Skvortsovia: 3(3): 130 –141 (2017)
Skvortsovia
http://skvortsovia.uran.ru/
ISSN 2309-6497 (Print)
ISSN 2309-6500 (Online)

Miscellany

A visit to Michael Dodge's "Wonderful World of Willows"

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Received: 20 February 2017 | Accepted by Irina Belyaeva: 30 March 2017 | Published on line: 5 April 2017

It was a cool autumn day in mid-October 2016 when we visited Michael Dodge at his unique nursery, which specializes in willow culture. Michael Dodge is a lifelong professional horticulturist and owner of the Vermont Willow Nursery located in Fairfield, Vermont, USA. The roots of his deep interest in plants are grounded in experiences he enjoyed while gardening as a child with his mother in the Lake District of England. He gained competence in plant taxonomy and identification while studying at The Royal Botanic Gardens in Kew which boasts a tremendous collection of plants. In 1964, travelling aboard HMS Queen Mary he immigrated to the United States of America, where he continued to work for more than 52 years in American horticulture.

His first job was curator of the orchid collection at the New York Botanic Garden. Then he worked for Henry Francis DuPont at Winterthur Garden in Delaware, where he participated in plant selection and bred the cultivar *Viburnum dilatatum* 'Michael Dodge.' Then after Mr. DuPont's passing, Michael moved on to Litchfield, Connecticut, where he worked at White Flower Farm for 26 years as propagator, new plant researcher and chief horticulturist as well as catalog director, designer and principal photographer. Michael published numerous images of plants, and a colleague once said of Dodge that he had "changed the face of American horticulture through his catalogue photography." In 1997 after leaving White Flower Farm,

Figure 1. Nearly 50 acres of Michael Dodge's land are surrounded by beautiful rolling hillsides of Vermont. Photo by Y.Kuzovkina

Michael worked as a freelance photographer and writer about plants while travelling around the world. In 2005 he "retired" to Vermont where he purchased a 50-acre farm with his wife, Sonia.

In 2006 Michael visited the Montreal Botanical Garden and was profoundly impressed with the living structures constructed of willow branches. He realized the ornamental, utilitarian and economic benefits provided by growing willows. He visited four prominent nurseries in the UK: Windrush Nursery near Exeter, Devon, West Wales Nursery at Haverfordwest, Pembrokeshire, Phil Bradley's nursery near Cockermouth in the Lake District as well as Wonder Tree near Bristol. Generous willow growers shared their time and knowledge with Michael and he learned from them how to grow, propagate and use willows for various projects.

Figure 2. *Salix alba* 'Silver Column', a 7-year-old columnar white willow from the Arnold Arboretum growing near M. Dodge's house. According to Michael, the New Brunswick Botanic Garden has a specimen with even nicer columnar form. Photo by M.Dodge

Upon his return from the UK, Michael visited the Vermont Flower Show, where a grower from New York State was selling cut stems of various pussy willows. He purchased a few varieties and that event started his collection. Thus began Michael's fascination with willows that evolved into a passion and became the culmination of his horticultural career.

A notable colleague, George Argus, helped Michael to absorb as much information as possible in a short period of time. According to Michael,

"George Argus has been my mentor for almost the entire time I have grown willows. He came to Vermont to meet me and show me the first recorded specimen of S. amygdaloides *in Vermont. His generosity with knowledge and his patience with someone who came to willows from a horticultural perspective, rather than knowledge of* Salix *taxonomy, has been a great inspiration to me. George's wit and his sheer joy of sharing his love of* Salix *has been an inspiration for me."*

Michael started selling willow stems in 2012, launching a new venture: the Vermont Willow Nursery. He transacted 50 sales through the first year. His vision initially focused on two specialty groups: willows for baskets and cut "pussy willow" stems as seasonal products.

The nursery was expanded to include many ornamental and low-growing alpine and arctic willows. Michael currently grows about 300 taxa in his collection, of which 138 are for sale as ten-inch dormant cuttings. Many cuttings are sold for basket weaving as well as for ornamental use and willow structures. The list of his offerings can be found here: http://www.willowsvermont.com/varieties.html.

The Vermont Willow Nursery is basically a one-man operation. Michael, age 75, works full time from the end of March through November. He overwinters in Santa Fe, New Mexico, USA, with his wife Sonia, who does order-taking and billing all year. Shipping does not commence at the nursery until early April, because of deep snow in the northern Vermont area. A few part-time helpers work during peak production time in spring. In spring, 2016, the nursery shipped over 500 orders of dormant willow cuttings to every state in the US. He sells ten-inch dormant cuttings that are easy to ship; he also sells eight-foot rods for creating living willow structures. In late spring-early summer, after the cuttings are prepared and shipped and all orders are filled, his collection is coppiced. For his Deep South and West Coast customers he ships in early November, an appropriate time to plant in those areas.

Figure 3. Deer browsing is an ongoing problem and is addressed by using eight-foot-high fences (left). Rabbits, voles and mice occasionally damage bark on the trunks of some willows near ground level when snow cover is absent during the winter. In his nursery, Michael Dodge uses landscape fabric to keep plants weed-free (right). Photos by Y.Kuzovkina

Most of the willows are growing in the primary, upland nursery with a fertile clay loam. The nursery is gradually expanding to include a second plot in a low-lying area, to accommodate new arrivals and native species. As of 2017, Michael is planning to offer 15 new taxa including *S. alba* 'Cardinalis,' *S. daphnoides* 'Red Rocket,' *S. interior* 'Filigree' and a few basket cultivars.

His online catalog offers branches for "Living Willow Structure Kits," which include rods to construct a dome, tunnels of various sizes, a Diamond Fedge, a Simple TeePee, Harlequin Tree Kit and even a Chicken Shelter Kit. Each kit consists of rods for the

Figure 4. The bestsellers in Michael's collection include *Salix gracilistyla* 'Mt. Aso' (shown here) with 2016 sales of 2000 cuttings, followed by *S.* 'Erythroflexuosa', *S.* 'Winter Glory' and *S.*×*fragilis* 'Britzensis'. Photo by M.Dodge

construction, building directions, black polyethylene weed barrier marked for holes, vinyl ties for holding the branches in place during the first year, and even rust-resistant staples to hold the plastic in place.

With so many taxa already in Michael's collection, he is still trying to track down a few new species. These days he has *S. purpurea* 'Lambertiana' and *S. hastata* 'Wehrhahnii' on his "wish list:" 'Lambertiana,' as no one in North America sells the correctly named cultivar. As to 'Wehrhahnii,' he believes that no one else grows this highly ornamental slow-growing willow in North America.

Michael Dodge utilizes modern marketing strategies. During 2012 he developed a website "The Wonderful World of Willows: The Vermont Willow Nursery" (http://www.willowsvermont.com/home.html), which displays numerous beautiful photographs of willows with interesting notes on historical plant records, exploration and uses. Michael employs his excellent garden photography skills to depict each species in numerous images that illustrate important details. Valuable descriptive information covers many aspects of willow cultivation, uses, categories and resources related to willows. A new page on the nursery's website entitled "Willows for Bees" was prompted by the pollinator population crisis in North America. It discusses the importance of willows as early-flowering plants that provide pollen and nectar for bees during the critical time in spring, when they first leave their hives in search of food.

Figure 5. All trees observed by the author at the time of the interview appeared quite healthy, despite trending drought conditions. The exceptions included some foliar diseases that caused premature defoliation and were noticeable on *Salix purpurea* L. and *S.* ×*fragilis* 'Britzensis' (left). Minimal cankers were observed throughout the nursery. Some willows were affected by potato leafhoppers including, *S. triandra* L., *S. purpurea* 'Sericea', *S. schwerinii* E.L.Wolf and *S. viminalis* L. (right). Photos by Y.Kuzovkina. Losses occurred in the nursery in January 2015, when the temperature fell to -25°F for 30 consecutive nights. Yet only those plants that had *S. babylonica* in their parentage were killed outright. In other willows, young growth, when it first appeared in the following spring, was highly susceptible to fungal damage. Another weather event in late October 2016 snapped many branches off large willows not known to be brittle, as the foliage remained on branches during a heavy, wet snow fall combined with high winds.

Dodge has constructed a few living willow structures, including archways and *fedges*, or fences/hedges, whose images are displayed on the website. The willow he favors for these projects is Miyabe willow, *S. miyabeana* Seemen.

Michael has travelled extensively throughout England and has also visited noteworthy plant collectors and collections in North America. According to Michael, the most influential willow collections in North America include the Arnold Arboretum, Montreal and Chicago Botanic Gardens, then collections at Morton and Holden Arboreta.

From the taxonomic expertise he honed while at Royal Botanic Gardens, Kew, and throughout his career, Dodge has been able to spot discrepancies related to accurate willow identification and corresponding names.

During his various travels, Michael noticed that many willow collections contained inaccurate records and/or mixed up names. Therefore, he invests a significant amount of time networking and consulting with taxonomists and authorities at botanic gardens around the

Figure 6. The use of native species is gaining momentum in North America, and Vermont Willow Nursery offers an extensive collection of native willows. *Salix lucida* Muhl., shining willow, is one of the most attractive North American willows. Photo by M.Dodge

country and internationally to accurately identify unnamed or improperly named willows. In 2016 Michael produced a publication related to Japanese willows "Clarifying affiliations of *Salix gracilistyla* Miq. cultivars and its hybrids" (HortScience 51(4): 334-341) along with two researchers, Irina Belyaeva and the author. Michael's taxonomic assistance was vital for the production of the "Checklist for Cultivars of *Salix* L. (willow)" 2015 http://www.fao.org/forestry/44058-0370ab0c9786d954da03a15a8dd4721ed.pdf .

Dodge networks with taxonomists and curators of the main botanical gardens and arboreta in North America: with the Denver Botanical Garden, Chicago Botanical Garden, Morton Arboretum, Arnold Arboretum, Holden Arboretum, Brooklyn Botanical Garden and Montreal Botanical Garden to ensure correct identification of willow specimens. His on-line catalog is updated annually and reflects recent taxonomical and nomenclatural changes.

Michael is currently trying to solve a puzzle that refers to *S.* 'Hakuro' which came from Broken Arrow Nursery (Connecticut, USA) as *S. integra* 'Hakuro' but according to Michael, does not resemble *S. integra* Thunb. and, upon finding similarities between this plant and a plant at the Montreal Botanic Garden, Michael has come to the conclusion that it must be *S. koreensis* Andersson. Michael's own observations have led him to research the origin of the popular pink pussy willow *S.* 'Mt. Aso,' as he noted that its hybrid vigor and specific flower bud shape differed from *S. gracilistyla* Miq.

Michael Dodge believes that DNA research is the future for *Salix* taxonomy: "*I have been told that it is possible for scientists to identify single genes that dictate a characteristic. Examples of this are in* S. matsudana *Koidz. that has a single gene that controls the curly stems in that species, thus separating it from* S. babylonica *L. Scientists are also working out the gene that controls resistance to rust infections in* S. purpurea *L.; this will result in*

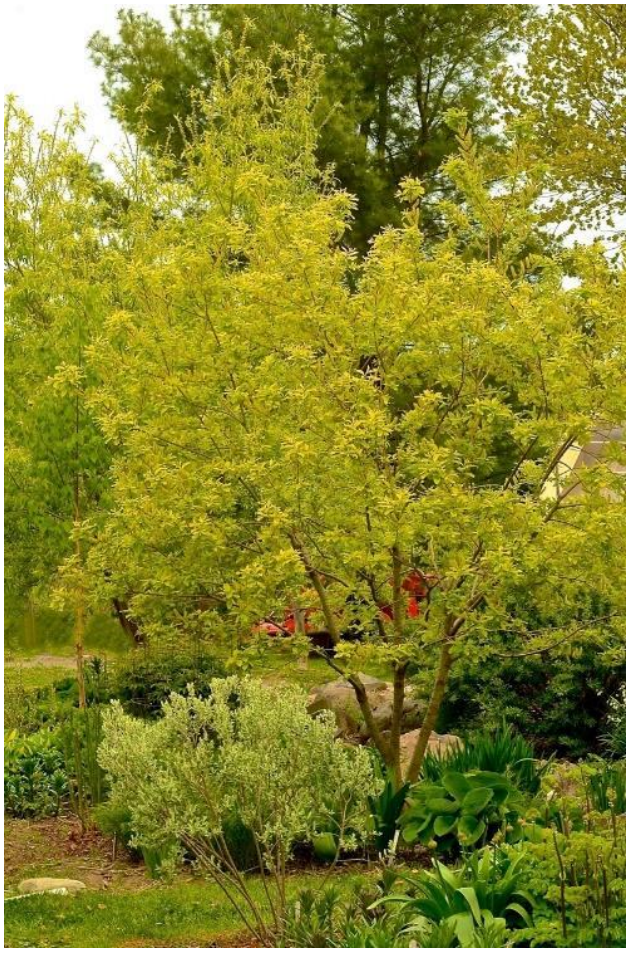

Figure 7. *Salix caprea* 'Ogon' produces golden foliage in spring. It is propagated by a few nurseries in the USA. The depicted willow is 8 years old, and Michael had to remove it from his inventory. Once a willow matures, it becomes impossible to root the cuttings, unless it has been regularly coppiced. Photo by M.Dodge

breeding hybrid strains that are resistant to rust in this very valuable ornamental and economically important plant."

He continues: "*I do think DNA analysis should be given more funding to resolve the issues in* Salix *taxonomy. I really believe that this would revolutionize the whole genus. I would also like to see* Salix *taxonomists go out and help identify willows in all major public gardens. One massive database could be produced to identify which species are represented. Further research is needed to focus on species that are threatened or endangered by global warming, logging, clearing, etc. Permits need to be given to professional propagators to propagate these rare plants and allow them to distribute them to all interested parties worldwide, not just public gardens.*"

Michael believes that some organizations involving public gardens have misguided, elitist perspectives about plant collections. There seems to be a notion that they should be the sole stewards of rare and endangered species, whereas in his experience their collections are often neglected, mislabeled and weakened by lost records. He thinks that the motto of the International Plant Propagators Society "to seek and to share" is a superior way of preserving endangered species. Providing propagation material to experienced propagators is by far the most important key to success in preserving these treasures. Michael sees benefits in developing tissue culture, i.e. mini-propagation in sterile conditions, which makes it possible to obtain rare plants in large quantities, so that they can be shared. This would allow international exporting and importing of willows, something that is currently prohibited.

Figure 8. This is A 275 foot fedge constructed by M. Dodge in spring 2016 in Greenwich, Connecticut, USA. Photo by M.Dodge

Michael remains very active and provides presentations about willows and advice on horticultural garden design and garden problems. He is available to all willow professionals including growers, horticulturists and researchers, and he communicates frequently with advice and information. He returns to England often to observe new developments in willow culture, related new varieties and their uses.

Michael humbly declared: *"I don't believe any individual in North America had "done willows" like I have!"* His favorite quote about willows: *"Willows? Been there, done that, moved on!"* as said by another horticulturist.

Meanwhile, Michael's short-term goal is to spend more time with his "neglected" dwarf *Salix* collection and to obtain more species. He is planning to focus on the culture of alpine and arctic willows and to build a rock outcrop mound to display them effectively. Michael would like to make dwarf willows more widely available, but since the areas where they do well are limited, he does not see much demand.

Michael Dodge belongs to the "Dwarf Willow Group" on Facebook and has collected dozens of dwarf willow photographs posted by group members, colleagues and friends, as well as his images collected during his own explorations. When Michael gives up the nursery,

he will create a non-commercial website for dwarf *Salix*, much like his current website. With this project he hopes to create a platform where many individuals can share what they know about the taxonomy, culture and habitats of dwarf willows.

Figure 9. Accurate willow identification and taxonomic effort are M. Dodge's priority. All plants are growing according to a well-organized design, in side-by-side plots allowing for comparisons and keen observations. Photo by Y.Kuzovkina

When asked about future trips he is planning, Michael presents a long list of strategically planned future adventures: "*In March 2017 I am visiting Walter Buechler in Boise, Idaho and his interesting collection of* Salix. *Walter would like to have someone with whom to share his plants. In June my wife and I will be touring Norway, Finland and Iceland for 27 days. I would like to see European willows in their natural habitats and take photographs. Unfortunately, I will not be allowed to return with any cuttings from these willows, because of strict USDA rules. In 2018 I am organizing a visit to northwest Newfoundland to study dwarf* Salix. *I am hoping that Irina Belyaeva will come with us. I want to repeat the format in 2019 on a camping-hiking visit to the Gaspé Peninsula, in Quebec*."

Figure 10. Vermont Willow Nursery selected and named a few new cultivars: *S.* 'Winter Glory,' *S. irrorata* 'Violet Beauty,' and *S. interior* 'Filigree.' *Salix interior* 'Filigree' was selected by Michael Dodge in 2016. Photo by M.Dodge

Figure 11. This nice, compact female specimen of *Salix candida* Flügge ex Willd. with sage-green foliage is native to New England and came from George Newman – a noteworthy plantsman from Bedford, New Hampshire, USA. Photo by Y.Kuzovkina

Figure 12. In summer 2016, Michael found what he believes to be the oldest willow he has ever seen - a specimen of *Salix* ×*pendulina* 'Blanda' at Grand Pre, Nova Scotia that is approaching 300 years old. It was documented at the time when the Acadians were forcibly removed from their homeland by the British and New England troops in 1750.

Figure 13. In June of 2014 Michael organized a successful expedition with the author to the top of Mount Adams in New Hampshire, USA, in search of rare alpine species of willows. Photo by Y.Kuzovkina

Regarding the future of *Salix* cultivation in general, Michael says:

"Judging by our ever-increasing willow sales, I think that by educating people in the joys of growing willows and showing them their beauty, that there is a great future for this previously largely neglected genus here in North America."

Although still very active, Michael is planning the future direction of his nursery. Perhaps, in a few years, he might sell off or donate his collection to a botanic garden or arboretum, but his preference would be to keep the collection intact. However, Michael ends on a very optimistic note:

"*I would love to be known as someone who made a difference in the world of* Salix*! As long as my wife and I are able to continue with the nursery, I would like to keep going with it. I am having the most fun I have ever had in my entire horticultural life and never want it to end! "*

Figure 14. Michael and his dogs Lily and River in front of their quaint, blue-shingled ca. 1850 farmhouse at the end of a road in rural Vermont, where he has lived with his wife Sonia since 2005. New willow acquisitions in black pots are beside Michael: *Salix variegata* Franch. (= *S. bockii* Seemen ex Diels) and *S. magnifica* Hemsl. Photo by Y.Kuzovkina