Lilacs!

An American Heritage

International Lilac Society, Inc.

Fifth Annual Convention

ROCHESTER, NEW YORK

May 21, 22 and 23, 1976

Lilacs!

INTERNATIONAL LILAC SOCIETY, INC.

Vol. 5, No. 2

CONVENTION PROCEEDINGS 1976

The "PROCEEDINGS" of the International Lilac Society are an annual publications of LILACS the official Convention Papers and Proceedings of Society's Annual Convention.

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Additional copies $5

Membership $5 annual
$100 Lifetime

Pictures:

Page 12: **Upper Left:** Ruth Sipp, Al Lumley & Richard Fenicchia at Smith Rd. Nurse
Upper Right: Lois Utley to Mrs. Margarretten and unidentified members of I F2 Hybrids.
Middle Left: Dick Fenicchia displays his outstanding F2 Rochester Hybrids.
Middle Right: Ohio Chapter Clare Short, Elyria, O., Pauline Fiala, Spencer, Mr. and Mrs. M. Martin, Holden Arboretum, Kirtland, and Marie Chaykows Mantua, O. (Dr. Don Egolf, National Arboretum in right corner.)
Lower Left: Mitch Katnik, Lilacia Park, Chicago, Elmhurst.
Lower Right: Nancy Emerson, Marie Chaykowski and unidentified members I.L.S.

Page 13: **Upper Left:** Rochester Park Personnel
Upper Right: Mitch Katnik and Bill Heard (Iowa)
Center Left: Dr. Don Egolf (National Arboretum) discusses hybridizing w Dick Fenicchia at Smith Road Nursery.
Center Right: Isabel Zucker (Bloomfield Hills, Mich.) and Mrs. Charles Holeti Hamilton, Ontario) exchange views on lilacs.
Lower Left: Dr. R. Pike, Fr. Fiala and Dr. O. Rogers engaged in genetic discu ions at Smith Road Nursery.
Lower Right: Elsie Kara (Columbia Hills, Ohio) and Nancy Emerson (Del New York) Oooohl over the seedling lilacs at Smith Road Nursery.

PRESIDENT OF I.L.S., WALTER E. EICKHORST, THE MORTON ARBORETUM

History of Lilacs in America

By Audrey H. O'Connor

It was that incomparable naturalist and keen observer of plants, May Theilgaard Watts, who traced the story of the lilac shrub on the south corner of the farmstead through several generations of homeowners. The chapter in Mrs. Watts' Reading the Landscape points up the endurance of the common lilac.

There it is, on the foundation corner by the old home; we have forgotten who planted it and when. Probably it was when the house was built; by now, when in leaf, the lilac darkens the upstairs bedroom window. It is leggy too and scrawny at the base, but sentiment can be strong about the old lilac. The stout fastigiate trunks have character. We'll leave it another year; maybe a little judicious pruning would help.

In the Northeast we've always had this sentiment about the lilac and have felt a little pride that a non-native does so well for us. In fact, except for the species *S. emodi*, all the lilacs thrive with us better than they do in another adopted home in Great Britain.

Certainly the dooryard lilac made a permanent place for itself when the poets of the "Flowering of New England" extolled its merits. Alice Morse Earle speaks of the lilac color as "typical of New England; some parts of celestial blue, with more of warm pink, blended and softened by that shading of sombre gray ever present in New England life... what Thoreau called a 'tender, civil, cheerful color.' Its blossoming at the time of Election Day, that all-important New England holiday, gave it another New England significance."

But Alice Morse Earle, our good chronicler of Colonial times, professes ignorance of "When it journeyed to the new world." On that point -- of the first lilacs planted here -- one claim is for those plants brought from Europe to Portsmouth, New Hampshire by Governor Benning Wentworth, probably in 1750.

Another report is the planting of lilacs at Hopkinton, Mass. by Sir Henry Frankland in 1751. Certain it is, however, that the master gardener, Thomas Jefferson made an entry in his own hand on April 1, 1767 in his "Garden Book":

"planted Lilac, Spanish broom, Umbrella, Laurel. Almonds, Muscle plumbs, Cayenne pepper. 12. cuttings of Goosberries." This is Mrs. McKelvey's determination of the first authentic record of the colonial planting of *Syringa vulgaris*, in her definitive monograph of 1928. This was the second year of entries made by Jefferson in his "Garden Book," made while he was living at his boyhood home in Shadwell.

Another well-known agriculturist, George Washington, in his Mount Vernon diaries on March 3, 1785, wrote;

"likewise took up a clump of Lilacs that stood at the corner of the south grass plat and transplanted them to the clusters in the shrubberies and standards at the south garden gate." Later that same month, Washington "transplanted... 9 live oak, 11 yew or hemlock, 2 Lilacs, 3 Fringe." The following year, in February, his notation was: "the buds of the lylack were much swelled and seemed ready to unfold."

After Thomas Jefferson moved to Monticello in 1770, he included both *Syringa vulgaris* and *S. persica* in his planting plans for the tree-shrub semi-oval planting in front of the house, where they could be viewed from "Setting stones" He was undoubtedly advised on plant selection by Bernard McMahon, author of "The American Gardeners' Calendar" and was influenced by the new naturalistic gardening as expounded by Thomas Whately and as observed by Jefferson on a tour of English gardens in 1784. In 1807, he left a memorandum for his overseer, Mr. Edmund Bacon, to "Plant weeping willows in the semi-circle in northeast front, one half way between two shrubs", which would have included the Persian lilac. This species would extend the period of bloom from April 1 to April 28.

Even earlier, in 1737, we note that Peter Collinson was sending lilacs to the famous plant-trader, John Bartram, and remarked: "Colonel Custis at Williamsburg... has undoubtedly the best collection in that country."

Thus you may pick your own date for introduction of *Syringa vulgaris* into Colonial America, but, by 1893 Henry Thoreau was writing:

"Still grows the vivacious lilac a generation after the door and lintel and the sill are gone, unfolding its sweet scented flowers each spring to be plucked by the musing traveler."

John Wister tells us that William R. Prince listed "Lilacs" in his catalog of 1823, and that *Syringa persica* (cut-leaf form) was cultivated in New York as early as 1801. By 1835 Prince was listing eleven lilacs: White lilac, Ditto extra large, Great white flowered, Blue or purple, Red, Charles the Tenth *superb new*, Purple Persian, White Persian, Persian cut leaved, Large Chinese or Siberian, and Large flowering hybrid.

From the early 1870's until about 1950, Victor Lemoine and son Emile were introducing the Lemoine Hybrid cultivars. Mrs. Frances King in 1923 expressed her pleasure:

"The association of the lilac for Americans is the immemorial one of the old gardens of New England and the latter's age of innocence. But since the war there is a new and glorious association which let none of us forget: I mean the moving courage of that great Victor Lemoine of Nancy to whom we owe the new beauties of this lovely plant...' Mrs King mentions collections at Highland Park, Arnold Arboretum, Mr. Havemyer's collection on Long Island, and the gift of plants to Montclair, New Jersey from Frank T. Presby.

In the first decade of the 20th century, E.H. Wilson was collecting the Chinese species, either for Messrs. Veitch or for the Arnold Arboretum. The hardy *S. S. julianae, reflexa, swezingowii, tomentella, velutina, wolfi* were added to the choices for lilac enthusiasts.

In 1925 Miss Isabella Preston, then horticulturist at the Central Experimental Station at Ottawa made the cross *S. villosa x S. Reflexa*, which resulted in the Preston Lilacs, many hybrid late-flowering clones being so derived. Dr. F. L. Skinner of Dropmore, Manitoba also did valuable breeding with the later blooming species. Of course, the lilac has also been a favorite shrub in Canada, since it withstands that climate so well.

Professor Sargent long ago told of having seen "some of the largest and handsomest Lilacs on this continent growing on the island of Mackinaw in Lake Superior". Ask Bernard Harkness about this planting.

For a genus which got confused with the 'pipes' of *Philadelphus*, the lilac has done very well in our country. In addition to its variety in size and form, its adaptability to sites, its beauty of foliage -- the fragrance of the lilac flower is one of the most memoristic of all perfumes associated with flowers.

"THE LILACS AT HIGHLAND PARK, ROCHESTER, NEW YORK"

Originally published 1912
By Alvan Grant

"As many persons are now interested in the lilacs, a brief history of the plant is of interest. The scientific name of the lilac is syringa, and in naming any particular species a second name is placed to the right of the word to distinguish what particular syringa is meant. The genus syringa is composed of about a dozen species of shrubs or shrub-like trees distributed from Southwestern Europe to Central Asia and the Himalayas, to Mongolia, Northern China and Japan.

The common lilac, syrings vulgaris is a native of the mountainous regions of Central Europe, from Peidmont to Hungary. The many varieties of cultivated lilacs are hybrids of syringa vulgaris and of the species from North China, syringa oblata. V. Lemoine of Nancy, France in Garden and Forest of the year 1889, described the methods by which he obtained many of the popular varieties of lilacs, by hybridizing a variety of the common lilac with syringa oblata.

Plants from Wild Lilac

Seed from the wild lilac, Syringa vulgaris were collected for Dr. Charles S. Sargent on the banks of the Danube several years ago, and plants were raised from them in the Arnold Arboretum at Boston. Seedlings from these plants have been received by the Rochester Park Commission from Dr. Sargent, Director of the Arnold Arboretum, and are now in the lilac collection at Highland Park and may be found on the north side of the grass walk near syringa pubescens. They are labeled.

The earliest to flower in the collection at Highland Park is the North China Lilac, syringa oblata with large pale purple fragrant flowers. The broad thick leaves of this shrub, unlike those of other lilacs, turn to deep bronze red in autumn.

Nearly as early to flower is syringa hyacinthiflora, a hybrid between syringa oblata and the common lilac. This hybrid grows to a large size and the small double flowers are very fragrant. It is interesting as one of the early hybrids of the genus. More beautiful and in every way a more useful garden plant is another hybrid, syringa chinensis, raised many years ago in France. The name is unfortunate for its parents are Syringa vulgaris, now known to be a native of the Balkan Peninsula, and Persian Lilac. The flowers of this hybrid are produced in long clusters, which are so heavy that they become semi-pendant on the slender branches. There are varieties with rose-colored and pale nearly white flowers.

Species of Delicate Perfume

Another chinese species is syringa pubescens. This has small leaves and small, long-tubed pale purple flowers which are produced profusely in small clusters. The value of this plant is the delicate perfume of its flowers. In Highland Park this species may be found just south of the grass walk a few feet west of the syringa oblata and almost fifty feet west of the beautiful variety, Aline (Macquery) Mocqueris.

Syringa villosa is an inhabitant of Northern China and is a large shapely shrub with good foliage and pale pink or nearly white flowers in large, compact, erect clusters which are produced in great profusion. The odor of the flowers is disagreeable.

The Hungarian Lilac, syringa Josikaea, a large flowering species is a tall shrub with loose unattractive habit, small leaves and long slender, open clusters of small purple flowers and is perhaps the least attractive of all the lilacs. The crossing, however, of these two species, have given rise to a race of lilacs which prolongs the season of flowering of the two lilacs for nearly two weeks. The new race is

Syringa Henryi, in honor of Monsieur L. Henry, at one time gardener at Jarden des Plantes in Paris, who made these hybrids.

The best known of these is Lutece, so-called because it originated in Paris. This is a compact, fast growing large shrub with foliage resembling that of syringa villosa, and large clusters of rose-colored purple flowers, and is one of the handsome and desirable shrubs of recent introduction. Lilac lutece is near the Persian Walnut tree and is not far from the boulder at Rhododendron Walk.

There is a group of lilacs that blooms even later than this hybrid. They are not true lilacs, however, but belong to the section Ligustrina of the genus which differs from the true lilac in the short tube of the corolla from which the stamens protrude. There are three species of this group, all natives of Northeastern Asia. They are shrubs or sometimes trees, and they all produce white, bad smelling flowers in large clusters.

The first to flower, syringa Amurensis is a native to Eastern Siberia, as its name indicates. It is a small tree, with flat, spreading or slightly drooping clusters of white flowers. The second species to flower is Syringa pekinesis, a native of Northern China, and is a shrub rather than a tree, although it sometimes reaches a height of thirty feet, with numerous stout stems more or less pendant at the ends and covered with bark peeling off in thin layers like that of some birch trees. The long narrow leaves hang gracefully, and the half-drooping flower-clusters, which are flat and unsymetrical, are smaller than those of the other species, but are produced in great quantities.

Syringa japonica, a native of the forests of Northern Japan, is the last of the tree lilacs to flower and is really a tree often thirty or forty feet high, with a tall stout trunk, covered with lustrous bark like that of a cherry tree, and a round-topped head. The leaves are large, thick and dark green, and the flowers are produced in large, erect symetrical clusters. Like the other species of this group, syringa japonica loses its leaves early in the autumn without change of color.

Syringa amurensis and syringa pekinensis have not become common in gardens, but syringa japonica has been quite generally planted in those of the Eastern states. It is of interest that this remarkable tree was first sent to America and thence to Europe by a citizen of Massachusetts, the late Wm. S. Clark, the first president of the Mass. Agricultural College and later the president of the Agricultural College at Sapporo, Japan.

In December 1876, a small collection of seeds, gathered in the neighborhood of Sapporo, were received at the Arnold Arboretum from Colonel Clark and among them were seeds of this lilac. The seedlings raised from this seed and their descendants are the native plants now cultivated in the United States and Europe.

The best early-flowering lilacs are nearly all varieties of the common lilac, Syringa vulgaris. There are two species from China that flower about one week ahead of the syringa vulgaris forms, namely syringa oblata and syringa giraldi. Syringa giraldi is not the correct name, as it has lately been discovered that the plant under that name is an unnamed species from China. Syringa giraldi is in good flower near the large boulder in the Rhododendron Walk.

The Rouen Lilac, syringa chinensis in its lilac, reddish and white form should be in all collections. The list of forty-one species and varieties of lilacs alone represent a selection from a collection of two hundred and fifty species and varieties. The collection contains 14 distinct species, the balance of 236 numbers being varieties of vulgaris for the most part, with a few of chinensis, josikaea, Persica and villosa, -- in all 250 named plants."

A PATRON FOR THE I.L.S.?

By Bernard Harkness

The life of Ogier (Augier) Ghislain de Busbecq, Flemish diplomat, which spans seventy years from 1522 to 1592, is condensed into one paragraph in the Encyclopedia Brittanica of the American edition of 1946. If we are to accept de Busbecq as the patron of this Society we should not do this without knowing something more of a remarkable man who lived an adventurous life.

In his paternal line de Busbecq was descended from the Ghiselin (the spelling varies) family, who were descended from invaders from northern Europe who settled along the navigable river Lys and built castles and forts. Names of the communities under their protection became attached to the ruling family, hence Ogier Ghiselin was known as de Busbecq. Ogier's grandfather, Gilles Ghiselin II, was one of the group of young nobles gathered into a court for their education and advancement in the miltary arts by the Duke of Burgundy, Charles the Bold. He prospered in his service to the Duke, but with the Duke's death in 1477 his military service ended and he returned to the seigneury and the life of a country gentleman. Ogier's father, George Ghiselin II preferred home duties and pleasures to a public career.

De Busbecq was an illegitimate child born of a servant, Catherine Hespiel His father, however, received him immediately into the family and except for inheritance of lands and title, he suffered no loss of opportunity for education and advancement. In 1540, by Royal Patent of Legitimation, Charles V admitted him into the noble family of Busbecq.

Charles V, Roman Emperor and King of Spain, was born in 1500 of Philip of Burgundy and Joanna, who was the third child of Ferdinand and Isabella—well known to us as the sponsors of Christopher Columbus. Charles V was crowned emperor in 1520; two years earlier he was made co-ruler of Spain with his mother through her inheritance. His reign was difficult because of the complex character and disparate territories and races under his rule. Flanders, which is now divided between Belgium and France, at that time had only the rudiments of government as most of the power was retained by the Seigneurs.

The authors of the two-volume life of de Busbecq, whom I will name later, produce strong evidence that he was an early protegee of the Seigneur of Comines, George Halluin, who was, in turn a student and life-long friend of Erasmus. These biographers believe that it was George Halluin's influence that directed de Busbecq's inquiring mind to the literature of the early Latin Scholars, to the record of Roman coins easily dug up locally and to the great field of Nature: plants with rare virtue for healing sicknesses, fruits that are good for food, flowers with sweet scents and various hues.

At the age of thirteen de Busbecq became a student at Louvain in the celebrated University of Brabant, where Erasmus once taught. After five years there he made the rounds of the Universities of Europe, Paris, Bologna and Padua, as was the custom for young scholars of the period. Then he returned home to spend some time in various researches, which nearby libraries afforded the means to pursue. In 1554 de Busbecq was asked by Ferdinand, who was soon to assume the role of Emperor of Rome from his brother, Charles V, to join the group representing him at the marriage in Winchester Cathedral of Mary of England to Philip of Spain. Though he acted as secretary of the delegation, no account of his writing has ever been found. He was a fluent linguist in Latin, French, Spanish, German, Slavic and Flemish, but not in English.

Within a few days after his return home from England, de Busbecq was summoned by Ferdinand for another assignment. The eight years that he was accredited to the Court of Solyman in Constantinople required the utmost of his talents for diplomacy. When Constantinople was lost to the Turks in 1453, the period of the

Renaissance is considered to have begun. One hundred years later Ferdinand by somewhat feeble diplomatic efforts was seeking to prevent the Sultan from enslaving more and more of his Slavic subjects. The previous ambassador sent to Constantinople had spent two years in a dungeon and died soon after his release. No courtier at Vienna would risk taking the post; Ferdinand was lucky to have found a man to send to the Turkish Court where he would be considered more a hostage than an ambassador. To accompany him de Busbecq chose a small group of his fellow Flemings: fearless, fun-loving companions that he needed.

The story of his ambassadorship is unfolded in a series of letters that de Busbecq wrote to a fellow student of his university days now settled into diplomatic service as Ambassador to Portugal; letters that were not intended to be published. As the party was approaching Constantinople they were presented with large nosegays made up of narcissus, hyacinths and tulips which seemed unseasonable to the travellers from the north. As Solyman was away conducting a military campaign, de Busbecq enjoyed seeing Constantinople and environs at his leisure. Finally, he made the journey of twenty-odd days to present himself to Solyman in Cappadocia and give him the messages from Ferdinand. At the same time an Ambassador from Persia arrived with gifts and splendid accoutrements that quite outshone the delegation from Vienna. By September of 1555 de Busbecq had returned to Vienna to report to Ferdinand, only to be sent back in November in cold, wet weather with dispatches which de Busbecq knew would be unacceptable to the Sultan. Solyman had two sons in a desparate struggle for his throne, since the loser would be killed by the victor; three other possible claimants had already been eliminated. Hence it was nearly impossible for an ambassador from a court with little military strength to seek out any friends in a country seething with internal rivalrys. He wrote in July of 1556 that he was consoling himself in his loneliness with his old friends, his books.

The last of De Busbecq's accounts of his ambassadorship of eight years written from Frankfort in December of 1562 relates his efforts to alleviate the suffering of prisoners taken in the defeat of an expedition from Italy by the Turkish fleet and his escape from an outbreak of the plague. As with any returned traveller, de Busbecq tallies his souvenirs for his friends. There were horses and camels, carpets, linens and leather-goods and a considerable collection of Greek manuscripts now treasured in the National Library of Vienna.

DeBusbecq's botanical mentor was Peter Andrew Matthioli, born in 1500; died in 1577, an Italian physician and an important Renaissance botanist. He worked in Siena, Rome, and Trent and in 1652 was summoned to the court of Ferdinand to act as first physician to the court. Matthioli's most celebrated botanical contribution is his translation and commentary on Dioscorides for which he used two manuscripts furnished him by de Busbecq from Constantinople.

De Busbecq's last letter relates, "I brought back some drawings of plants and shrubs which I am keeping for Matthioli, but as to plants and shrubs themselves I have few or none. For I sent him many years ago the sweet flag, Acorus calamus, and many other specimens." It was the beginning of a wide distribution of sweet flag, for it can be now from Prince Edward Island to Florida, not as a rampant weed but as a heritage of our forefather's appreciation of its aromatic root. Also in Matthioli's Commentaries are descriptions and figures of the horse-chestnut and the lilac, taken from branches and seed sent him by de Busbecq.

Ferdinand's son, Maxmilian, upon his coronation as King of Hungary in September, 1563 bestowed on de Busbecq the honour of knighthood in recognition of his efforts to relieve the inhabitants of that unfortunate kingdom from slave-raiding and other levies upon them by their powerful neighbor, Turkey.

De Busbecq stayed at the court taking over various family chores for the Emperor; tutoring and managing family estates in Spain and France. However, he was

art and soul of the literary and scientific circles of the Austrian capital. Here he was able to keep up to some degree his connection with Turkey, as he is known to have received parcels of tulip bulbs and other rare plants from Constantinople. These were shared with Charles L'Ecluse, a Flemish botanist.

In spite of his long sojourn in foreign courts, de Busbecq yearned for his homeland. Unfortunately, it was overswept by the War of the Leagues. The chateau had suffered at the hands of the insurgents and the vassals of the seigneury were well nigh ruined by the requisitions of the Spaniards. In 1587 de Busbecq bought from his nephew a life-interest in the seigneury. He next proceeded to restore and repair the chateau, hoping to make it his residence. A tradition remained for a long time at Bousbecque of the beautiful garden formed under his direction and the lilacs, tulips and other new plants with which he filled it. They were all labeled, carrying inscriptions of their names and medicinal properties.

Finally, in the autumn of 1592, he obtained leave of absence from his post in Paris to spend six months at his newly-prepared ancestral home. In passing through Normandy he stopped for the night at Cailly, a small village nine miles from Rouen. Though de Busbecq carried passports from both factions engaged in the civil war, the Leaguers and the Royalists, a band of Leaguers descended on the village that night and carried off de Busbecq, confiscating his baggage. The old man gave the ruffians a lecture on his ambassadorial privileges and in the morning he was returned to Cailly along with his belongings.

As his English biographers say: *"The governor of Rouen, on hearing of the affair, apologized for the outrage and offered to inflict severe punishment on the offenders. The good old man replied that he was too much occupied in making his peace with God to think of revenging injuries. He felt he was dying. The shock he had received in his encounter with the marauders proved fatal. He was never to see the home for which he had so often yearned in distant lands. He was removed from Cailly to the chateau of the Lady of Maillot, near St. Germain, not far from Rouen, and there he died, October 28, 1592."*

In Bousebecque's fifteenth-century church built by de Busbecq's grandfather and in the family tomb six years later when strife had calmed down, de Busbecq's heart was taken in a leaden casket to be interred under the Ghiselain family monument with all the pomp and ceremony due a national hero.

We owe thanks to Charles Thornton Forster, M.A., Late Fellow of Jesus College, Cambridge and Vicar of Hinxton and F. H. Blackburne Daniell, M.A., Late Fellow of Trinity College, Cambridge, Barrister-at-Law, who in 1881 had published in London their two-volume Life and Letters of Ogier Ghiselin de Busbecq, Seigneur of Bousbecque, Knight, Imperial Ambassador – and the one who introduced the lilac to Europe.

"LILACLAND" in 1977

I.L.S. CONVENTION- AMHERST, MASS.

Prof. Albert Lumley and Mrs. Lumley will host this Sixth Annual Lilac Convention from May 20- 22nd. The Lord Jeffery Inn, Amherst, Mass. will be the headquarters. The Lumley Estate "Lilacland" is one of the most beautifully landscaped plantings using lilacs as main theme.

Dr. Robert B. Clark
Meredith, N.H.

THE I.L.S.
HONORS and ACHIEVEMENT
AWARD

was presented to two outstanding recipients for very special and meritorious service and dedication to the Society and for promoting the Lilac.

Fr. John L. Fiala
Medina, Ohio

THE PRESIDENT'S AWARD

To Lois and William Utley, Grape Hill Farm, Clyde, N.Y. for their outstanding collection and plantings and dedicated service to the Lilac Society.

AWARD of MERIT

to Richard Fennichia of Rochester Parks for his F2 Rochester Hybrids.

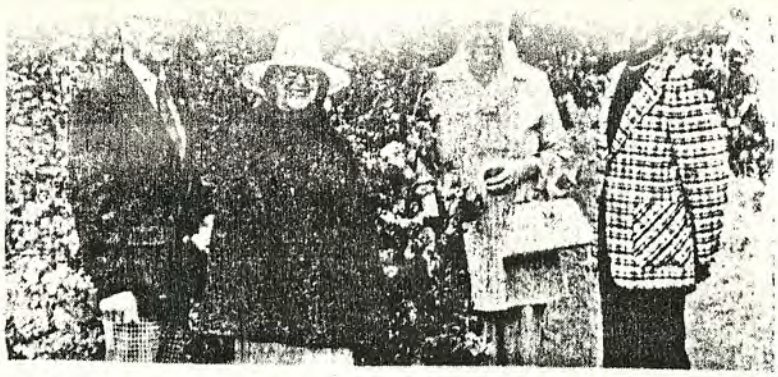
A tremendous display of these magnificient lilacs was viewed at the Smith Road Nursery.

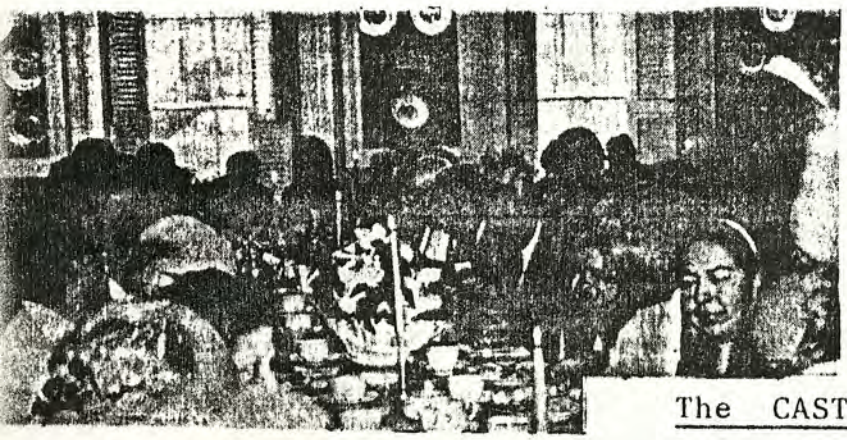
AWARD OF MERIT

To Joseph Dvorak Jr. for his writing and research on the soon to be published work "Lilacs of Morton Arboretum and Lilacia Park".

GRAPE HILL FARM

HOSTS Lois and Bill Utley in lilacs with President-Elect Walter and Mrs. Eickhorst at Grape Hill Farm, Clyde.





The CASTLE LUNCHEON

Luncheon at the "Castle", Rochester Parks, hosted by the ladies of the Rochester Garden Club. *(With delightful herbs and home baked breads that we shall never forget!)*

SONNENBERG GARDENS

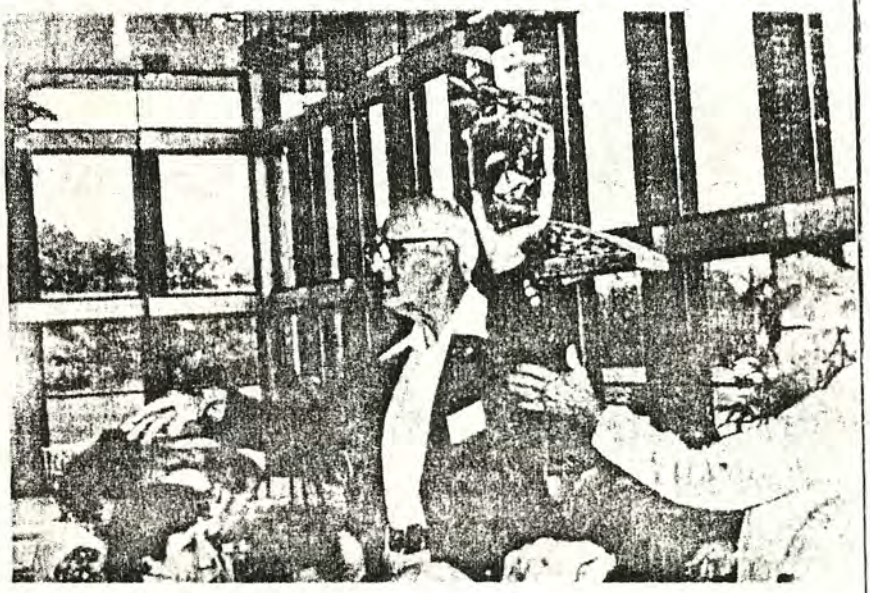
Walter Eickhorst, Sec. Walter Oakes and Exec. V.P. Utley planting a "Memorial Tree Lilac" at the Sonnenberg Gardens, Canandaigua.

ANNUAL MEETING & GUEST SPEAKERS

Dr. Bob Clark makes a point at General Meeting.

LILAC AUCTION

Auctioneer-Walter Eickhorst sets a record for any I.L.S. auction.



I.L.S. "AWARDS BANQUET"

Mr. and Mrs A. Grant and Dick Kelly at the I.L.S. Banquet.

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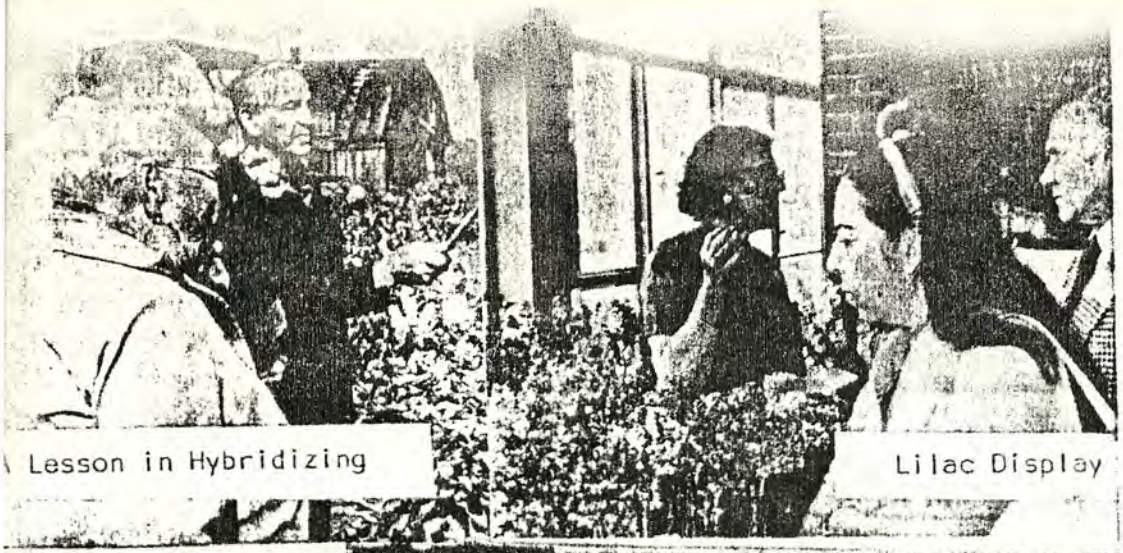
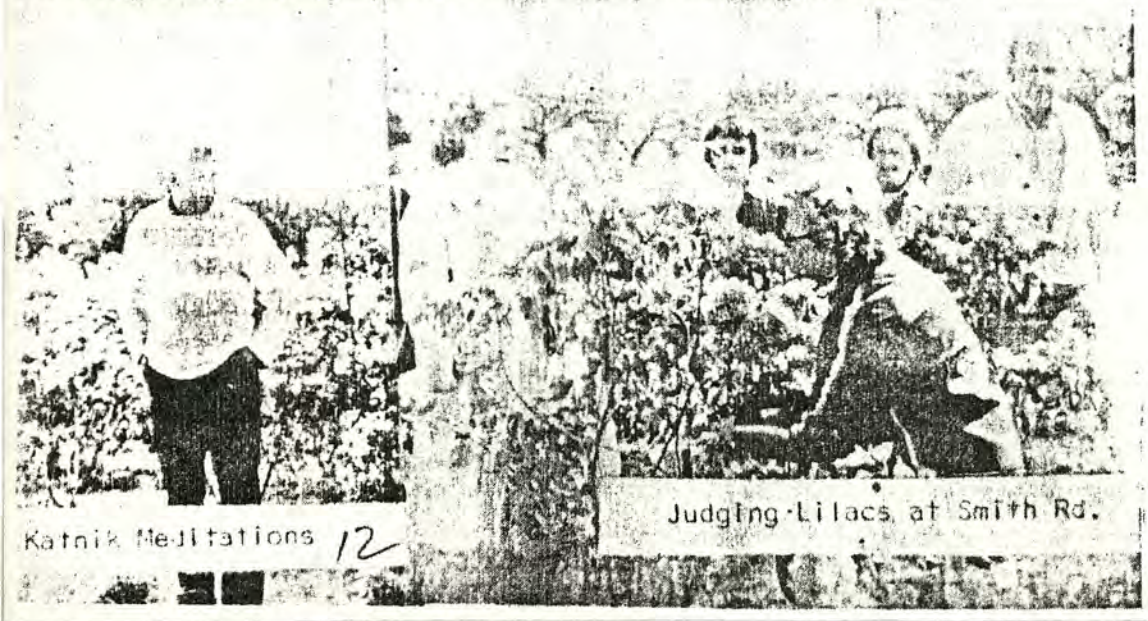


A Lesson in Hybridizing

Lilac Display

"A Star is Born!"

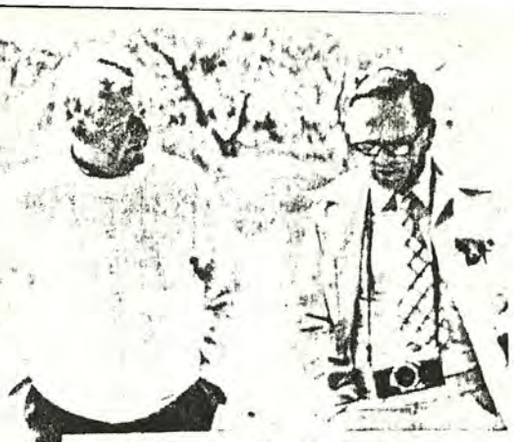
Ohio I.L.S. Chapter



Judging Lilacs at Smith Rd.

Katnik Meditations 12

PLANTSMEN -



DEEP LILAC CONCERNS-

THE EXPERTS -

THOUGHT PROVOKING -

"Les Belles- Madames"

GENETICS AGREEMENT

LILACS OF THE FUTURE

Fr. John L. Fiala

To discuss the Lilacs of the future one might indulge in subjective dreaming that would contribute little, if anything, but to predict with any objectivity what we can expect in Lilac development one must begin by considering what progress has been made in the past and analyze what are the most meaningful contributions to the present. From these two factors we are able to go forward with some reasonable expectations of progress. I should like to briefly recount some significant contributions that, to me, are rather "mile stones" of lilac progress, and here and there point out a cultivar that has some unusual characteristic that might, perhaps, be of genetic value in hybridizing the lilac. In retrospect, a great deal has been accomplished in bringing the lilac to its present state of beauty ... some few things may have been lost...and many more aspects need careful consideration by hybridists and growers alike.

There appear to be three main aspects of the lilac that have greatly determined the course of its history - namely the lilac's fragrance, the beauty of its flowers and the ease of its culture. These still remain as important factors for the breeding of lilacs for the future. To neglect any one of them would be a real disaster.

SIGNIFICANT HYBRIDIZING CONTRIBUTIONS FROM THE PAST IN SYRINGA VULGARIS

Hundreds of lilac cultivars have made their appearance over the past two centuries. Few have really been notable contributions of real progress. Some have added greater selection of some minor differences; most should never have been introduced because of the similarity of color or because of poor qualities of growth.

From the past century, in the 1800's, only a very few lilacs have stood the test of approbation as really distinct; (I would list only a very few) such as 'coerulea superba' for its genetic blue; 'Lucie Baltet' for her exquisite copper-pink and dwarfness; 'Macrostachya' for pale pink and 'De Croncels', a really beautiful copper-purple that still deserves a place in any garden, for its thyrses and color.

The first 'giant steps' of significant progress and improvement came with the hybridizing genius and patience of Victor Lemoine. His work with *s. hycinthiflora (s. oblata 'Lindley' x s. vulgaris)* produced a whole new race of lilacs. Lemoine's painstaking efforts with his magnificent doubles *(s. vulgaris 'Azurea plena' x s. vulgaris 'Ville de Troy'* and other vulgaris forms) have really never been equalled since. It would be very difficult to select his "best" double lilacs or introductions. Certainly, from a hybridists point of view, among the best must be included *'Victor Lemoine', 'Capitaine Perrault', 'Leon Gambetta', 'Olivier de Serres' and 'Rosace'* (Lemoine & Fils. Also to Lemoine (and Fils) we owe some remarkable singles such as *'De Miribel', 'Archeveque'* and a whole new race of blues which include *'Ambassadeur', 'Firmament' and 'Mme. Charles Souchet'.*

Next in hybridizing impact and significance we would have to mention the work of Havemeyer who brought forth recognition to giant floret singles and introduced some of the most beautiful singles we have such as *'Sarah Sands'*, one of the finest deep purples, the tantalizing blue of *'Mrs. August Belmont'*, the rich red of *'Lady Lindsay'* and the beautiful purple-blue hues of *'Mrs. Elizabeth Peterson'*. One of Havemeyer's finest and relatively unknown and unused in hybridizing is the double white *'Prof. E. H. Wilson'*.

Lilac progress moves on and signaled out for special recognition from a hybridizing point of view would have be the work with Early Hybrids done by Skinner. Much more work could and should be done in second and third generation crosses with these Early Hybrids for more variety of color - and some increase frost resistance. Clarke's work with Early Hybrids using *'Giraldi'* gave us the magnificent double hybrid *'Sunset'* and showed what double Early Hybrids could be like.

In more recent years very few introductions of vulgaris cultivars have really been significant. Serendipity brought for Maarse two unusual cultivars the result of mutations from the forcing houses, the bi-color of *'Sensations'* which is unique and beautiful in its richness and the tantalizing "yellow" of *'Primrose'*. Neither one of them has offspring of quality and the desired characteristic do not appear in subsequent generations. The Maarse cultivar *'Flora' (Maude Notcutt)* is a most beautiful single white but since has been totally eclipsed by what must be, in form, flower, color and thyrses as well as in genetic breakthrough one of the most significant lilacs of all times, and, I believe, the finest of all lilacs grown to date, Alvan Grant's *s. vulgaris 'Rochester'*! This is THE lilac par excellence. I sincerely believe after it has been hybridized with many cultivars that in looking back *'Rochester'* will be the most significant lilac cultivar in this era. It is not appreciated because it is relatively unknown in cultivation because of its extremely limited distribution. Even today there are only a few plants in this whole country. Its offspring in the Fennichia strains of F-1 and F-2 called the *"Rochester Strain"* must also be considered as real milestones of modern lilac progress. They could be truly significant contributions and breaks in colors, especially in the changing hues of blues. Much is contained in these lilacs genetically and could prove to equal anything introduced by Havemeyer and Skinner. The probability of their having a significant impact on lilac hybridizing becomes less and perhaps of no real value unless they are introduced as already some few hybridizers have begun to use *"Rochester"* in crosses of their own and other hybrids will surely appear in the years to come.

Among *s. vulgaris* there are a few significant, modern introductions that must be mentioned because of the enormous size and deep color of the florets that are truly outstanding (how much hybridizing value they may have has yet to be proven) namely Minerva Castle's deep purple introduction called *'Violet Glory'*, Slater's *'Agincourt Beauty' and 'Slater's Elegance'*. The modern deep purples are a significant contribution of their own and include: *'Sarah Sands'*, *'Frank Patterson'*, *'Violet Glory' and 'Agincourt Beauty'*. To these modern "few" must be added Dr. Cummings most beautiful hybrid called *"Maiden's Blush'*, a pale pink.

Each of the above hybridizers has made us step forward to the lilacs of the future. There are many possibilities left. We have newer and better forms of Early Hybrids (that possibly could have *'Rochester'* in their backgrounds--we need better and new deep bold blues, redder reds, more real pinks and perhaps the elusive "yellow" will become a reality, at least a pale and creamy yellow. We need to hybridize these vulgaris cultivars for Fall color of pod and leaves—for better plant forms and for more disease resistance. These will be possible only IF we find dedicated and scientific hybridizers now.

SIGNIFICANT HYBRIDIZING CONTRIBUTIONS OF THE SPECIES LILACS

The real 'breakthrough' into interspecific hybridization was the work of Isabel Preston and the resulting *'Prestonian Hybrids'*. The work of Skinner in Canada and Bugala in Poland advanced the second generations of this cross. Skinner's hybrids are well known and propagated; the work of Bugala is known only in Poland. Many beautiful hybrids have been developed and are presently being developed from this line of cross breeding (e.g. Meader and Alexander) and by outcrossing with other species to interspecific hybrids of several species (e.g. work of Rogers and Fiala). We should certainly expect great refinements and advances by this kind of continued breeding and selectivity. Miss Preston, and a few others, introduced far too many of a type hybrid and we would hope that present day hybridizers would be far more selective and less inclined to name every plant produced. Careful selectivity and restrained introduction must go hand in hand with hybridization.

In my own work with species I am only now (after nearly 30 years) beginning to see some of the results, meager as they are, of the value of tribrids and even quintobrids (plants of three, four or five species). The hybridization of Dr. Pringle at Ham-

ition is academically interesting but since no plants have ever been introduced nor planted for comparisions, nor disseminated, it has become a work of nearly total ineffectiveness in progressing lilacs for others to use in hybridization.

From what I can ascertain today, we have crossed all the species in some form or others with the exception of pinnatifolia and reticulata. Some interspecific crosses show a great deal of promise, others seem to appear at present as insignificant. The lilacs of the immediate future are the hybrids species crosses, both the interspecific hybrids and more especially their hybrid crosses to suceeding generations. Particularly important are those between *'s. reflexa'*, *'s. sweginzowi'*, *'s. Kamorowi' and 's. tomentella'*. The interspecific hybrids of these crossed back to selected *'Prestioniae'* give us some amazing results. Among these I would class a few selections of my own which are *'s. Wolfii x s. yunanensis' XX 's. sweginzowi albida'* and some crosses of *'s. sweginzowi albida x 's. yunanesis' XX 'Prestoniae Kim and Ursula'*.

What are some of these advanced generations of late blooming hybrids indicating? They are giving us fuller flower heads with many more flowering shoots along a single stem. It is not uncommon for a single branch to have as many as 14 flowering heads whereas formerly they had only one or at most three or four. Refinement of flowers with the flowering head having many more florets that are more uniformly open. With more flowering heads open at one time the landscaping value of the total plant is considerably enhanced. There is a great future ahead for the late hybrids and their interspecific crosses but it will take several generations, not one or two of careful and painstaking selection lest we make Miss Isabel's mistake all over again. I hope hybridizers of these late blooming species will use "great restraint" and not introduce many of the first and second generation plants. There are many similarities among these hybrids, as with the work of Miss Preston. She would have done an added service had she introduced only four or five instead of forty.

There are many introductions among the species that are excellent and need far more recommendation, should be more widely planted and above all used for hybridization although all may not be fertile: e.g. *'s. chinensis "Bicolor"'*, the excellent selection *s. velutina "Miss Kim"*, some of the selections of *'s. julianae "Hers Variety"* especially the red selection made at the Rochester Parks by Fennicchia. There are notable *Prestoniae "Ursula"* and *"Isabella"* that are very good and should continue to be used in backcrosses. There are deep colored cultivars like *'Nocturne' and 'Rutilant'* that should be used in breeding of interspecific hybrids. There is, also, the magnificient introduction of Lape's called *'Summer White'* that holds many exciting possibilities. The possibilities seem unlimited.

POLYPLOIDS IN LILACS OF THE FUTURE

Great strides have been made in many flowering plants through the introduction of tetraploids and polyploids. There is no reason that any less should be expected in lilacs. In the genus *SYRINGA*, series *VILLOSAE* tetraploids seem to exist now in all ten species, namely, *emodi, yunnanensis, tigerstedti, josikaia, wolfi, reflexa, komarowi, tomentella and sweginzowi.* Some very small plants a very few just beginning to bloom. Among the *VULGARES* there are tetraploids of *oblata dilatata and oblata Giraldi* hybrids, *rhodopea* and several forms of *vulgares*, a very few weak plants of *julianae* and *potatinini;* none, to my knowledge of *pinnatifolia* and *reticulata.*

Even among the present small population of tetraploids there are several that are chimeras, some few more advanced than tetraploids. What does all this mean? A lot, a very, very lot of hard and unrewarding work for the first few generations. We need to have existing tetraploids of named cultivars to see the real differences between the diploid and the tetraploid for identical characteristic comparison *(Most of the existing tetraploids are from germinating seed treatment and not from root or stem treatment.)* We need to have more tetraploids in all species for more ready distribution of materials. Tetraploids initially grow very slowly, by inches the first several years, hence cutting material is not readily available or desireable. Many die along the way before

they outgrow the shock of treatment; they need special protection for the first several winters. Their roots grow slowly and are near the surface and easily dry out in hot weather—they suffer more as seedlings from dry spells, heat and lack of moisture and too much sun.

When they finally bloom (add four or five years more than untreated plants) they are for the most part disappointing, need a very keen observant eye and must be crossed to the 2nd and 3rd generations—better the 4th and 5th. Only then do we begin to see dramatic results. It is not a task for a "few years hybridizer". It is a lifetime dedication for someone else to continue and bring to perfection. There are no real short-cuts. Yet it is work that must be done if we are to have tetraploid lilacs!

From the few 1st and 2nd generation cultivars that I have been able to observe some of the characteristics are : florets are thicker in petal thickness (not always larger), mostly larger than their diploid counterparts. They seem to have a deeper, more intense coloration and are more lasting in wind, rain and sun. They are slower growers with heavier shoots with buds spaced much closer together. The leaves are thicker and last longer on the stem after heavy frosts. They set far less seed and seem to bloom over a somewhat longer season. Much, much more work needs to be done with them. I hope that within the next three or four years really interested breeders might be able to obtain at least a few of these tetraploid species or hybrids.

SOME SUGGESTIONS TO THOSE WHO SERIOUSLY HYBRIDIZE LILACS FOR THE FUTURE

In regard to Plant habits/disease:

1. Pay attention to health, vigor and disease resistant parentage.
2. Notice what cultivars are particularly susceptible to scale, wilt, *White Hyacinth, Lady Lindsay* are notoriously susceptible to scale.
3. Hybridize for plants that do well in your area first and in your own kind of soil, then test them in several other areas under different conditions. (For us *Kate Sessions, Gertrude Leslie* are totally worthless as they are always killed by early frosts, elsewhere they are reported to be beautiful.
4. Some cultivars grow better in light soils, some will grow well even in mid-western heavier clays (none grow well if waterlogged or wet!).
5. Pay attention to plant habit - small shrubs do not cross well with trees - *Dilitata and Giraldi Hybrids* are really trees and not under-window plants.
6. Pay attention to "fragrance" - Fragrance is genetic. Parents who have no fragrance have offspring that are not fragrant either (thus be it always!).

In regard to color:

1. Never keep an inferior plant for color alone unless yellow or orange!
2. For better color cross plants of similar color and select, select, select, etc.
3. White parents seem to have only about 1/3 white offspring unless the whites have come from controlled breeding of whites for several generations.
4. In special color classifications for breeding:
   a. Whites - *ROCHESTER* is perfection, other good whites: *Flora, Carley, Edith Cavell, Prof. E. H. Wilson, Summer White (I)*
   b. Lavenders - *Dr. John Rankin, Hosanna, Sobra (IV)*
   c. Blues - *Mmme. Charles Souchet, Mrs. August Belmont, Ambassadeur, Pres. Dwight D. Eisenhower (III)*
   d. Violet -*DeMiribil (II)*
   e. Pink - *Lucie Baltet, Maiden's Blush, Lewis Mattock, Miss Canada, Lark Song (V)*

f. Reds - *Lady Lindsay (VI)*
g. Magenta - *Marechal Foch, Sunset, De Croncels*
h. Purple - *Sarah Sands, Violet Glory, Agincourt Beauty, Frank Patterson, Edith Braun (VII)*

5. There are no known genetic yellows/creams: *Primrose* does not transmit any yellow color, only poor offspring, Among known poor parents are: *Sensation, Mt. Blanc, Toussaint l'Overture, Heather, White Swan, Moonlight, L'Oncle Tom, (plus all the cultivar we have all tried).*

SOME THINGS WE SHOULD LIVE TO SEE IN THE LILACS OF THE FUTURE

1. Mini plants, no taller than 3 feet or 4 at most. *Miss Muffet*, an induced polyploid, is no more than three feet in 25 years. There are other small selections.
2. We will begin to distinguish lilacs as - "miniatures, shrubs, trees". Many of the Early Hybrids are small trees and should be considered as specimens. The sooner we face up to this the better and people will not be pulling them out because of having planted small trees instead of shrubs.
3. Selection for Fall color of leaf and of pods. Someone must begin this work. Oblata Hybrids offer much promise here.
4. More selected crossings with *ROCHESTER.*
5. We need deep blues without purple or lavender in them. We already have good light and medium blues.
6. Better Whites? Can we surpass *ROCHESTER?* Perhaps we could work for better double whites, buffy and creamy whites.
7. Tremendous strides will appear in interspecific hybrids in all species.
8. The 'beginnings' of meaningful tetraploids and polyploids will appear and some startling new breaks.
9. Someone will really work with *reticulata* and produce crosses and selections of outstanding worth. A pink?
10. Someone will do wonders breeding the many forms of *patula.* Wonderful miniatures should result.
11. Some very good, redder lilacs should appear. Really bright reds are not in the immediate future, if ever.
12. No yellows - only by serendipity and mutation.
13. Plants that do not sucker and are less rampant growers.
14. We will learn, I believe, that scale and wilt are related to both cultural practices and to genetics of certain cultivars that effect the sap (scale) that make some cultivars more acceptable hosts. We will learn that scale MUST BE CONTROLLED if the Lilac is to be grown more extensively.

And with all of this we shall wake up one day to a whole new race of Lilacs - early, midseason and late blooming. Can they really be more beautiful than what we already have today? I do not believe they will but we must work to see!

MILDEW ON LILACS

by Owen M. Rogers
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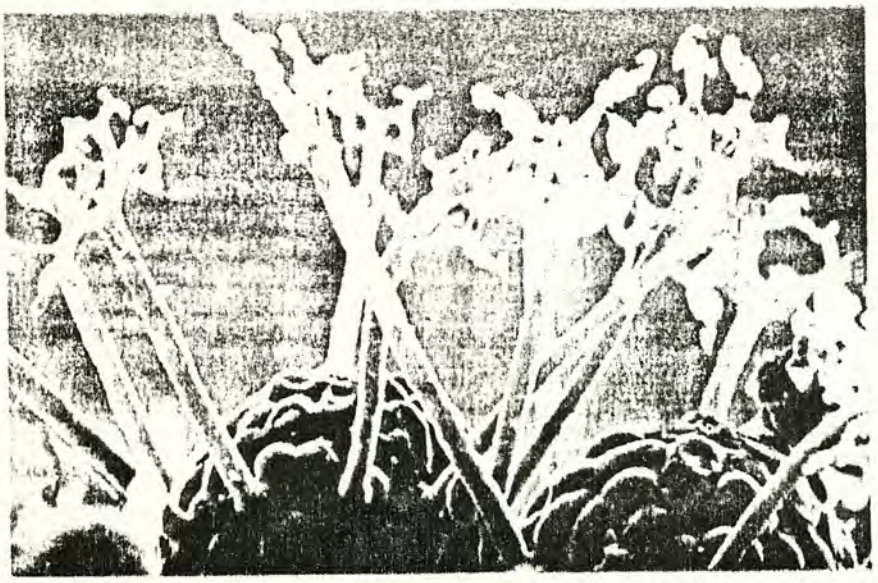
Does mildew on lilacs bother you? Powdery mildew is one of the more common fungus diseases of lilacs. It becomes evident as a series of whitish patches on the leaves in August and September. As the fungus grows it spreads into a felt-like covering over the entire leaf surface, especially if the season is warm and dry. The fruiting bodies, when ripe, are small, black, spherical structured called cleistothecia with ornate branched appendages (see figure).

Technically the fungus is called *Microsphaera alni.* It is named for the alder *(Alnus)* on which it was first reported. The mildew fungus also infects deciduous azaleas late in the summer and has been reported on a long list of other hosts, including elm trees, privet, trumpetvine and viburnum. The spores germinate on the leaf surface. The fungus growth, called mycelium, grows mostly on the surface, although the growth will invade and draw nourishment from the leaf epidermal layer. Under the microscope, occasionally a strand of the mycelium can be seen entering the leaf through a stomate.

Mildew is a superficial disease and appears late in the season. Most authorities, therefore believe that little concern is necessary. William Councilman, in McKelvey's The Lilac, writes, "This fungus does not seem to injure the plant;" and "It is a question whether such a common and harmless interrelation between a plant and a fungus should be regarded as a disease." John Wister dismisses it as one of the things "..... which mistakenly alarms the gardener.. in August and September." However, powdery mildew is a highly visible disease, and if the lilac is planted close to a doorway or path where it becomes visible, the disease may be very unsightly.

Microsphaera alni on Syringa vulgaris.
Cleistothecia are immature and have not
developed appendages (mag. x400)(Rogers)



Microsphaera alni on S. vulgaris with mature cleistothecia. (mag. x 627,T° 68° W D 22.9) (photo Dr. Owen Rogers)

If no control measures are used the bush will survive. There are no reported instances where mildew has killed a lilac. A few cases are known where the plant died and mildew was blamed but further investigation always showed something else, such as borers or root strangulation or some other cause less obvious than the mildew. If control is desirable either because the mildew is visually unsightly or for the owner's peace of mind, it can be accomplished by chemical sprays or selection of resistant cultivars. The chemical control requires spraying with wettable sulphur or karathane as soon as any sign of the disease appears and repeat the treatment if opaque white patches continue to appear. This control can be considered if the shrub is in a highly visible spot or if it is an especially choice cultivar. The other way of eliminating powdery mildew as a problem is to plant only mildew-resistant cultivars. Some plant breeders have included resistance to mildew as one of their goals in the development of new cultivars. The University of New Hampshire, for example, can make the categorical statement that none of the late-blooming lilac cultivars released by the University will ever show mildew. Even among the many common lilac cultivars that are on the market today, a range of resistance to mildew can be seen. Several authors have published lists of cultivars that are resistant, partially reistant and susceptible. Anyone growing lilac seedlings can select resistant strains of lilacs by noting which seedlings have no mildew and discarding any and all that develop a heavy mildew coat. In my own breeding plots, I always do this while the seedlings are quite small. This thins out my planting and means that any introduction coming from such a group of seedlings at some future date will automatically be mildew-resistant without further work on my part.

If you have one of the named cultivars that is susceptible to mildew, you have three choices; 1) leave it alone. The plant will survive if it is otherwise healthy. 2) Spray with chemicals if the shrub is very visible or otherwise valuable. 3) Replace the cultivar with one that is resistant. I'm not advocating that we discard all susceptible cultivars, but I do recommend mildew resistance to be part of any improvement plan. If everyone growing seedlings would destroy all the susceptible seedlings before they flower, we would one day have a good list of lilac cultivars highly resistant to mildew, and would have to go to articles on azaleas and elm trees to find pictures of"cleistothecia globose to globose-depressed with appendages branched dichotomously at apex, often ornate."

Powdery Mildew

The most widespread and persistent disease of lilac is powdery mildew, caused by *Microsphaera alni* DC. ex Wint. Mildew detracts from the appearance of lilac foliage, but it usually does little damage to the plant. Spraying is seldom recommended specifically for mildew control. Reistant species and cultivars would offer a more effective means of attaining lilacs in prime condition for landscape planting.

In conjunction with the study (2,3,6) of the leaf roll-necrosis disorder of lilac near urban centers in northeastern U.S., we rated lilacs for their resistance to infection by the powdery mildew fungus. Mildew infection was observed in 1970 and 1971 at the Brooklyn Botanic Garden and Arnold Arboretum, and for 1 year (1971) at the Howard Taylor Memorial Lilac Arboretum and John J. Tyler Arboretum.

Crowell (1) in 1933 to 1936, and Kelly (4) in 1975 conducted similar surveys at the Arnold Arboretum, and at Highland Park in Rochester, New York, respectively. We include their data with ours in Table 2, which lists 147 cultivars and species according to their resistance to mildew.

The 3 independent ratings were generally similar, especially in the more resistant categories. Those from Highland Park, Rochester, N.Y. showed a trend of being higher. It is noteworthy that the *vulgaris* cvs generally were more heavily infected than the non-*vulgaris* types and inter-specific hybrids. The non-*vulgaris* types were the most resistant.

The general consistence of the mildew ratings, both within our study, and when comparing the 3 independent studies, permit us to conclude that our list, even though representing a small percentage of those lilacs available to the plantsman, provides reliable information for those in the northeastern U.S. who wish to select lilacs that will remain free of powdery mildew. Morever, those involved in hybridizing lilacs might utilize to a greater extent the genetic resistance available in certain cultivars and species.

For those interested in more detailed information about our lilac research, we have included pertinent publications in Literature Cited.

footnotes

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Lilacs Resistant to Leaf Roll-Necrosis and Powdery Mildew

by

C. R. Hibben (1) J. T. Walker (2), M. P. Taylor (3), and J. R. Allison (4)

Abstract

Lilacs *(Syringa Vulgaris* L. and other species) at several aboreta in northeastern United States were evaluated over several years for their field resistance to urban-generated air pollutants responsible for the leaf roll-necrosis (LRN) foliar disorder, and to the powdery mildew fungus *Microsphaera alni* DC ex Wint.). Twenty-three, and twenty, cultivars or species were classified as resistant to LRN, and mildew, respectively. Non-*vulgaris* cultivars and species possessed the greatest resistance to both agents. Lists of lilacs are presented according to their sensitivity or resistance to both LRN and mildew.

Introduction. Lilacs *(Syringa* spp.), comprising over 30 species of deciduous shrubs or small trees native to Asia and southeastern Europe, and over 1,000 cultivars (5), have long been among the favorite landscape plants in certain regions of the United States. Their showy, often fragrant flowers and attractive foliage, and relative ease of cultivation, account for their popularity. Lilacs are not without harmful diseases, however. This communication summarizes our recent research on two foliar problems of lilac; leaf roll-necrosis and powdery mildew. The emphasis of our work has been to seek solutions through natural plant resistance.

Leaf Roll-Necrosis Foliar Disorder

Lilacs are in trouble in the northeastern United States, particularly around cities. The peculiar malady that is afflicting them may be recognized late in the summer by several characteristics; a rolling or curling of the foliage; scorch marks between the veins of the leaves and on the leaf edges; browning of the undersides of the leaves; and the early dropping of the foliage. Shrubs losing their canopy of leaves sometimes produce a second flush of leaves and flowers late in the growing season. This then subjects them to twig dieback from early frosts.

Because of the characteristic symptoms, we have named this the leaf roll-necrosis of lilacs, abbreviated LRN. There is strong evidence that this malady is caused by air pollutants emanating from cities.

Members of the Kitchawan Research Laboratory of the Brooklyn Botanic Garden, Ossining, New York, and the University of Georgia Experiment Station have completed an investigation into the causes of LRN of lilacs. The ultimate health of lilacs, not to mention other forms of plant and animal life, depends on our willingness to cleanse the air in cities and suburbs. Until that occurs, however, a partial solution to the problem is to plant certain kinds of lilacs that are now known to resist air pollutants.

From our early studies it was learned that microbial disease agents, insects and mites, nutrient deficiencies, herbicide injury, graft incompatibility, soil acidity and water shortages were not primary causes of LRN. However, as our research progressed, injury by air pollutants was suspected because some of the leaf markings on lilacs were typical of those caused by pollutants on other kinds of plants. Previous tests at the Botanic Garden in Brooklyn confirmed that plant-injurious air contaminants indeed occur in New York City, as they do in most urban areas.

Several experiments showed that air pollutants were likely contributors to LRN of lilacs. For example, current-year stem cuttings were harvested in Brooklyn from cultivars known to be the susceptible to LRN. The cuttings were rooted and grown the next year at Kitchawan, which is a rural location about 25 miles north of Manhattan. Whereas the parent shrubs in Brooklyn continued to show the effects of LRN, their vegetatively propagated - hence genetically identical - offspring recovered completely in the new environment. However, when transplanted back to the Garden, they again developed LRN symptoms. In another experiment, single branches of lilac shrubs exposed to city air were enclosed for 2 to 4 months in filter chambers, designed to exclude certain air pollutants. Foliage on the protected branches remained healthier than portions of the same shrub continually exposed to the atmosphere.

Despite the annual recurrence of LRN, after 1968 we noticed a slight yearly decrease in its severity on lilacs at the Garden, and in several arboreta near Philadelphia. During the same time span, data from air-quality monitoring stations located in New York and Philadelphia showed a trend of decreasing levels of ozone and sulfur dioxide, the two air pollutants which probably cause more plant damage than any others. If this correlation is valid, we can expect an increase in LRN severity if current pollutant emission standards are relaxed.

We attempted to identify the pollutants which were injurious by exposing potted lilacs to ozone, sulfur dioxide, or the gases simultaneously, in laboratory growth chambers. Only some of the LRN symptoms could be reproduced with these toxicants. The diversity of LRN symptoms suggests that additional, as yet un-identified, air contaminants are also damaging lilacs in cities. This might be expected when one considers the many types of gaseous and particulate pollutants which are generated in urban areas. Moreover, researchers are discovering that certain gases, although relatively non-phytotoxic by themselves, become injurious when combined with other gases in the air.

Field Resistance to LRN

From our observations of LRN at several locations, it became apparent that certain cultivars and species were affected less than others. This suggested a genetic basis for the differences. To determine if there were true resistance to the causes of LRN, the symptoms were rated yearly, beginning in 1968, for about 500 lilac cultivars and species in the following locations; Brooklyn Botanic Garden; Arboretum of the Barnes Foundation, Merion Station, Pennsylvania; Arthur Hoyt Scott Horticultural Foundation, Swarthmore, Pennsylvania; John J. Tyler Arboretum, Lima, Pennsylvania; Arnold Arboretum, Jamaica Plain, Massachusetts; Howard Taylor Memorial Lilac Arboretum of Rosedale Gardens, Millbrook, New York.

The magnitude of the resulting data necessitated their transfer to punch cards for computer analyses to determine the statistical significance of apparent correlations among symptoms, location and year. Through the American Horticultural Society's Plant Records Center and the University of Georgia Computer Center, a multivariate analysis of the data enabled us to rate numerically each cultivar and species according to its sensitivity to LRN. We were particularly interested in those selections which occurred at all six study locations.

A final list of cultivars and species was grouped into three categories; slightly injured, or resistant; moderately injured; and severely injured, or susceptible. The list in Table 1 includes 99 out of the 500 cultivars and species evaluated. These lilacs were rated most often under severe air pollution conditions. Therefore, their ratings are considered the most reliable when considering resistance. It is note-worthy that non-*vulgaris* cultivars and interspecific hybrids showed greater resistance to LRN than the *vulgaris* cultivars.

From this investigation, we recommend that growers consider the LRN disorder when choosing lilacs for city or suburban gardens. Some of the lesser known species and hybrids are not yet widely available from nurseries but may be worth the search if they have low numerical ratings in the table. Although not all have the strong scent or very large flower clusters of the common lilac, they have their own interesting traits and from our observations, should perform better in polluted air.

Table 2. Ratings of certain lilac cultivars and spec.

Cv or species	Mean Powdery mildew rating C.R.H. [1]	I.H.C. [2]	J.W.K. [3]
GROUP ONE – RESISTANT			
S. diversifolia4	1.0		
Doyen Keteleer	1.0		
S. emodi	1.0	1	1
Excelliens	1.0		
Jules Ferry	1.0	2	1
S. julianae	1.0		
Laurentian	1.0	1	1
S. Meyeri	1.0	1	1
S. microphylla	1.0	1	1
S. microphylla superba	1.0		1
S. oblata var dilatata	1.0	1	1
S. patula	1.0	1	1
S. persica	1.0	1	1
S. reflexa	1.0	1	1
S. reticulata	1.0		
S. swegiflexa	1.0		
S. sweginzowii	1.0	1	1
Vauban	1.0		2
S. villosa	1.0	1	1
S. yunnanensis	1.0	1	1
GROUP TWO SLIGHTLY INFECTED			
Alice Eastwood	1.6		1
Bertha Phair	1.3		
Bleuatre	1.9	2	1
Carmine	1.3	1	1
Clarke's Giant	1.3		
Dame Blanche	1.3	1	1
Decaisne	1.9	1	1
Hippolyte Maringer	1.5	1	
Jan van Tol	1.3	2	
Jeanne d'Arc	1.2	1	1
S. Josikaea	1.2	1	2
Jules Simon	1.7	2	1
Katherine Havemeyer	1.2	1	2
Louvois	1.7	3	
Lucie Baltet	1.9	2	1
Lutece	1.8		
Marceau	1.3	3	2
Marechal Lannes	1.9	4	
Marie Finon	1.2	1	
Marie Legraye	1.3	1	1
Maurice Barres	1.2	1	1
Michel Buchner	1.4	2	1
Mme. Casimir Perier	1.4	2	2
Mme. Florent Stepman	1.6		
Mme. F. Morel	1.7	2	2
Mme. Lemoine	1.6	3	2
Mont Blanc	1.6	2	3
Monument	1.3		
Nana	1.7	1	1
S. oblata	1.7	1	1
Patrick Henry	1.3	2	1
Paul Thirion	1.8	2	2
Pocahontas	1.3		
President Fallieres	1.6	3	1
President Lincoln	1.5	1	1
President Loubet	1.3	2	1
President Poincare	1.6	2	2
Primrose	1.2		1
Ronsard	1.7		2
Stadtgartner Rothpletz	1.6	2	2
S. tomentella	1.2		
Vestale	1.2	1	1
Villars	1.7	2	
Virginite	1.5		1
William S. Riley	1.8	1	2
Zulu	1.7		
GROUP THREE – MODERATELY IN:			
Adelaide Dunbar	2.0	2	
Alphonse Lavallee	2.0		2
A. M. Brand	2.7		
Ami Schott	2.0		3
Assessippi	2.3		2
Belle de Nancy	2.1	3	2
Blue Hyacinth	2.0		2
Boule Azuree	2.7	2	
Capitaine Baltet	2.3	4	2
Catinat	2.3	1	1
Charles X	2.3	3	3
Claude Bernard	2.0	2	1
Condorcet	2.3	3	2
Congo	2.8	3	2
Corinne	2.7	1	3
Crepuscule	2.7		2
Diderot	2.5	3	2
Dr. Charles Jacobs	2.3	2	2
Edith Cavell	2.3	1	1
Esther Staley	2.0		
Etna	2.2	1	1
Frau Wilhelm Pfitzer	2.3		1
General Pershing	2.4	1	1
General Sheridan	2.4	3	2
Georges Bellair	2.3	2	1
Gloire	2.2	1	
Jacques Callot	2.3		
Jean Mace	2.3	3	1
Lamartine	2.3	3	2
Leon Gambetta	2.0	2	2
Macrostachya	2.0	4	3
Marechal Foch	2.0	2	2
Miss Ellen Willmott	2.0		2
Mlle. Melide Laurent	2.0	4	2
Mme. Antione Buchner	2.0	3	3
Monge	2.7	4	
Montaigne	2.2		2
Montesquieu	2.5		1
Mrs. Edward Harding	2.7	2	1
Necker	2.7		
Paul Hariot	2.0	2	2
Planchon	2.0		1
President Carnot	2.3	2	2
President Grevy	2.7		2
President Massart	2.5	2	2
President Roosevelt	2.3		3
President Viger	2.5	1	1
Priscilla	2.3		3
Reaumur	2.2	4	
Rene Jarry Desloges	2.2	2	1
S. rhodopea	2.7		2
Ruhm von Horstenstein	2.7		2
X chinensis f. Saugeana	2.4		
Scotia	2.0		1
Sensation	2.0		
Sunset	2.4		1
Thomas Jefferson	2.0		3
Turgot	2.4	1	2
Victor Lemoine	2.0	2	2
Violetta	2.8	4	2
Volcan	2.8		3
Waldeck-Rousseau	2.1		2
William Robinson	2.3	2	2

Andenken an Ludwig Spaath	3.0		2
Buffon	3.0		3
Cavour	3.0	4	2
s. chinensis Alba	3.3		3
X chinensis f. Metensis	3.5		
De Louvain	3.0		2
De Miribel	3.2	4	2
Desfontaines	3.0	3	1
Dr. Lindley	3.0	4	3
Edmond Boissier	3.3	4	3
Henri Martin	3.0	3	2
Marlyensis	3.3	2	3
Mme. Fallieres	3.0	3	1
Mrs. W. E. Marshall	3.7	4	2
Night	3.4		
Perle von Stuttgart	3.0	2	1
Thunberg	3.3	2	2
Triomphe de Moulins	3.3	2	2

1. Rating system: 1 = no mildew, 2 = slight, 3 = moderate, 4 = severe.
2. Crowell, I. H. In Literature Cited. (1 = immune, no macroscopic evidence, 2 = slightly susceptible, 3 = moderately susceptible, 4 = very susceptible).
3. Kelly, J. W. In Literature Cited. (Kelly ratings of 0, 1, 2 transposed to 1,2,3, where 1 = no visible effects, 2 = slight infection, 3 = heavy infection.
4. Lilac names according to Rogers In Literature Cited.

"Summer White" Late Lilac

By Fred Lape, George Landis Arboretum, Esperance, New York

In 1964 seed of *Syringa Komarowii* was received from the Alma-Ata Botanical Garden, USSR. Seedlings were outplanted in 1969, and in 1971 the herein described plant bloomed for the first time. The following description is by Professor Richard Southwick of Cobleskill (SUNY) New York.

Habit upright; leaves oviate, 12 cm long by 7 cm broad, veins beneath hairy, petioles 2 cm long; inflorescence densely pyramidal, 17 cm long, 10 cm broad, upright, corolla tube narrow funnelform, 2 cm long, 1.5 cm at mouth, lilac pink in bud,
suffused lilac upon expanding, in anthesis becoming pure white, lobes 4, sometimes 5 or 6, abruptly acuminate, anthers inserted (below mouth); capsules not observed.

"Summer White" appears to be a large clustered form of the common white lilac which is late blooming. Its true affinity, however, is with the botanical series Villosae, or late lilacs. Its fragrance resembles that of *Syringa Josikaea* or *S. Wolfii*.