

## **Bursary trip to St Louis and New York City gardens by Marcia Peacock**

### **Introduction**

At the beginning of 2023, Chris Taylor and I started planning a trip to visit gardens in the United States. We particularly wanted to visit Missouri Botanical Garden (MOBOT). For a number of years I have been referring to their plant profiles when needing a reliable source of information on a specific plant. I had heard from fellow horticulturists that MOBOT is regarded as one of the best gardens in the US. When investigating their website further I saw that they provide a garden advice service similar to that of the Royal Horticultural Society (RHS) advisory service. As Chris and I both work as horticultural advisors for the RHS and are both keen to identify plants suitable for the UK's changing climate, we decided to make MOBOT the focus of our trip.

We then compiled a long list of other gardens near the east coast that we would like to visit, but to keep within sensible time and budget constraints, we limited ourselves to one other location – New York City.

Having seen and admired Piet Oudolf's designs in the UK and the Netherlands, I was keen to visit the High Line, providing an opportunity to see his choice of plants for challenging urban conditions. Plants native to North America, popularised by Piet Oudolf and the New Perennial movement, have been significant throughout the 25 years I have worked in horticulture and I was interested to see these growing in their native habitat at Shaw Nature Reserve and within contemporary landscape designs at Brooklyn Botanic Garden (BBG) and New York Botanical Garden (NYBG).



Chris and me at Shaw Nature Reserve

### **Trip itinerary and schedule of garden visits**

#### **Tuesday 19<sup>th</sup> September**

We flew from London Heathrow to St. Louis, Missouri, USA. We arrived at our Airbnb accommodation late afternoon.

### **Wednesday 20<sup>th</sup> September**

We met Andrew Wyatt (Senior Vice President of Horticulture and Living Collections) and Daria McKelvey (Supervisor of Home Gardening Information and Outreach) at the entrance of MOBOT. After brief introductions we gave a PowerPoint presentation to MOBOT horticulturists about the RHS, focusing on RHS Garden Wisley. During our early correspondence with staff at MOBOT, they asked if we would be willing to give a presentation, and we were happy to oblige.



Chris and me giving a 45 minute presentation followed by questions

Daria, our main contact at MOBOT, showed us around the Kemper Center for Home Gardening, where horticultural staff and volunteers provide free gardening advice, by email, phone and in person. We met Dana Rizzo (Supervisor of Kemper Demonstration Gardens) and had a tour of the area. Daria gave us a guided tour of popular areas of MOBOT.

### **Thursday 21<sup>st</sup> September**

Daria drove us to Shaw Nature Reserve, 34 miles from MOBOT. We met Quinn Long (Director of Shaw Nature Reserve) who showed us around parts of the 2,441 acre site, including vast areas of restored prairie and the Whitmire Wildflower Garden, accompanied by Jen Sieradzki who manages that area. Before leaving we had a brief tour of their seed bank, led by Meg Engelhardt (Seed Bank Manager).

We returned to MOBOT in the afternoon and met and chatted to Rebecca Sucher (Senior Manager of Living Collections) and Matt Lobdell (Director of Landscape & Living Collections Cultivation).

### **Friday 22<sup>nd</sup> September**

We spoke to Daria and her colleague Laura Chaves (Horticulture Answer Service Coordinator), discussing and comparing the gardening advice services offered by MOBOT and the RHS.

Daria and Andrew gave us a tour of the glasshouses and nursery areas. We spoke to Derek Lyle (Senior Manager, Nursery).

Daria took us to MOBOT's library and herbarium, half a mile away, to look around the facilities. In the evening we returned to the garden to view the Chihuly sculpture trail that was lit up after dark.

### **Saturday 23<sup>rd</sup> September**

We spent the day looking around the garden on our own, visiting areas we had not previously seen and revisiting areas of particular interest to us.

### **Sunday 24<sup>th</sup> September**

Travelling from St. Louis to New York City.

### **Monday 25<sup>th</sup> September**

We visited the High Line. From the southern end of the High Line we saw the public park - Little Island, which looked interesting, so we made an unplanned visit to it.

### **Tuesday 26<sup>th</sup> September**

We visited New York Botanical Garden. We spent the morning talking to Leslie Coleman and Anita Finkle-Guerrero, both Plant Information Specialists, who answer gardening questions and write gardening and horticultural guides for NYBG's website.

In the afternoon we looked around NYBG.

### **Wednesday 27<sup>th</sup> September**

We visited Brooklyn Botanic Garden, meeting Rowan Blaik (Vice President of Horticulture) who showed us around areas of the garden and discussed management and maintenance issues. We also met and spoke to Ellie Shechet (editor of BBG's digital editorial content).

### **Thursday 28<sup>th</sup> September**

We flew from Newark airport, arriving at London Heathrow on **Friday 29<sup>th</sup> September**.

## **Aims and objectives**

At each garden/site we aimed to look at plant selection, with a focus on long term outdoor displays, their climate resilience, environmental benefits and maintenance requirements.

We were able to view plants grown in intensively cultivated conditions, as well as low maintenance naturalistic and native plantings in Shaw Nature Reserve, BBG's Native Flora Garden designed by Darrel Morrison, and NYBG's Native Plant Garden designed by Sheila Brady. Walking the length of the High Line allowed us to see what plants are successful in a range of challenging urban conditions.

From our observations of plants at the different sites we hope to identify plants that are able to cope well with extremes of weather and a range of growing conditions, and therefore will be suited to the changing UK climate.

We visited nursery and propagation areas of the botanic gardens to learn about what peat-free growing media are used for different types of plants.

## **Peat-free growing media**

Responses to our enquiries about the use of peat in US horticulture showed that, although there is a movement away from peat use, it is not as big a concern as it is here. Derek Lyle, the Senior Manager at MOBOT Nursery, said that they have over 100 different growing media recipes due to the vast range of plants they grow. However, the vast majority of plants they produce are grown in either

their general mix (60% wood fibre, 30% perlite, 10% vermiculite) or their perennial mix (70% pine bark, 25% perlite, 5% vermiculite).

At NYBG, Leslie and Anita said they are aware of the need to reduce peat use and as part of their work this winter they intend to update their web pages to remove recommendations of peat and add information about peat-free alternatives. BBG propagation unit used a range of peat-free, organic mixes from a company called Organic Mechanics. They were happy with the performance of the various mixes, but were concerned that it came in plastic bags on pallets, so were looking into ways to buy in peat-free growing media without plastic packaging.

## Climate

As the UK climate is changing, it is useful to identify plants adapted to temperatures and rainfall that differ from what had previously been considered typical UK maritime, moist and temperate growing conditions. Below is summary of a climate report for St. Louis from the National Oceanic and Atmospheric Administration (NOAA), recommended as a reliable source by MOBOT staff for US weather records.

### St. Louis climate

*During the summer months, air originating from the Gulf of Mexico tends to dominate the area, producing warm and humid conditions. Since 1870, records indicate that temperatures of 90°F (32°C) or higher occur on about 35-40 days per year.*

*Winters are brisk and stimulating. Records show that temperatures drop to 0°F (-18°C) or below an average of two or three days per year, and temperatures as cold as 32°F (0°C) or lower occur less than 25 days in most years. Snowfall has averaged a little over 18in (46cm) per winter season.*

*Normal annual precipitation for the St. Louis area is a little less than 34in (86cm). The three winter months are the driest. The spring months of March through May are normally the wettest. It is not unusual to have extended dry periods of one to two weeks during the growing season.*

*Thunderstorms normally occur on between 40 and 50 days per year. During any year, there are usually a few of these thunderstorms that are severe, and produce large hail and damaging winds. Tornadoes have produced extensive damage and loss of life in the St. Louis area.*

The temperatures, periods of drought, occasional deluges of heavy rain, and strong winds, suggest that plants that have evolved and survived in the St. Louis area could withstand the changes in climate the UK is set to experience. It was notable that one of the first areas of urban planting we saw in St. Louis featured a rain garden. The car park at MOBOT also had porous paving, an underground water reservoir and a planted sunken area (rain garden).

The use of native plants is popular and promoted at all the sites we visited. We asked staff at MOBOT how they define 'native' and they consider plants within a large region around St Louis, in Missouri and neighbouring states, to be native. At NYBG's Native Plant Garden an information board provided interesting answers to the question 'What is a Native Plant?' - *In the simplest terms, a plant is considered native if it grows naturally in the place where it evolved many years ago. To botanists, a native plant is any species that grows and spreads spontaneously in a given geographic region in the absence of human intervention. To ecologists, a native plant has evolved over time within a complex and changing web of climate, geology, and organisms. To gardeners, a native plant*

*represents an opportunity to embrace a bit of their local floral heritage in a landscape reshaped by human activity.*

The word 'nativar' is used in the US, referring to a cultivar of a native species. Although a double-flowered cultivar of a native species would provide less benefits to pollinators than the straight species, in many cases a nativar could be a good garden plant, perhaps more compact or more floriferous than the species, and have the same wildlife benefits and ecological value as the species.

## Plants

The plants shown below are native to the region around St. Louis and were growing at either MOBOT or Shaw Nature Reserve and, where indicated, were also at one of the sites we visited in New York City. I have chosen plants that looked good and I believe could potentially be used in sustainable planting designs in the UK.

### Ornamental grasses:

#### *Sporobolus heterolepis* (prairie dropseed)

Standing near the entrance of MOBOT I noticed a pleasant scent, a slightly spicy and exotic fragrance that I initially thought might be Daria's perfume. I was surprised to learn that the scent came from the grass *Sporobolus heterolepis*. This is an attractive, mound forming grass. The flowers have pink and brown tints and are held on thin stems above the foliage, which develops bronze tints in autumn and winter. The seedheads have a graceful, airy look and in the US the seeds are eaten by birds (I expect they are in the UK as well). *S. heterolepis* was also planted on the High Line and a cultivar of it, 'Tara', was used in Little Island Park. The huge native range of this grass spreads from the south eastern states of Canada, through eastern states of the US, as far south as Texas and Georgia. As a fairly slow-growing and long-lived grass, only needing cutting back once a year in early spring, I can see it becoming more popular in UK gardens.



*Sporobolus heterolepis* - MOBOT

***Schizachyrium scoparium* (little bluestem)**



*Schizachyrium scoparium* is a grass that I was not familiar with prior to my visit to the US, although since then I have read an Instagram post by Tom Stuart-Smith praising *S. scoparium* 'Standing Ovation' as a good, drought tolerant plant. 'Standing Ovation' is the cultivar we saw growing at MOBOT, which is said to have wider leaves and better maroon autumn colour than the straight species. On the High Line, the straight species and the cultivar 'The Blues' were growing; 'The Blues' was also used on Little Island. BBG had *S. scoparium* 'Twilight Zone' growing in their native garden; this was standing less upright than the straight species and other cultivars that I had seen elsewhere; it had some reddish tints but less blue colouring to the leaves. However, without seeing them all side by side in exactly the same growing conditions, it is difficult to judge between cultivars.

*Schizachyrium scoparium* 'Standing Ovation' – MOBOT

**Herbaceous perennials:**

***Vernonia lettermannii* (narrowleaf ironweed)**

I have planted *Vernonia arkansana* in the past and I think it is a good late summer flowering perennial, although it did require staking, which could be why it is not more commonly seen. *Vernonia lettermannii*, planted at MOBOT and the High Line, is much shorter (less than 1m), more delicate looking and they were covered in flowers. The narrow leaves looked fresh, there were plenty of flower buds still to open, and the flowers that had finished were slightly brown but did not make the plant look messy.



*Vernonia lettermannii* – MOBOT

### ***Liatris aspera*** (rough blazing star)

*Liatris aspera* has a similar native range to *L. spicata*, a species many UK gardeners are familiar with, spreading from the south eastern states of Canada, through eastern states of the US, as far south as Florida and Texas. The group of *L. aspera* I saw at MOBOT were about 1m tall, standing upright without any staking, in flower with more buds yet to open, and spent flowers noticeable but not unsightly. The flower spikes are less compact than those of *L. spicata*. At MOBOT *L. aspera* has a long-flowering season, providing nectar for pollinating insects and hummingbirds, and seeds for birds. *L. aspera* was also growing at Shaw Nature Reserve and the High Line.

### ***Spigelia marilandica*** (Indian pink)



Whitmire Wildflower Garden is an easily accessible area of Shaw Nature Reserve, with paths leading through five plant community areas (woodland, wetland, glade, savanna and prairie), featuring over 500 Missouri native plant species. Within the woodland area I saw *Spigelia marilandica*. It was past its flowering season, with just a few flowers remaining, which can be seen in the photo. We were told it is covered in red and yellow flowers in June and July, which must look striking. Viewing it in mid-September, it still looked a very attractive plant, with upright stems bearing fresh looking leaves and seed capsules. It grows well in shady positions, and according to the MOBOT plant profile is tolerant of wet soils, although with wetter winters in the UK, a moisture retentive soil with decent drainage might be a safer option.

*Spigelia marilandica* – Shaw Nature Reserve

### ***Solidago spp.*** (golden rod)

We saw a lot of solidagos flowering during our visit. Their bright yellow flowers were prominent in all the prairie plantings we saw. Solidagos do not seem popular in the UK, I assume this is partly because some species, like *S. canadensis*, have become naturalised and therefore are considered invasive. Also, they were blamed for causing hayfever, but apparently this unfounded. Although some solidagos are garden escapees, they are good for pollinators, with '*Solidago* species' featuring on the RHS Plants for Pollinators list. Of the eight species grown at Shaw Nature Reserve, some also featured in the native prairie plantings at BBG and NYBG, and on the High Line. *Solidago rugosa* is grown at Shaw Nature Reserve and NYBG, it is an attractive plant with bright yellow flowers held on arching flower spikes. The straight species, or cultivars such as 'Fireworks' that has an RHS Award of Garden Merit, could help this genus become more popular. All the solidagos I saw were standing up well, even taller species like *S. altissima* at about 1.5m tall at Shaw Nature Reserve, and apparently they hold themselves upright into winter, with attractive seed heads.

## Trees and shrubs:

### *Rhus aromatica*

At the edge of some woodland at Shaw Nature Reserve I noticed a small shrub, about 1m high, starting to develop autumn colour. I was told the reddish, purple tints were earlier than usual due to the very dry summer. I would not have guessed it was a *Rhus*, so was glad to have Quinn and Daria there to ask. They picked and scrunched up a leaf to smell; this had a spicy, yet earthy scent. The berries are enjoyed by birds and taste of lemon. *Rhus aromatica* is used in the US as a low groundcover shrub, useful for stabilising soil on slopes due to the suckering habit. It is also used as a hedging plant.

### *Sassafras albidum*



I first saw *Sassafras albidum* growing in a partially shaded area of MOBOT; it is also planted at NYBG, the High Line and Little Island Park. It has a vast native range, from south east Canada, down the eastern side of the US. It has a good display of greenish-yellow flowers in spring, followed by green, aromatic leaves with a pale underside that vary in shape, from ovate to three lobed. It then has good autumn colours. Reaching a height of about 18m, it would be suitable for medium sized gardens. *S. albidum* does produce suckers, but we were told these are easy to remove, or they can be left to create a multi-stemmed effect. It is drought tolerant and not fussy about soil type.

Daria holding a selection of *Sassafras* autumn leaves - MOBOT

### *Callicarpa americana*



*Callicarpa americana* – MOBOT

In MOBOT I noticed the bright purple berries of a *Callicarpa*. The clusters of berries and leaves looked bigger than *Callicarpa bodinieri* and its cultivars. The label showed it was *C. americana*, a plant native to south eastern states, with Missouri being towards the north of its native range. Its arching habit, bearing tight clusters of berries and leaves that have yellow autumn colour make this an attractive shrub. We also saw *Callicarpa dichotoma* 'Issai' at MOBOT and BBG, this species is not native to the US, but with smaller leaves and berries and a weeping habit, is useful for the front of borders.



***Diospyros virginiana*** (American persimmon)



*Diospyros virginiana* – Shaw Nature Reserve

At Shaw Nature Reserve we saw a *Diospyros virginiana* laden with fruits. Quinn and Daria kindly selected and picked ripe fruits for us to try; they told us unripe fruits are astringent and very unpleasant. The fruits were sweet and delicious. *D. virginiana* is native to eastern and midwestern states. It grows to a height of about 18m with a spread of 10m. It is typically dioecious, so the need for more than one tree for fruit production requires a decent sized garden. It has a nice shape and attractive dark grey, fissured bark. It is drought tolerant, so possibly a good alternative to fruit trees, such as plums, that have high water requirements. It has been promoted by the Agroforestry Research Trust for its high yield and benefits to bees.

## Conclusion:

I learnt a lot during our visit to the US. It was good to talk to other horticultural advisors, discovering lots of similarities about the work we do, but also some significant differences. I was impressed that botanic gardens and Extension services run from universities offered free advice to gardeners.

Visiting botanic gardens, the High Line and Little Island Park allowed us to see native plants used together in contemporary landscapes. Although we were familiar with many of the genera we saw, it was interesting to see different species.

The contacts we had made at each garden before our visit were very welcoming and generous with their time and knowledge. We hope that some of the horticulturists we met will be able to visit us at Wisley, and that we will continue to stay in touch to exchange information.

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Below are some of my favourite photos that I took at each garden we visited.



The Japanese Garden at MOBOT



The High Line



Perennial planting outside the glasshouse at NYBG



Prairie planting at the Native Flora Garden at BBG



On the bridge to Little Island Park

**Marcia Peacock**

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