids and cultivars, and to 2004 for southern hemisphere species of *Erica* and their often artificial derivatives (hybrids and selected clones)).

## Twenty-first century – heathers fall out of fashion again

During the last three decades, specialist heather nurseries (Fig. 5) everywhere closed so that now (2021) only a handful exist in Britain and western North America. This trend coincided with a change in the way garden centres (which displaced specialist nurseries) sold plants. More and more, plants were only displayed seasonally when in full bloom and so were purchased by gardeners on sight rather than by name. A concomitant statistic is that the number of commercially available cultivars has declined to around 200 *Calluna*, 50 *Daboecia* and 350 *Erica*, many fewer in total than the roughly 1,100 listed in the 2001 *Handy Guide*. For *Calluna* especially, the market has changed dramatically and is now dominated by two German horticultural consortia which together list around 60 carefully tested, artificially bred cultivars.

These are protected by plant breeders' rights and are slickly marketed under trademarks such as Beauty Ladies® and Gardengirls®, greatly restricting their propagation to licensed growers.

None of the virtues of heaths and heathers have dissipated. They are among the most useful and versatile plants, for informal plantings and formal ones whether on a small or a grand scale. Heathers are promoted as pollinator-friendly plants, enhancing the value of even small gardens for wildlife, especially pollen- and nectar-gathering insects. They are as attractive as ever, when well grown and well maintained: 'Heathers spell the open air, the moorland, the wide sweeps of hill and dale, and the companionship of grasses and small-leaved shrubs and little trees. They bring to the garden, if rightly used, a smell of the wild open country' [Thomas, 1997]. Yet they are now marketed with advice such as 'Best grown for one season'. Why?

Heathers have been 'reinvented'. They have been removed from island beds and relocated as winter decorations to graves in cemeteries and troughs on terraces, to window boxes and urban planters. They are even promoted for table decorations. Hardy heathers are no longer treated as long-lived shrubs for open ground, left to grow with a minimum of attention year after year – clones can even persist in the wild for at least a century (Nelson, 2001). Perish the thought that you would keep one for a quarter of a century or even a human lifetime, let alone the several centuries that some individual tree heathers undoubtedly can achieve (for example, see Everett, 2000). They have become pot plants, pot-bound, sold to be thrown away when their flowers fade. They have been made into disposable 'annuals', ironic 21st-century versions of the



**Fig. 4** *International Register of Heather Names* issued by the Heather Society (Nelson & Small, 2000, 2004–2005), acting as International Cultivar Registration Authority, in two volumes each of four parts, contained more than 12,000 names at all taxonomic levels from genus to cultivar published since 1753 within *Calluna*, *Daboecia* and *Erica* (and the unrelated genus *Andromeda*); volume 1 (left) contained approx. 6,000 names that had been applied to northern hemisphere species and their cultivars (approx. 2,600 for *Calluna* cultivars; 280 for *Daboecia* cultivars; 1,800 for *Erica* cultivars); volume 2 (right), covering southern hemisphere taxa of *Erica* and their cultivated progeny, contained approx. 6,300 names of which fewer than 400 were applied to cultivars. The register database recorded epithets irrespective of their status and also recorded mistakes such as misspellings. Annual supplements were published by the Heather Society in its annual journal up to 2017. Images: E.C. Nelson.



**Fig. 5** An English heather specialist nursery in early autumn 2011 showing a range of *Calluna vulgaris* cultivars in the foreground, most of which are old, long-cultivated clones, not protected cultivars of the so-called bud-bloomers. In the background are spring- and summer-flowering cultivars of *Erica*. Photo: E. Charles Nelson.

bedding-out plants of the Victorian era, in the process generating fortunes for those who have the plant breeders' rights on the named cultivars. If this change was not indignity enough, cultivars, particularly of *Calluna*, have been selected to be unsexed so that what should be functioning flowers providing pollen, nectar and eventually seeds, now comprise just petals and sepals. They have been bred to be sterile, to produce only buds: oxymorons termed 'bud-bloomers'. These deliberately created and selected monstrosities are profitable for the breeders who created them and the nurserymen licensed to propagate them because their buds never open and so retain colour for a long season, making these heathers attractive for gardeners. However, they are

ecologically useless, especially to bees and other pollinating insects. The ultimate insult is delivered by spraying these bud-blooming heathers with resin containing water-soluble dyes to create 'painted heathers' – red, blue, orange, yellow! These abused heathers are often dead when displayed for sale – but who can tell under the layer of garish mascara? No longer do small specialist nurseries maintain a diverse stock of cultivars and from these propagate numerous heathers in small batches, plants that benefit gardeners and insects. Instead, factory-style production units annually regurgitate tens of millions of identical pots of a few clones which are then sold everywhere from street markets to supermarkets, and even garden centres. In 2003, 65 million *Calluna* bud-bloomers were

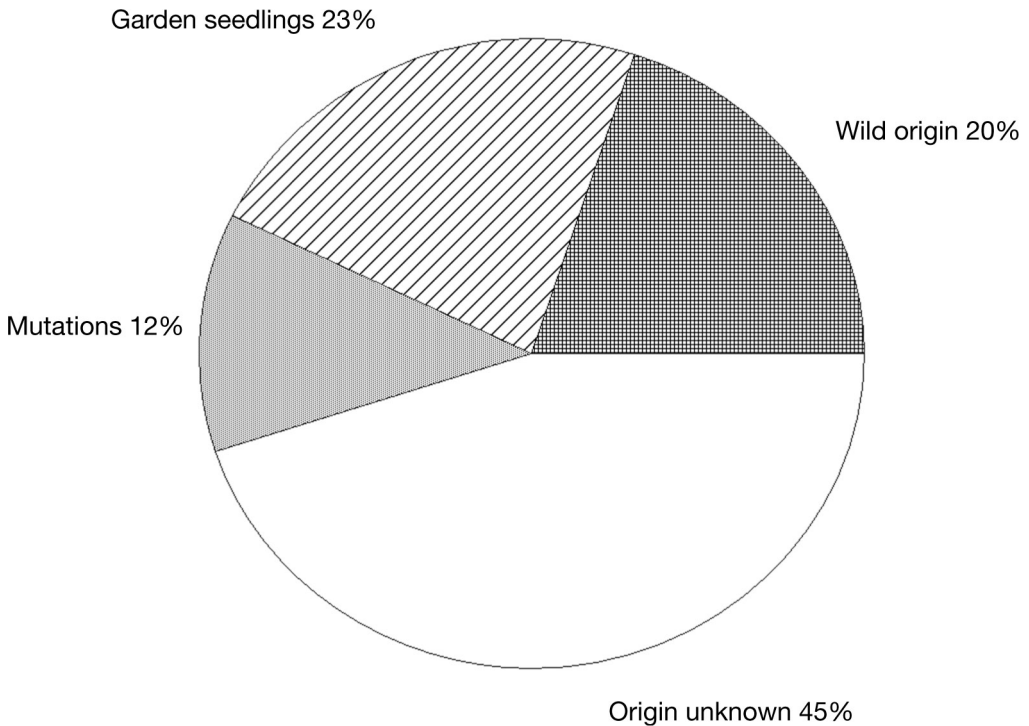
produced in Germany alone (Schröder, 2005); by 2015 the same market accounted for 135 million heathers in pots (Kramer, 2017).

## Conservation of species and cultivars

Heathers have not vanished. They have been transmogrified into non-plants. At least these vegetable eunuchs are not plastic imitations (although such things are also produced). However, the current overwhelming market dominance of a relatively few heather cultivars, effectively as throwaway summer and autumn bedding and pot plants, might be viewed as an entirely different phenomenon, perhaps barely relevant to the waxing and waning interest in heathers – hardy, or Cape – since the 1800s. Fertile

cultivars of heath and heather species represent in part discoveries over decades of a range of morphological variation in wild populations (Fig. 6). This variation may reflect an underlying, highly variable genomic diversity within species with origins dating back thousands or even millions of years. It certainly represents the long-term future of the horticultural trade and a contribution by gardens and gardeners towards preserving biological diversity into an uncertain future.

New cultivars and gardening trends arise and inevitably decline again over time. It is perhaps unreasonable to expect to maintain indefinitely the full range of cultivars that was available at the peak of popularity of heather gardens (as exemplified in Small & Small, 1992, 1998, 2001). However, diversity can be



**Fig. 6** Graphic representation of origins of named cultivars of hardy heather (*Calluna*, *Daboecia* and *Erica*) for which sources are recorded in the *International Register of Heather Names* (Nelson & Small, 2000). A total of 45 per cent of named cultivars had no recorded history. Mutations (known to gardeners as ‘sports’) may have been found in cultivation or in the wild. Graph drawn by E.C. Nelson.

preserved, over decades or even centuries, in dedicated institutional collections, such as those of botanic gardens, particularly when cultivars of known wild origin, rather than artificially bred plants, are deliberately chosen for use. One example of successful long-term preservation of living heather collections is the Belvedere in Vienna, Austria (Fig. 7). In 1786 an expedition sent to the Indian Ocean by Emperor Joseph II deposited the Bavarian gardener Georg Scholl (1751–1831) at the Cape of Good Hope, where he remained for a number of years assembling what became the beginning of the Belvedere's Cape *Erica* collection. This collection preserves to this day dozens of species including two that once inhabited the Cape flats but which, due to habitat destruction around the city of Cape Town, are extinct in the wild: *Erica verticillata* (Hitchcock, 2003; Hitchcock & Rebelo, 2017) (Fig. 8) and *E. turgida* (Hitchcock, 2007).

Thanks to this continuity of effort and investment, maintaining living lines of clones through vegetative propagation over numerous generations of horticulturists and management, these species are now being reintroduced to the wild (Hitchcock & Rebelo, 2017). These are not the only species threatened with extinction in the biodiversity hotspot that is the Cape Floristic Region. The South African National Biodiversity Institute (SANBI) maintains a Red List covering 944 species of *Erica* and subspecific taxa, of which 60 are Endangered, 46 Critically Endangered and 3 extinct in the wild (Hilton-Taylor, 1996; Raimondo *et al.*, 2009). The achievement of many generations of gardeners at the Belvedere (Oliver, 2003) in saving two of the latter is dwarfed by the future challenge of preserving the many others that are under increasing pressure particularly from human impact on the natural fire regime,



**Fig. 7** *Erica canaliculata* (left) and other *Erica* clones, some derived from species such as *E. verticillata* and *E. turgida*, brought to Europe in the late 18th century, have been continually propagated at the Belvedere garden, Vienna, Austria. Photo: Michael Knaack.



**Fig. 8** The late Anthony Hitchcock with *Erica verticillata* plants re-established on the Cape Peninsula propagated from material sourced from cultivars grown in European gardens. Photo: Wendy Hitchcock (originally published in Hitchcock & Rebelo, 2017).

introduction of invasive species and climate warming (Skowno *et al.*, 2019).

The most important living collections of Cape *Erica* are curated by SANBI, at Kirstenbosch Botanic Garden. However, neither SANBI nor any other single institution should be forced to act alone to prevent species extinctions. Serving under the umbrella of Botanic Gardens Conservation International, the *Erica* Conservation Consortium (initiated in 2020), linking gardens, botanical and horticultural institutions, and societies, is currently working to coordinate and prioritise *ex situ* conservation across the geographical range of the genus (Pirie *et al.*, submitted). By efficiently sharing the most important genetic resources across multiple gardens and seed banks, we can insure against local misfortune

and maintain the possibility of reintroducing species to restored habitats in the future.

No hardy heather species are similarly threatened, and the impact of loss of diversity in northern hemisphere heather gardens does not compare in its gravity to the mounting species extinctions of our ongoing biodiversity crisis. Nevertheless, a range of cultivars and the shared inheritance of cultural history and within-species diversity that they represent can and perhaps should similarly be preserved in, for example, permanent national collections, even when the swings and roundabouts of fashion within the gardening community do not currently favour them. With long-term strategies in place to maintain species and their genetic diversity we can anticipate – if not exactly look forward to – more optimistic

times. Future generations will have inherited at least some of the genetic resources they need to restore natural and semi-natural wonders that we are in the process of losing today.

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