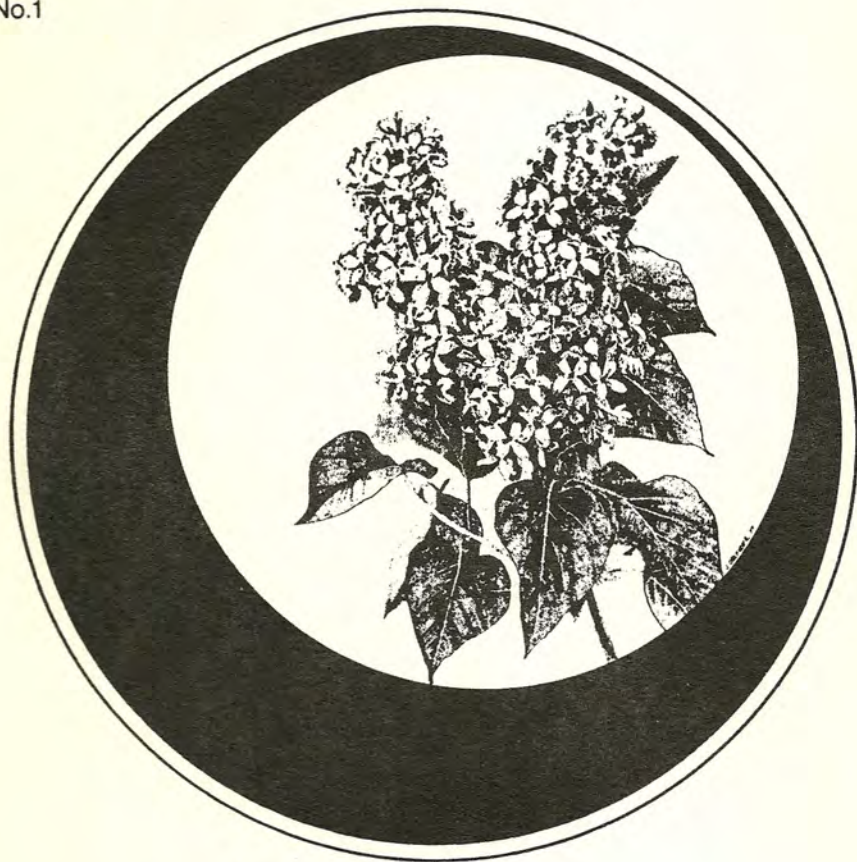


International Lilac Society, Inc.

# Lilacs

Vol. 6, No.1



## PROCEEDINGS

Sixth Annual Convention

AMHERST, MASSACHUSETTS

May 20, 21 and 22, 1977

# L I L A C S

VOL. 6

PROCEEDINGS 1977

A publication of

## THE INTERNATIONAL LILAC SOCIETY

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LILACS is the official publication of the *International Lilac Society*. Proceedings published annually.. Research publications as received. THE PROCEEDINGS are benefits of membership.

Copies of this publication are available by writing to the *International Lilac Society*, c/o Mr. Charles Holetich, Royal Botanical Gardens, Box 399, Hamilton, Ontario, Canada L8N 3H8. Enclose \$3.00 per copy requested.

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### MEMBERSHIP CLASSIFICATION

Single annual .....	\$ 5.00
Family .....	7.50
Sustaining .....	10.00
Institutional/Commercial.....	15.00
Life.....	100.00

\* Mail membership dues to I.L.S. Secretary.

INTERNATIONAL LILAC SOCIETY is a non-profit corporation comprised of individuals who share a particular interest, appreciation and fondness for lilacs. Through exchange of knowledge, experience and facts gained by members it is helping to promote, educate and broaden public understanding and awareness.

Published March 1978

REPORT OF CONVENTION CHAIRMAN - Albert E. Lumley

The annual meetings of the International Lilac Society were held at the Lord Jeffery Inn, owned by Amherst College, on May 19, 20, 21, 22, 1977. The charming, quaint New England Inn was enjoyed, and its competent staff, headed by Innkeeper Ray Kelleher, gave good service. The food was excellent and we had all our meals there. I heard no complaints. The most frustrating aspect of setting up the meetings was occasioned by a change of management at the Inn, which came after I had secured full assurance of plenty of rooms there during the period of our meetings, by the former manager. Somewhat later in the game it came to my attention that due to the simultaneous scheduling of the Smith College commencement rooms needed by us had been given out to the Smith returnees. The new manager, Mr. Kelleher, and the College, did everything possible to straighten out the situation, and in the end almost all of our members were accommodated. Only four of our single men were housed at Amherst College, and six couples were taken care of in private homes, all within three blocks of the Inn.

Two sessions, May 21 and 22, were held at Lilac Land on Harkness Road, Amherst. My lilacs were about five days past the peak of bloom but this was prevalent throughout the area. Members seemed to enjoy the opportunity of exchanging experiences, socializing, digging plants and taking cuttings. Mrs. Lumley entertained those in attendance with refreshments inside our home.

I personally was unable to attend many of the meetings, but the reports I received were of excellent talks, some illustrated by interesting slides. I seemed to be very busy getting things to run smoothly and the program schedule adhered to as strictly as possible.

The lilac auction was the weakest part of our plans. Perhaps the building (the Amherst College Track Cage) was too large. However we uncovered a good Assistant Auctioneer to Walter Eickhorst in Col. (Ret'd) Hannsen Schenker of Freedom, N.H. All of the plants donated were sold, but the prices were low. Many of our people came by air and therefore could not handle plants in pots. We had about 500 plants donated. These contributions were from Mr. Egolf of U.S. National Arboretum, the Arnold Arboretum, Little Lake Nurseries, Messrs. Sjulín, Vrugtman, Holetich, Alexander, Rogers, Clark, Oakes, Heard, Baker and many others. We took in \$461.75.

One of the things which contributed to the success of this Convention was the generosity of the Chieppo Bus Company of New Haven, Conn. Mr. Tom Chieppo, a new life member, furnished a bus and driver without charge to tour the Smith College greenhouses, old Deerfield, and the University of Massachusetts greenhouses on Friday, May 20th. I was never able to find time to fit in a trip to thoroughly see Amherst College or the interesting home of the poet Emily Dickinson.

Our President, Mr. Eickhorst, Mr. Oakes and Marie Chaykowski worked hard to make this a successful meeting. Marie certainly did charm the help, who consisted of faculty wives Leta Bailey, Betty Halsted and her daughter Lorna, Mr. Kelleher, and the people at Amherst College who readied the Cage and cleaned up afterwards - also Buddy Lumley and Dorothy Davenport who arranged for two outings at Lilac Land.

On behalf of the Society I would like to thank Prof. Arnold Coltery of the College for his remarks to us. (He has since accepted a Deanship at Columbia College). Also Mr. George May, President of the Inn and Amherst College Comptroller, for his support of our proceedings. I am thankful to Bob Clark and Owen Rogers for their Friday work, and for talks by Jack Alexander, Al Fordham, Owen Rogers, Freek Vrugtman, Father Fiala, Charles Holetich and Radcliffe Pike, and most certainly to Tom Chieppo whose generosity was a great contribution.

In closing this 1977 convention report of the International Lilac Society I feel I'd like to put in a big plug for the Society becoming a more democratic one by allowing dues-paying members who are in attendance to vote on all questions, thus using the support of our members in all decisions made.

Incidentally, the pictures turned out well. They were sold at cost of \$2.00 each. The post cards were sold at a loss to me. The Track Cage at Amherst College for purposes of holding the auction was free to the Society. All other financial information having to do with the operation of the meeting was turned over to the Treasurer, who has the necessary information for more formal financial reports.



REPORT OF PRESIDENT - Walter Eickhorst

The ILS year 1976-77 has been a period during which the Society struggled for guidance and direction -- I'm not too certain that I have met the challenge. However, at the close of the 5th Annual Conference at Rochester, New York, I did earnestly vow to grapple with the task.

During early November I travelled through the Horicon, Wisconsin area and chanced to pass by the Edward Gardner Nursery -- home of the Gardner Lilac introductions, and casually noted that many large plants still grow there. A letter subsequently directed to the nursery met with no reply. More recently I have learned that ILS does have a member (Mrs. Raymond Ramsden) in Oshkosh, Wisconsin, who may have specimens of most of the Gardner materials -- this I have not pursued as yet, but it would seem that the Society should endeavor to retrieve this data for archival reference.

Various procedures and operational responsibilities that have plagued the Society since its inception have been confronted. One or two have been effectively dealt with while others still impede progress, although these problems will in time be corrected. The "PIPELINE" is presently serving as a membership binder -- being our primary channel of communication.

The recent "PIPELINE" supplement, Lilac Plant Source List, compiled by Dr. Donald R. Egolf and Anne O. Andrick, is a much-appreciated effort and should do much to stimulate interest among the membership as well as persons not under the canopy of ILS.

The printing and editing of the Upton Scrapbooks is under consideration and presently awaiting financial support. The October 1976 estimated publishing cost of \$2,000 has undoubtedly increased, yet the wealth of knowledge contained in these volumes should be made available to interested individuals.

There is much to be done and it would appear that the home landscape is leaning toward the inclusion of an ever-increasing number of lilacs. At least throughout much of the Middle West the symbol of our organization outdid itself in floral display during late April of this year and I'm certain that the banner of ILS will fly proudly for many years to come.



REPORT OF THE SECRETARY - Walter W. Oakes

The statistical part of my report to you for the past year's membership is as follows: Presently paid for 1977 including Life Membership is 208. The number of members who have not renewed who were paid for 1976 is 70. Since last year's Convention, we have added 40 new members. Based on past experience, I think it is safe to project membership for this year to reach 250.

The number of new members is significant and is due to paid advertising, membership salesmanship and to articles in magazines, e.g. the June issue of Flower and Garden. Most especially growth in membership is due to the quality and regularity of our monthly publication "PIPELINE," for which we are deeply indebted to Bob Clark for editing and to Charles Holetich and family for publishing and mailing. No other program the Society could support can do as much for membership maintenance and gains as regular, dependable, quality communication with the members.

We are aware that many new members are attending the Annual Convention for the first time. We hope that those who are old timers will make a special effort to make them know how welcome they are and extend a hand of fellowship to them.

Since the Society was founded in 1971 with only 16 members, we have come a long way. We have been through some difficult times over the years. Some have felt that we are not doing as much as we

might for the membership. We have tried in positive ways to respond with better communications, formation of a Committee for Propagation and Distribution, publishing of the Tentative Lilac Register, special publications and a seed-distribution program. The problems associated with new programs are two - one, members who will take the responsibility for directing the special programs, and two, the cost.

It is the general membership which, in the end, will determine in what manner these problems will be met. Our new President will need to know who is willing to serve on Committees. Don't be shy about volunteering. The work-load is falling too heavily on too few people which is not fair to them or to the Society.

The topic of an increase in dues is a serious one that needs careful consideration. There is no easy solution to trying to balance the need for more membership benefits with the certainty that important losses in membership will follow a significant increase. The decision to be made should, in my opinion, be made by a vote of the membership rather than by the Board of Directors.

It would be helpful in this meeting if you would make any suggestions which you feel would help to build a better Society. I am not concerned about numbers, for when we can offer real benefits for dollars paid, the numbers will take care of themselves.

It has been a pleasure and a privilege to serve as your secretary since the Society's founding. There have been times when the going got bumpy that it was tempting to "let George do it". When I get to the Convention and meet all my old friends and make new ones, I am encouraged to keep going and contribute in any way I can to building not so much a large organization, but a solid one: an organization composed of friends meeting together in peace and harmony serving a common interest - the growing of beautiful plants.



REPORT OF THE EXECUTIVE VICE-PRESIDENT - William Utley

The income tax returns for the International Lilac Society, Inc. were filed as of October 15, 1976. Mr. Clark and I set up the tax structure with a representative of the Internal Revenue Service in 1972. I have filed the returns each year since.

I have been working with the Sonnenberg Gardens to bring their lilac planting to a more respectable showing. We are working toward the development of a larger, more showy lilac garden, one that will display many of the newer and better selections.

EDITOR'S REPORT - Robert B. Clark

I am pleased to submit the following report for the year 1976-77. The PIPELINE was issued monthly to keep our members informed and up-to-date on lilacs and Society activities. It averaged 5.6 pages and carried in addition the membership directory plus a special supplement, "Lilac Plant Source List" (31 pages), compiled by Dr. Donald R. Egolf and Anne O. Andrick of the U.S.D.A.

The editor's deadline for contributions was the first of the month, the printer's deadline was the tenth of the month, and mailing was done usually by the twentieth. The system worked fairly well in spite of temporary moving of the editorial office to Florida from December through March. Credit for this goes to Charles Holetich and his "crew" at Hamilton.

Charles' expenses for the year are as follows :

3500 envelopes	\$ 54.14
Rubber stamp (dues renewal reminder)	18.03
Postage (domestic)	299.20
Postage (foreign, airmail)	<u>2.68</u>
	\$374.05 corrected to
	\$399.00

Thirty contributors used the pages of the PIPELINE during the year, including six reprinted articles. The editor would welcome articles of current interest, or at least having them brought to his attention since he depends upon a modest private library. He wishes to thank each contributor and publisher who has made possible the success of this venture.

REPORT OF THE TREASURER - Marie F. Chaykowski

International Lilac Society, Inc.

Financial report - June 1, 1976 to May 19, 1977

Balance brought forward - June 1, 1976		\$ 2,544.77	
Receipts - June 1, 1976 to May 19, 1977			
Membership Fees	\$ 1,561.50		
Reimbursement on awards	65.71		
Rochester Convention receipts	515.16		
Interest on Savings	146.63		
Gift (Joel Margaretten)	150.00		
Total all receipts 6-1-76 - 5-19-77	\$ 2,439.00	\$ 2,439.00	
Total funds available 6-1-76 - 5-19-77		\$ 4,983.77	

Disbursements - June 1, 1976 to May 19, 1977

Postage, mailing permits, envelopes	\$ 543.63		
Checks	3.40		
Seed Exchange (Nancy Alexander)	100.00		
1977 Convention Advance	300.00		
National Garden Club	10.00		
Advertising ("Horticulture" magazine)	40.35		
Publications	600.00		
Total all disbursements 6-1-76 - 5-19-77	\$ 1,597.38	\$ 1,597.38	
Balance on hand May 19, 1977		\$ 3,386.39	

Cash Balance Reconciliation:

General Operating Funds	\$ 2,067.53		
Research/Educational Fund	718.86		
Life Membership* (Fiala, Chieppo)	600.00		
	\$ 3,386.39	\$ 3,386.39	

\*(\$500 owed from General Fund to be transferred - \$100 a year to Life Membership funds = '78 Wilder, '79 McKean, '80 Margaretten, '81 Lumley, '82 Wyncoop)



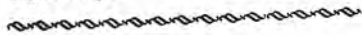
MESSAGE TO THE PRESIDENT & BOARD OF DIRECTORS OF THE INTERNATIONAL  
LILAC SOCIETY at the 1977 ANNUAL MEETING, Amherst,  
Massachusetts, May 20-22, 1977 - John C. Wister

- (1) Please tell the members fully and frankly the actual up-to-date facts about the condition of the Society and that it cannot continue to function with our present inadequate dues.
- (2) Please tell them that I believe that all the events over the years since it was founded amply prove not only this but also prove that no society of such limited size and such limited dues can exist and carry out the ambitious program that I.L.S. promised to undertake.
- (3) Please tell them that I am convinced that no society with such limited financial resources could possibly pay the cost of publishing many worthwhile bulletins, and this has been amply demonstrated not only by our own experience but also by our only slightly older horticultural sister society, the American Magnolia Society.
- (4) Please tell the members that I fear that the time has come when drastic action must be taken so that all the good work of the Society and all the hard work of its leaders may not be lost and indeed that the Society may survive at all.
- (5) Please tell the members that at this time I can only suggest the following actions if they will agree to make them on a trial basis :
  - (a) Give up the attempt to publish more than an occasional "PIPELINE" and one bulletin (by whatever names and not four or five), and that this should contain the PROCEEDINGS of the Annual Meeting, to be sent to the members within a very short time following the meeting, so that they have the benefit of the information reported promptly.
  - (b) Ask the members how many of them will be willing to continue as members under this plan for a few years to give it a real trial.
  - (c) Tell them that if enough agree, the present Officers and Directors will agree to carry on and will attempt to reorganize and to bring in if possible new leaders and enough new members to provide financial resources.

It seems clear to all, I believe, that this is not the time to recommend an increase of dues, and that the Society may under the present dues prove itself worth belonging to, to many more than our general average of about two hundred members who really love lilacs and really want to help to get more gardeners in

the colder regions of this continent to appreciate how badly they are needed in their gardens - and not merely one straggly bush or two but half a dozen (depending on the space available) of first class varieties of the so-called Common Lilac (*Syringa vulgaris*) - after that also such later-blooming species and hybrids as space allows. (There, by the way, is the chance to emphasize one of the great achievements of the Society - Dr. Egolf's monumental publication which tells for the first time since 1953 where the first-class varieties (cultivars) can be purchased!)

I send you this long message as the only thing I can do for this Society which has been so close to my heart and which has not only honored me with its awards, but also by making me an Honorary Director when I could no longer attend the meetings. I am very sorry I cannot be with you all at Amherst. I feel that the Annual Meetings I attended in the past have been great proceedings. These and Dr. Egolf's list have been the truly great achievements of the Society.



REPORT OF THE SEED AND SCION COMMITTEE - Nancy Alexander (Chairman)

Requests for *Syringa* seed were sent out in early August of 1976 to numerous arboreta. Several of these institutions expressed a willingness to contribute in future years, but they had no seed available for the 1976 season. Seed was received from Arnold Arboretum and the Morton Arboretum.

A request was also placed in the PIPELINE, and three members, Bob Clark, Joel Margaretten, and Fr. Fiala, made contributions.

Twenty-seven different species and hybrids were collected and offered to the membership through the PIPELINE. Twenty-two members responded, and all the seeds, approximately 100 packets, were distributed.

Financial Statement:

Advance for operating expense		\$ 50.00
Expenses : Postage	\$ 6.59	
Coin envelopes	4.91	
Mimeo materials	.90	
	\$12.40	12.40
Balance on hand 5-20-77		\$ 37.60

REPORT OF THE EDUCATION COMMITTEE - Nancy Alexander (Chairman)

A program which can be distributed to interested garden clubs is almost ready for distribution. The program will consist of slides and a cassette recording. The committee recommends it be distributed free, with the recipients paying all shipping charges. Other ideas on this would be welcome.

The program consists of the following:

- I. Brief history of lilacs
  - A. Introduction into cultivation
  - B. Research and development
- II. Selecting the Lilac
  - A. Examples of available lilacs
  - B. Selection for use in the landscape
- III. Care and culture
  - A. Basic propagation - own-root vs. grafted
  - B. Planting
  - C. Pruning
  - D. Pests and diseases

Financial Statement:

Advance for operating expenses		\$ 50.00
Expenses :		
Stamps	\$ 3.00	
Customs charges	9.00	
Return postage	16.72	
Slide tray	3.10	
	<u>\$31.82</u>	<u>31.82</u>
Balance on hand 5-20-77		\$ 18.18



THE AWARDS OF THE INTERNATIONAL LILAC SOCIETY

- Dr. Owen M. Rogers (Chairman)

The International Lilac Society has established the following awards to honor those people who advance the Lilac.

HONOR AND ACHIEVEMENT AWARD

The highest award given by the Society. It is given only for outstanding work, dedication and service to promoting the Lilac or the Society. To be considered for the award the individual's contributions must be truly outstanding and of benefit to the whole

Society. It is awarded only to individuals and not to institutions, given only once to any individual and need not be presented annually.

Recipients

1972	Dr. John C. Wister
1974	Mr. Albert E. Lumley
1976	Rev. John L. Fiala
	Mr. Robert B. Clark

DIRECTOR'S AWARD

Awarded by the Society only to those engaged in the improvement of the Lilac through hybridizing, scientific selection or selective research to improve the quality of the flower of the lilac plant. It is intended as an award for outstanding work with the Lilac. It is to be considered as the highest scientific horticultural award given by the Society.

Recipients

1972	Mr. Richard A. Fenicchia
1973	Mr. L.A. Kolesnikov
1974	Dr. James S. Pringle
1977	Mr. N.L. Mikhailov

PRESIDENT'S AWARD

Awarded to the Arboretum, Public or Private Park or Garden for outstanding collections and public display of lilacs, work with promoting the growing and landscape uses of the Lilac, outstanding landscaping with lilacs or major research with lilacs. It is an institutional or park-garden award. Its purpose is to encourage the planting of lilacs for public display and education. It is not intended for strictly private gardens (no matter how great their excellence).

Recipients

1972	Monroe County Parks Department and Highland Park
1973	The Arnold Arboretum
1974	The Royal Botanical Gardens
1975	The Morton Arboretum
	The Lombard Park District
1976	William and Lois Utley

AWARD OF MERIT

Given to Individuals or Institutions, Public or Private Gardens, for outstanding contributions in promoting, growing, researching or working with the Lilac or the Society. It is intended as the Society's recognition for outstanding work or service. It is intended to be given regionally as an 'International Recognition for Work

Over and Above the Average' - for outstanding promotion, for public education, for scientific-research work, or for horticultural excellence. A recipient may receive this award only once for the same work (but more than once for several contributions of equal merit).

Recipients

- |      |   |
|------|---|
| 1972 | Miss Minerva Castle<br>Mr. Robert B. Clark<br>Dr. William A. Cumming<br>Mr. Mark O. Eaton<br>Mr. Alvan R. Grant<br>Mrs. Laurene Wishart   |
| 1973 | Mr. J. Herbert Alexander<br>Mr. Ken Berdeen<br>Mr. Alfred J. Fordham<br>Miss Mabel L. Franklin<br>Prof. E.M. Meader<br>Dr. Radcliffe B. Pike<br>Mr. Leonard Slater<br>Mr. Orville M. Steward                                  |
| 1974 | Mr. George Dalby<br>Mr. Ray Halward<br>Mr. Charles Holetich<br>Dr. Leslie Laking<br>Mr. Fred Lape<br>Miss Ann Robinson  |
| 1975 | Mr. Walter E. Eickhorst<br>Mr. Mitcheal Katnik<br>Cantigny Memorial Park and Gardens<br>Mr. Arch McKean<br>Mrs. Isabel Zucker<br>Dr. Joel Margaretten<br>Mr. Clare E. Short<br>The Interstate Nurseries and the Sjulín Family |
| 1976 | Mr. Richard Fenicchia<br>Mr. Joseph Dvorak, Jr.   |
| 1977 | Mr. Albert E. Lumley<br>Dr. Walter E. Lammerts<br>Historic Deerfield  |

All awards need not be given annually but it is hoped that the dedication and work with the Lilac or the Society will be so creative and expansive that there will ever be an increasing number of worthy recipients each year. All awards are presented at the Annual Convention Banquet or its equivalent.

1977 Recipients

The Director's Award

Dr. N.L. Mikhailov, Curator  
PRINCIPAL BOTANICAL GARDEN, Moscow, USSR.

For dedicated work in promoting the Lilac through an inter-

nationally known Lilac collection and the publication of works designed to extend knowledge of the Lilac in his native country and the world.

Awards of Merit

Mr. Albert E. Lumley,  
Amherst, Massachusetts

For his hard work and dedicated service to the International Lilac Society and his continued efforts to promote use of the Lilac.

Dr. Walter E. Lammerts,  
Corallitos, California.

For his pioneering work in the development of warm-winter-tolerant Lilacs and the introduction of new cultivars for southern areas.

Historic Deerfield,  
Deerfield, Massachusetts.

For their understanding of the importance of the Lilac to early settlers and the development of the historic plantings as a source of education and inspiration to the public.



REPORT OF THE PROPAGATION & DISTRIBUTION COMMITTEE -

Dr. Donald R. Egolf (Chairman)

The propagation and distribution activities have involved the preparation of a lilac source list, a survey of ILS membership, and additional arrangements for the propagation of select lilacs.

The lilac source list was compiled from nursery catalogs. Only cultivars and species listed in catalogs for the past two years are included. The list includes 284 cultivars and 47 species and varieties of 201 nurseries, of which 103 are in the United States, 68 are in Canada, and 30 are in other countries (mostly European). This list will be the guide for the selection of future cultivars for propagation by ILS, as no cultivar will be propagated if adequate commercial sources are known.

In the March PIPELINE, a questionnaire was distributed to the entire membership in order to evaluate the needs and functions of a propagation and distribution committee. The participation and response was less than anticipated, so that any interpretations may not necessarily reflect the total membership response. Only 38 replies were received, and only one of these was from a member of an ILS chapter. For the most part, the response was from members in isolated geographic areas. This indicates either apathy for any such endeavour or that those geographic areas with ILS chapters already have adequate plant sources. With this limited response, ILS propagation will be restricted until proven otherwise.

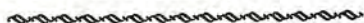
Of the 49 cultivars or species listed on the survey, there was not a significant demand for any one. In order of priority, those selected by more than one response were 'Maiden's Blush', 'Rochester', 'Maud Notcutt', 'Sarah Sands', 'Sensation', 'Anne Tighe', 'Bicentennial', 'Violet Glory', and 'Rosace'. An additional 54 cultivars, of which 21 were Lemoine introductions, were recommended for propagation. The greatest number of persons would purchase a single plant of from 2-5 cultivars a year. Size to most is immaterial, with a preference for smaller plants in the 12-24" range. The majority would pay \$7.50 for a select rare cultivar and \$12.50 for a new selection: second preferences would be \$5.50 and \$7.50 respectively. United Parcel Service was the preferred method of plant transportation, and only 11 opted for distribution by local ILS chapter. This in itself poses problems, as the committee is not set up for a major packing and shipping operation. The survey provides a directive to the committee to exercise restraint in any propagation and distribution plans.

From the plants propagated in 1975, there will be over 300 available for distribution in late 1977 as two-year, multiple-stemmed plants. These will represent 26 cultivars, with the following number of plants available: 5 with less than 5 plants, 8 with 5-10 plants, 8 with 10-20 plants, and 4 with over 20 plants. These will be made available on a first-come basis. The details will be presented in a future PIPELINE. In any case, assistance will be needed to pack and ship plants, as it does not now appear feasible to handle the same through ILS chapters.

Financially, the propagation and distribution program should be self-sustaining. The funds received from the sale of plants will be adequate to cover the cost of the next season's propagation and also will contribute funds to the ILS treasury. Little Lake Nurseries have proposed that an ILS-propagated cultivar be restricted for three years. During the first year, plants would be made available only to ILS members. During the next two years, they would be listed in their catalog. Little Lake Nurseries would pay ILS 10% of all sales for three years. Such would result in a source of revenue without any expenditure.

In 1976, an additional 736 buds were placed by W.J.Forsythe Nurseries. In recent communications with Mr.Forsythe, it was indicated that the take was above average, or about 50%, but an actual count was not yet available. To further increase several of the new potential introductions, grafts were made in 1977 by Heard Gardens, Des Moines, Iowa, and Little Lake Nurseries, Willits, California. Again the percentage of takes appears to be good. Arrangements have been made for further propagation by Mr. Forsythe this season. With limited scions for propagation, stock plants need to be established before an increase for introduction can be achieved. The propagations of the past seasons have established a basis for a continuing program and the systematic restricted introduction and distribution of select cultivars to the membership.

Dr. Egolf further stated that the source list of lilac varieties is now available from Mr.Holetich. Extra copies may be had for the asking; also, a certain number have been set aside for Mr. Oakes to use for commercial listings.



1976 LILAC REGISTRATIONS\* - Freek Vrugtman,  
Royal Botanical Gardens, Canada.

At the beginning of 1975 the Royal Botanical Gardens succeeded the Arthur Hoyt Scott Horticultural Foundation as the International Registration Authority (IRA) for cultivar names in the genus *Syringa*. In compliance with the International Code of Nomenclature of Cultivated Plants 1969 and the Notes for the Guidance of International Registration Authorities for Cultivated Plants (CHRONICA HORTICULTURAE 15(1): 5-6 (1975) ), the Tentative International Register of cultivar names in the genus *Syringa* was compiled by O.M.Rogers and published as Research Report No. 49 (1976) of the New Hampshire Agricultural Experiment Station, Durham, New Hampshire.

When the Arthur Hoyt Scott Horticultural Foundation was appointed as the IRA for lilacs in 1958, the report of the 1953 Lilac Survey Committee of the American Association of Botanical Gardens and Arboreta, LILACS FOR AMERICA by J.C.Wister (1953), was accepted as the preliminary check list of lilac cultivar names. Registration lists prepared at the Scott Foundation between 1958 and 1974 were published in ARNOLDIA 23: 77-83 (1963); 26: 13-14 (1966); 27: 65-66 (1967); 31: 121-126 (1971) and in ARBORETUM AND BOTANICAL GARDEN BULLETIN 1 (2): 19-20 (1967).

\*Contribution No. 29, Royal Botanical Gardens,  
Hamilton, Ontario, Canada.



Included here are those cultivar names which have been registered during 1976; there were no requests for registration in 1975. All correspondence concerned with more information, plant, or propagating material of these plants should be directed to the various originators, describers, or introducers, not to the Royal Botanical Gardens.

The following three lilac cultivars were originated and registered by Mr. Harold L. Child, 225 Third Street, Dixfield, Maine, 04224, USA, and described by Mr. Walter W. Oakes, Box 315, Rumford, Maine, 04276, USA.

*Syringa vulgaris* 'Bertha Child'

Seedling of unknown age and unknown parentage. Colour tone in bud: dark; when open: light. Thyrses 15 cm broad at base. Flowers well arranged, not bunched. Floret size to 2 cm. Nickerson Color Fan of bud: 2.5 RP 6/10; open: 2.5 RP near edge, flushed white towards centre; finish: 7.5 P 8/5. Differential characteristics: the colour of the buds contrasting with the much paler open flowers make this a very showy cultivar. Buds darker than cv. 'Romance' (Havemeyer). Flowers single.

*Syringa vulgaris* 'Ethel Child'

Seedling of unknown age and unknown parentage. Flowered first and was selected about 1955. Colour tone dark. Thyrses long, slender, average 20 cm. Flowers well spaced, overall appearance comparable to 'Andenken an Ludwig Späth'; colour darker than 'Zulu'. Nickerson Color Fan of bud: 5 RP 4/10 (deep red-purple); open 7.5 RP 4/10; finish: 2.5 RP 4/9. Differential characteristics: colour and floriferousness. Flowers single.

*Syringa vulgaris* 'Gertrude Child'

Seedling of unknown age and unknown parentage. Colour tone medium. Thyrses 20 cm long, slender; florets grouped in layers or tiers. Floret size to 2.5 cm. Very floriferous, some clusters containing from 4 to 7 thyrses. Nickerson Color Fan of bud: 2.5 RP 4/10 (rosy lilac); open: 2.5 RP 4/10; finish: 2.5 RP 5/10 with pale blue overlay fading to white at centre. Differential characteristics: colour and floriferousness; desirable plant habit since the plant is mature at about 2.5 m with 3.5 m spread without pruning. Flowers single.

Propagating material of the above three cultivars has been received by the Royal Botanical Gardens from the originator and the resulting plants will be grown in the lilac collection.

*Syringa x henryi* 'White Summer'

This new cultivar was originated, described, and registered by Mr. Fred Lape, George Landis Arboretum, Esperance, New York, 12066, USA. Of unknown parentage from seed received in 1964 from the Botanical Garden, Kazakh Academy of Sciences, Alma-Ata, USSR. Originated in 1965; flowered first and selected in 1971; now about 2 m tall and bushy. It is a most unusual plant for a late-blossoming lilac. The panicle is definitely upright, wide and dense. The corolla tube is somewhat spreading and large. From a distance it resembles, when in full bloom, a white *S. vulgaris*.

Leaf blade 12 cm long by 7 cm wide, oval. Periole 2 cm, stout; leaf veins hairy on the under side. Panicle 17 cm long by 10 cm wide, pyramidal, dense. Corolla tube 2 cm long, gradually enlarged. Corolla sometimes 1.5 cm across, with 4, 5, or 6 lobes, the lobes wide-oblong, abruptly acuminate. Buds lilac pink; just opening flowers tinted lilac; fully opened flowers pure white. Fragrance similar to *S. josikaea*. Anthers do not reach the mouth of the tube. Flowers single.

Herbarium specimen and photograph deposited at the Royal Botanical Gardens' Herbarium (HAM).

The following four lilac cultivars were originated by Dr. Walter E. Lammerts, Freedom, California, 95019, USA, and have been introduced and registered by Hines Wholesale Nurseries, P.O. Box 11208, Santa Ana, California, 92705, USA. Information and descriptions have been extracted from the appropriate United States Plant Patent information sheets. The colour terminology used refers to the Royal Horticultural Colour Chart (London 1966).

*Syringa x hyacinthiflora* 'Heather Haze'

U.S. Plant Pat. 3885

(First named 'Pink Lace' J. Sass; not 'Pink Lace' = 'Herman Eilers'). Seed parent: Lammerts C112 x Lammerts 42-108-4. Pollen parent: Lammerts 42-109-4 x ? Originated in 1951; bloomed first in 1953; commercially introduced in 1975. Bud colour: outside Red-Purple 70C-70D; opening bud Red-Purple 70C-70D fading to 73C-73D. Groups of buds tend to have the appearance of Red-Purple 65B. Flower colour: centre of the open flower starts at Red-Purple 68C-68D, fading towards the tips to 65D and to almost white 155B. Flowers single.

*Syringa x hyacinthiflora* 'Sweet Charity'

U.S. Plant Pat. 3892

Seed parent: Lammerts C112 x 'Lamartine' seedling. Pollen parent: Lammerts 42-109-4 x ? Originated in 1951; bloomed first in 1953; commercially introduced in 1975. Bud colour: Red-Purple 70A. Flower colour: open flowers are Purple 78B fading to 78C; underside of the flower is Red-Purple 70D. Flowers single.

Syringa x hyacinthiflora 'Old Lace'

U.S. Plant Pat. 3893

Seed parent: Lammerts C112 x Lammerts 42-108-3. Pollen parent: Lammerts 42-109-4 x ? Originated in 1951; bloomed first in 1953; commercially introduced in 1975. Bud colour: Red-Purple 70C-70D fading at the tip. Flower colour: centre of the open flower starts at Purple 78C on the edge to 78D towards the centre; open flowers fade towards the tips from Red-Purple 65D to almost White 155B at the base; underside of the flowers is Purple 75A-75B. Flowers single.

Syringa x hyacinthiflora 'Big Blue'

U.S. Plant Pat. 3895

Seed Parent: Lammerts C112 x 'Lamartine' seedling. Pollen parent: Lammerts 42-109-4 x ? Originated in 1951; bloomed first in 1953; commercially introduced in 1975. Bud colour: Red-Purple 70B-70C. Flower colour: Violet-Blue 94C-94D; there are tints present of Red-Purple 70C; the petal colours fade towards the base to Violet-Blue 92B-92C; underside of the flower varies in Purple 75B-75C. The flowers have a distinct pleasing fragrance. Flowers single.



LILAC PROPAGATION - Alfred J. Fordham,  
Research Horticulturist

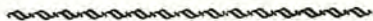
An extensive presentation accompanied by a generous number of slide illustrations depicting the manner and means of Lilac reproduction was offered by Al Fordham, in this, the final week of his tenure of many years at the Arnold Arboretum, Jamaica Plain, Mass. Due to the nature of the paper and the extensive pictorial input, it does not lend itself to meaningful printing at this time; rather, the material is presently being considered for publication either as a special issue of PIPELINE at a later date, or to be a part of a Manual of Woody Plant Propagation by one of the leading publishing houses in the near future. At this time many phases of the manner of presentation are still under consideration and awaiting various copyright and author privileges.

While there is little Lilac reference or parallel, one might appreciate the scope of involvement in the author's most recent contribution thru' ARNOLDIA (The Arnold Arboretum), Vol. 37, No.1 - Jan./Feb. 1977 - PROPAGATION MANUAL OF SELECTED GYMNOSPERMS: by Alfred J. Fordham and Leslie J. Spraker. This work is available (\$2.00 per copy) by writing - Arnold Arboretum of Harvard University, Jamaica Plain, Mass. 02130. This issue is an excellent handbook of 90 pages, well illustrated (both by line drawings and photographs), treating the subject from the scientific application and the practical point of view.

Al is probably the most qualified plant propagator of this era, and regardless of how and when his work finally finds its way into print, those persons concerned with the production of Lilacs should by all means avail themselves of his expert experiences when such become available.

At this time we wish to extend our appreciation and grateful thanks to Al for taking time out from his well-earned vacation to offer us the benefit of his expertise at this Conference.

Editor



COLCHICINE TREATMENT IN THE GENUS SYRINGA \* - Fr. John L. Fiala

Historically the use of colchicine was known to the ancients. The Greeks used the root of colchicum bulb (Autumn crocus) for medicinal purposes, especially in the treatment of gout, a use that has continued even to modern times. The ability of colchicine to effect genetic structures and produce polyploids in plants has been one of the greatest advances in modern horticulture and agriculture.

Polyploids, plants with increased numbers of chromosomes in their structures, be they triploids, tetraploids, octoploids or more, are known to exist in nature. Many plants exist in their wild state as both diploids and in various polyploid forms. How did they become so? Some are plant regressions because of various reasons from higher numbers of chromosomes. Most have come about by sudden change that caused doubling of their chromosome numbers. In nature we have both ascending and descending numbers of chromosomes in specific genera and in species. Some may have been caused by lightning or radioactivity, by extremes of cold or heat, others by some unknown chemical action. For example, in *Paeonia brownii*, the only peony native to the United States, found in California, we find a whole range of different chromosome counts as we proceed from Lower California to the higher and upper regions of the State. Counts begin at 5 chromosomes and continue to advance all the way to 14. These changes often provide plant growth habits which enable it to survive with changes in environment.

In the Lilac we have chromosome counts for *Syringa vulgaris* of 44, 46 and 48 in diploid state. *Emodi* and *persica* have 44 while in *amurensis*, *oblata*, *potanini*, *reflexa*, and *sweginzowi* we find 46 chromosomes. In *velutina*, *Wolffi*, *josikaea*, *Komorowi*, *meyeri*, *tomentella* and *yunnanensis* as in *villosa*, *microphylla*, *pinnatifolia* and *pubescens* we find 48. All extremely confusing to one not versed in genetics. To my knowledge, outside of what is listed in Darlington's 'Chromosome Atlas' there is no extensive study or even reasonable sampling of *Syringa*'s genetic structures of clones or interspecific hybrids to give us a

clear picture of what we are dealing with in the many forms now in our gardens, yet alone understand what we are crossing. Most of the counts in the 'Chromosome Atlas' are of individual plants. There must be many variations among the individual clones that give us certain characteristics we so admire and desire. Who is there to make an exhaustive study of *Syringa* as, for example, the Japanese government did for the peony? No one !

I know of no one, before the present, who even bothered to collect seed or planted the seed of Sax's lone tetraploid *vulgaris* that once grew on the hill at Arnold above the Lilac Walk. What a loss ! It could have been a beginning but was not !

#### The Value of Tetraploids and Polyploids

What do tetraploids or increased polyploids do for plants ? Most tetraploids have giant flowers, sturdier stems, heavier leaves that withstand wind and heat better. Many hold their leaves later in the autumn and some, that are rather sterile, keep their flowers somewhat longer. Most of them, after a few generations, have wonderful combinations of newer, vibrant, often iridescent, colors and floret changes that are at times more open and ruffled with a waxier, heavy texture to the petal. Many, as the number of chromosomes is increased over an optimum level, begin to have smaller, very heavy florets that can be extremely attractive. It would be wonderful to have all these added characteristics found immediately in one flower - all in one new lilac! There is no immediate way of doing this.

There are two ways of improving plants over a considerable length of time. One would be to have intensive breeding programs of very large numbers of seedlings and carefully selected hybridization over many, many generations. Great patience, skill and scientific knowledge is needed, such as Dr. Stout had in working with the *hemerocallis*. This would never be achieved with the Lilac in a single lifetime by anyone. From all practicality it is a dream to work for, not a present-day reality.

The other way would be to rapidly develop polyploids, which, because of their increased genetic make-up, could bear many more characteristics in a few generations. By crossing several tetraploid clones one could come to rather significant 'giant steps' in a much shorter time but NOT in a single generation. This is more of a reality and not an overnight program. It, too, requires patience, scientific knowledge, great patience and long selective hybridization with much careful evaluation, such as the work of Brother Charles Reckamp with the *hemerocallis* at Mission Gardens. Tetraploids are not a substitute for sound programs of hybridization. They are a tool for advancing genetic structures and the genetic pool availability to those who hybridize lilacs or any other plant.

### Handling and Treating Plants with Colchicine

Colchicine is a very toxic and dangerous drug and must always be handled with great care and concern, generally with gloves. Do not become careless about handling it or breathing in its vapors as some of us may have become over the years. Its deteriorating effects are not immediately visible. Most of its serious effects cannot be easily treated or cured. Generally it is purchased in a powdered form to be diluted according to the most effective strength for a particular plant species. I have found that an ideal solution for *Syringa* in germinating seedlings is .1 to .15%. In most cases a 2% solution is totally lethal to seedlings. It is best to mix only that amount that will be used in a reasonable time and store it always in an anti-sol (dark) bottle away from all heat. Always keep it away from any possibility of children ever reaching it. In cool, dark storage it will last for a second year.

### Preparing Plant Material for Treatment

You may treat either germinating seedlings (washed from soil or sphagnum) that are just breaking the cotyledon leaves or growing plants (they would have to be very small). With lilacs it would be very difficult, but not impossible, to treat growing plants.

For seedlings: after germinating in sphagnum take from medium, immerse them in a large test tube of colchicine solution. Initially we treat seedlings from 12 to 16 hours (some have been treated all the way to 30 hours). Remove with tweezers and place in a clean water bath, stirring them on occasion and changing water if necessary to remove all chemical traces, for at least 12 hours. Use care not to injure or hit them with a direct water spray as treated seedlings are extremely susceptible to bruising and are often brittle tissue. Pot them up, water moderately, then keep them on the drier side. Most of them will die within two weeks from overtreatment but about 10% should survive. If the survival rate is too high, treatment was probably ineffective and few, if any, will be tetraploid. Plants look good for several days, then begin to die of what appears to be dampening-off. It is really colchicine kill. Protect treated plants from dampening-off with air-circulation and fungicide, and avoid cold chills and too high temperatures.

Some plants that survive, but not all, will have changed, much larger, darker, thicker leaves with short, stubby development. Leaves are often crinkled deep green. Rejoice if this be your case! First true leaves will be long in coming because of colchicine shock. Some will even go into a dormant central bud without producing any real leaves or growth the first year. If they grow, the space between leaves is reduced, often with rosette-like heavy growth. The whole plant may grow only 2 to 5 inches the first year. The roots always grow slowly. Since there are few roots the plant is subject to heat, dryness, extreme cold and winter

heaving. They need very special care and watching, shade, proper watering and ventilation. I do not trust them outside a lath-house for the first 3 and even 5 years. Even then we have experienced as much as 40% mortality, mostly the first winter. At 5 years old they are smaller than untreated 2 year-olds. For us they come into bloom only after 9 years, rarely before. Often you get fast growing side shoots which may well be the remnants of diploid tissue that needs to be removed.

#### Results of Treatment to 1977

My earliest treated plants were open pollinated with some few hand pollinations (mostly because of the enormous colchicine kill of seedlings one does not feel like experimenting with choice hand-pollinated seeds. These are now 30 years old. Many were lost in the early experiments owing to lack of knowledge of how they should be handled especially the first winters. As with all seedling lilacs the best one can expect from open pollinated seed is that 99.9% will be inferior to either or both parents, and they were. You begin to notice some deeper coloring, stubby growth, very dwarf plants, some heavier petals. In color, pinks become lavenders, light blues a deeper lavender-blue. Wherever you look that ubiquitous lavender pigment is intensified and one is aware of why we call them 'lilacs'. It is an extremely difficult color to eliminate.

Most of the earliest tetraploids of *vulgaris* appear to be unimpressive. One must observe very carefully: they bloom longer, their leaves hang on after frost, they stand the spring rains better in bloom and summer heat. Here and there a rather choice plant appears, but very few, that gives hope that all the hours, the years, seem not to have been in vain. We have induced polyploids in all the species except *amurensis*, *microphylla* and *pinnatifolia* (which seems to winterkill for us). In the many interspecific hybrids more apparent results are found with some interesting changes in floret size and color and plant structure. Some remain 'dwarfs' as in the *vulgaris* 'Little Miss Muffet' that is only 2.1/2 feet after 30 years. It is really only in the 3rd and 4th generations that tetraploids begin to show the multiple genetic inheritance. In first and second generations you are doubling what is already there. Many treated plants have yet to bloom. There is much to look forward to, to work with and for. Perhaps a new race of tetraploid and polyploid lilacs has at last come into being (some 150 induced plants with about 200 F2 and F3 seedlings). A very small, humble beginning with hopes that others will continue this work and add to it.

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INTERSPECIFIC HYBRIDIZATION EXPERIMENTS IN  
SYRINGA SERIES VILLOSAE (Oleaceae)\*

James S. Pringle\*\*

Editor: This paper is in the form of a bulletin and consists of 44 pages (12 pages include 43 photographs). The work of Dr. Pringle herein published is significant and indicative of the efforts being exerted in this extensive breeding program, searching for NEW and better lilacs of superior bloom quality, growth habit, and greater disease resistance. The report is extensive and scientific in nature, deemed of extreme value to those persons concerned with lilac breeding programs. Therefore, due to the high cost of reprinting in this publication (LILACS) at this time, reference is made with the intent that those persons so interested may obtain a copy of this paper via the following: BAILEYA is a journal published irregularly by L.H. Bailey Hortorium, a unit of the New York State College of Agriculture and Life Sciences, Cornell University, Ithaca, N.Y.

Single copies may be obtained for \$1.25 ea. (postpaid). Address requests to the L.H. Bailey Hortorium, Mann Hall, Cornell University, Ithaca, N.Y. 14853 - make all remittances payable to BAILEYA.

This paper was not actually presented at the 1977 I.L.S. Convention, but it is a formidable report of work that has been accomplished during recent years and of such significance to the founding purpose of the Society, it is felt that it should be herein acknowledged. BAILEYA, Vol. 20, No. 2, January 1977.

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\* Contribution No. 20, Royal Botanical Gardens.

\*\*Royal Botanical Gardens, Box 399, Hamilton, Ontario,  
Canada, L8N 3H8.



1976 was the second year during which the Royal Botanical Gardens functioned as the International Registration Authority for cultivar names of lilacs.

During his sabattic year, the academic year 1975-76, Dr. Owen M. Rogers took on and completed the task of compiling the Tentative International Register of Cultivar Names in the Genus *Syringa*. This Tentative Register was published a year ago last April (1976) and since that time Dr. Rogers has coordinated its distribution to individuals and institutions concerned with lilacs. At the Rochester ILS meeting last year Dr. Rogers transferred to the Royal Botanical Gardens all the materials he had accumulated during the compilation of the Tentative Register.

In his introduction to the checklist Owen Rogers appealed to all users to supply any additional information known to them. We have repeated that appeal for information in the ILS PIPELINE, and ever since we have had an intermittent trickle of additional information and corrections. We are very grateful to those who have provided such data, not only on the lilac cultivars but also on their originators. This is what I call the appeal approach; unfortunately, it is limited to those who have a copy of the Tentative Register and use it.

Our second approach has been the missing information approach, and I would like to tell you about just one of these cases. Those of us who were at the Hamilton meeting in 1974 remember the interesting paper presented by Dr. William A. Cumming from Morden, Manitoba, on Canadian Lilac Breeders and their Introductions (Lilacs, Vol. 3, No. 1). One name that did not appear in Bill Cumming's summary was that of James Dougall. Dr. John C. Wister, in his *Lilacs for America* (1953) made the following entry: "James Dougal (sic) Windsor, Can., about 1886" and refers to three originations, namely 'Albert the Good' (1886), 'Prince of Wales' (1889) (sic) and 'Princess Alexandra' (1886). Checking Susan D. McKelvey's monograph (*The Lilac*, 1928) we find that Ellwanger & Barry of Rochester, New York offered these three cultivars in their catalogue No. 2 of 1886, stating that these cultivars had never before been offered for sale. This seemed to be all that was known, and there appeared to

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\*Royal Botanical Gardens, Hamilton, Ontario, Canada L8N 3H8.

be disagreement about the spelling of the name Dougal(1) and the year of introduction of 'Prince of Wales' (1886 or 1889). This explains Bill Cumming's doubts about James Dougall. It bothered us that we did not know more about James Dougall and we started to look for information; imagine our surprise when we found out the following: James Dougall was born at Paisley, Scotland, in 1810; his family was in the muslin business and in 1826, when James was 16, he was sent to Canada with a consignment of Paisley shawls. In 1830 he opened the first general store in what is now the Windsor, Ontario area; in 1850 he established Windsor Nurseries. To date we have located one catalogue, the one for 1874. Listed are the three lilacs offered 12 years later by Ellwanger & Berry, namely:

- 'Albert the Good' - "This bids fair to be the very finest, largest flowered dark purple lilac."
- 'Prince of Wales' - "A new seedling, the handsomest dark purple lilac, flowers large, recurved petals."
- 'Princess Alexandra' - "A new seedling, superb, pure white, flowers double the size of common white, very showy and desirable."

Furthermore, there is another named cultivar and two unnamed ones:

- 'Queen Victoria' - "Very dark purple, a splendid new seedling, none superior, one year from bud."
- (Double Purple) - "A new, very fragrant lilac."
- (New Double Purple) - "A new seedling from the previous, much darker and finer".

From two articles in the Canadian Horticulturist (January 1879 and July 1880) we learned that Dougall originated a further cultivar which he named:

- 'Marchioness of Lorne'- "A beautiful pale clear blue."  
(originally 'Azure')

There also are three *nomina nuda* (naked names), namely 'Marquis of Lorne', 'Princess Beatrice' and 'Princess Louise'. A further search of Dougall's writings may turn up evidence that will match up the unnamed descriptions with some of these names. Quite a bit is known about James Dougall. Our information comes from unpublished manuscript material compiled by Dr. Fred H. Armstrong, University of Western Ontario, for the Dictionary of Canadian Biography. At the age of 27 Dougall was appointed a magistrate and a notary public; he served on the town council and was twice elected mayor of Windsor; it was through his initiative that the town was named Windsor. There is a portrait of him. He died in 1888.

Our third approach has been that of conflicting information. A very recent case was the one of cv. 'Heavenly Blue'. John Wister's entry in Lilacs for America (1953) reads "D III Heavenly Blue (Blacklock N) OT"; in other words, double blue, a new Blacklock origination in the Ottawa, Canada collection. Owen Rogers' entry in the Tentative Register (1976) reads; "D III Heavenly Blue, Blacklock pre 1968 Rowancroft Gardens, Cat. 31 (1969)". There is no conflict here. The conflict was that all the plants we have grown over the years at the Royal Botanical Gardens turned out to have single flowers. These plants came from various sources, including Rowancroft Gardens and the Ottawa Collection (OT). In the Gardens' Library we had only the more recent catalogues of Rowancroft Gardens issued during the 1950's and 1960's; namely numbers 15, 16, 17, 18 and 19; these catalogues do not carry a date. In the description in these catalogues it does not state whether the flowers of 'Heavenly Blue' are single or double. Charles Holetich would bug me every winter, asking me to find a source of the "real" 'Heavenly Blue'. When he asked me again this year I remembered that we had received a pack of old catalogues of Rowancroft Gardens. These catalogues came from the office of the now discontinued Rowancroft Gardens and some copies had been annotated by the late Miss Blacklock and the late Miss Castle. We looked up 'Heavenly Blue' and in catalogues number 10, 11, 12 (13 we do not have) and 14 we found it described as having single flowers. In other words, the plants with single flowers we had been growing were all genuine 'Heavenly Blue' ! But why did John Wister list it as being double? We found the answer to that question in catalogue No. 9, issued about 1943. It is the catalogue in which the description appears for the first time. It reads:

"Heavenly Blue - Upright growth and double flowers of a lovely clear blue. This is the finest of our own seedlings to date. Each \$2.50"

Checking and double-checking is another approach we used; it is a simple one, but time-consuming and often tiring. In the PIPELINE of August, 1976, (Vol. 2, No. 8), the editor drew attention to four recent United States Plant Patents for new lilacs. Since we had a hunch that the plant patents had not been checked we compiled a list of all patents granted for lilacs (there are 24) and compared it with the Tentative Register. We now have all plant patent information in the registration file; a list of the patented lilacs has been appended to this report.

Work on the International Register is continuing. At the same time we continue to search for biographical information on those people who worked on lilacs and originated new hybrids or cultivars. Some people have been most cooperative in supplying information about themselves or others; some are not so cooperative. Our greatest problem is time; firstly the lack of adequate time to spend on registration business, secondly the speed with which

time passes, and while time passes information gets lost, catalogues are discarded, people pass away and are forgotten. In the case of James Dougall we were quite fortunate to find so much information; of others who lived and worked on lilacs much more recently we know next to nothing. Our biographical file is only one year old; of the majority of lilac originators we know no more than can be found on pages 17 through 21 of Lilacs for America (1953). To those who have relatives, friends or neighbours who originated lilacs we appeal to share their information with us for our lilac files.

There are problems to be solved and decisions to be made. We have asked the ILS Advisory Committee on Registration to look into the problem of transliteration of the Cyrillic characters into English. There appear to be several systems in use; we would like to see one system used that is acceptable to those who use the Cyrillic alphabet and to those who use the English alphabet or, to be more specific, the Latin alphabet adapted to the English language. We are also consulting the Advisory Committee and the Editor on the choice of publications in which to publish new lilac registrations.

#### APPENDIX

##### Lilac Cultivars Patented in the United States\*

<u>U.S. PLANT PATENT NO.</u>	<u>DATE</u>	<u>CULTIVAR NAME</u>
754	Aug. 26, 1947	'Clarke's Giant'
768	Dec. 16, 1947	'Esther Staley'
831	Apr. 12, 1949	'Pink Spray'
832	Apr. 12, 1949	'Purple Heart'
837	May 17, 1949	'Splendor'
937	June 13, 1950	'Sunset'
946	June 13, 1950	'Purple Glory'
1086	Apr. 22, 1952	'Edward J. Gardner'
1108	June 24, 1952	'Primrose'
1128	Sept 16, 1952	'Sweetheart'
1238	Jan. 5, 1954	'Lavender Lady'
1242	Jan. 19, 1954	'Sensation'
1443	Jan. 3, 1956	'Mrs. R.L. Gardner'
1444	Jan. 3, 1956	'Jessie Gardner'
2076	Aug. 1, 1961	'Frank Patterson'
2204	Dec. 25, 1962	'Stropkey Variegated'
2614	Mar. 22, 1966	'Dappled Dawn'
2744	May 30, 1967	'Sierra Snow'
3694	May 15, 1975	'Agincourt Beauty'

## APPENDIX (cont'd)

<u>U.S. PLANT PATENT NO.</u>	<u>DATE</u>	<u>CULTIVAR NAME</u>
3695	May 15, 1975	'Slater's Elegance'
3885	Aug. 15, 1976	'Heather Haze'
3892	Aug. 15, 1976	'Sweet Charity'
3893	Aug. 15, 1976	'Old Lace'
3895	Aug. 15, 1976	'Big Blue'

\* United States Plant Patents become public property after 17 years.

RESPONSES OF LILACS TO APPLICATION OF DIFFERENT HIGH-PHOSPHATE FERTILIZERS at the Royal Botanical Gardens, Hamilton, Ont., Canada

- Charles Holetich

The idea of this project originated during the first International Lilac Society Convention in May 1972, at Rochester, N.Y., when numerous questions were asked: which fertilizer is the best for lilacs? Although the general consensus was that it should be high in phosphate, opinions differed as to the best time of application.

The "Katie Osborne" Lilac Collection at the Royal Botanical Gardens in Hamilton, Ontario, which is situated on rolling terrain, and is subdivided into sections with different exposures, was an ideal testing location.

Each section within the lilac collection where this fertilizer study was conducted was subdivided into two equal areas. One area was treated with one of three selected fertilizers, while the other was left untreated as a control area.

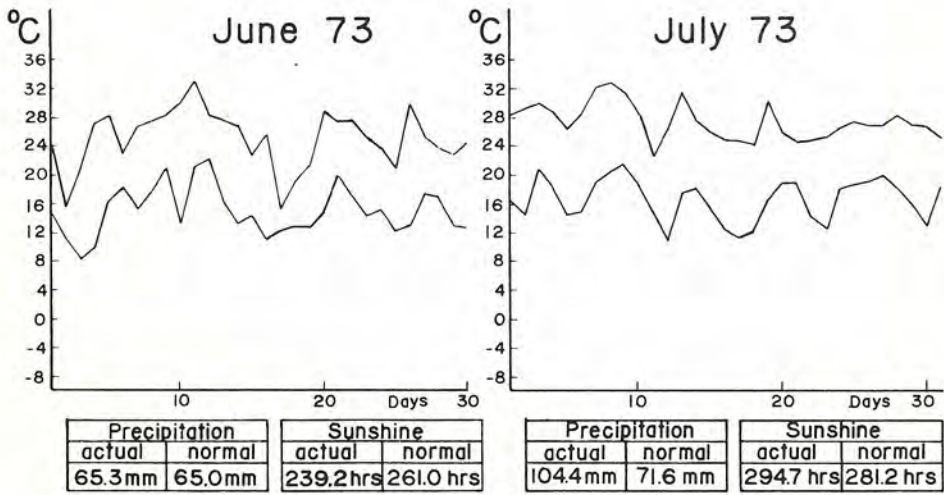
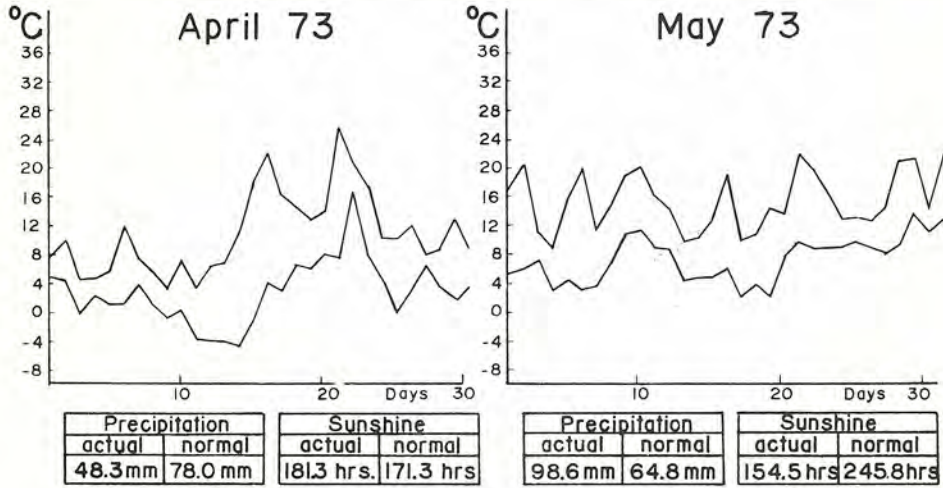
The three high-phosphate fertilizers applied were 4-12-8, 15-45-5, and 0-20-0. Dates of applications were May 18 and June 15, 1973, June 27 and July 18, 1974, and a single application on June 12, 1975. The amount applied per lilac bush during each application was 14 ozs of 0-20-0, or 14 ozs of 4-12-8, or 4 ozs of 15-45-5. The fertilizer was scattered evenly in an area of about 3-4 ft. in diameter and was cultivated into the soil.

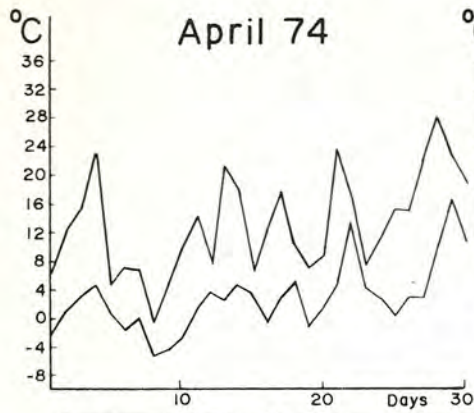
The plants used for the survey averaged 15 years of age in sections A-L, 10 years in sections N and O, and about 8 years in sections S and U. Sections T and V, although fertilized all 3 years, were not taken into consideration in this survey because of numerous changes due to planting. In all other sections, if new planting took place during 1972-76 these newly planted lilacs were not considered in the survey.

Soil throughout the collection is composed of heavy clay. It took 4-6 hours for water to disperse from water-filled holes 3 ft wide and 2 ft deep. The soil varies throughout the collection site from neutral to slightly alkaline.

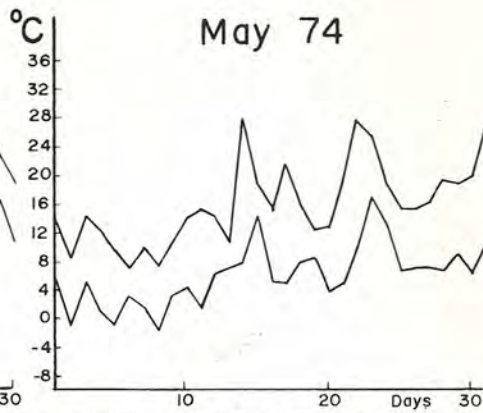
Since it is not clear when flower-bud initiation takes place, and since, in my opinion, flower-bud initiation depends not only on the physical condition of a plant and on soil nutrients, but also on such factors as temperature, precipitation, and sunlight, data on these factors for the months of April through July, 1973 through 1975, are presented in Tables.

Daily maximum and minimum temperatures  
monthly precipitation and sunshine hrs.

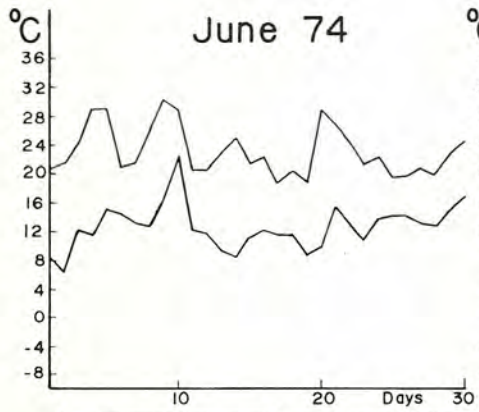




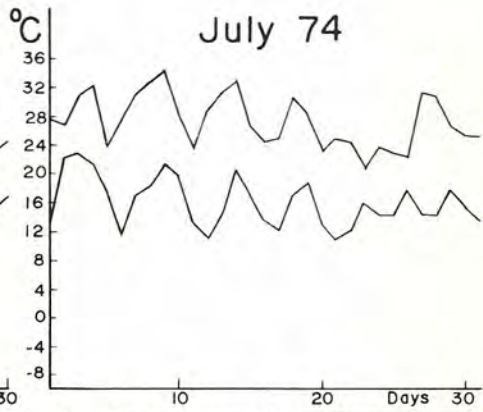
Precipitation		Sunshine	
actual	normal	actual	normal
82.8 mm	78.0 mm	185.8 hrs	171.3 hrs



Precipitation		Sunshine	
actual	normal	actual	normal
130.3 mm	64.8 mm	226.0 hrs	245.8 hrs

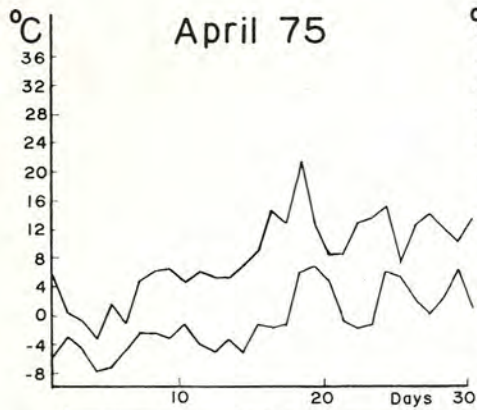


Precipitation		Sunshine	
actual	normal	actual	normal
103.6 mm	65.0 mm	250.3 hrs	261.0 hrs

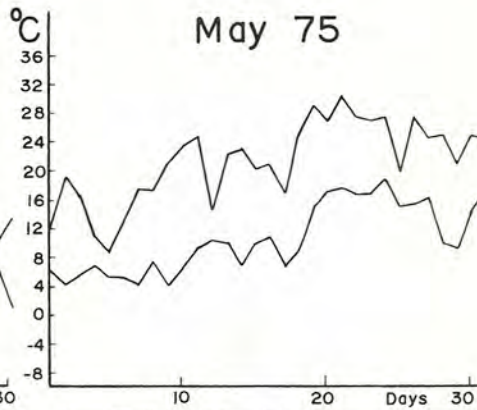


Precipitation		Sunshine	
actual	normal	actual	normal
39.4 mm	71.6 mm	329.4 hrs	281.2 hrs

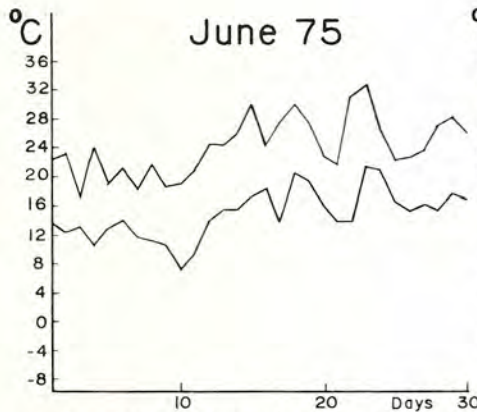




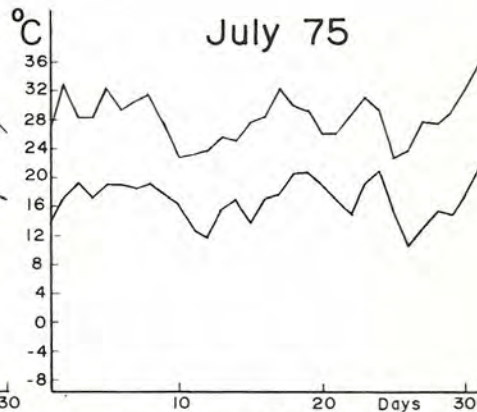
Precipitation		Sunshine	
actual	normal	actual	normal
44.7mm	78.0mm	213.6hrs	171.3hrs



Precipitation		Sunshine	
actual	normal	actual	normal
78.5 mm	64.8mm	257.2 hrs	245.8hrs



Precipitation		Sunshine	
actual	normal	actual	normal
64.5mm	65.0mm	289.8hrs	261.0 hrs



Precipitation		Sunshine	
actual	normal	actual	normal
75.2mm	71.6 mm	346.5hrs	281.2 hrs

Each year subsequent to fertilizer application a flower count was recorded for each lilac bush. Three categories were established: "Good" for plants with more than 40 clusters; "Medium" for shrubs with 20 to 40 clusters; and "Poor" for plants with fewer than 20 clusters.

Following tables comprise the record of the amount of bloom during the three-year period - 1973-75.

SECTION A

YEAR	FERTILIZER 4-12-8				CONTROL			
	GOOD	MED	POOR	TOTAL	GOOD	MED	POOR	TOTAL
1974	9	-	-	9	9	-	-	9
1975	6	1	2	9	6	1	2	9
1976	9	-	-	9	9	-	-	9

SECTION B

YEAR	FERTILIZER 15-45-5				CONTROL			
	GOOD	MED	POOR	TOTAL	GOOD	MED	POOR	TOTAL
1974	10	2	1	13	8	1	4	13
1975	6	2	5	13	4	4	5	13
1976	10	3	-	13	9	3	1	13

SECTION D

YEAR	FERTILIZER 4-12-8				CONTROL			
	GOOD	MED	POOR	TOTAL	GOOD	MED	POOR	TOTAL
1974	28	5	7	40	31	4	5	40
1975	17	14	9	40	23	9	8	40
1976	25	8	7	40	31	2	7	40

## SECTION E

YEAR	FERTILIZER 15-45-5				CONTROL			
	GOOD	MED	POOR	TOTAL	GOOD	MED	POOR	TOTAL
1974	20	6	3	29	19	1	9	29
1975	13	8	8	29	8	5	16	29
1976	22	4	3	29	15	3	11	29

## SECTION L

YEAR	FERTILIZER 0-20-0				CONTROL			
	GOOD	MED	POOR	TOTAL	GOOD	MED	POOR	TOTAL
1974	26	-	-	26	18	4	4	26
1975	13	5	8	26	11	3	12	26
1976	25	-	1	26	16	3	7	26

## SECTION N

YEAR	FERTILIZER 4-12-8				CONTROL			
	GOOD	MED	POOR	TOTAL	GOOD	MED	POOR	TOTAL
1974	6	4	4	14	2	5	7	14
1975	5	4	5	14	2	5	7	14
1976	9	1	4	14	4	6	4	14

## SECTION O

YEAR	FERTILIZER 0-20-0				CONTROL			
	GOOD	MED	POOR	TOTAL	GOOD	MED	POOR	TOTAL
1974	9	4	6	19	2	3	14	19
1975	7	8	4	19	4	5	10	19
1976	7	7	5	19	3	5	11	19

## SECTION S

YEAR	FERTILIZER 0-20-0				CONTROL			
	GOOD	MED	POOR	TOTAL	GOOD	MED	POOR	TOTAL
1974	11	3	10	24	11	4	9	24
1975	8	5	11	24	9	5	10	24
1976	10	2	12	24	10	4	10	24

## SECTION U

YEAR	FERTILIZER 4-12-8				CONTROL			
	GOOD	MED	POOR	TOTAL	GOOD	MED	POOR	TOTAL
1974	3	1	15	19	3	1	15	19
1975	-	4	15	19	3	3	13	19
1976	4	1	14	19	-	4	15	19

In conclusion, one may see when comparing data of treated bushes with control ones that in the "Katie Osborne" Lilac Collection different high-phosphate fertilizer applications had no appreciable influence on the amount of bloom.

There are a number of large trees growing in the collection that were deliberately left in place when the original woodland was cleared so as to make the garden aesthetically pleasant throughout the year. This may account for the fact that control lilacs in section D generally had a greater amount of bloom than those fertilized. In section N the case is reversed where the treated lilacs may have enjoyed a somewhat greater number of sunshine hours than those untreated.

Readers comments, suggestions and information about their own experiences in application of fertilizer are welcomed.



LILACS RESISTANT TO LEAF ROLL-NECROSIS AND POWDERY MILDEW by  
C.R. Hibben<sup>1</sup>, J.T. Walker<sup>2</sup>, M.P. Taylor<sup>3</sup>, & J.C. Allison<sup>4</sup>.

#### Abstract

Lilacs (*Syringa vulgaris* L. and other species) at several arboreta 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.

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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

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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 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 susceptible to LRN. The cuttings were rooted and grown the next year at Kitchawan, which is in 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 unidentified, 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 noteworthy that non-*vulgaris* cultivars and inter-specific 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.

#### 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. Resistant 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 leafroll-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 consistency 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. Moreover, 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.

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Table 1. Ratings of certain lilac cultivars and species according to their resistance to the leaf roll-necrosis foliar disorder.

Cv or species	Injury Index <sup>1</sup>
Group 1. Slightly injured (resistant).	
<i>S. pekinensis</i> <sup>2</sup>	1.1
<i>S. meyeri</i>	1.3
Lamartine	1.4
<i>S. emodi</i>	1.5
Buffon	1.5
Esther Staley	1.5
Macrostachya	1.6
Excellens	1.6

Montesquieu	1.6
Montaigne	1.7
Mrs. W.E. Marshall	1.7
Assessippi	1.7
<i>S. microphylla</i>	1.8
Nellie Bean	1.8
Président Fallières	1.8
<i>S. villosa</i>	1.8
<i>S. yunnanensis</i>	1.8
Catinat	1.8
Lutèce	1.8
Pocahontas	1.8
A.M. Brand	1.9
Priscilla	1.9
<i>S. reflexa</i>	1.9

Group 2. Moderately injured.

Congo	2.0
Jules Simon	2.0
Monge	2.0
Ruhm von Horstenstein	2.0
Frau Wilhelm Pfitzer	2.1
Glory	2.1
Ronsard	2.1
<i>S. Josikava</i>	2.1
Necker	2.1
Belle de Nancy	2.2
Decaisne	2.2
Georges Bellair	2.2
Jean Macé	2.2
Lucie Baltet	2.2
Maréchal Foch	2.2
Président Grévy	2.2
René Jarry-Desloges	2.2
Waldeck-Rousseau	2.2

<i>S. persica</i>	2.2
Bleuâtre	2.3
Charles X	2.3
Général Pershing	2.3
Jeanne d'Arc	2.3
Louis Henry	2.3
Paul Hariot	2.3
Primrose	2.3
Thunberg	2.3
<i>S. patula</i>	2.3
Virginité	2.3
Alphonse Lavallée	2.4
Charles Joly	2.4
Edouard André	2.4
Jacques Callot	2.4
Mme. Antoine Buchner	2.4
Mme. Florent Stepman	2.4
Mont Blanc	2.4
Monument	2.4
Président Carnot	2.4
Président Poincaré	2.4
President Roosevelt	2.4
Volcan	2.4
<i>S. sweginzowii</i>	2.4
Louvçis	2.4
Scotia	2.4
Adelaide Dunbar	2.5
Capitaine Baltet	2.5
De Louvain	2.5
Desfontaines	2.5
General Sheridan	2.5
Léon Gambetta	2.5
Andenken an Ludwig Späth	2.5
Maréchal Lannes	2.5
Marie Finon	2.5
Michel Buchner	2.5

Président Viger	2.5
Victor Lemoine	2.5
Turgot	2.5
Jan van Tol	2.6
Mme.F. Morel	2.6
Mme.Lemoine	2.6
De Miribel	2.7
Miss Ellen Willmott	2.7
Marie Legraye	2.7
Diderot	2.8
Etna	2.8
Mme.Casimir Périer	2.8
Perle von Stuttgart	2.8
Réaumur	2.8
Vestale	2.8
Ami Schott	2.9
Maurice Barrès	2.9

GROUP 3. Severely injured (susceptible)

Boule Azurée	3.0
Edith Cavell	3.0
Katherine Havemeyer	3.0
Leopold II	3.0
William Robinson	3.0

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<sup>1</sup> Severity of injury increasing with the numbers 1.0 - 3.0

<sup>2</sup> Lilac names according to Rogers In Literature Cited

Table 2. Ratings of certain lilac cultivars and species according to their resistance to powdery mildew.

Cv or species	Mean Powdery mildew rating		
	C.R.H. <sup>1</sup>	I.H.C. <sup>2</sup>	J.W.K. <sup>3</sup>
Group 1 - Resistant			
<i>S. diversifolia</i> <sup>4</sup>	1.0		
Doyen Keteleer	1.0		
<i>S. emodi</i>	1.0	1	1
Excellens	1.0		
Jules Ferry	1.0	2	1
<i>S. julianae</i>	1.0		
Laurentian	1.0	1	1
<i>S. meyeri</i>	1.0	1	1
<i>S. microphylla</i>	1.0	1	1
<i>S. microphylla</i> 'Superba'	1.0		1
<i>S. oblata</i> var. <i>dilatata</i>	1.0	1	1
<i>S. patula</i>	1.0	1	1
<i>S. persica</i>	1.0	1	1
<i>S. reflexa</i>	1.0	1	1
<i>S. reticulata</i>	1.0		
<i>S. x sweginflexa</i>	1.0		
<i>S. sweginzowii</i>	1.0	1	1
Vauban	1.0		2
<i>S. villosa</i>	1.0	1	1
<i>S. yunnanensis</i>	1.0	1	1
Group 2 - Slightly infected.			
Alice Eastwood	1.6		1
Bertha Phair	1.3		
Bleuâtre	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
<i>S. Josikaea</i>	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
Lutèce	1.8		
Marceau	1.3	3	2
Maréchal Lannes	1.9	4	
Marie Finon	1.2	1	
Marie Legraye	1.3	1	1
Maurice Barrès	1.2	1	1
Michel Buchner	1.4	2	1
Mme. Casimir Périer	1.4	2	2
Mme. Florent Stepman	1.6		2
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
<i>S. oblata</i>	1.7	1	1
Patrick Henry	1.3	2	1
Paul Thirion	1.8	2	2
Pocahontas	1.3		1
Président Fallières	1.6	3	1
President Lincoln	1.5	1	1
Président Loubet	1.3	2	1
Président Poincaré	1.6	2	2
Primrose	1.2		1
Ronsard	1.7		2
Stadtgärtner Rothpletz	1.6	2	2
<i>S. tomentella</i>	1.2		
Vestale	1.2	1	1
Villars	1.7	2	
Virginité	1.5		1

William S. Riley	1.8	1	2
Zulu	1.7		

Group 3 - Moderately Infected

Adelaide Dunbar	2.0	2	2
Alphonse Lavallée	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 Azurée	2.7	2	
Capitaine Baltet	2.3	4	2
Catinat	2.3	1	1
Charles X	2.3	3	3
<i>S. x chinensis</i> f. <i>saugeana</i>	2.4		
Claude Bernard	2.0	2	1
Condorcet	2.3	3	2
Congo	2.8	3	2
Corinne	2.7	1	3
Crépuscule	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
Général Pershing	2.4	1	1
General Sheridan	2.4	3	2
Georges Bellair	2.3	2	1
Glory	2.2		1
Jacques Callot	2.3		
Jean Macé	2.3	3	1
Lamartine	2.3	3	2
Léon Gambetta	2.0	2	2
Macrostachya	2.0	4	3

Maréchal Foch	2.0	2	2
Miss Ellen Willmott	2.0		2
Mlle. Mélide Laurent	2.0	4	2
Mme. Antoine 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
Président Grévy	2.7		2
Président Massart	2.5	2	2
President Roosevelt	2.3		3
Président Viger	2.5	1	1
Priscilla	2.3		3
Réaumur	2.2	4	
René Jarry-Desloges	2.2	2	1
<i>S. rhodopea</i>	2.7		2
Ruhm von Horstenstein	2.7		2
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

Group 4 - Highly Susceptible.

Andenken an Ludwig Späth	3.0		2
Buffon	3.0		3



Cavour	3.0	4	2
<i>S. chinensis</i> f. <i>alba</i>	3.3		3
<i>S. x chinensis</i> f. <i>metensis</i>	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. Fallières	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

<sup>1</sup> Rating system: 1= no mildew, 2= slight, 3= moderate, 4= severe.

<sup>2</sup> Crowell, I.H. In Literature Cited. (1= immune, no macroscopic evidence, 2= slightly susceptible, 3= moderately susceptible, 4= very susceptible).

<sup>3</sup> 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.

<sup>4</sup> Lilac names according to Rogers In Literature Cited.

Editor's Note:

The foregoing paper appeared as part of the 1976 PROCEEDINGS, but because of unexplainable omissions and erroneous arrangements of a portion of the copy, the total emphasis of the authors effort tantamount to the subject was lost, hence it is herein being reprinted in its entirety. We acknowledge the value of this investigation and recognize the disturbing affects of the problem over a wide range of the genus *Syringa*, and we sincerely appreciate the authors indulgence in this instance.

## LILACS RESISTANT TO BACTERIAL BLIGHT

Charles J. Gould and Worth E. Vassey\*

Lilacs (*Syringa* spp) are often severely attacked by bacterial blight in the cool, moist coastal area of the Pacific Northwest. The disease (caused by *Pseudomonas syringae* Van Hall) causes the typical brownish-black dieback of young shoots and flower clusters in the spring. It is so serious that lilacs have lost much of their popularity in this area since the 1930's when Mrs. Klager was developing so many new varieties at Woodland, just north of Portland.

When streptomycin sulfate became available for agricultural use, we assumed that it would provide a more simple remedy for bacterial blight than Bordeaux solution which had been recommended previously. The streptomycin did reduce the disease for us in the late 1950's, but only after 10 or 12 sprays were applied. This schedule was obviously impractical for the average homeowner, so we gave up on that approach. However, the research wasn't a waste of time because during the experimentation, we observed that varieties varied considerably in susceptibility. Therefore, we embarked upon a disease-resistance testing program in 1963, soliciting cultivars and species from many arboreta, nurseries, and individuals in both the United States and Canada. By 1970 we had accumulated and tested 226 types.

At first, we inoculated the plants artificially by spraying them with bacterial suspensions. However, we found that this was unnecessary, for, if the weather was favorable, the disease developed naturally, and in the occasional years when it wasn't favorable, the disease did not develop anyway. Since then we have either interplanted with susceptible varieties, (such as 'Katherine Havemeyer' and 'René Jarry-Desloges') or surrounded the entire area with a hedge of such varieties. The only complicating factor has been injury from an occasional late frost which precluded an accurate evaluation of disease incidence.

By 1970 it appeared that, in general, the most resistant types were late-blooming species of Asiatic parentage, while many of the most susceptible types had as a parent the early-blooming common lilac *S. vulgaris*, from southeastern Europe. Some of the most resistant types in the early tests were: *Josikaea*, 'Floreal' (*x nanceiana*), *pekinensis*, 'Rutilant', and *Sweginzowii* 'Albida'.

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\*Plant Pathologist and Senior Experimental Aide, Western Washington Research and Extension Center (Washington State University), Puyallup, WA. Research done under Project # 1167.

We had assumed that, because we had received donations from many sources, we had a representative collection of lilac varieties and, therefore, we were ready to close out the project and publish our recommendations. Prior to publishing we submitted our list of species and cultivars to Dr. John Wister. Imagine our chagrin when he replied that there were many new and good varieties now on the market which we did not have and, in fact, the majority of ours were rather outdated. Although disappointed, we were grateful for the information and started trying to run down the new types which he recommended. This proved to be quite a job, but with assistance from many sources, we finally collected a total of 88 types, including the best from our old collection and as many new ones as were available.

The new planting in 1973 was composed of five replications of five plants each, planted in a randomized block, with an additional plant of a known susceptible variety planted with each set of five test plants. Unfortunately, due to a combination of too-small plants, a waterlogged location, and some severe freezes, we subsequently lost so many plants that we had to move to another location in 1975, eliminate a few varieties, and reduce the number of replications of the others to three or fewer. However, the loss was not all bad because it demonstrated that those varieties which survived were sufficiently hardy for western Washington conditions.

Injury from a late spring frost prevented us from obtaining accurate data in 1976, but, fortunately, a reasonably good disease attack without frost injury occurred in the spring of 1977 to yield the data obtained on May 19 and shown in Table 1. We also have included in Table 1 the disease rating in 1973 for those cultivars and species which were also in the old block. We should emphasize that the data for the new planting represent counts for only one year. Different strains of the pathogen may exist and different environmental conditions might produce different results in other areas and perhaps in this area upon repeated tests.

#### Resistance By Groups

A few differences were found between different groups of lilacs but, before listing them, it must be emphasized that (1) this was a somewhat select collection, and (2) the numbers in some groups are rather small. With this in mind, the number of plants is given in parenthesis after each characteristic, followed by the average percent of bacterial blight. The totals for numbers of varieties are not always identical because some information was lacking on classifications. In general, the doubles seem to be somewhat more resistant than singles, and the lilac (IV) colored somewhat more than the other colors.

FLOWER TYPE: Single (55 varieties) = 8.0% (Blight)  
Double (15 varieties) = 4.6% (Blight)

FLOWER COLOR: Bluish (III) (6) = 12.0%; Magenta (VI) (11) = 8.6%;  
White (I) (14) = 8.5%; Purple (VII) (7) = 9.14%; Pinkish (V) (19)  
= 7.2%; Violet (II) (3) = 6.2%; Lilac (IV) (8) = 3.4%.

SPECIES & HYBRIDS: *S. x hyacinthiflora* (6) = 19.3%;  
*S. villosa* (2) = 14.2%; *S. komarowii* (2) = 12.8%; *S. vulgaris* (33)  
= 8.5%; *S. x prestoniae* (10) = 7.9%; *S. reticulata* (2) = 5.3%;  
*S. microphylla* (2) = 4.0%; *S. velutina* and *S. x henryi* (2) = 2.0%;  
*S. patula* (1) = 1.9%; *S. reflexa* (1) = 1.7%; *S. josikaea* (1) = 1.4%;  
*S. sweginzowii* (1) = 1.3%; *S. x nanceiana* (2), *S. pekinensis* (1),  
*S. x swegiflexa* (1), *S. x josiflexa* (4) = 1% each.

The *vulgaris* group has long been noted for its susceptibility to bacterial blight. In this test the *x prestoniae*, *villosa* and *komarowii* cultivars were comparable to *vulgaris*, and the *x hyacinthiflora* selections appeared even more susceptible. The most susceptible cultivar in the entire collection was the *x hyacinthiflora* 'Sister Justena' with 47% of its shoots infected. Unfortunately, the numbers of other species tested are too few to be indicative.

The *Ligustrina* subgenus was somewhat more resistant (3.9% avg.) than either the Series *Vulgaris* (8.0%) or Series *Villosae* (8.2%).

#### SUMMARY

This study, fortunately, has shown that there are several suitable resistant varieties available in each of the color, species and other categories from which we can recommend types for planting in Western Washington. Hopefully, too, this information will be used by hybridizers so more bacterial blight resistance will be incorporated into future varieties.

The testing procedure could and should be simplified. Because of a shortage of greenhouse space and for other reasons we relied upon field tests. However, with ample greenhouse facilities and/or growth chambers, a suitable 'indoor' test probably could be devised to expedite selection of highly resistant types similar to that which Dr. Don Egolf is now using for Scab and Fire Blight resistance in *Pyracantha* at the U.S. National Arboretum.

We should also point out that this bacterium (*Pseudomonas syringae*) is highly variable and infects many types of plants. Therefore, it is possible that different strains exist in different parts of the U.S. and varieties that are resistant here may not exhibit similar resistance elsewhere, and vice versa.

Finally, we wish to thank the many individuals, nurseries, and arboreta for their kind donations of cuttings or plants. There were so many that we hesitate to name any, lest we overlook one or more. But to everyone who cooperated goes our special thanks.

(See Tables on Pages 52 - 57)

SYRINGA SPECIES AND VARIETIES AND THEIR RESISTANCE TO BACTERIAL BLIGHT

Highly Resistant in 1977

Name	NEW PLOTS		OLD PLOTS	CLASSIFICATION		
	No. of Plants 1977	% Infection 5-19-77	Rating <sup>a</sup> 1973	Single <sup>b</sup> or Double	Color <sup>c</sup>	Species <sup>d</sup>
'Alphonse Lavallée'	5	0.8	+++	D	IV	V
'Anna Amhoff'	5	1.0		S	I	Jo
'Crépuscule'	1	1.0		S	III	V
'Enid'	5	0.8		S	V	Jo
'Floréal'	13	1.0	+++++	S	V	N
'Maud Notcutt'	3	0.7	++++	S	I	V
<u>S. microphylla</u>	13	1.0	++++	S	IV	M
'Mont Blanc'	4	1.0		S	I	V
<u>S. pekinensis</u>	14	1.0	+++++	S	I	Pe
<u>S. reflexa</u>	15	0.7	+++++	S	V	Re
'Romeo'	12	0.8		S	V	P
'Royalty'	15	0.7		S	VII	Jo
'Rutilant'	15	1.0	+++++	S	VII	N
<u>S. Komarowii</u>	14	0.7	+++++	S	V	K
<u>S. x swegiflexa</u>	14	1.0	+++++	S	V	S
'Wm. Robinson'	2	0.0	+++++	D	IV	V

## Moderately Resistant in 1977

Name	NEW PLOTS		OLD PLOTS	CLASSIFICATION		
	No. of Plants 1977	% Infection 5-19-77	Rating <sup>a</sup> 1973	Single <sup>b</sup> or Double	Color <sup>c</sup>	Species <sup>d</sup>
'Excellens'	7	2.0		S	I	Pa
'Guinevere'	14	1.4		S	VI	Jo
<u>S. x henryi</u>	15	1.7	+++++	S	IV	He
'Isabella'	15	1.7		S	IV	P
'Jeanne d'Arc'	6	1.5	+++	D	I	V
<u>S. josikaea</u>	14	1.4	+++++	S	IV	J
'Lutèce'	13	2.3	++++	S	II	He
'Mme. Antoine Buchner'	7	2.6	+++++	D	V	V
'Mrs. W.E. Marshall'	12	2.1		S	VII	V
<u>S. patula (velutina)</u>	12	1.9		S	?	Pa
'Prairial'	8	2.0		S	V	H/T
<u>S. sweginzowii</u> 'Albida'	15	1.3	+++++	S	I	Sw

Intermediate Resistance in 1977

Name	NEW PLOTS		OLD PLOTS	CLASSIFICATION		
	No. of Plants 1977	% Infection 5-19-77	Rating <sup>a</sup> 1973	Single <sup>b</sup> or Double	Color <sup>c</sup>	Species <sup>d</sup>
'Congo'	4	4.5	+++	S	VI	V
'Coral'	9	5.1		S	V	P
'Marc Micheli'	3	5.0		D	V	V
'Mme. Abel Chatenay'	9	4.8	+++	D	I	V
'Nerissa'	14	3.7		S	VI	P
<u>S. x prestoniae</u> (hybrid)	14	4.1	+++++	S	IV	P
'Priscilla'	11	3.3	+++	S	VI	V
'Red Guide'	7	3.0	+++	S	VI	V
<u>S. reticulata</u>	15	4.7		S	I	R
'Violetta'	5	4.0	++++	D	II	V



Moderately Susceptible in 1977

Name	NEW PLOTS		OLD PLOTS	CLASSIFICATION		
	No. of Plants 1977	% Infection 5-19-77	Rating <sup>a</sup> 1973	Single <sup>b</sup> or Double	Color <sup>c</sup>	Species <sup>d</sup>
'Bleuâtre'	12	9.7	++++	S	III	V
'Etna'	4	10.0	+++	S	VII	V
'Hiawatha'	14	8.0		S	VI	P
'James MacFarlane'	15	6.7	++++	S	V	P
'Jean Bart'	6	7.7	+++	D	V	V
<u>S. microphylla</u> 'Superba'	13	7.1		S	V	M
'President Carnot'	4	5.0	+++	D	IV	V
<u>S. reticulata</u>	14	5.9	+++	S	I	R
'Rosea grandiflora'	3	6.0	+++	D	VI	V
'Ursula'	13	5.7	++++	S	V	P
<u>S. villosa</u> 'Rosea'	15	8.3		S	V	Vi

Most Susceptible in 1977

Name	NEW PLOTS		OLD PLOTS	CLASSIFICATION		
	No. of Plants 1977	% Infection 5-19-77	Rating <sup>a</sup> 1973	Single <sup>b</sup> or Double	Color <sup>c</sup>	Species <sup>d</sup>
'Annabel'	9	12.8		D	V	V
'Assessippi'	15	12.7		S	IV	H
'Catinat'	5	24.0		S	V	H
'Cavour'	12	12.4		S	II	V
'Charles X'	4	20.0	+++	S	VI	V
'Charm'	4	11.5		S	V	V
'Donald Wyman'	13	30.0		S	VII	P
'Esther Staley'	15	15.0		S	VI	H
'Firmament'	5	35.0		S	III	V
'Gertrude Leslie'	3	15.0		D	I	H
'Gloire de Moulins'	8	13.8	+++	S	V	V
'Hecla'	12	13.3		S	VI	P
<u>S. komarowii</u>	12	25.0		S	V	K
'Maréchal Lannes'	7	12.0	+++	D	III	V
'Marie Finon'	7	17.6		S	I	V
'Night'	7	12.1		S	VII	V
'Primrose'	15	14.7	+++	S	I	V
'Réaumur'	12	17.0		S	VI	V
'René Jarry-Desloges'	7	11.4	+++	D	III	V
'Sister Justena'	12	46.7		S	I	H
<u>S. villosa</u>	15	20.0		S	V	Vi

- a. Most resistant = +++++ to most susceptible = + in 1973
- b. Flower type: S = single and D = double
- c. Flower color: I = White; II = Violet; III = Bluish; IV = Lilac; V = Pinkish;  
VI = Magenta; VII = Purple
- d. Species parentage: H = *S. hyacinthiflora*; He = *S. x henryi*; J = *S. josikaea*;  
Jo = *S. x josiflexa*; K = *S. komarowii*; M = *S. microphylla*;  
N = *S. x nanceiana*; O = *S. oblata*; P = *S. x prestoniae*;  
P = *S. patula*; Pe = *S. pekinensis*; R = *S. reticulata*;  
R = *S. reflexa*; S = *S. x swegiflexa*; Sw = *S. sweginzowii*;  
T = *S. tomentella*; V = *S. vulgaris*; Vi = *S. villosa*

From the Tentative International Register of Cultivar Names in the Genus *Syringa* by  
Owen M. Rogers, Res. Rpt. #49, 1976. University of New Hampshire, Agricultural  
Experiment Station.



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8. Mr. Chaykowski
9. Mrs. Chaykowski
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11. Mrs. Clark
12. Mrs. Fiala
13. Mrs. Pesata
14. Mrs. Kara
15. Mr. Kara

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3. Mrs. Margaretten
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7. Mrs. Webster
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