

UK Study Tour of Informal Stream Plantings and selected Genera

2023 May to October, with most visits 15th June – 1st July

Thomas Jackson



Figure 1 Primula and Iris at Marwood Hill Gardens

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Introduction

I am currently a senior gardener at Hidcote, National Trust. I have worked at Hidcote for over 6 years, and prior to that have been employed at RHS Wisley and worked as a self-employed gardener. I have always had a particular interest in waterside and woodland-dell plantings; the variability of growing conditions creates unique opportunities to work with a diverse palette of plants.

Hidcote is a grade-1 listed garden, primarily created 1907-1948 by Lawrence Johnston. The garden is widely recognised for Johnston's pioneering design style in combination with his plantsmanship. Hidcote is regarded as being very influential in English garden design, especially in the latter half of the 20th Century. Today, Hidcote is maintained and conserved by the National Trust and is open to the public. A Conservation Management Plan outlining a future programme of works was authored by Judith Teasdale and agreed 2021.

At Hidcote, one of my current responsibilities is a refresh of our stream garden. Per the Conservation Management Plan, it is a high priority to 'review the whole planting scheme for this area, to re-plan the height and structural planting to create dells and frame views'. This is to be followed by a refresh of the lower level (ie. herbaceous) planting, taking into account historic plantings, prior advice from Tony Lord and likely impact of climate change. Work has already started on the woody layer, but planning for the lower level is in very early stages,

Overview

The principle objectives of the study tour are as follows:

- Design inspiration – as I'm to be completely overhauling and replanting our stream garden inspiration is always valuable ranging from the overall composition/style to individual cultivar selection
- Research of key genera – key genera linked to Lawrence Johnston our gardens creator, historical varieties and how best to care for them. Identify opportunities to conserve rare cultivars/species. Key genera, linked to Lawrence Johnston's historic plant collecting and breeding efforts, include: Primula (waterside/woodland types, not auricula etc), Iris (I. siberica, I. ensata), Agapanthus, Astilbe, Kniphofia and Meconopsis.
- Assess impact of climate change and potential solutions– changing weather patterns have had significant impact on seasonal streams and soil moisture, identifying how to improve the resilience of streamside plantings will be important to conservation of historic gardens and plants.



Figure 2 Relevant Locations to visit

My study tour comprised 3 elements:

1. A study tour of relevant gardens in Cornwall/Devon 15th-22nd June (8 days)
2. A study tour of relevant gardens in Northern England and Scotland 26th June – 1st July (6 days)
3. A series of garden visits and working days with highly relevant gardens/collections in other areas, including Wakehurst, RHS Wisley and Bodnant. (8 days)

Itinerary

26/05/23 – Wakehurst Place, West Sussex, England
06/06/23 – RHS Wisley, Surrey, England
07/06/23 – Bodnant Garden, Conwy, Wales
15/06/23 – RHS Rosemoor, Devon, England
16/06/23 – Stone Lane Gardens, Devon, England
16/06/23 – Docton Mill, Devon, England
17/06/23 – Marwood Hill Gardens, Devon, England
17/06/23 – Greencombe Gardens, Devon, England
18/06/23 – Keith Wiley's Wildside, Devon, England
18/06/23 – The Garden House, Devon, England
18/06/23 – Hotel Endsleigh, Devon, England
19/06/23 – Eden Project, Cornwall, England
19/06/23 – Lost Gardens of Heligan, Cornwall, England
19/06/23 – Hidden Valley Gardens, Cornwall, England
20/06/23 – Trengwainton Garden, Cornwall, England
20/06/23 – Tremenheere Sculpture Garden, Cornwall, England
21/06/23 – Bonython Estate Gardens, Cornwall, England
21/06/23 – Trebah, Cornwall, England
21/06/23 – Lamorran Garden, Cornwall, England
22/06/23 – Coletton Fishacre, Devon, England
22/06/23 – Abbotsbury Subtropical Gardens, Dorset, England
22/06/23 – Minterne Himalayan Gardens, Dorset, England
26/06/23 – RHS Harlow Carr, North Yorkshire, England
26/06/23 – Himalayan Garden and Sculpture Park, North Yorkshire, England
27/06/23 – Howick Hall Gardens and Arboretum, Northumberland, England
27/06/23 – Lilburn Tower, Northumberland, England
28/06/23 – Monteviot Gardens, Scottish Borders, Scotland
28/06/23 – Branklyn Garden, Perthshire, Scotland
29/06/23 – Threave Gardens, Dumfries and Galloway, Scotland
30/06/23 – Holehird Gardens, Cumbria, England
01/07/23 – (Lowther Castle and Gardens, Cumbria, England)

01/07/23 – RHS Bridgewater, Greater Manchester, England

16/07/23 – Cotswold Garden Flowers, Worcestershire, England

19/08/23 – Avondale Nursery, Warwickshire, England

19/09/23 – RHS Garden Wisley, Surrey, England

Planned October 23 - Beth Chatto Gardens, Essex, England

Planned October 23 – Ashwood Nursery: John Massey's Garden, West Midlands, England

Locations Visited

Wakehurst Place

Wakehurst Place is a historic and botanic garden owned by the National Trust but managed by Royal Botanic Gardens, Kew and is home to Kew's Millennium Seed Bank. The garden is approximately 500 acres, and includes walled formal gardens as well as extensive ornamental woodland, meadow and wetland areas.

At the start of an informal stream, a selection of *Acer* have been planted around a cascade. The stream weaves through a 'native' meadow planting with canopy of *Magnolia* and *Acer* spp. The stream descends to Black Swan Pond, currently surrounded by plantings of *Cornus alba* and other shrubs. There are plans to replace these with a lush herbaceous planting using different textures of *Darmera*, *Gunnera*, and *Osmunda*. The nearby bog garden is being substantially redeveloped with new dipping areas and replanting the margins.

The stream descends through primula plantings and weaves through the 'Iris Dell'. This was home to a collection of 60 *Iris ensata* cv. However, these have hybridised and self-seeded and the original cultivars are believed lost. The team plans to adjust the level of the stream to raise the water level, increasing the saturation of this iris bed. The planting in these beds are entirely *Iris*, and as such weed infiltration has been a challenge. The team finds mulches of composted fine bark to be effective.



Figure 3 Damp Dell at Wakehurst

The adjacent damp woodland garden benefits from a multi-layered canopy of *Acer*, *Sorbus*, *Ginkgo*, *Quercus*, *Enkianthus* and more. The area is underplanted with highly vigorous moisture-lovers including *Gunnera*, *Rodgersia*, *Lysimachia* and *Primula*, interwoven with clumps of *Epimedium*, *Kirengeshoma* and *Hosta*.

Plants with historic relevance to Hidcote included *Primula profifera*, *sikkimensis*, *japonica*, *denticulate*, *aurantica* and *Iris ensata*.

RHS Wisley, Surrey, England

Wisley has been the flagship garden of the RHS since c. 1903 and now covers over 200 acres. The oldest 60 section of the garden was developed by George Wilson from 1878. This oldest section now known as Oakwood (formerly the Wild Garden) is in a low-lying area and naturally is damp. A network of ditches helps drain the beds and provide opportunities for marginal plantings in a woodland dell. The neighbouring Rock Garden features artificial cascades and streams.

These two areas are home to the National Collection of Georg Arends Astilbe, Georg Arends being a contemporary of Lawrence Johnston. These areas also contain significant plantings of Primula (emulating George Wilson's collections) and Iris. Current Primula plantings are primarily hybrids planted in large blocks through the oakwood. They help create rhythm through the area. A large variety of Iris cvs. are planted, of which I. 'Caesar's Brother' is clearly the most vigorous and successful.

Bodnant Garden

Founded in 1878 and developed by multiple generations of enthusiastic plantsmen, the garden at Bodnant covers more than 80 acres. A hillside valley garden bisected by a small river, the garden includes formal terraces, herbaceous borders, diverse shrub-beds and woodland plantings. It is also home to several national collections.

Although the garden features a river, the marginal plantings here are less diverse than much of the rest of the garden and were not the primary purpose of my visit. Instead, in this garden my focus was on May-flowering rhododendrons, a selection of which will be included in the woody layer in the stream plantings at Hidcote.

RHS Rosemoor

Starting development by Laddy Anne Berry as an 8 acre garden in 1959, RHS Rosemoor has since expanded to approximately 65 acres. Maintained by a team of 28 horticulturists and students, it includes many different styles of planting from formal rose gardens to woodland, alpine gardens to meadows.

Of particular significance to my visit was the bog garden. A natural stream runs through the area, but this is topped up by a pumped supply. The iris collection is extensive, but focuses on a collection received from Rowdens Nursery, now closed. Rowdens Nursery had bred and developed a substantial range of moisture-loving iris, across the species *laevigata*, *versicolor*, *ensata* and *sibirica*. The iris are maintained as distinct clumps and dead-headed to prevent hybridisation.

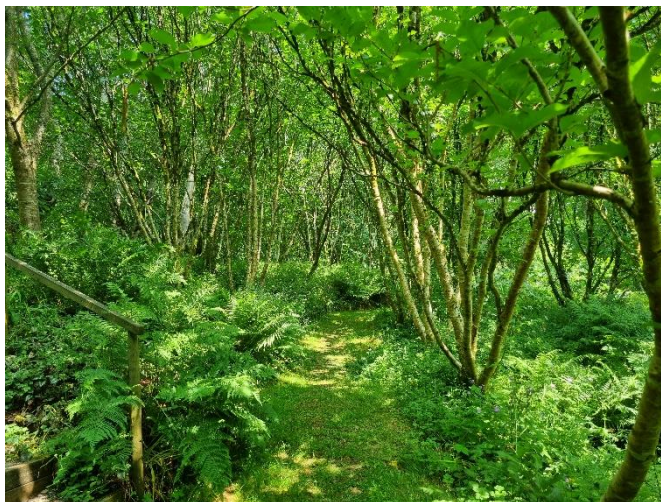
Other plants which stood out in the damp garden included plantings of bamboos, *Anemone rivularis*, *Zantedeschia*, *Rodgersia*, *Dactylorhiza* and *Aruncus*.

Stone Lane Gardens

5 acres of woodland and water garden created by Kenneth and Jane Ashburner, Stone Lane gardens was in many ways less intensively planted than most gardens on my itinerary but a personal highlight. National Collections of *Betula* and *Alnus* form the backbone of the garden creating woodland glades. Craggy sculptural stems created areas of light and shade, contrasting with long grass beneath, and sculpture are placed throughout. Simple plantings of *Primula*, *Hemerocallis*, *Rodgersia* and *Darmera* follow a stream.

This garden was a demonstration of how a relatively simple concept, delivered consistently and with vision can often be more effective than more diverse, cluttered plantings.

Figure 4 Simple yet effective, at Stone Lane



Docton Mill

First created in the 1930s, the gardens at Docton Mill have been substantially redeveloped since the 1980s. Woodland plantings cover a hillside, and water plantings follow the small stream.

Marwood Hill Gardens

Currently home to National Collections of Astilbe and Iris ensata, Marwood Hill Gardens were first created in the 1950s by Dr Jimmy Smart VMH. The 20 acres includes 3 lakes with extensive marginal plantings as well as hillside woodland walks and a nursery which continues to propagate the historic varieties.



Figure 5 Iris ensata among hybrid Primula at Marwood Hill

Of particular relevance were a pair of beds displaying the collection of Astilbe, and further beds of different Iris ensata cvs. Significant quantities of interpretation was on display in the nursery, which was very helpful in comparing cultivars (see below section on key genera).

Also notable was the display of Paradisea lusitanica which was new to me. Growing in damp meadows, the white flowers resemble Anthericum or

Ornithogalum magnum.

Greencombe Gardens

A 3.5 acre woodland garden, this strip of hillside is packed with a diverse collection of plants. I found inspiration in the layers of canopy and diverse palette.

Keith Wiley's Wildside

Wildside was a true highlight of my study tour. The work of Keith and Ros Wiley, the style is unique and distinctive. Created out of fields in the last 2 decades, vast quantities of soil were moved to create small hills and valleys resulting in a unique topography. In the lower garden these mounds and gullies are planted with a diverse range of structural trees and shrubs, with layers of lush underplanting beneath. A small artificial stream wends through and is

surrounded by swathes of Iris, Primula and other moisture-loving perennials. Particularly notable in this composition was the variability in plant forms (vertical or horizontal), foliage colour, and texture to create appealing planting even when not in flower.

The most formal area of the garden, the Courtyard, mixes Mediterranean and southern-hemisphere plants enclosed by a Wisteria arbour. Still in development, the Canyons are inspired by natural landscapes from around the world. Scree slopes are planted with an incredible array of perennials appreciating the free-draining conditions.



Figure 6 Landsculpting at Wildside

Plants of note here included Iris x fulvala, I. versicolor 'Concerto' and I. laevigata 'Richard Greaney'

The Garden House

A plantperson's garden initially developed in the 1940s by Lionel and Katherine Fortescue. Since then, this 12 acre garden has become known for a style of self-seeding and naturalistic plantings styles. A small stream was surrounded by Primula and other moisture lovers, and specimens of Dactylorrhiza were impressive.

Hotel Endsleigh

The hotel is surrounded by a 200 year old Humphrey Repton landscape of 180 acres. Many of the original waterfalls, follies and grottos still survive. This garden had an incredible

charm, and landscape plantings of shrubs and bamboos were interrupted by occasional beds full of colourful Primula and Iris.



Figure 7 Folly at Endsleigh

Eden Project

The Eden Project is a pioneering garden centred around two large geodesic domes: the Rainforest Biome and the Mediterranean Biome. The surrounding landscape is planted inspired by different habitats around the world. The Eden Project is home to a National Collections of species Kniphofia. Unfortunately, recent challenges including significant staff turnover and a particularly harsh winter have resulted in the loss of most of the collection, and the surviving plants are yet to be identified.

Lost Gardens of Heligan

Previously a richly planted garden, Heligan was functionally abandoned from 1914 at the outbreak of the First World War. 'Rediscovered' in the 1990s, a restoration of 200 acres commenced. The garden is defined by incredible specimens of tree ferns, bamboos and rhododendrons dating back over a year years, taking advantage of the subtropical climate.

A stream tumbles down through the Jungle. Very large Dicksonia and bamboos provide the structure, with pockets of Primula along the waterside.

Hidden Valley Gardens

A charming 3 acre garden and nursery, beds include a collection of Iris, Agapanthus and Kniphofia. Primula surround a small pond.

Trengwainton Garden



Parts of the garden at Trengwainton date back to the Elizabethan era. However, much of the garden has been developed in its current form since 1925. The garden of 30 acres, maintained by 2.4 gardeners, contains a walled kitchen garden, shrub beds, woodland garden and herbaceous borders. A gulley running alongside the long drive to the house has been planted recently, with a repeating combination of Iris, Primula, Zantedeschia, Astilbe, Restio and other moisture-loving plants.

Figure 8 New waterside planting at Trengwainton

Tremanheere Sculpture Garden

This 22 acre garden has been developed in its current form since 1997. Taking advantage of the subtropical climate and steep well-drained slopes has allowed the team to cultivate a range of plants almost unique in the UK. The planting frames views out to St Michaels Mount, and provides context for a series of sculpture. Dicksonia and hydrangeas in the valley contrast with Aloe, Kniphofia and succulents on the

slopes.



Figure 9 Subtropical Planting at Tremanheere

Bonython Estate Gardens

The current garden at Bonython has been developed almost entirely over the last 10 years under the ownership of Mr and Mrs Nathan. The garden contains a walled garden filled with herbaceous borders, a series of small lakes and a cascading stream; much of the planting is inspired by Mrs Nathan's South African background. Current plans are to continue expanding the garden, creating new planting on the cliff-faces of the flooded quarry.

Trebah

This 26 acre garden follows a valley to the sea and has been developed by a series of horticulturally-inclined owners over 200 years. A stream runs from the Koi Pool through the Water Garden, descending through the valley via multiple ponds. The hillside is planted with



Figure 10 Lush Hydrangea and Gunnera at Trebah

a diverse collection of trees, rhododendron and bamboo. Structure along the water garden is provided by Dicksonia, underplanted with Zantedeschia, Hedychium, Primula and Astilbe.

Primula planted included the species beesiana, bulleyana, x bulleesiana, japonica, helodoxa, pulverulenta and veris. Iris included I. ensata 'White Ladies', japonica, pseudacorus 'Variegata' and

sibirica 'Butter and Sugar'.

Lamorran Garden

Lamorran House Gardens have been developed under the ownership of Robert and Mario-Antionette Dudley-Cooke since 1982. While the style is Italianate, the last recorded frost was 1987 and as such there has been an opportunity to grow many southern-hemisphere plants in the sub-tropical climate. The garden is on a hillside, terraced towards the sea, and there are a series of pools alongside cycads and succulents.

Coleton Fishacre

Coleton Fishacre is a 26 acre arts-and-crafts style garden now in the care of the National Trust and maintained by a team of 4. Again, a stream descends through a valley towards the sea, with trees framing incredible views. Herbaceous borders surround the 1920s house, with water starting as a formal rill within a cottage garden. The planting to either side of the descent of the stream towards the sea is currently undergoing significant redevelopment. The new scheme make repeated use of Astilbe, Zantedeschia, Iris, Primula chungensis and Aruncus.

Also of note were plantings of Agapanthus and Kniphofia thomsonii var. thomsonii.



Figure 11 Kniphofia thomsonii var. thomsonii

Abbotsbury Subtropical Gardens

The site at Abbotsbury Subtropical Gardens has been extensively cultivated for over 200 years. Significant restoration and development of the garden followed the Great Storm of 1987. Today, the garden is noted for its collections of Camellia, Magnolia, Rhododendron and Hydrangea.

A stream runs through the garden passing under a series of red bridges. Planting to either side largely consists of ferns, Rodgersia, Astilbe, Ligularia, Carex and Gunnera. Sarracenia grow from stumps in the middle of pools. Throughout the garden, an impressive collection of Myrtaceae display wonderful bark.

Minterne Himalayan Gardens

The gardens at Minterne were initially developed by the owner Admiral Robert Digby attempting to emulate the style of Capability Brown, starting when he acquired the property in 1768. Today the 20 acre garden is comprised of a series of small lakes and cascades created through the damming of a small stream. An established collection of historic trees and shrubs provide a canopy, creating a glades. The style is wild and informal, punctuated by pockets of collections of Iris, Primula, Bletilla and other perennials.

RHS Harlow Carr

Harlow Carr is a 58 acre garden of the RHS, originally created by the Northern Horticultural Society in 1946. Maintained by 30 horticulturists and students it contains an array of different features, including kitchen garden, herbaceous borders, arboretum and alpine house. For me, the stream running through the site has always been one of the primary features. This area is currently undergoing significant redevelopment, to revitalise the planting while also addressing some challenges.

The stream at Harlow Carr has always been susceptible to surges or flash flooding. These events are destructive – undermining embankments, washing away plantings and even collapsing rockwork cascades. However, in recent years the frequency of such events seem to have increased significantly. This is attributed to a combination of increased extreme weather events due to climate change and increased run-off from recent housing developments of the surrounding hills. The team is currently increasing the number of pools along the stream with the ambition to increase their water retention capacity while working to improve the resilience of cascades and embankments through additional rock-work.



Figure 12 Collapsed cascades at Harlow Carr

The plantings alongside the stream are very diverse and included a large range of Iris, Astilbe, Carex and Primula. Harlow Carr had the most extensive (and accurately labelled)

collection of *Primula* I visited, including: *chungensis*, *vialii*, *alpicola*, *pulverulenta*, *beesiana*, *bulleyana*, *x bulleesiana*, *florindae*, *sikkimensis*, *poisonii* *profilera*, *secundiflora*, *wilsonii* var. *anisodora*, *capitata*, *waltonii*, *japonica*, *heucherifolia* and more. The team favoured mulching these with horse manure or leaf mould – but not shredded bark.



Figure 13 Primula and Carex in shade at Harlow Carr

Himalayan Garden and Sculpture Park

The garden has been under development since Peter and Caroline Roberts acquired the property in 1996. Now 45 acres, the garden team of 4 care for extensive developing woodland plantings, a series of lakes and a collection of 1650 varieties of *Rhododendron*. Throughout the landscape are 85 sculptures.

Butomus umbellatus were especially effective in the lakes.

Howick Hall Gardens and Arboretum

Howick Hall is the ancestral seat of the Earls Grey. The current garden is largely the work of Charles, 5th Earl of Grey and his wife Mabel, and then their daughter Lady Mary Howick between 1920 and 2001. Informal in style, the 20 acres of garden and 85 acres of arboretum includes 12500 specimen trees and shrubs covering 1800 taxa. Many of these are wild

collected specimens up until 2020, as the owners have partnered with prestigious botanic gardens.

The bog garden was developed in 1989, and is largely home to wild-sourced plants. Of note were wild-collected Iris, including *I. forrestii*, *ensata*, *pseudacorus*, *sibirica*, *sanguinea* and *graminea*. A naturally occurring hybrid of *I. sibirica* x *pseudacorus* had subtle colouring and strong vigour.



Figure 14 *Iris sibirica* x *pseudacorus* at Howick Hall

Lilburn Tower

In private ownership of Mr and Mrs Davidson, this diverse 10 acre garden and 30 acres of woodland is not routinely open to the public. The garden includes rose parterres, a Victorian conservatory, walled garden, meadows and woodland walks.

The pond garden here was a highlight of my study tour. A mature deciduous canopy created a woodland damp dell. Planted with ferns, sedges, *Digitalis*, *Meconopsis*, *Primula*, *Cardiocrinum*, *Aruncus*, *Iris*, *Hosta* and other moisture-lovers, the planting was elevated by effective composition, utilising foliage texture, form and line more than flower colour.



Figure 15 Pond Garden at Lilburn Tower

Monteviot Gardens

30 acres of gardens divided into different areas and styles include a water garden and river garden.

Branklyn Garden

Branklyn Garden was created by Dorothy and John Renton in 1920. This 2 acre garden contains over 5000 plants, many of which come from plant collecting expeditions in the first half of the 20th Century. Now maintained by National Trust for Scotland the garden continues to have an incredible range of plants, including a substantial collection of Meconopsis. Also noteworthy were the collections of Rhododendron, Lilium and Primula.

Threave Gardens

The 64 acres of gardens at Threave were started in 1867 by William Gordon. Now home to the School of Heritage Gardening, the gardens are in the care of National Trust for Scotland. The garden includes a walled garden, glasshouses, island beds, ponds and arboretum. The garden is home to a National Collection of *Iris sibirica*. Helpfully, this collection was all in one bed and set out in date order allowing the easy identification of historic varieties. Unfortunately not all labels were present. Also notable at Threave was a small collection of

Kniphofia (unlabelled), an impressive collection of Dactylorrhiza and a collection of Meconopsis.

Holehird Gardens

Holehird is the 10 acre garden of the Lakeland Horticultural Society. Maintained entirely by volunteers, it contains a walled garden with herbaceous borders, a small stream garden and alpine houses. It is also home to 6 national collections, including Hydrangea, Meconopsis and Astilbe. These were some of the best maintained national collections I have ever observed.

Also onsite is a substantial library including a unique resource on Astilbe consistently describing all registered cultivars of the genus, the work of Henry Noblett.



Figure 16 Astilbe Collection at Holehird

(Lowther Castle and Gardens)

Not originally on my itinerary, visited as en-route. An impressive developing garden, but little relevance to my objectives.

RHS Bridgewater

The most recently acquired garden of the RHS, Bridgewater is very much a developing garden. The garden was initially created in the 1840s as part of the Worsley New Hall estate, but was abandoned with the onset of the First World War. Acquired by the RHS in 2015, a 154 acre modern garden inspired by the historic context is taking shape.

Work has recently started on a 7 acre Chinese Streamside garden, scheduled to be completed in 2026. A path already weaves back and forth over a meandering stream, with pockets of Astilbe, Primula, Iris laevigata and other moisture-loving plants.

Cotswold Garden Flowers

Founded by Bob Brown, Cotswold Garden Flowers is a peat-free independent specialist nursery with a wide variety of plants. Growing almost 40 varieties of Kniphofia, this nursery is a potential source of stock for my project. Unfortunately, the previous winter killed almost all potted plants due to be sold in 2023. Stock plants in the ground survived, but were being lifted to create more stock. Of these, 'Ed's Findling', 'Mango Popsicle', 'Gilt Bronze', 'Fiery Fred' and 'Ernest Mitchell' were strongly-coloured and vigorous.

Avondale Nursery

Avondale is a peat-free nursery specialising in a range of herbaceous plants. Usually growing a small range of unusual Kniphofia and a large range of agapanthus, most of this stock had been lost the previous winter. Many, but not all, varieties of agapanthus survived in the demonstration garden.

Beth Chatto Gardens

Planned for October 2023

Ashwood Nursery: John Massey's Garden

Planned for October 2023

Genera

Primula

Most waterside plantings included some Primula. However, these were generally limited to the species bulleyana, beesiana, prolifera, pulverulenta, florindae, japonica, chungensis and their hybrids. This is likely indicative of their vigour and reliability. Many interviewed highlighted P. prolifera and pulverulenta as potentially being more resilient and capable of surviving slightly drier soils. The most extensive collection was held at Harlow Carr, where the team were using sand plunge beds in their propagation area to produce more stock for planting of over 20 species.

In some gardens, different species and colours were mixed. In others, they were kept distinct but this can be challenging as they will hybridise freely. Unless in vast swathes, distinct colour blocks were more striking.

Primula may be susceptible to build up of diseases in the soil if intensively grown. The principle threat to the cultivation of primula would appear to be the impact of climate change: they are likely to struggle with extreme weather events, especially extended droughts.

Observing Primula in multiple gardens highlighted that if not consistently moist, they can still survive if planted in shady, cool locations. The book 'Primula' by John Richards was recommended as a key reference.

Iris

I observed an incredible array of different Iris varieties. Collections at Rosemoor, Marwood Hill, Harlow Carr and Threave were particularly impressive. As a general rule plants of I. pseudacorus, laevigata and versicolor most benefited from consistent damp, ensata was somewhat more tolerant and I. sibirica and its varieties was very tolerant of drier ground. I. forrestii, sanguinea, graminea, x fulvala and chrysophages were not consistently observed, but are also likely to be somewhat tolerant.

Most cultivars, especially those of ensata, were very modern and may be less appropriate in historic contexts. Many white and almost all pink/rose varieties lacked vigour and were

distinctly weak in all species. *Iris sibirica* 'Caesar's Brother' was popularly grown and very resilient, and per Threave dates to 1931 so is period appropriate.

Irises are potentially a very useful plant to create consistency in a streamside planting. While it will be necessary to use cultivars from different species, it is possible to find varieties of rhizomatous iris which will grow happily on dry banks which are still similar in appearance to cultivars of moisture-loving species. In this way, we can create links of planting consistency between areas with disparate growing conditions.

'The Iris Family' by Goldblatt and Manning was recommended, as was Claire Austins's 'Irises, a gardeners encyclopaedia'

Astilbe

Both Marwood Hill and Holehird held very substantial collections of Astilbe alongside comprehensive information. There were no particular threats to Astilbe and the consensus was that they should be resilient. They are able to tolerate soils which are not consistently moist, although they may scorch in periods of drought and definitely do benefit from growing in moist conditions. I observed more diversity in height, foliage colour and flower than I anticipated in this genus.

This genus is likely to link well aesthetically to the related Aruncus, which is tolerant of much drier soils.

Kniphofia

Unfortunately, most collections of this genus had suffered significantly the previous winter.

Christopher Whitehouse's 'Kniphofia, The Complete Guide' was recommended as a resource, and Cotswold Garden Flower's nursery website also has information.

Agapanthus

Unfortunately, most collections of this genus did not respond to contact, and those which did had often suffered from the previous winter.

An ongoing challenge with growing Agapanthus is the recently discovered Agapanthus gall midge, *Enigmadiplosis agapanthi*, which has become endemic through much of the south west and some other areas of the country. This pest does not impact the overall health or vigour of plants, but can have significant adverse impacts on flowering. Such was the impact, some gardens in the South West were deciding to replace with other genera. Other gardens were attempting to break the life-cycle by removing all flowerheads 2 years out of 5.

Meconopsis

Harlow Carr, Branklyn Garden and Threave all grew significant collections of Meconopsis successfully. The team at Holehird provided comprehensive information on their history of cultivation and recommendations for success. Site selection is critical in more southerly gardens, as they are most likely to do well in cool dappled shade with good humidity.

The book 'Meconopsis for Gardeners: the lure of the blue poppy' edited by Christopher Grey-Wilson was recommended.

Other plants

Plants observed in many gardens which I think are likely useful to my future project include: *Bistorta superba*, *Koenigia campanulata*, *Hemerocallis lilioasphodelus*, *Hesperaloe parviflora*, *Aruncus*, *Rodgersia*, *Butomus umbellatus*, *Dactylorhiza*, *Carex* spp. and *Zantedeschia*

Key Themes/Learning

Composition

One of my first observations from my visits was that most gardens benefited from having multiple layers of canopy. Planning the new woody structure of my project, I need to ensure the woody layer is sufficiently complex without being over-crowded.

My other main observation was that the most effective compositions had defined clumps of plants with contrasting texture, form, line and foliage colour.

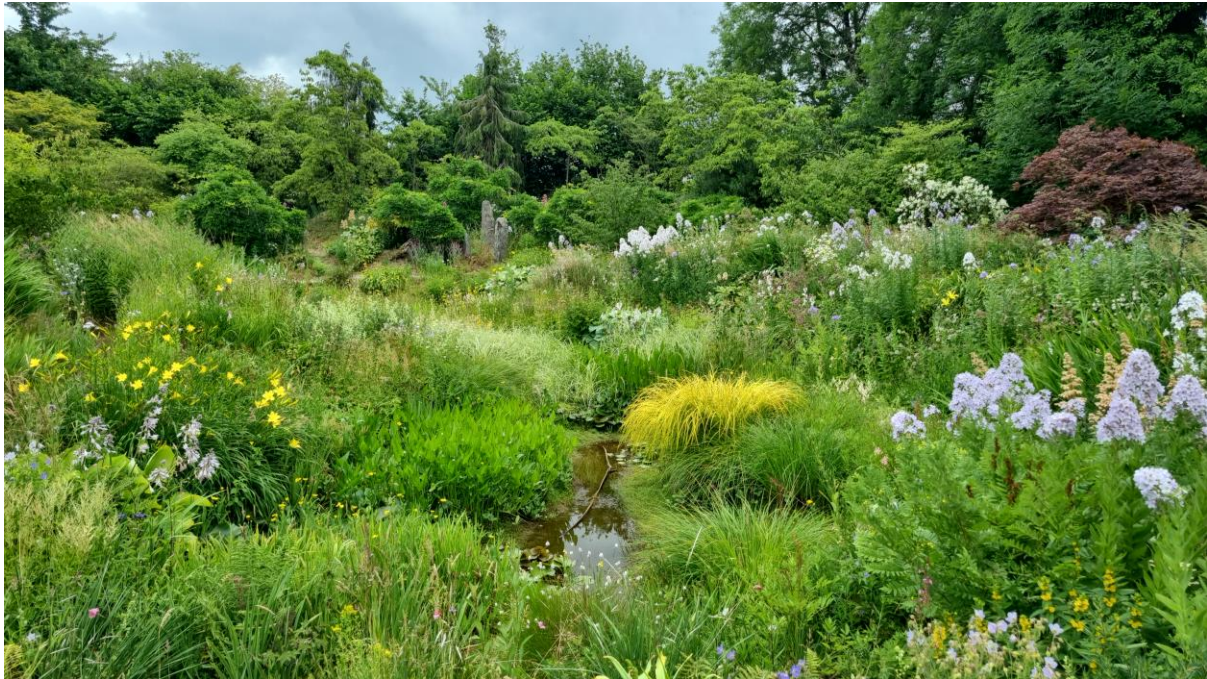


Figure 17 Varied texture and form at Wildside

Varying Conditions

Gardens significantly further north than Hidcote successfully grew many plants we struggle to by creating sheltered areas with trees and shrubs.

Where a severe gradient of moisture levels exist on waterside plantings, we can still achieve linked consistent planting by selecting species or genera with similar forms and textures, even if varieties cannot thrive at all points of the gradient. The creation of sufficient shade can help plants moisture-loving plants in slightly drier areas, helping create a consistent planting. Shade and mulching can help reduce moisture loss in hot weather, decreasing the severity of difference in conditions.

Rodgersia, Aruncus and Iris sibirica were particularly useful for creating the impression of a consistent planting, as while they benefited from moisture they still performed well in much drier areas.

Future Resilience

Most waterside plantings visited seem less vulnerable to a changing climate than those at Hidcote as they were either entirely artificial or had a potential 'top-up' water source so would be unlikely to dry up entirely.

However, flash-flooding as seen at Harlow Carr may become an increasing risk. In these cases, planning the waterway and planting to increase holding capacity will be important.

Rodgersia, Aruncus, sedges and Iris sibirica would appear to be more resilient during extreme weather events such as heatwaves, so could be used as the primary component of plantings.

Conclusion and Future Plans

I have gained inspiration for creating a new composition of streamside planting at Hidcote. I have also achieved a good understanding of Primula, Meconopsis, Astilbe and Iris, their historically appropriate varieties and how I might most effectively use them. I have been less successful at improving my knowledge of Kniphofia and Agapanthus, in part due to the severity of the impact of the preceding winter. The knowledge gained will be of considerable benefit in delivering my upcoming project. We have already purchased seed for 20 different species of Primula to start trials at Hidcote, and I'm starting to develop my lists of stockplants to acquire of other genera.

In addition I have visited many gardens I realistically could not have visited on my own resources, as well as developing more contacts across the country. While early in my career I did lots of development of my plantsmanship, in recent years development opportunities have tended to be of soft skills – people management, budgeting, projects, administrative work. This study tour has allowed me to advance my plants-based knowledge and renew my garden inspiration.

In the immediate future, I shall complete my visits to Ashwood and Beth Chatto Gardens. In 2024, collections of Kniphofia and Agapanthus will hopefully have recovered. Several of these collections are more local to me, so I should be able to visit these again.

Appendices

Acknowledgements

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I would also like to thank the team at Hidcote for their support enabling me to take time out from the garden at a peak time of year.

Finally, I owe many thanks to all the gardens which welcomed me, and the gardeners who shared their valuable time discussing their collections.

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Budget

Element	Item	Cost
Element 1- SW		
	Accommodation, 8 nights	782
	Accommodation overage	83.65
	Subsistence 9 days	216.09
	Subsistence overage	43.58
	Garden Entry	162.7
	hire car	304
	Fuel	145
	Total Costs	1737.02
	Merlin	-1160.79
	NT	-449
	Personal Contribution	127.23
Element 2 - North		
	Accommodation, 5 nights	452.23
	Accommodation overage	5.25
	Subsistence 6 days	149.63
	Subsistence overage	6.64
	Garden Entry	20
	hire car	300
	Fuel	150
	Total Costs	1083.75
	RHS	-621.86
	NT	-450
	Personal Contribution	11.89
Element 3		
	Travel to date	359.91
	Forecast Travel	181.8
	Subsistence	60
	Total	601.71
	Personal Contribution	601.71
Overall		
	Costs	3422.48
	Merlin	1160.79
	RHS	621.86
	National Trust	899
	Personal Contribution	740.83