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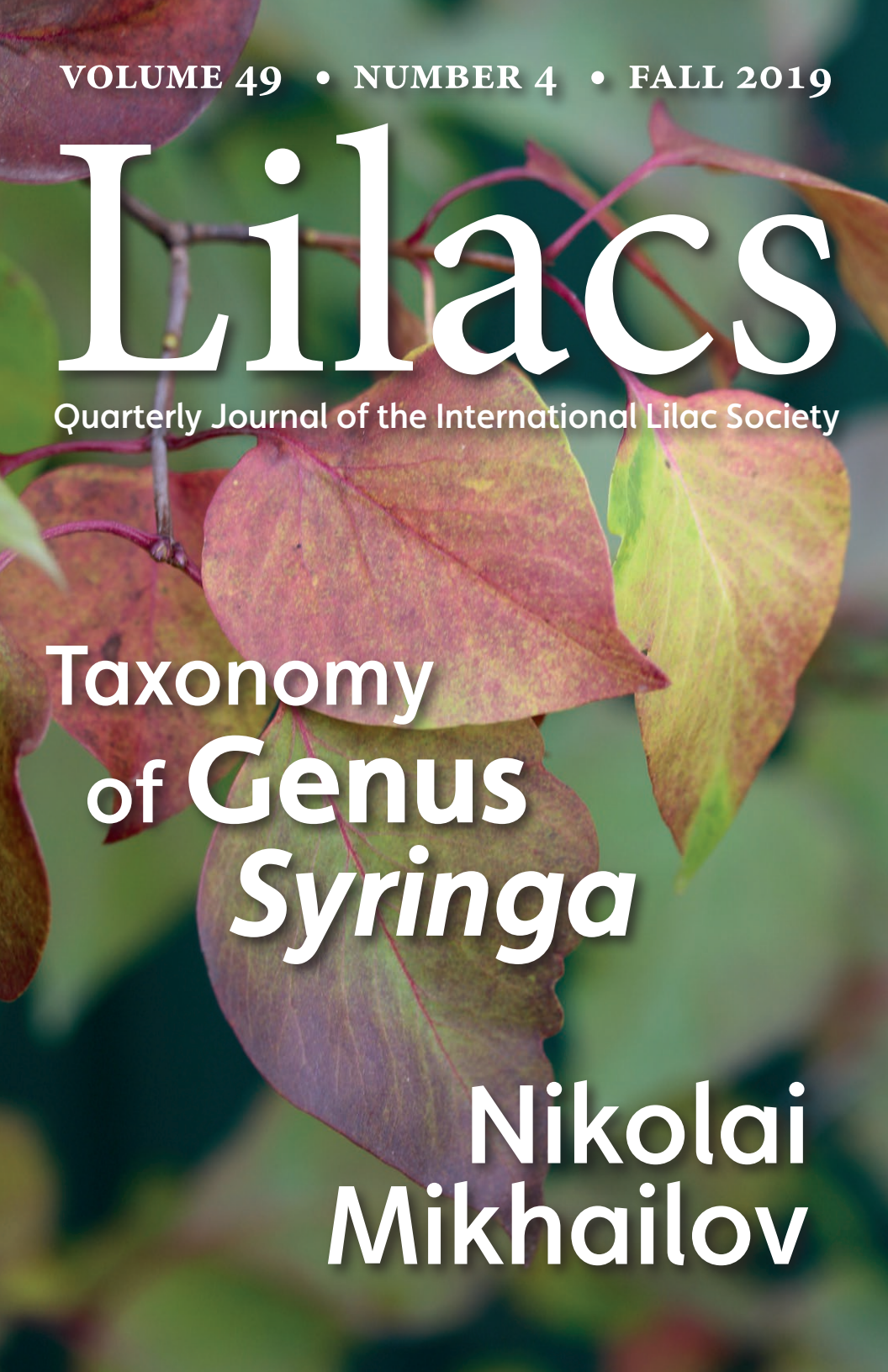

Taxonomy of Genus *Syringa*

Nikolai Mikhailov

'Miss Kim'
Photo cby Tatiana Poliakova

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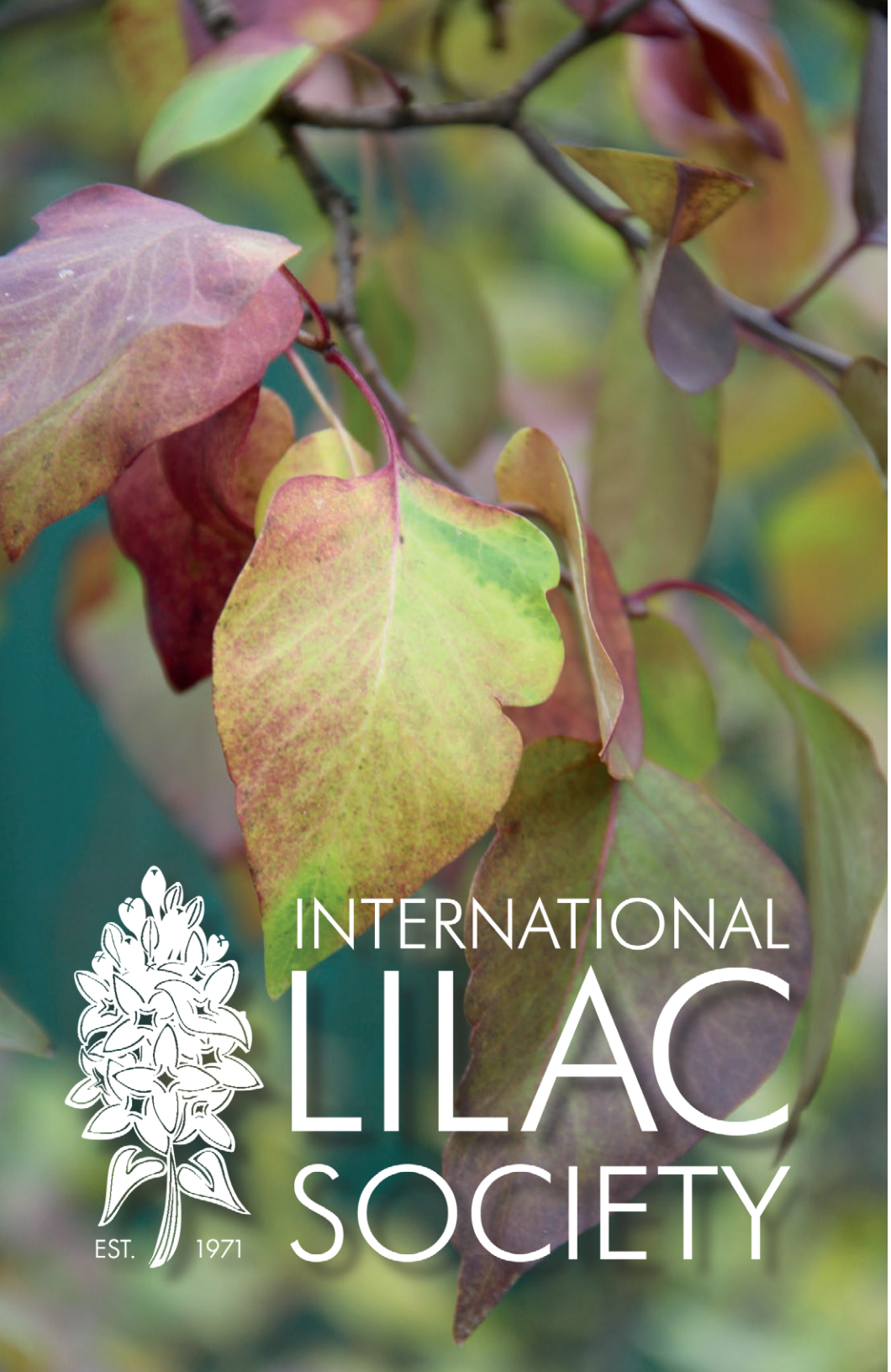

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Photo by Tatiana Poliakova

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Photo by Tatiana Poliakova

EDITOR'S DEADLINE
FOR SPRING ISSUE:
FEBRUARY 20, 2020
[Please send photos + articles]

President's Message

Dear *Syringa* Enthusiasts Around the World,

I hope everyone had a great summer/winter. It's the beginning of fall here in northeast Ohio, USA. The fall foliage has begun to show its colors. Many trees are already losing their leaves due to our mini drought and record breaking hot summer and early fall temperatures. This year I have been attempting to keep my lilac collection watered, to prevent premature dormancy. Last year some of the *Syringe vulgaris* broke dormancy after the fall rains returned: then we had a very cold winter, causing the opening buds to be damaged. I am continuing to work on my historic Wolcott Lilac Gardens. In 2020, it will (I will) be celebrating its centennial year. I have added several new lilacs (from the ILS auction, lilac exchanges, internet purchases, and friends' collections) and continue to work the garden beds to allow for future expansions. I plan to host the 2022 Convention, so I need to get my garden in tiptop shape.

As you may already know, Dr. Mark DeBard has been working with Archmore Business Web to develop an improved website for the ILS. It is currently up and running. Please take the time to visit the website. There is a members-only side (you must have an email to gain access) where more private information is shared and there is a public side. Also included is the Lilac Database with names and various photos of blooming lilacs. The plan for the website is to offer a secure way of purchasing books, DVDs and renewing your membership. We also encourage the inclusion of an email address in your directory; we promise it will not be sold and we will not send promotional emails to it. It can be a great way to meet other members near you and for your regional VP to contacts of area events.

I also asked for any updates from the Preservation Committee Co-chairs. Both have been very active locating collections of lilacs. Josh Miller has located and obtained information on six private collections – one contains a large number of Berdeen lilacs. He felt this is extremely important due to the fact that Berdeen lilacs are considered rare. Tatiana Poliakova has been continuing to compile lists of collections from Botanical Gardens and private collections as well, but the lists need to be cross-checked for accuracy before proper documentation. Several rare Kolesnikov cultivars have been found and are being propagated by tissue culture. These are 'Liza Chaykina', 'Pamyat' o Tripol'skoy Tragedii', 'Nadezhda Krupskaya', 'Vetka Mira' plus some unnamed seedlings from his lilac garden. Several varieties of Berdeen, Karpov-Lipski and Fiala are being propagated by tissue culture, as well.

On a more somber note, one of Russia's premier hybridizers and collector of lilacs, Dr. Nikolai Leanidovich Mikhailov, passed away September 16, 2019. He was a hybridizer of many beautiful lilacs. He created the lilac collection in the Main Botanical Garden in Moscow and was the curator from 1949 to 1984. The collection of lilacs in the MBG's heydays, numbered about 450, because of his efforts. He was the author of many books. In short, he dedicated his life to lilacs. I would like to offer my condolences to his family and friends.

I have an update from our Registrar, Dr. Mark DeBard. He is continuing to review additions and making corrections to other entries to the Lilac Registry. A new edition to the Registry is expected to be published in October, 2019. He has made arrangements to have new registrations published in a new RHS annual hardcover publication. He also states the "LILACS" Journal will have a short reference to these registrations in the future.

Mark also has an article in the "LILACS" Journal. Its topic is on the new lilac genus classification of species. It is the first proposed reclassification in 30 years and summarizes the last 25 years of morphological and genetic research. It greatly simplifies and

reduces the number of species, while proposing the possibility of including privet (Ligustrae) in the Syringa genus. It also removed the series designation from S. pinnatifolia, but formalizes the series distinction as revealing impossible natural interseries hybridizing. It is a lengthy article, but looks to be quite interesting, especially to the scientist in all of us.

As I conclude this letter to all of you, I had the opportunity this weekend to entertain 8 youths in the Cub Scouts and Lion Packs (junior members of the Scouting Program in the USA). Their Pack Leader was in need of showing her group a botanical garden: she chose my Wolcott Lilac Garden. They got to see several of the re-blooming *microphyla* lilacs, and some of the other stately trees in the Garden. But, they were most excited about the koi pond. Each child received a copy of the ILS-sponsored Kids' Lilac Activities booklet. Their Pack Leader's goal is to get the kids interested in plants and gardening. I hope they will become interested in Lilacs! They plan on returning in the spring when the lilacs are in their full glory.

I will be sending out letters to past-due members, who haven't renewed as of yet. Please keep the Society apprised to name and address changes: Jamie Powers is who you will need to contact.

The ILS is now accepting reservations to the 2020 Convention. The reservation form is available in "LILACS" and on the website. Please reserve your spot at this Convention in Saint-Georges, Quebec; hosted by Le Musée Des Lilas. I would like to send a special thanks to Claire Fouquet for her time in planning this event. There will be a few extra days for a trip to Quebec City; a must see European-like city in North America.

Once again, I invite you to log into our new ILS website, which is up and running. If you have any articles or photos from local events that you would like published in "LILACS", please email Tom Gober, our editor. We would love to hear from you and see what you are doing to promote lilacs and our society. Our Facebook site has 396 members, this is more than the number of members in our society – we need to reach out to them and get them to join. Until the winter edition, please find health, friendship, happiness, and lilacs in your life. If you have questions or concerns, please contact me by snail mail or email.

Finally, we are in need of volunteers to help with the posting of news articles and events on the members only sides of the website. Please email Candace Wentz at candace.wentz@centre.edu. Hope to see you soon.

Dr. Robert A. Zavodny
ILS President
lilacgardenskent@gmail.com
(330) 329-2993

ILS 50th Anniversary

The International Lilac Society was formed in 1971 and we are looking to return to Rochester, New York in 2021 for the annual convention where it all began. To commemorate the anniversary, I would like to publish some type journal, booklet, or book that illustrates the ILS over the years and takes one down memory lane. I can only do this with your cooperation.

If you have any photos of past conventions, meetings, etc please send them to me at: 590 Delaware Ave., Akron, OH 44303. I will scan the photos and return them to you. If you are computer savvy, please scan the photos and send to me at: lilaceditor@gmail.com. Do not forget to identify who is in the photo, the year and location if possible.

Ask the VP...

A new feature for *Lilacs* is this Ask the VP column. Do you have questions about why the ILS has a weird or confusing rule? Do you wonder why people serve in certain roles? Do you wish we had not changed something that we did? Would you like to know what former presidents or officers did? Then ask our historian and Executive VP, by emailing or sending your questions to the editor. We will publish the answers in a future journal.

Our first question is, "Why do we have an Executive Vice President and not just a vice president?"

Answer: When the founders set up the ILS, there were many regional vice-presidents distributed around the world. Remember, this was in the days before internet and convenient long distance telephone calls. So regional vice presidents were positioned so they could more easily communicate with members near them. However, only some of the vice presidents were authorized to handle money on behalf of the ILS. We once had regional VP's for Europe, for Canada, and for the society as a whole.

Over time, as international banking became more accessible, the board chose to handle all of our finances out of one centralized account. The executive vice presidents for Europe and Canada were changed to regional vice presidents, and only our Executive Vice President position remains.

Only three officers are empowered by our By-Laws to authorize expenditures on behalf of the ILS. These are the Treasurer, President, and Executive Vice President.

Please send your questions to Editor@InternationalLilacSociety.org.

Le Musée des Lilas – The Lilac Museum

THE COLLECTION

About 20 lilacs were planted at the beginning of 2000 as decorative bushes. They were what could be found on the market and unfortunately nobody kept records of what they were. In 2011, The Lilac Museum was born and about 200 known lilacs were added and every year thereafter more lilacs were planted.

Today, The Lilac Museum has 447 lilacs that are identified as true to description and bear an identification plaque in front of them. Some 200 more are awaiting confirmation of their identity (have not bloomed yet, are questionable or have lost the original tag). These have nonetheless a metal tag somewhere on the plant. It will be interesting to have all those lilacs specialists be able to look at them and maybe contribute to their identification.

The collection is organized in different groups/sectors according to the originator (Fiala, Lemoine) or according to the part of the world they come from. These are USA, Canada, Western Europe (like France, Belgium, Germany), Eastern Europe (like Ukraine Poland, Estonia) or Russia. At the convention, all attendees will be provided with a list of what is in the ground making your visit more enjoyable with plenty of time on Thursday evening and most of the day Sunday to explore the collection. This spring we will be installing a few interpretation panels with information on the most prolific originators.

Every year we have between 75% to 85% of the bushes that bloom, and most blossoms are at eye level making it possible to enjoy their fragrance, to take excellent close up photographs or to take nice “selfies” nested in the blooms!

We are excited to welcome many of you this coming June 4th to June 7th, 2020 and be able to share our love of lilacs.

In Memoriam

John Charles Carvill

John Carvill, former president of the ILS, passed away at the age of 93 on January 19, 2019. John and his late wife Ann were very active in the ILS for many years. John served as ILS President from 1997 to 2000.

He was the father of John W. (Nanci) Carvill and the late Ann Blodgett. He was the best grandfather to his only grandson Kelly Christopher "KC" Carvill and later to KC's fiancée Sarah Minguela and her daughter Mabel Blodgett. He was also the dearest Uncle Jack to Elaine St. Pierre, Suzanne Cobb, Marielle Labonte, and Katherine Turcotte as well as lifelong friend to Jackie Tweedie and his family.

Born in Albany, NY on August 21, 1925, he never left the area. He was the son of the late William and the late Catherine (Webster) Carvill. He was the Purchasing Agent with Albany Felt Company in Menands for over 38 years. John served in the United States Navy during World War II from 1942 until 1944. He was an active member of the Latham Masonic Temple serving as Worshipful Master and District Deputy. He was a passionate gardener growing vegetables and flowers alike. John was active in Calvary United Methodist Church and he and Ann were active in both the Prime Time Players Club and the Young at Heart Social Club. He always looked out for his fellow neighbors, helping numerous people in his life in many ways. John was a great leader and seemed to be chosen to lead whatever club he joined, too numerous to count. He looked after his family very well and was loved by all.

Internment will be at the convenience of the family with his beloved wife in Memory Gardens in Colonie.

John and Ann Carvil

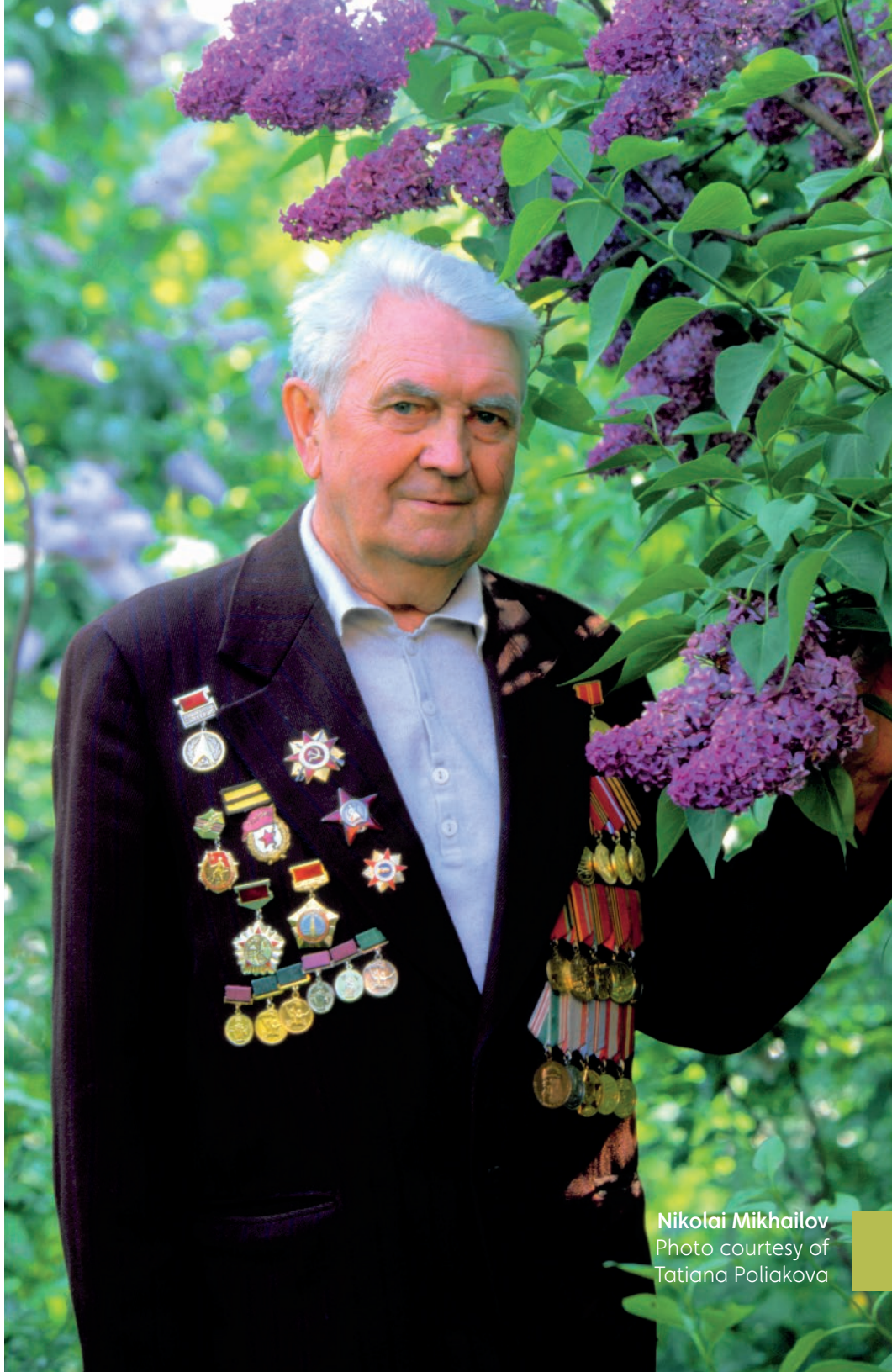
John Carvil (center)
Auctioning Lilacs

In Memoriam

Nikolai Leonidovich Mikhailov (1924-2019)

On September 16, 2019, Nikolai Leonidovich Mikhailov (1924-2019) passed away. A distinguished scientist and practical hybridizer, he dedicated himself to the selection and popularization of the lilac in Russia and abroad. For me, he was not only a teacher and mentor, but also a friend. We met for the first time in 1999, when a group of lilac fans came together in a special "Lilac Section" in a Moscow gardening club. We did not know anything about lilacs, so we turned to Nikolai L. Mikhailov for help. He gladly agreed to share his experience with all of us beginners. His lectures were always informative and interesting. He talked about the types of lilacs and taught us the art of grafting. In 2004, the chief editor of one of the leading garden magazines, in which I wrote a regular column devoted to lilacs, asked me to interview N. Mikhailov. His life story deserves the greatest respect.

Since childhood he was always fond of nature and dreamed of becoming a biologist. But the path to this dream led through the dark, frightful years of the Second World War. When the war started, Nikolai was only seventeen and he was supposed to start studying in the last grade at school before graduation. He spent one day at school but then, concealing his age, he left for the front as a volunteer. He fought through the hardest years in the battles around Moscow. "We were frostbitten in temperatures of 40 below zero and swollen from hunger while we were digging trenches in the snow and fighting to free small villages" (from his recollections). "All we wanted was to get warm and have a proper sleep." He was sent to the hospital with a wound to an arm and after recovery he went to Officer's School for training. Back at the front, the young Lieutenant Mikhailov was sent with a shock battalion to break through the enemy's defenses near Smolensk (today near the eastern border of Belarus). An explosion caught him when the battle was at its height and, just before unconsciousness overwhelmed him, the last thing he remembered was enemy soldiers running over him because they thought he was dead.



Nikolai Mikhailov
Photo courtesy of Tatiana Poliakova

'Mulatka'
Photo courtesy of
Tatiana Poliakova

'Kosmos'
Photo courtesy of
Tatiana Poliakova

'Nina'
Photo courtesy of
Tatiana Poliakova

'Nikolai Mikhailov'
Photo courtesy of
Tatiana Poliakova

Surgeons worked for hours to remove countless shell splinters, and severe head injuries led to heavy shellshock (severe concussion), lost hearing and six months poised between life and death. "My mother saved me", he said. In a country of official atheism, she prayed for him night and day at the church for six months. In the spring of 1944, he left the hospital. Times were very hard and there were no spare uniforms. He was given a woman's long heavy overcoat and the very first patrol he encountered in Moscow arrested him as a spy. His war had ended. He was just 20 years old. He lost his hearing, and his injured leg forever lost the ability to bend.

He entered the Agricultural Academy named after K. A. Timiryazev and specialized in the field of decorative landscaping to help fill a land laid waste by war with flowers. In 1948 he went to work as a trainee at the Main Botanical Garden (MBG) in Moscow and in 1949, after graduation, Mikhailov started to work at the MBG full time. He studied lilacs and they won his heart. In search of more knowledge, he met Leonid Kolesnikov who gave him 50 of his cultivars to plant at the MBG. Through his hard work and enthusiasm, he eventually increased the collection to about 450 different cultivars. Mikhailov's own 14 cultivars are well known and are very popular in Russia and they are also becoming known around the world. His most famous cultivar is 'Mulatka'. Among my personal preferences are 'Kosmos', 'Nina', and 'Nikolai Mikhailov'.

In the 1970's Nikolai L. Mikhailov made contact with Charles Holetich at the Royal Botanical Gardens in Hamilton, Ontario, Canada and they began an exchange of lilac propagating material which we all benefit from to the present day. They were instrumental in sending propagating material around the world and making authoritative descriptions available. While Charles sent new American and Canadian cultivars east, Nikolai Leonidovich sent propagating material and information about his own cultivars west, along with those of L. A. Kolesnikov, N. K. Vekhov and those produced in Minsk, Kyiv, the Baltic States and many other places. Thus, our lives were enriched, and fragrance and beauty were spread around the world. For this work the International Lilac Society gave their Directors' Award to Nikolai Leonidovich Mikhailov in 1977.

Mikhailov's other passion was roses. At the MBG he maintained a collection of 2500 cultivars. Dr Mikhailov's thesis was dedicated to roses. He is the co-author of 4 books about lilacs, author of more than 30 scientific publications and many popular articles.

After retiring in 1988, Nikolai L. Mikhailov continued to actively participate in many public projects, including the "Victory Lilac" project. The doors of his hospitable house were always open for fans of lilacs. Whenever we called him, we were welcome to ask any questions, or we were invited to come to see him. He was a man from the last century - intelligent, with the manners of a real gentleman.

His house was full of kindness and love. He and his wife Nina Andreyevna have two daughters, two granddaughters and a grandson, and great-grandchildren. The family is very close. His constant care by his daughters, who are well-known medical therapists in Moscow, helped Nikolai L. overcome serious illnesses and live a long and happy life.

The memory about Nikolai Mikhailov will live in our hearts.

Nickolai and Tatiana
Photo courtesy of Tatiana Poliakova

2019: An Updated Taxonomy of Genus *Syringa* (Lilacs)

by Mark L. DeBard, MD

Introduction

The existing genus *Syringa* L. taxonomy was derived from research literature available before 1995 and was formalized in 2008 (Fiala & Vrugtman, 2008). In the ensuing almost 25 years of research, numerous authoritative articles have addressed this taxonomy in a piecemeal fashion using both detailed morphological survey and population sampling methods, along with the beginning of phylogenetic DNA research. This paper synthesizes all these studies by taxon and constructs a final updated taxonomy tree. Those who wish a quick summary conclusion may jump to Table 1 to see the final results. An alphabetical list of current and obsolete (with their assignments) taxons in subgenus *Syringa* L. (except for the Ligustrae) (Table 3) is posted on the ILS website.

Genus *Ligustrum* (Privet)

While *Ligustrum* has only 12 accepted species in the Integrated Taxonomic information System (ITIS, 2011), it has about 50 described species (Li, Goldman-Huertas, Deyoung, & Alexander III, March 2012). This proliferation of species, so unlike subgenus *Syringa*, is most likely not due to being a different genus than *Syringa*; rather, it is likely due to its development of a fruit (instead of a capsule) for birds to more easily spread (Li, Alexander, & Zhang, Paraphyletic Syringa (Oleaceae): Evidence from Sequences of Nuclear Ribosomal DNA ITS and ETS Regions, 2002).

Phylogenetic data using nuclear ribosomal DNA (NrDNA) (Li, Alexander, & Zhang, Paraphyletic *Syringa* (Oleaceae): Evidence from Sequences of Nuclear Ribosomal DNA ITS and ETS Regions, 2002) and plastid chloroplast (cDNA) (Li, Goldman-Huertas, Deyoung, & Alexander III, March 2012) shows that *Ligustrum* is derived from within subgenus *Syringa*, changing its designation to a series within genus *Syringa*. NrDNA shows it to be monophyletic

and sister to series Villosae, Pubescentes, and subgenus *Ligustrina* (Li, Alexander, & Zhang, Paraphyletic *Syringa* (Oleaceae): Evidence from Sequences of Nuclear Ribosomal DNA ITS and ETS Regions, 2002). NrDNA also shows it forms a clade derived from within *Syringa*, and the dehiscent berries of *L. sempervirens* as an evolutionary reversal towards capsules. (Li, Alexander, & Zhang, Paraphyletic *Syringa* (Oleaceae): Evidence from Sequences of Nuclear Ribosomal DNA ITS and ETS Regions, 2002).

Other authors agree that it is a sub-group of *Syringa*, particularly considering similar early fruit development, wood structure, and panicle clusters (Goldman-Huertas, Fall 2005). Floral features are common with the sister subgenus *Ligustrina*, suggesting symplesiomorphism (Kim & Jansen, 1998).There is evidence that it diverged after series Syringa and before Ligustrina, Villosae, and Pubescentes, about 12.17 mya (Li, Goldman-Huertas, Deyoung, & Alexander III, March 2012).

Genus *Syringa* L. (Lilac) (Oleaceae)

While no specific change is noted at the genus *Syringa* level, the implications of other section discussions are that genus *Ligustrum* will be folded into this genus as a series, and that the two subgenera of *Syringa* and *Ligustrina* will go away, the former due to lack of necessity and the latter due to reclassification under *Syringa* as a series. *Ligustrum* forms a clade derived from within *Syringa* (Li, Alexander, & Zhang, Paraphyletic Syringa (Oleaceae): Evidence from Sequences of Nuclear Ribosomal DNA ITS and ETS Regions, 2002).

Plastid DNA shows that maternal or biparental inheritance is consistent within series, being unique in series *Syringa* and Pinnatifolia (maternal), supporting their combination (Liu, Cui, Zhang, & Sodmergen, September 2004).

Species within a series show consistent modes of cytoplasmic maternal or biparental inheritance, confirming their inclusion in their respective series (Liu, Cui, Zhang, & Sodmergen, September 2004).

Subgenus *Ligustrina* (Rupr.) K.Koch

This subgenus forms a strong basal clade within *Syringa* according to cDNA. Floral features are in common with the sister genus *Ligustrum*, suggesting symplesiomorphism (Kim & Jansen, 1998).

It is monophyletic and weakly sister to series Pubescentes, as well as sister to genus *Ligustrum* and series Pubescentes, but not to series Syringa (Li, Alexander, & Zhang, Paraphyletic Syringa (Oleaceae): Evidence from Sequences of Nuclear Ribosomal DNA ITS and ETS Regions, 2002). It is more closely related to series Pubescentes and Villosae than to series Syringa or Pinnatifolia but separate from them (Goldman-Huertas, Fall 2005).

Other authors agree that NrDNA and cDNA sequences show it to be nested within subgenus *Syringa*, with sister genus *Ligustrum* and sister series Pubescentes and Villosae (Li, Goldman-Huertas, Deyoung, & Alexander III, March 2012). There is evidence that it evolved after series Syringa and Ligustrae but before Villosae and Pubescentes, about 11.39 mya (Li, Goldman-Huertas, Deyoung, & Alexander III, March 2012). Species within a series (and this subgenus) show consistent modes of cytoplasmic maternal or biparental inheritance, confirming their inclusion in their respective series (Liu, Cui, Zhang, & Sodmergen, September 2004).

S. reticulata (Blume) H.Hara subsp. *reticulata* subsp. *amurensis* (Rupr.) P.S.Green & M.C.Chang

In 1995 S. *amurensis* was confirmed to be a subspecies of *S. reticulata.* The same authors assigned S. *pekinensis* as a similar subspecies (Green & Chang, 1995), which was initially accepted, but later refuted (Fiala & Vrugtman, 2008). Morphological data and NrDNA sequences are similar to control species and along with new morphological data support subsp. *amurensis* and subsp. *reticulata* as conspecific and in the same species (Li, Zhang, & Alexander, Tree Lilacs: Evidence from Morphology and DNA Sequences Supports McKelvey's Taxonomic Treatment, Winter 2001).

S. *pekinensis* Rupr.

Despite attempts to make this into a subspecies of S. *reticulata* (Green & Chang, 1995), later authors have kept it at the species level, likely due to morphological differences in bark and size, as well as distinctness in geographic distribution (Li, Zhang, & Alexander, Tree Lilacs: Evidence from Morphology and DNA Sequences Supports McKelvey's Taxonomic Treatment, Winter 2001) (Fiala & Vrugtman, 2008).

In addition, no hybrids have been proven between this and S. *reticulata*, while cDNA supports the monophylly of the two species (Kim & Jansen, 1998). DNA sequences showing significant sequence divergence and morphology differences support S. *pekinensis* as its own species (Li, Zhang, & Alexander, Tree Lilacs: Evidence from Morphology and DNA Sequences Supports McKelvey's Taxonomic Treatment, Winter 2001).

Subgenus *Syringa*

The existence of a subgenus implies the existence of another from which to distinguish it. However, as discussion under subgenus *Ligustrina* shows, the latter is derived from within subgenus *Syringa*, changing its taxonomic class to that of a series. Hence, with only one subgenus left in the genus *Syringa*, there is no longer any need for a subgenus. The possibility of a subgenus *Ligustrae* is dealt with in that section and felt to belong in its own series.

Series Syringa

See the discussion under series Pinnatifoliae Rehder for a justification of a merger of these series. This will allow the addition of *S. pinnatifolia* to the series Syringa as a separate species.

Another study showed that this series diverged earlier from the other series within genus *Syringa*, about 17.67 mya (Li, Goldman-Huertas, Deyoung, & Alexander III, March 2012). Species within a series show consistent modes of cytoplasmic maternal or biparental inheritance, confirming their inclusion in their respective series (Liu, Cui, Zhang, & Sodmergen, September 2004).

S. vulgaris L.

This forms a strong clade with S. *oblata* with strong genetic compatibility (Kim & Jansen, 1998).

S. oblata Lindl.

Two subspecies of *S. oblata* subsp. *oblata* and *S. oblata* subsp. *dilatata* were distinguished based on different geographic distributions and minor but continuous morphological differences (Green & Chang, 1995).

S. protolaciniata P. S. Green & M. C. Chang
S. afghanica C. K. Schneid.[1]
S. × *chinensis* Schmidt ex Willd. (pro sp.) (*S. protolaciniata* × *S. vulgaris*)
S. × *laciniata* Miller (pro sp.) (*S. protolaciniata* × ?)
S. × *persica* L. (pro sp.) (uncertain parentage)

The two species and three nothospecies in the above grouped section comprise a strong laciniate-leaved clade, but their relationships and ancestry have yet to be definitively determined (Kim & Jansen, 1998).

Series Pinnatifoliae Rehder

Series and sections are used for convenience to organize large genera usually with hundreds of species (Wikipedia, Series (botany), 2018) (Wikipedia, Section (botany), 2018). This would obviously be unnecessary in *Syringa*, previously with 21 natural and 10 nothospecies (Fiala & Vrugtman, 2008). However, the highest order series under the genus *Syringa* have been useful for delineating species groups that cannot naturally interbreed viable offspring (Lattier & Contreras, 2017).

The only proven interseries nothospecies, *S.* × *diversifolia* (*S. oblata* × *S. pinnatifolia*), along with recent phylogenetic data showing maternal-only plastid DNA inheritance in series *Syringa* and Pinnatifolia versus biparental in all other series (Liu, Cui, Zhang, & Sodmergen, September 2004), along with NrDNA evidence that series Syringa and Pinnatifolia are basal clades for all other series

(Li, Alexander, & Zhang, Paraphyletic Syringa (Oleaceae): Evidence from Sequences of Nuclear Ribosomal DNA ITS and ETS Regions, 2002), suggests that the series *Syringa* and Pinnatifolia are similar enough that they can be combined into one series, thereby once again using the series designation in *Syringa* to delineate naturally non-interbreeding species groups with non-viable offspring.

cDNA shows considerable genetic compatibility between these two series, making them sisters and together forming a monophyletic group, with *S. pinnatifolia* nested within series Syringa (Kim & Jansen, 1998). Both are shown to be basal clades (Li, Alexander, & Zhang, Paraphyletic Syringa (Oleaceae): Evidence from Sequences of Nuclear Ribosomal DNA ITS and ETS Regions, 2002).

There is evidence that series Pinnatifolia evolved from series Syringa but before the other series, about 14.46 mya (Li, Goldman-Huertas, Deyoung, & Alexander III, March 2012).

S. pinnatifolia Hemsl.

Considering the discussion under series Pinnatifoliae Rehder, and the combining of series Syringa and series Pinnatifolia, *S. pinnatifolia* can now be moved into series Syringa as a species, still distinguished by its palmate leaf structure. Its cDNA tree shows its leaf is either 1) derived from a simple-leaved ancestor with partial reversal through the intermediate laciniate-leaved condition towards the simple-leaved condition of the rest of the series Syringa, or 2) independent evolution of the compound *S. pinnatifolia* and laciniate *S.* × *laciniata* leaves from simple leaved ancestors (Kim & Jansen, 1998). This latter possibility is less likely since it would be expected to create *S.* × *laciniata* as a fertile natural species, and not the sterile nothospecies that is accepted.

Interseries hybrid

Reputed interseries hybrids probably do not exist. *S. reticulata* × *S. laciniata* has been shown to be *S. reticulata.* Reported hybrids between *S. pinnatifolia* and other series *Syringa* species (such as *S.* × *diversifolia*) represent genetic compatibility and the lack of a reason for series Pinnatifolia (Kim & Jansen, 1998).

Series Pubescentes (C.K.Schneid.) Lingelsh

This classification, minus var. *flavanthera*, was set out in 1995 (Green & Chang, 1995). By 1998, plasmid DNA showed evidence of 3 monophyletic groupings then designated as species: *S. pubescens*, *S. microphylla-S. julianae*, and *S. patula-potanini* (Kim & Jansen, 1998). *S. microphylla* and *S. pubescens* have some overlapping areas in northern China so that natural hybridization is possible, though never reported (Kim & Jansen, 1998).

This series has been shown to be sister to series Villosae and subgenus *Ligustrina* (Li, Alexander, & Zhang, Paraphyletic Syringa (Oleaceae): Evidence from Sequences of Nuclear Ribosomal DNA ITS and ETS Regions, 2002). There is some evidence that this is the youngest series, coming just after series Villosae, about 9.6 mya (Li, Goldman-Huertas, Deyoung, & Alexander III, March 2012). Species within a series show consistent modes of cytoplasmic maternal or biparental inheritance, confirming their inclusion in their respective series (Liu, Cui, Zhang, & Sodmergen, September 2004).

S. pubescens Turcz.

This entire complex is distinguished from other species in the series Pubescentes by purple anthers and verrucose fruit. A detailed morphological study of 14 populations in China along with 17 herbaria in China, Korea, and Inner Mongolia show continuous variation and therefore only one species in the complex (Chen, Zhang, & Hong, A Taxonomic Revision of the Syringa pubescens Turcz. complex (Oleaceae), 2009)

subsp. *pubescens*

This could not be genetically merged with subsp. *microphylla* as concluded by cDNA inheritance patterns and sequences (Kim & Jansen, 1998). Using NrDNA, *S. pubescens* formed its own cluster (Li & Alexander III, NrDNA Sequences and their Taxonomic Implications in the Series Pubescentes, Fall 2000). Detailed

morphogical study shows it to be continuous with subsp. *patula* and subsp. *microphylla*, with all other forms in the *S. pubescens* complex being intermediate based on altitude (Chen, Zhang, & Hong, A Taxonomic Revision of the *Syringa pubescens* Turcz. complex (Oleaceae), 2009).

subsp. *patula* (Palib.) M.C.Chang & X.L.Chen

One study showed it to be nearly identical to *S. microphylla*, though its NrDNA was a bit scattered (Li & Alexander III, NrDNA Sequences and their Taxonomic Implications in the Series Pubescentes, Fall 2000). Another detailed morphological study showed it to have continuous character traits with subsp. *pubescens* and subsp. *microphylla*, and differing from subsp. *pubescens* by altitude, supporting it as a subspecies of *S. pubescens* (Chen, Zhang, & Hong, A Taxonomic Revision of the *Syringa pubescens* Turcz. complex (Oleaceae), 2009).

subsp. *julianae* (C.K.Schneid.) M.C.Chang & X.L.Chen

This was shown to be a part of the subsp. *microphylla* group (Kim & Jansen, 1998). It was also shown by NrDNA to be almost identical with *S. microphylla* (Li & Alexander III, NrDNA Sequences and their Taxonomic Implications in the Series Pubescentes, Fall 2000). A detailed morphological study showed this rare species to be close to subsp. *microphylla*, probably representing an occasional extreme of this subspecies (Chen, Zhang, & Hong, A Taxonomic Revision of the *Syringa pubescens* Turcz. complex (Oleaceae), 2009).

subsp. microphylla (Diels) M.C.Chang & X.L.Chen

This could not be genetically merged with subsp. *pubescens* (Kim & Jansen, 1998). However, a detailed morphological study showed this to be continuous with subsp. *pubescens* and subsp. *patula*, varying mostly by geography and from subsp. *pubescens* by altitude, supporting it as a subspecies within *S. pubescens* (Chen, Zhang, & Hong, A Taxonomic Revision of the *Syringa pubescens* Turcz. complex (Oleaceae), 2009).

var. potanini (C.K. Schneid.) P.S.Green & M.C.Chang

This showed virtually no cDNA variation with *S. patula* (Kim & Jansen, 1998), making it close to a synonym of the latter. However, a more convincing detailed morphological study suggests it belongs with subsp. *microphylla* (Chen, Zhang, & Hong, A Taxonomic Revision of the *Syringa pubescens* Turcz. complex (Oleaceae), 2009).

var. *flavanthera* (X.L.Chen) M.C.Chang [1]

This was included in subsp. *microphylla* based on a detailed morphological study (Chen, Zhang, & Hong, A Taxonomic Revision of the *Syringa pubescens* Turcz. complex (Oleaceae), 2009).

S. meyeri C.K. Schneid.

This could not be recognized as a distinct species based on cDNA (Kim & Jansen, 1998). Likewise, it was found to be similar to *S. microphylla* (Li & Alexander III, NrDNA Sequences and their Taxonomic Implications in the Series Pubescentes, Fall 2000).

This was originally described as a cultivated plant in Beijing, with no wild specimens ever discovered, and was found in a detailed morphological study to closely resemble *S. pubescens*, likely just an extreme cultivated variety (Chen, Zhang, & Hong, A Taxonomic Revision of the *Syringa pubescens* Turcz. complex (Oleaceae), 2009).

var. *spontanea* M.C.Chang

This variety was raised to specific rank by Qin in 1998, but it was reduced in rank in 2009. This extensive morphological study showed its distinguishing characteristic of palmate venation was not always present and that it was similar to and continuous with the *S. microphylla* population (Chen, Zhang, & Hong, A Taxonomic Revision of the *Syringa pubescens* Turcz. complex (Oleaceae), 2009).

S. mairei (H. Lév.) Rehder

This was formerly distinguished from *S. pinetorum* by a larger leaf blade and a more pubescent indumentum, which a much larger study showed to be continuous traits with *S. pinetorum* and *S. wardii*, supporting it as a geographic variation of a single species (Chen, Zhang, & Hong, Taxonomic Revision of *Syringa pinetorum*

Complex (Oleaceae), 2008).

S. pinetorum W.W.Sm.[1]

The S. pinetorum complex, including *S. mairei* and *S. wardii*, is poorly defined due to few herbaria specimens with little field observation and population sampling. A detailed examination of seven geographic populations and 100 herbarium specimens reveals that as a group they differ from *S. pubescens* in having yellow anthers and glabrous capsules, but that the morphology of the complex is continuous, with leaf blade size being the main but still continuous distinguisher, showing the presence of only one variable species of *S. pinetorum* in the complex (Chen, Zhang, & Hong, Taxonomic Revision of *Syringa pinetorum* Complex (Oleaceae), 2008).

S. wardii W.W.Sm.[1]

This was formerly distinguished from *S. pinetorum* by a smaller leaf blade, but a much larger study showed this to be continuous with leaf blade size in *S. pinetorum* and *S. mairei*, supporting it as a geographic variation of a single species (Chen, Zhang, & Hong, Taxonomic Revision of *Syringa pinetorum* Complex (Oleaceae), 2008).

Series Villosae C.K.Schneid.

A strong monophyletic series with 3 well-supported monophyletic groups. These are *S. emodi, S. villosa-S. wolfii-S. josikaea* (though the latter's great geographic distance from the other two marks it as unique), and *S. yunnanensis-S. komarowii/S. reflexa-S. sweginzowii-S. tomentella* (Kim & Jansen, 1998). The species in this series have no overlapping geographic areas in southern China and so have no chance of natural hybridization, but interspecific hybrids will be fully fertile, with some exceptions in S. *emodi, S. wolfii, and S. josikaea* (Kim & Jansen, 1998). It has been shown to be sister to series Pubescentes and subgenus *Ligustrina* (Li, Alexander, & Zhang, Paraphyletic Syringa (Oleaceae): Evidence from Sequences of Nuclear Ribosomal DNA ITS and ETS Regions, 2002). There is some evidence that this is the second-youngest series, coming just before series Pubescentes about 9.6-11.2 mya (Li, Goldman-Huertas, Deyoung, & Alexander III, March 2012). Species within a series show consistent modes of cytoplasmic inheritance, confirming their inclusion in their series (Liu, Cui, Zhang, & Sodmergen, September 2004).

S. villosa Vahl

There is genetic compatibility and monophylly with *S. wolfii* (Kim & Jansen, 1998). Character variation was found to be continuous with *S. wolfii* though geographical tendencies were noted, suggesting one species and two subspecies (Chen, Zhang, & Hong, A New Status and Typification of Six Names in *Syringa* (Oleaceae), 2007).

S. emodi Wall. ex Royle

There is strong support for this as a unique genetic species in this series, older than the others (Kim & Jansen, 1998).

S. wolfii C.K.Schneid.

There is genetic compatibility and monophyly with *S. villosa* (Kim & Jansen, 1998). Character variation was found to be continuous with *S. villosa* though geographical tendencies were note, suggesting one species and two subspecies (Chen, Zhang, & Hong, A New Status and Typification of Six Names in *Syringa* (Oleaceae), 2007).

S. josikaea J.Jacq. ex Rchb.

One phylogenetic study shows it to be monophyletic with *S. villosa* and *S. wolfii* (Kim & Jansen, 1998), but its great geographic distance from them suggests it should not be demoted from species status. It may have been monophyletic with them originally, but the ancient geographic isolation (theorized to be glacier interposition) allowed for independent development. It recently became the first Syringa species to be given endangered status (Höhn & Lendvay, 2018).

S. komarowii C.K.Schneid.[1]

Since McKelvey in 1928, *S. komarowii* and *S. reflexa* were listed as close but separate species. In 1990 they were united as varieties

under this species, but in 1995 they were given separate subspecies status based upon their non-overlapping geography and minor but continuous morphological differences (Green & Chang, 1995).

S. tomentella Bureau & Franch.

S. tomentella, S. sweginzowii and *S. yunnanensis* were found to have four major character traits that vary continuously among the taxons, as well as overlapping geographic regions. *S. tomentella* was formerly distinguished by being more glabrous, having a more subcylindrical corolla tube, and anther insertion near the corolla throat, but these traits were found to be continuous with the other species. This all indicates one species with three subspecies. (Chen, Zhang, & Hong, Two New Combinations in *Syringa* (Oleaceae) and Lectotypification of *S. sweginzowii*, 2008).

S. sweginzowii Koehne & Lingelsh.

S. tomentella, S. sweginzowii and *S. yunnanensis* were found to have four major character traits that vary continuously among the taxons, as well as overlapping geographic regions. *S. sweginzowii* was formerly distinguished by a varied location of the indumentum, a cylindrical corolla tube, and anther insertion below the corolla throat, but these traits were found to be continuous with the other species. This all indicates one species with three subspecies. (Chen, Zhang, & Hong, Two New Combinations in Syringa (Oleaceae) and Lectotypification of *S. sweginzowii*, 2008).

S. yunnanensis Franch.

S. tomentella, S. sweginzowii and *S. yunnanensis* were found to have four major character traits that vary continuously among the taxons, as well as overlapping geographic regions. *S. yunnanensis* was formerly distinguished by normally pubescent leaves, a slightly funnelform corolla tube, and anthers slightly protruding from the corolla throat, but these traits were found to be continuous with the other two species. This all indicates one species with three subspecies. (Chen, Zhang, & Hong, Two New Combinations in Syringa (Oleaceae) and Lectotypification of *S. sweginzowii*, 2008).

Conclusion

Considering all of this information, a consolidated and parsimonious taxonomy of the genus *Syringa* L. emerges (Table 1). It includes the former genus *Ligustrum* as a series, with renaming of its species to genus *Syringa (S.)*. The other major changes are the deletion of subgenera, the re-assignment of *Ligustrina* from subgenus to series, and the merger of the series Syringa and Pinnatifolia. The series Pubescentes has seen significant consolidation and simplification. In series Villosae, the *S. tomentella* and *S. villosa* species groups have been separately consolidated.

Table 2 lists the new number of natural species and nothospecies by each of the five series.

On the ILS website are the References in Appendix F, and Table 3, which starts with Freek Vrugtman's alphabetical listing in Appendix F of the International Lilac Register (Vrugtman, 2018) and summarizes all valid and obsolete species terms applied in the genus *Syringa* L., (minus the Ligustrae) with their assigned placements when they have become obsolete. All revisions from Vrugtman's original are the author's.

Table 1: 2019 Genus *Syringa* Taxonomy

Series Syringa

- *S. vulgaris L.*
- *S. oblata Lindl.*
- subsp. oblata
- subsp. dilatata (Nakai) P.S.Green & M.C.Chang
- S. protolaciniata P.S.Green & M.C.Chang
- *S. pinnatifolia* Hemsl.
- *S. afghanica* C.K.Schneid.[1]
- *S.* ×*chinensis* Schmidt ex Willd. (pro sp.) (*S. protolaciniata* × *S. vulgaris*)
- *S.* ×*diversifolia* Rehder (*S. oblata* × *S. pinnatifolia*)
- *S.* ×*hyacinthiflora* Rehder (*S. oblata* × *S. vulgaris*)
- *S.* ×*laciniata* Miller (pro sp.) (*S. protolaciniata* × ?)
- *S.* ×*persica* L. (pro sp.) (uncertain parentage)

Series *Ligustrae* L.

- *S. amurense* Carrière
- *S. ibota* Siebold
- *S. japonicum* Thunb.
- *S. lucidum* W.T. Aiton
- *S. obtusifolium* Siebold & Zucc.
- *S. ovalifolium* Hassk.
- *S. quihoui* Carrière
- *S. robustum* (Roxb.) Blume
- *S. sempervirens* (Franch.) Lingelsh
- *S. sinense* Lour.
- *S. tschonoskii* Decne.
- *S. vulgare* L.

Series Ligustrina (Rupr.) K.Koch

- *S. pekinensis* Rupr.
- *S. reticulata* (Blume) H.Hara
  - subsp. reticulata
  - subsp. amurensis (Rupr.) P.S.Green & M.C.Chang

Series Pubescentes (C.K.Schneid.) Lingelsh

- *S. pubescens* Turcz.
  - subsp. microphylla (Diels) M.C. Chang & X.L. Chen
  - subsp. patula (Palib.) M.C.Chang & X.L.Chen
  - subsp. pubescens Turcz.
- *S. pinetorum* W.W.Sm.[1]

Series Villosae C.K.Schneid

- *S. emodi* Wall. ex Royle
- *S. villosa* Vahl
  - subsp. villosa Vahl
  - subsp. wolfii C.K.Schneid.
- *S. josikaea* J.Jacq. ex Rchb.
- *S. komarowii* C.K.Schneid.
  - subsp. komarowii
  - subsp. reflexa (C.K.Schneid.) P.S.Green & M.C.Chang
- *S. tomentella* Bureau & Franch.
  - subsp. tomentella
  - subsp. sweginzowii Koehne & Lingelsh.
  - subsp. yunnanensis Franch.
- *S. tibetica* P.Y.Bai [1]
- (S. Villosae Group)
- *S.* ×*henryi* C.K.Schneid. (*S. josikaea* × *S. villosa* subsp. villosa)
- *S.* ×*josiflexa* I.Preston ex J.S.Pringle (*S. josikaea* × *S. komarowii* subsp. reflexa)
- *S.* ×*nanceiana* McKelvey (*S.* ×*henryi* × *S. tomentella* subsp. sweginzowii)
- *S.* ×*prestoniae* McKelvey (S. komarowii subsp. reflexa × S. villosa subsp. villosa)
- *S.* ×*swegiflexa* Hesse ex J.S.Pringle (*S. komarowii* subsp. reflexa × *S. tomentella* subsp. sweginzowii)

[1]Not known to be in cultivation outside China. Plants cultivated under these names or synonyms in Europe and North America have been misidentified (see Pringle, 197901980, 1990; Vrugtman 2009).

Table 2: 2019 List of Number of Species and Nothospecies by

Series	# Natural Species	# Nothospecies
Syringa	5	5
Ligustrae	12	0
Ligustrina	2	0
Pubescentes	2	0
Villosae	6	5
Totals	27	10

Lilacs (and Other Shrubs) at Spring Meadow Nursery

by Mark L. DeBard, MD

My wife and I spent a day in late July 2019 at the wholesale Spring Meadow Nursery in Grand Haven, Michigan with their new product and marketing manager Tim Wood and head breeder Megan Mathey.

We started by staying the night before at their cottage guest house, located on the property of the owner, Dale Deppe. Not only does it have a great view out the back of the Grand River, its extensive grounds are testing and display gardens for the business and the site of many gorgeous photographs for its magazines and catalogs. I loved the bordering evergreens, especially *Cryptomeria japonica* 'Yoshino', or Japanese cedar, with its interesting wispy, fluffy, needle-like leaves, that does well in shade and poor soil. I was also impressed with a variegated Rose of Sharon hibiscus. But it was the rows of wildly differing hydrangeas that created the biggest wow effect, and which are a major focus of the nursery.

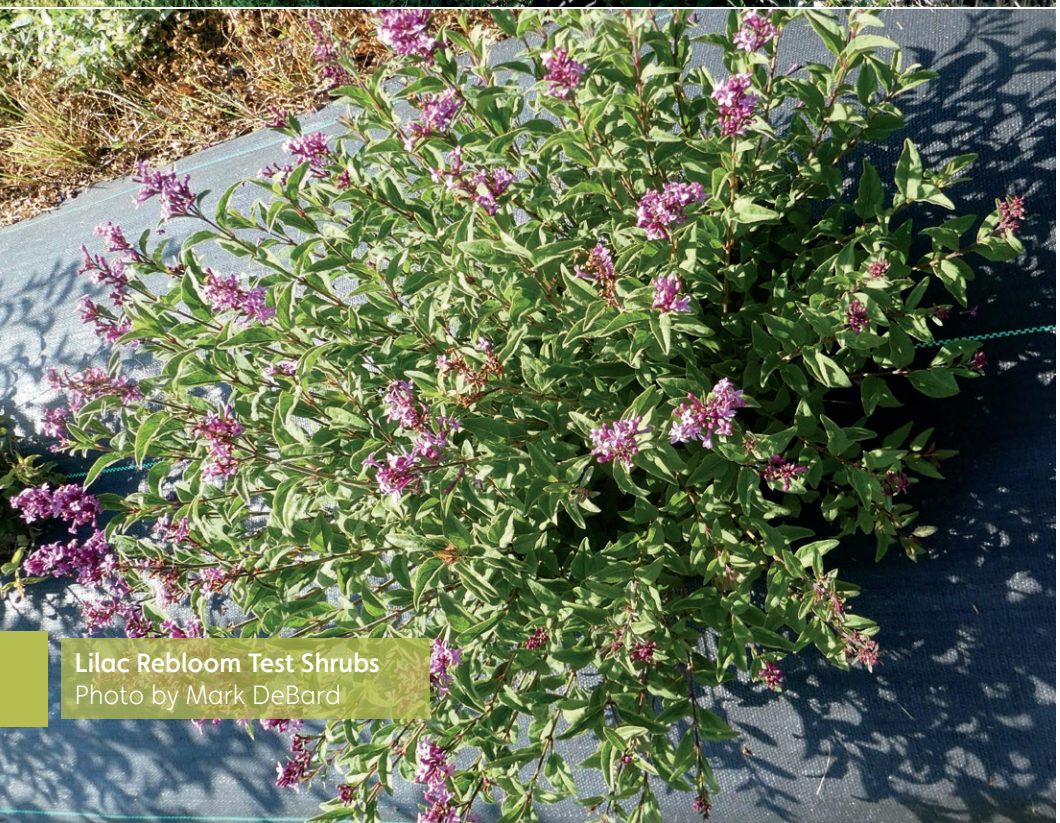
The next morning, we toured with Tim. He spent an hour talking with us about their business and its history and philosophy. Basically, in the 1980's the founder had a big vision of working with more than the giant retail nurseries by searching out the best and newest and most unusual cultivars around the world and partnering with them to develop plants suitable for the American garden. Tim came on board in the early 1990's. They decided to concentrate on woody ornamental shrubs, and to seek more vigorous and generally more compact, bush-like varieties.

I asked why they've gone to an alphanumeric code-naming system for their cultivars with trademarked and registered names. (The prevailing theory was that it was to suppress competition with unmemorable cultivar names in 20 years when the patent expired, forcing people to refer to and buy their trademarked name). But Tim said that's not it at all. It turns out that defending patents is much

Linda & Mark at SMN Guest House
Photo by Mark DeBard

SMN Cottage House Grounds
Photo by Mark DeBard

Lilac Test Rows
Photo by Mark DeBard



Lilac Rebloom Test Shrubs
Photo by Mark DeBard

more difficult than trademarks; that patents expire but trademarks basically don't, and that it's easy to steal patented plants with trouble enforcing patents, but very difficult to steal trademarked plants to sell as trademark law is much stronger. And, he pointed out, very few trademarked plants will be viable after 20 years anyway, having been supplanted by better plants.

In addition, they have partnered with the Proven Winners® trade group, which had previously concentrated on annuals and then perennials, and became their exclusively contracted group for ornamental shrubs. He pointed out that it's not enough to have a great plant, to sell well you must have great marketing, so people get to know the plant.

They work on about 70 different genera. Among them is *Syringa*. While they originally propagated some *Syringa* cultivars, they decided rooting them was too difficult and their shape and size were out of control, having been bred solely for their flowers. So, they started with the Pubescentes Series which naturally tend to be more compact and bush-like, and bred for remontancy, resulting in the Bloomerang® series. This development is still ongoing, with many potential new cultivars being tested in their trial fields that I saw.

In addition, they decided to concentrate on the × *hyacinthiflora* nothospecies due to the influence of their *S. oblata* subsp. *dilatata* heritage, which gives them a fuller, bush-like look and shape. Early releases of these resulted in the Scentara® series, with more coming. They like working with the F1 hybrids, especially Skinner cultivars, which have much more of the *oblata* influence than F2 crosses.

Finally, they've started developing some Villosae Series hybrids, which are not ready for market yet, including radiation and chemically treated ones to induce mutations and possible polyploidy.

We drove through vast acres of trial plants. They are planted in 5 shrub groups in long raised weed-barrier rows with extensive irrigation. All are tagged with orange name posts, with flowering

weeks marked every week. Those felt to offer special possibilities get a large white pole marking, and these are then sent for propagation and further testing. The other 95% are discarded. I learned that the remontant lilacs require fertilizer and irrigation to show their best reblooming.

Those undergoing testing end up in giant warehouses with overhead watering. They are laid out in vertical rows of about 3-5 of each kind and are subjected to various treatments to determine best of breed. For instance, some hydrangeas are cut back 1, 2, or even 3 times to mimic a late spring frost and allowed to regenerate to see how plentiful the resulting flowering will be. Scattered among them are trademarked varieties from competing nurseries so they can evaluate the competition against their own.

After this we met their head breeder, Megan Mathey, who develops via hybridization all these select plants that then go out to the trial fields. She showed us her beautiful tissue culture lab where they do a lot of their reproductive and international work. She then took us through the 40 acres of greenhouses, concentrating on their propagation greenhouses, where we saw workers feeding small cuttings to large robot machines that stick them in rapid fashion into potting trays. They are then sent to either misting or fog greenhouses for rooting. Finally, a machine separates the rooted cuttings by their vigorousness, and they are potted up in various sizes for the liner market.

I got lots of tips on cuttings propagation.

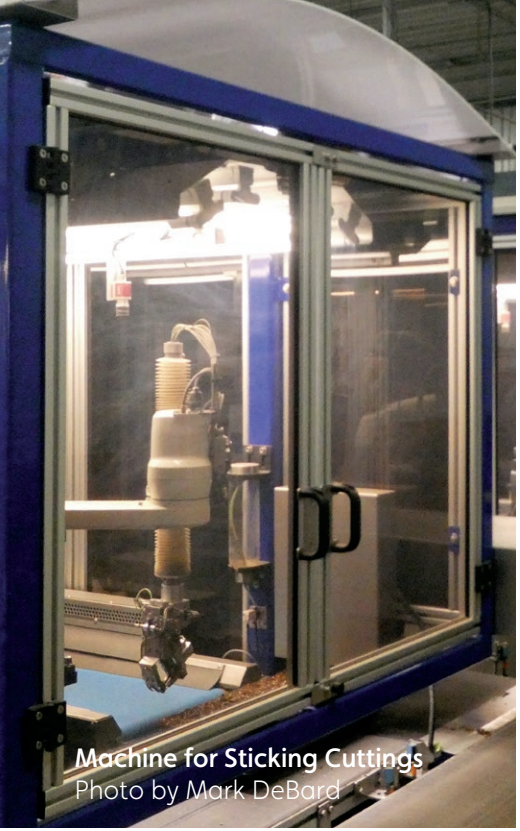
Their propagation manager was around when they used to propagate *S. vulgaris* types and admitted to how difficult they were to propagate, unlike the Pubescentes and Villosae Series. She mentioned they were extremely susceptible to *pseudomonas* which added to their challenge.

For cuttings, tips work best for them followed by at least two sets of leaves. It is not impossible to root the second cutting below the tip, but the tips are what they prefer. They make the cut right above the

Rooted Cuttings Storage Greenhouse
Photo by Mark DeBard


Megan Mathey in Culture Lab
Photo by Mark DeBard

Rooted Cuttings and Plugs Sorter
Photo by Mark DeBard



Machine for Sticking Cuttings
Photo by Mark DeBard

Lilac Rebloom Late July
Photo by Mark DeBard

Lilac Rebloom Late July
Photo by Mark DeBard

third node below the tip, just a regular horizontal cut. She said they do not trim the leaves or cut the top off. It appeared to me that they leave about 3-4 leaf pairs on their 4-inch small-leaf cuttings.

Rooting media is not sterilized. It is made of peat, aged pine bark, slow release fertilizer and lime.

As for mist, it is used as little as possible; *Syringa* species are cuttings that she would place in the fog houses, as they love the high humidity and reduced mist and water on their leaves. Megan would recommend doming and shade outside a fogging greenhouse. When she roots tissue culture plants out, she domes with clear plastic. For the first two weeks, she covers with a sheet of white poly, and slowly works to remove it based on weather and sun in the greenhouse.

For rooting hormones, in the spring the softer greener cuttings get 500 ppm (0.05%) IBA liquid dip. If they need to take a later season cutting the IBA gets upped to about 1000 ppm (0.1%) IBA.

They are now running the Bloomerang® types through the potting machine (which sticks cuttings without holes dug and without rooting hormone applied) and these get a foliar application of 800ppm (0.08%) IBA, as it is more efficient and allows the machines to be used. They prefer green spring cuttings, but can do more mature, firmer ones in which case they increase the IBA concentration.

Besides giving up his valuable time to show us around, Tim surprised us with large pots of the cultivars that we exclaimed the most about during our tours. I ended up with the newer lilacs Bloomerang® Dwarf Pink and Dwarf Purple, and the variegated double pink Rose of Sharon Sugartip®, and my wife ended up with roses At Last® (very fragrant, apricot-colored), and multi-colored Ringo®, as well as Buddleia butterfly bush Pugster® Purple. It was a very generous ending to this delightful inside look at one of the great wholesale nurseries in this country.

Syringa Nothospecies (hybrids): Valid and Invalid Names

by Mark L. DeBard, MD

With the new taxonomy of species in the genus Syringa, it is important to update the nomenclature of the genus' hybrid nothospecies, including 10 names that have been validly published and are acceptable to use today, and 14 common names that have not been validly published or are subsumed in a valid name and are not acceptable to use today but are often encountered in older literature. Here is an alphabetical summary of these names. More complete information can be found in Appendix F, Section III, of the International Register and Checklist of Cultivar Names in the Genus Syringa on the ILS website.

VALID NAMES

Series Syringa

× *chinensis* Schmidt ex Willd. (pro sp.)
{*S. protolaciniata* × *S. vulgaris*}
× *diversifolia* Rehder
{*S. oblata* × *S. pinnatifolia*}
× *hyacinthiflora* (Lemoine) Rehder
{*S. oblata* × *S. vulgaris*}
× *laciniata* Mill. (pro sp.)
{*S. protolaciniata* × *S. ?*}
× *persica* L.
{unknown parentage}

Series Villosae

× *henryi* Schneider
{*S. josikaea* × *S. villosa* subsp. *villosa*}
× *josiflexa* Preston ex. Pringle
{*S. josikaea* × *S. komarowii* subsp. *reflexa*}
× *nanceiana* McKelvey
{*S.* ×*henryi* × *S. sweginzowii*}
× *prestoniae* McKelvey
{*S. komarowii* subsp. *reflexa* × *S. villosa* subsp. *villosa*}
× swegiflexa Hort. Hesse ex J.S.Pringle.
{*S. komarowii* subsp. *reflexa* × *S. tomentella* susp. *sweginzowii*}

INVALID NAMES

× *clarkiana* J.L.Fiala
{*S. komarowii* subsp. *komarowii* × *S. komarowii* subsp. *wolfii*}
× *fialiana* R.B.Clark
{(*S. tomentella* subsp. *sweginzowii* × *S. tomentella* subsp. *tomentella*) × *S. wolfii*}
× *heterophylla* Skinner
{(*S. oblata* subsp. *dilatata* × *S. vulgaris*) × *S. pinnatifolia*}
× *hybrida* W.R.Prince - included in *S.* ×*chinensis*
× *lamartina* Moldenke - included in *S.* × *hyacinthiflora* (Lemoine) Rehder
{*S. oblata* subsp. *oblata* × *S. vulgaris*}
× *lemoineiana* (Lemoine) J.L.Fiala
{*S. tomentella* subsp. *sweginzowii* × *S. tomentella* subsp. *tomentella*}
× *persica* var. *laciniata* (Mill.) Weston - see *S.* ×*laciniata* Mill. (pro sp.).
× *pringleiana* J.L.Fiala
{*S. komarowii* subsp. *reflexa* × *S. tomentella* subsp. *yunnanensis*}
× *quatrobrida* J.L.Fiala
{(*S. tomentella* subsp. *sweginzowii* × *S. tomentella* subsp. *tomentella*) × (*S. komarowii* × *S.wolfii*)}
× *sinensis* Hort. - see S. ×chinensis Schmidt ex Willd.
× *sweginbretta* Hort.
{*S. tomentella* subsp. *sweginzowii* × *S. villosa* subsp. *villosa*}
× *swegitella* J.L.Fiala (see also *S.* × *lemoineiana*)
{*S. tomentella* susp. *sweginzowii* × *S. tomentella* subsp. *tomentella*}
× *tribrida* J.L.Fiala
{(*S. tomentella* subsp. *sweginzowii* × *S. tomentella* subsp. *tomentella*) × *S. komarowii* subsp. komarowii}
× *varina* Dum.Cours. - included in *S.* ×*chinensis*

Burn Family Lilac Collection at the New York Botanical Garden

written by Louise Edeiken. Reprinted from the Research Guides of the New York Botanical Garden https://libguides.nybg.org/lilaccollection

Spring has arrived when the air is permeated with intoxicating lilac fragrance. Poets and authors often include lilacs in garden descriptions and use the metaphor of lilacs to describe love. However, not even the likes of T.S. Elliot, Walt Whitman, nor Victor Hugo can truly describe the beauty of this garden favorite with words alone.

A visit to the Burn Family Lilac Collection, containing 500 lilacs, satisfies any desire to experience these fragrant plants, so beloved by authors and artists. Being surrounded by these beauties is an olfactory extravaganza that one is never likely to forget. During peak bloom time, from April to June, every lilac color, shape, size, leaf variation and fragrance is on display. This collection was especially designed to showcase the varieties of lilacs, as well as ones that flower at different times throughout the spring season.

Lilacs, mostly shrubs with some tree forms, are in the olive family (Oleaceae) and are originally native to parts of Europe and Asia. There are at least 20 species and hundreds of cultivars of lilacs all in the genus *Syringa*. Lilacs need at least 6 hours of sun to thrive. Flowers bloom on the previous year's growth and flower buds for the upcoming year develop in the fall before the shrub becomes dormant. Therefore, lilacs should be pruned right after they flower in late spring to allow for this bud growth. Pollinators, such as hummingbirds and butterflies, show up early in the garden season because they are attracted to lilac flowers.

Hybridizers of lilacs, like Victor Lemoine who revolutionized the field by utilizing a scientific approach in the 1870's, intentionally cross-pollinate shrubs, trying to improve fragrance, flower shape, bloom time, fall foliage, climate tolerance and disease resistance. Original lilac colors were white and purple only, but now it is hard to name the hundreds of color variations of purple, pink, white, blue and even yellow. Two ground breaking, colored cultivars are *S. vulgaris* 'Sensation', which has purple flowers with white edges, and *S. vulgaris* 'Primrose', which has creamy, yellow flowers. Some lilac buds have different colors than their opened flowers, such as *S. vulgaris* 'Beauty of Moscow' (or 'Krasavitsa Moskvy'), with pink, pearl-like buds that open to white flowers. Fragrance ranges from sweet (*S. vulgaris* from southeastern Europe) to spicy and clove-like (*S. pubescens* native to Korea). Color and fragrance can even vary within one plant type depending upon the weather and soil pH. Sizes range from dwarf to as large as trees. A visitor to the NYBG lilac collection will quickly see that not all lilacs look like the common lilac (*S. vulgaris*), which has heart shaped leaves and large flowers. (For more information on lilacs and a list of selections for the garden, access our guide "Trouble-free Lilacs" by going to: https://libguides.nybg.org/troublefreelilacs)

Lilacs at the NYBG
Photo courtesy of NYBG

History

Lilac specimens have been a part of NYBG's history since its inception in the 1800's. A collection of hybrid lilacs created and donated by Theodore A. Havemeyer was showcased near the conservatory in 1912 in concentric arcs. Havemeyer, president of the Horticultural Society of New York and Chairman of the International Flower Show, brought some Victor Lemoine lilac cultivars to New York from France in 1910. He began improving on those lilacs and created 45 new cultivars in his lifetime, including one of the finest double purples *S. vulgaris* 'Katherine Havemeyer', the very dark purple *S. vulgaris* 'Mrs. W. E. Marshall', the upright shaped and deep purple flowered S. vulgaris 'Sarah Sands', and a large, magenta flowered *S. vulgaris* 'Glory'. He continued to contribute cultivars to NYBG until his death in 1936. Many of Havemeyer's cultivars were named posthumously by his friend Mark Eaton, creator of a now defunct lilac specialty nursery called Lilacland. Eaton's importance in making Havemeyer's best lilacs available to the public, and therefore preserving and promoting them, was recognized by the International Lilac Society with their Award of Merit in 1972.

Lilacs at the NYBG
Photo courtesy of NYBG

The collection moved in 1920 to a place near Pelham Parkway that was perhaps a bit remote for visitors to enjoy easy access. It was Marian Cruger Coffin who proposed that the collection be moved to its current site at NYBG. Coffin, one of America's first women landscape architects and designer of NYBG's Beneson Conifer Collection, was asked to redesign the rose garden in 1947. In almost perfect timing, the Havemeyer Long Island estate, Cedar Hill, was sold and offered NYBG the chance to purchase 250 lilacs for one dollar each. Coffin's lilac garden design accentuated the lilac specimen form and color by framing them within the lawn and creating pathways that drew visitors to wander and appreciate the collection. 1n 1951, the lilac garden opened and was fittingly dedicated to Theodore A. Havemeyer.

Lilacs from other sources, such as the Rochester Park System and hybridizers John Dunbar, Alvan R. Grant and Richard A. Fenicchia, continued to be added. Unfortunately, the lilac collection gradually succumbed to many problems, including ones caused by heat, humidity and soil conditions, and the installation of irrigation in the area, leaving only 90 varieties by 2015.

A much needed renovation of the lilac collection was completed in 2016 to coincide with NYBG's 125th Anniversay thanks to a generous gift from the Burns family. Landscape architect Shauvan Towers added paths based on Coffin's original design. Also created was an outlook surrounded by masses of lilacs with breathtaking views of the Peggy Rockefeller Rose Garden and the Judy and Michael Steinhart Maple Collection. Deanna Curtis, NYBG's Curator of Woody Plants, preserved the remaining plants and enlarged the collection by adding 400 disease-resistant and heat-tolerant lilacs that thrive in the New York climate.

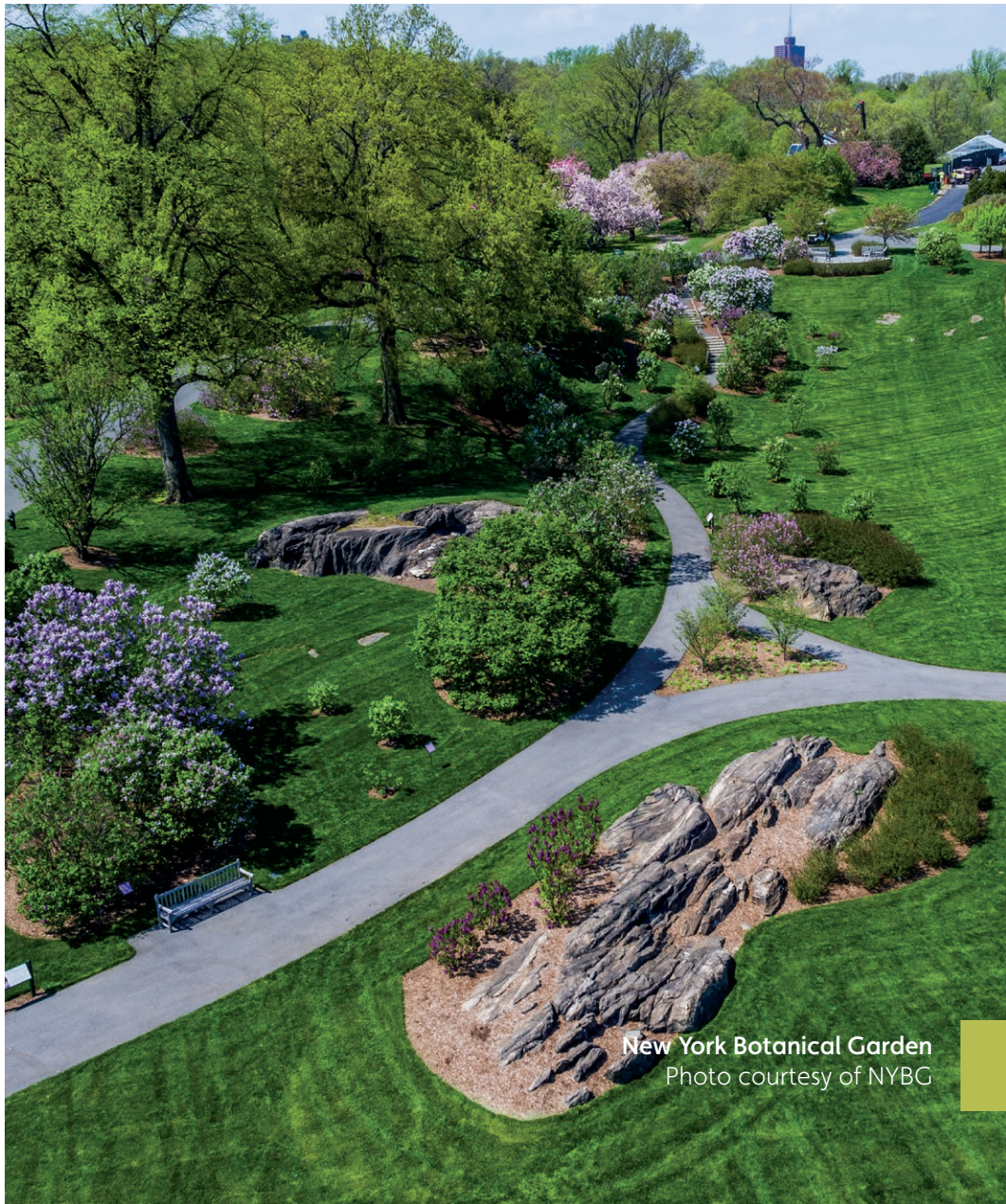
Current Garden

The Burns Family Lilac Collection of five hundred lilacs includes two hundred varieties arranged on either side of the main NYBG road. Non-cultivar specimens include the majestic Japanese tree lilac (*S. reticulata)* with its beautiful metallic toned bark, the dwarf

Meyer lilac (*S. meyeri*), the graceful cutleaf lilac (*S. x laciniata*) and the Hungarian lilac (*S. josikaea*) with its arching branches. Lilac cultivars include S. vulgaris 'President Lincoln', hot pink *S. vulgaris* 'Bailbelle' (Tinkerbelle™), cinnamon scented *S. x hyacinthiflora* 'Maiden's Blush' and the Jimi Hendrix tribute *S. vulgaris* 'Purple Haze' with pale lavendar flowers. Wine-red blooming *S. vulgaris* 'Congo' and wonderfully fragrant *S. x chinensis* 'Lilac Sunday' are large shrubs that can reach 12 feet and are useful as hedges. Pink *S. vulgaris* 'Prairie Petite' and *S. vulgaris* 'Elsdancer' (Tiny Dancer™)., dwarfs considered compact and not leggy, slowly grow to a diminutive four feet which is ideal for smaller gardens. Lilacs known for their fall foliage colors included in the collection are the ideal, abundant bloomer *S. oblata* subsp. dilatata 'Cheyenne', long blooming with rich violet flowers fading into a deep lilac color, the deep maroon flowered *S. x hyacinthiflora* 'Pocahontas', and dainty but robust dwarf Korean lilac *S. meyeri* 'Palibin'.

In mid-April, the first lilacs to flower are the hyacinthiflora lilacs, such as the white *S. x hyacinthiflora* 'Mount Baker' hybridized by Frank Skinner in Canada. Next to bloom are the popular and intensely fragrant French hybrids, including heirloom, double magenta *S. vulgaris* 'Monge'. Late blooming varieties include the tree lilacs and the strongly scented, light purple *S. pubescens* subsp. patula 'Miss Kim'. There are even repeat bloomers, S. 'Penda' (Bloomerang Purple®) profuse pink-flowered *S.* 'Colby's Wishing Star' and lavender-pink *S.* 'Morjos 060F' (JOSÉE) that display their fragrant flowers in spring and bloom again from mid-summer into the frost.

Excellent signage throughout the collection gives detailed information on a wide range of lilac topics. "Color and Fragrance" enlightens us on many facts, including that it is difficult to manufacture the lilac scent. "Flower Form" describes the details of the inflorescence (cluster of flowers) of the lilac. "Advice for the Home Gardener" could help to determine where to plant your next lilac shrub. "A World of Lilacs" further details the differences between the common and the Asian lilac. In "New York Lilacs" one learns the special relationship between New York and lilacs. Innovative hybridizers are highlighted including New York lilac expert and writer Father John L. Fiala. Introductions of certain cultivars, such as the U.S. Flag series of one white, one red and one blue flowered shrub is provided on many signs. Lilacs have been scientifically studied since 1965 as a climate change indicator as explained on "Lilacs and Climate Study".



New York Botanical Garden
Photo courtesy of NYBG

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