



Fig. 1 Naturalised daffodils at Backhouse Rossie

Heritage and science in the Backhouse Rossie National Daffodil Collection in Fife

Caroline Thomson and David Willis

The 'Heritage' in The Plant Heritage National Collection® of *Narcissus* Backhouse cultivars is evident, both outdoors in the many hybrids raised by members of the Backhouse family (fig. 1), and indoors in the extensive reference library and other archives held at Rossie. Displays from the reference collection are exhibited in Backhouse Rossie Heritage and

Education Centre in Fife (fig. 2). While other plant collections exist which relate to a single hybridiser, the one at Backhouse Rossie is thought to be unique because of the combination of living plants and reference material, some of which dates back almost 200 years, involving three generations of the same family.

The first member of the Backhouse family

to become involved in daffodil breeding was William (1807-1869). His achievements spurred on his sons, Henry (1849-1936) and especially Robert Ormston Backhouse (1854-1940); Robert's wife, Sarah Elizabeth Backhouse née Dodgson (1857-1921), and his grandson, William Ormston Backhouse (1885-1962), to follow in his footsteps. These three generations of the Backhouse family dedicated over a century of endeavour to improving garden cultivars of the genus *Narcissus*, and produced forms that were unique in their genetic makeup, colour or combination of colours. Of particular importance were their creation of polyploid and reverse bicolor forms, and the introduction of daffodils with pink cups and red trumpets.



Fig. 2 Backhouse Rossie Heritage Centre

The collection at Backhouse Rossie was started in 2008. Caroline Thomson's mother, Lady Georgina Buchan-Hepburn, who understood the importance of the Backhouse cultivars in the history of daffodil breeding, asked if we could gather together the remaining daffodils into a collection which also celebrated their history. Since then, we have managed to locate and positively identify 82 of the cultivars introduced by our ancestors. A small number of these were easily obtainable because they were still available commercially, over 100 years after their introduction. Others have been more challenging to find, and have involved searching the grounds of properties large and small, where it was known that daffodil collections had existed in the past; and others still have been donated by daffodil enthusiasts across the country.

Narcissus 'CJ Backhouse', bred by William and introduced before 1869 but then completely lost, was tracked down in the best sleuthing tradition. It had been named after William's eldest son, and was distinguished by the strong reddish-orange colour of its cup, or 'corona' (fig. 3). Its re-discovery began with information recorded on a small piece of paper found in the Backhouse Rossie



©Rossie Estate

Fig. 3 *N. 'CJ Backhouse'*

archive, where the name 'CJ Backhouse', followed by a set of barely legible numbers had been recorded in what appeared to be William's handwriting. This note encouraged us to look deeper into the archive, eventually leading us to William's original master copy, which revealed his coding system, consisting of geographical locations aligned with the cardinal points. This was William's

personal shorthand, containing information on his hybrids, their breeding history and/or their location among the thousands of daffodils once grown in his garden and grounds at St John's Hall near Wolsingham, County Durham.

We were given access to William's former home, but the grounds are now managed mainly for shooting and farming,



©Rossie Estate

Fig. 4 *Narcissus* 'Emperor'

Fig. 5 *N.* 'Empress'Fig. 6 *N.* 'Weardale Perfection'

and the garden is quite run down. Despite this, the code led us to the exact location of *N.* 'CJ Backhouse'. It took several attempts to align the points of the compass with the coded shorthand numbers, and to cross-check the location in relation to adjacent daffodils in the record. But there it was, fluttering in the breeze, where it had probably been growing undisturbed and

unrecognised since it was planted by its breeder over 150 years ago, in the exact location indicated by the code.

Although several of William's codes have been deciphered, some now lead to areas where daffodils have not grown for many years due to waterlogged conditions, rough grass or deep shade under large conifers. But there have been other success stories, and we believe plans are under way to protect what remains of this fragile site.

While archive material can be vital in the challenge of positively identifying rare old narcissus cultivars, some of William's best-known introductions have not required this because they have remained in cultivation continuously since the 19th century. For example, *N.* 'Emperor' and *N.* 'Empress' (figs 4 & 5) are still prized as commercial cut flowers and garden plants, the latter being a particularly elegant daffodil. However, *N.* 'Weardale Perfection'¹ (fig. 6), probably William's most important and influential cultivar, disappeared from the market about 80 years ago and was only rescued from near-oblivion in 1998 by David Willis. It has now been re-established in the grounds of the Parish Church in Wolsingham,

Illustration from *The Journal of Horticulture and Cottage Gardener* April 19th 1894 p 303

Fig. 7 Illustration of *N.* 'Weardale Perfection' from a journal of 1894

¹The story of *N.* 'Weardale Perfection' was told in the spring 2019 edition of *The Hardy Plant*

and at Rossie and other sites. When *N.* 'Weardale Perfection' first became available, it was such an advance on existing cultivars that it was described and illustrated in great detail in magazine articles, newspapers and catalogues (fig. 7). These contemporary sources were a great help in its positive identification.

At Backhouse Rossie we are now working to create living demonstrations of how the Backhouse cultivars were developed, using the actual plants involved. With these, we plan to bring to life the following pivotal developments in the evolution of cultivated daffodils:

1. William Backhouse and the creation of the first polyloid cultivars

This was a particularly important phase in the development of garden daffodils as we know them today. When William began his breeding work, he used narcissus species which were relatively small, and normally contained 14 chromosomes in each cell (the usual diploid number for the genus). It would, however, have been obvious to the practised observer that some species contained individuals that were sturdier and more vigorous than their fellows. One of these was *Narcissus bicolor* which, while normally occurring as a diploid,

also occurs in several polyploid forms with additional chromosomes. There is a triploid with 21 chromosomes, a tetraploid with 28 and a hexaploid with 42 chromosomes. Of these, the triploid and tetraploid forms showed the greatest vigour, and this would not have escaped William's expert eye. It is not certain which polyploid form William possessed, but we know he used *N. bicolor* with the English lent lily, *N. pseudonarcissus*, to raise the earliest known triploid cultivars.

William initially produced two outstanding triploids in *N.* 'Emperor' and *N.* 'Empress' and then, using *N.* 'Empress', went on to raise the first tetraploid *N.* 'Weardale Perfection'. The importance of this development is that in daffodils, the tetraploid form is the one in which



Fig. 8 Left to right: a. *N. pseudonarcissus* (diploid); b. *N. bicolor* (tetraploid); c. *N.* 'Empress' (triploid); d. *N.* 'Weardale Perfection' (tetraploid)

vegetative vigour and flower substance are at their maximum (fig. 8). The significance of this fact is demonstrated by the observation that around 1920, tetraploids began to be dominant among new



Fig. 9 *Narcissus* 'Binkie'

daffodil registrations, and today make up almost the entirety of the principal divisions of daffodils.

2. Robert Backhouse and the creation of reverse bicolor cultivars

William's son Robert almost certainly produced the first daffodils in which the cup is white and the perianth yellow. This is the reverse of the natural colour contrast in those daffodils that have differently-coloured perianth and corona components, and plants with this unusual arrangement are known as reverse bicolors.

Up until 1978 it was thought that the first reverse bicolor cultivars were the result of work by Northern Irish breeder Guy L Wilson (1885-1962). The first recorded cultivar was

N. 'Binkie' (fig. 9), raised by W Wolfhagen in 1938 in Australia, from seed sent by Wilson. Wilson later registered his own reverse bicolor, *N.* 'Spellbinder' in 1944, followed by several other cultivars of this type. But the story changed in 1978, through a discovery made by David Willis, then Curator of the National Collection® of *Narcissus* at the University of Ulster, Coleraine. Looking through Wilson's record books, Willis found that Wilson visited Robert's garden at Sutton Court in Herefordshire in 1923, and recorded his first sight of a reverse bicolor cultivar growing there. Wilson wrote: "a remarkable seedling – many have been remarkable but this one was a reverse bicolor, it really looked more

beautiful than one would have expected". A year later Wilson visited Sutton Court again, this time with Irish hybridiser Lionel Richardson, and they saw several more unnamed seedlings of this type raised by Robert.

Before Wilson's first view of Robert's unnamed seedling in 1923, this colour combination was unknown in narcissus cultivars, and was found only in one quite rare variety of a single species, *N. triandrus* subsp. *triandrus* var. *pulchellus*.

Further evidence of the pioneering role that Robert played in the creation of the first reverse bicolor hybrids is contained in his own notebooks. He recorded a wild bicolor species growing in the 'West Border' at Sutton Court and described it as 'yellow & white' – the convention being to record the perianth colour first, followed by the colour of the corona. He also recorded reverse bicolor hybrids in his diary of daffodils he grew between 1896 and 1907, again using the description 'yellow & white'. This strongly suggests he was the first to raise reverse bicolor hybrids, several decades before Wilson's *N.* 'Spellbinder' was registered with the International Daffodil Registrar.

It's not clear why Robert didn't go on to



Fig. 10 *N.* 'Mrs RO Backhouse'

develop the reverse bicolors; maybe he realised the daffodil world wasn't ready for such a radical change – perhaps correctly, as Wilson's introduction of his *N.* 'Spellbinder' in 1944 met with considerable resistance. In recent years, the grounds of Robert's former home have been searched for evidence of the reverse bicolor seedling recorded by Wilson in 1923, without success.

3. Sarah Elizabeth (Mrs RO) Backhouse and the establishment of pink-cupped daffodils

Pink-cupped daffodils are unknown in nature, and their appearance as progeny of parents with no sign of this colour must have baffled early hybridisers. Several decades after they first appeared, it was discovered that the potential for pink flowers originates at the species level. It results from the 'dilution' of the red genes that naturally occur in species like *Narcissus poeticus*, when they are crossed with a white species such as *N. moschatus*. Such hybrids do not occur naturally because the two species flower at different times. Early hybridisers overcame this problem by storing pollen in foil packets kept in cool conditions until the stigmas became receptive; nowadays the job is made easier by refrigeration.

While Sarah was not the first hybridiser to create pink-cupped cultivars,



Fig. 11 *N.* 'Red Curtain'

she was one of the first to create cultivars with solid pink coronas. This achievement was recorded in her garden diary of 1906-7, and the hybrid *N.* 'May Fair' was registered by her in 1908. However, the cultivar that probably did most to popularise pink-cupped daffodils was the one that bore her name, *N.* 'Mrs RO Backhouse' (fig. 10). This cultivar arose from the most unlikely-looking seed parent, *N.* 'Lord Kitchener', another Sarah Backhouse cultivar, which was white and yellow. The explanation for the pink colouring lies in the fact that *N.* 'Lord Kitchener' possessed genes from both *N. poeticus* and

N. moschatus in its ancestry. Sadly, Sarah did not live to see the success of her namesake as it was not released by her husband until 1923, two years after her death. The popularity, stability and vigour of this cultivar can be gauged by its ready availability today, almost 100 years after its introduction.

4. William Ormston Backhouse and his role in developing red trumpet daffodils

Robert and Sarah's son William studied agriculture and forestry at Cambridge. After graduating, he worked at the Cambridge Plant Breeding Station and then the John Innes Institute,



Fig. 12 *N.* 'Brer Fox'

founded in 1910. In 1912 he took up the position of agricultural advisor to the Argentine Railways, and bred disease-resistant wheat varieties.

During William's time overseas, his parents sent him bulbs which formed

the basis of his early daffodil breeding work. He returned to Sutton Court in 1945 to further his family's passion for daffodil breeding. Red-trumpeted daffodils had always been an ambition for his father, and William continued

to pursue this goal. His lasting achievement was to manage the difficult task of transferring the red colouration that in nature is found only in species with small coronas such as *Narcissus poeticus*, into cultivars with large trumpets. He had considerable success, registering several of his cultivars including *N.* 'Red Curtain' and *N.* 'Brer Fox', although the description of 'red' trumpets in earlier days has been modified to 'strong orange' in more recent colour classifications (figs 11 & 12).

Plant collections should not be static. At Backhouse Rossie we are keen to expand our collection of Backhouse daffodils, and to develop the supporting historical, social and scientific information needed to place individual cultivars, and the whole collection, in context. The plants and their stories are fascinating and irreplaceable, and we would love to hear from anyone who can provide additional material for this living archive. 🌷

Caroline Thomson is a researcher, designer, and former lecturer. She holds three generations of her family's *N.* Backhouse cultivars at the Backhouse Rossie Estate in Fife, which is an RHS Partner Garden, and host to Scotland's annual National Daffodil Festival. See www.backhouserossie.co.uk.

Dr David Willis is an author and international authority on the genus *Narcissus*. He was a senior lecturer in horticulture and curator of the National Collection® of *Narcissus* at the University of Ulster, Coleraine.