ONTARIO REGIONAL LILY SOCIETY

"COMING EVENTS"

Sunday, April 20, 1975: 2 P.M., Headquarters Building of the Royal Botanical Gdns. Hamilton, Ontario - THE ANNUAL MEETING of the ONTARIO REGIONAL LILY SOCIETY. Guest Speaker: Dr. W.D. Evans, Guelph, Ontario

Saturday, July 12, 1975: and -Sunday, July 13, 1975: THE ANNUAL LILY SHOW of the ONTARIO REGIONAL LILY SOCIETY.

and of special interest: June 26, 27, 28/75: THE INTERNATIONAL LILY SHOW OF THE NORTH AMERICAN LILY SOCIETY, Ashland, Virginia

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Awards: Robert S. Barber Newsletter: T. Ross Martin . Library: Robert S. Barber

EDITOR'S NOTEBOOK

(T. Ross Martin)

As we embark upon another year, will you take a few minutes to ponder ways the society may better serve you? It might be an expanded Newsletter with featured articles, question and answer column, or even a barter department. Perhaps it could be improvements to our Annual Show. We have already instituted a single bloom class and will further expand this section in 1975. Do you have any suggestions to further increase the scope of the exhibition? The board has had recommendations to repeat the garden tour we had a few years ago. Would you like to participate in such a tour? What about the possibility of a small lily exhibition in Toronto, Kitchener, London, Niagara Falls in addition to the regular show? This could be held either the weeks before or after the usual show date, and would certainly assist us in reaching more gardeners and create further interest in growing lilies. And what about adding lily photography classes to our show? Are many of you photographers or camera bugs? It is certainly not an editor's duty to direct the Society, but it might just get each of you thinking that we really do want to make the Society your Society!

A note from R. S. Tinson, Bungalow 2, Kingsdown Nurseries, Swindon, Wilts. England asks that if any of our members has lilium species seed other than formosanum, regale, tigrinum, henryi, longiflorum or publium, he would very much appreciate a few. Mr. Tinson remarked that while he once had over 30 species growing in his nursery, most have been lost and it is difficult to locate sources of species seed.

Again my thanks go out to the contributors of articles for this issue of the NEWSLETTER. Without the splendid cooperation I consistently receive from the members I would find it an almost impossible task. Last fall the "Martins of Binbrook" decided to discontinue our mail order retailing of lily bulbs, and in future we'll concentrate on growing and breeding for new varieties.

Membership dues are now payable. Cur financial year runs from January to December so unless you paid your dues in advance, you should mail them to Miss Mabel Watson, Treasurer, 2 Watson's Lane, Dundas, Chtario. Help us save mailing costs of sending out renewal reminders, not to mention the time of our treasurer.

A special welcome to all our new members who have joined us since the show of 1974. Cur membership is increasing slowly, and we hope that as you browse through the names of all the society faithful, (and they are listed herein), you will find someone near you to share your enthusiasm for lilies.

olish C.R.L.S. MARKETFLACE as feed ...

A new supply of the fungicide BENIATE has been obtained by the Society. This highly concentrated powder is again available from Fred H. Hayes, 1222 Bellview St, Burlington, Ont. in small 1/4 lb. packets at \$3.00 each. Good control for black spot on roses, mildew, and betrytis on lilies. Available at the Annual Meeting too!

(ur huge supply of iron garden stakes (3 foot) was sold out at the 1974 auction. Fred has again done some digging to come up with a new source, and has a new stock at hand bundled in lots of 50 stakes at \$2.00 per bundle. Also at the Ammual Meeting.

The new stationary depicting L. michiganense will be available to buy at the Meeting. A great way to write your friends! This note paper will make a good gift idea too!

"A Beginner's Lily Garden"

(An O. R. L. S. member)

The exquisite lilies now available tempt more and more amateur gardeners to "grow lilies". Lilies are most effective when grown in a clump, if you are content with only one variety, or in a bed devoted exclusively to them, if you have the space for a collection, large or small. The effort spent to provide a near ideal environment is similar, and amply rewarding. The following suggestions have a bed four by six feet in mind, which can be diminished or extended to whatever length you can accommodate. We advise you to prepare for twice as many as you plan to grow. Undoubtedly you will be needing it.

Location is important in order to get the full enjoyment from your investment. Make certain to fit it naturally into your garden theme. It should be in full view of your dining room and kitchen windows. The slanting rays of morning and evening sunlight through the varied shades of lily petals are beautiful. Lilies in a summer shower have a beauty all their own. The moisture glistens on the whites, and the colours are intensified. Once a fresh floret opens in the morning it does not close for rain, cold or darkness.

Lilies require at least four hours of good sunshine daily. If possible, provide some afternoon shade to prolong the blossom, and to help prevent the fading of some delicate pastel colours.

Drainage must be perfect. If surrounded by slow draining heavy soil, raise the bed several inches as an added insurance. A slight slope prevents surface water from accumulating.

A background, particularly of evergreens, adds greatly to the display. For a clump it can be a single tree of cedar, yew or juniper. A small collection is best backed by a hedge which can be trimmed as a narrow arch. For a larger area a drooping curve in the length of the hedge, with the tall accent at either end is very attractive, or the taller portion can be in the centre. By keeping the hedge narrow these shapes are not difficult to maintain, nor do they need to be above your lilies. Keep within easy reaching distance of your shears.

A very dwarf evergreen hedge of boxwood, pachistima, or semi-evergreen creeping rockspray across the front, can be propagated inexpensively from an initial investment. It provides a formal transition from the lawn to the lily bed. If the area is large enough to appear barren in winter, add a couple of Hicksii yew with their shining dark green needles, or Gaiety euonymus with gay white and green leaves, at either end or, if you prefer, within the lily bed. Staked and rigidly trimmed to very slender spires either variety can be unobtrusive in the summer garden, withstand the filtered shade of the most robust lily leaves, and together with the hedges will present an entirely different and very pleasant scene in winter.

Good soil texture is vital to success, but you can grow healthy and beautiful lilies in any basic well-drained soil with the additions recommended. It may need a little experimenting to achieve the ultimate, but success is assured along the way. Heavy clay loam is probably one of the most difficult soils to garden. Once drainage is achieved the success with lilies in clay is peat moss. Use it extravagantly. It will give the long term benefits of a mellow, friable, acrated soil, but it must be thoroughly mixed.

A Beginner's Lily Garden (Continued)

The clay content is reputed to increase the depth of colour in the blossom. The growth may not be as rampant, but winter kill is less likely in a well drained clay base than in a light sandy loam, but you have to work for those advantages.

Stake out the lily bed. Working from one end excavate a trench crosswise the full depth of the shovel, and two shovels wide. Pour in peat moss — as much as you can thoroughly mix to the depth of the shovel again. Discard stones and chunks of solid clay you may encounter at that depth. Mix what was excavated with as much peat moss as it will take and return it to the trench. The amount depends on the original texture of the soil, but if you have used enough, and have mixed it thoroughly, you now have an 18-24" depth of soil in which lilies will thrive. Repeat the trenching and mixing, making sure to overlap each time as far as the bed extends.

Very sandy soil will benefit from deep digging. The addition of peat moss increases the moisture retention and provides aeration. Since both are infertile it is a better practice to add compost or rich loam also, but not manured soil for lilies.

Lime can be tolerated by some, but in general lilies require a neutral or slightly acid soil provided by the peat moss or decaying humus. Orientals should be grown separately. They thrive on more acid, more shade and shelter, and somewhat more moisture than asiatics, the same requirements as are favoured by rhododendrons.

A newly worked bed will appear to be raised, but it is very porous and will settle. The simplest way to permanently raise a small bed is to surround it with a shallow trench wide enough to be used as a path. Add the soil to the lily bed, and incorporate more peat moss. This whole project is best completed in spring and annuals or vegetables grown the first year. The extra cultivation improves the texture and the soil sinks naturally. Otherwise tamp to pack followed by a thorough watering. It helps if the garden can be left for a month or so before planting.

Grass clippings and dried weeds can be added to the pathway to give you a clean surface from which to spray, stake, remove spent blossoms, and admire at close range. Clay can remain very sticky to walk on long after the moisture on the lily leaves has dried, and the bed is workable. Your basic labours are now over for as long as you want to grow lilies.

Bulbs are most frequently delivered in peat moss in plastic bags. Lilies are never totally dormant. Plant directly from the bag to their place in the garden. A fungicide such as Thiram, dusted on the bulb, provides some protection. If you include the peat moss, be sure it is well mixed with the soil. Otherwise it could form a pocket of excess moisture. Distance varies somewhat with the subsequent growth of the bulbs, but 9" apart, in rows across the narrow width 18" apart, if you can afford that spaciousness, gives free air movement which helps prevent disease. Plant each bulb with four inches of soil above it. It will work down to accommodate its needs, but never up. Graduate the height, the talkest varieties in the centre back, and the shortest across the front. Plan the colour of the bloom as an artist uses his paint brush.

After freeze-up all new plantings require considerable mulching, as the frost can heave bulbs not fully anchored by an established root system. Any mulch is reported to be better than none, but a material which will not pack, such as straw, is considered to be the best.

A Beginner's Lily Garden (Continued)

The heavy mulch of winter should be removed in spring when danger of frost is past. A lighter summer mulch can be replaced after all the lilies have well sprouted. Some are quite slow to emerge. If straw offends the eye in summer, peat moss and soil - 2 to 1 - will provide a "dust mulch" if it is worked regularly. Pure peat will lump, and bone-dry it becomes a compact mass almost impervious to water. Pure, it is worse than useless. The idea is to keep the roots cool and moist while the stem and leaves enjoy the sunshine.

The upkeep is routine, regular but not heavy, nor is it time-consuming considering the returns. Lilies are gross feeders to support that profusion of exotic bloom, many lasting over two weeks. The fertilizer must be low in nitrogen (the first number) 5-10-10 or 5-20-10. Apply three times a year: early April before the lilies emerge, mid May, and early August when most bloom is past. A small handful around the perimeter of each bulb, sprinkled carefully! The stem is very sensitive to burn and rot. Adjust the amount to the fertility of your particular soil. A little is better than too much. Peat Moss contains no nutrients. It is there primarily to produce the proper texture. It can absorb up to fifty times its weight in water, and at the depth recommended, realeases it slowly, acting as a built-in automatic watering system. It also helps in aeration to keep the tender bulbs healthy, but it does not nourish. A top-drossing annually from the compost heap helps to maintain both fertility and texture in all soils.

Watering is rarely required for a properly prepared bed except in a prolonged dry spell, or where a large tree or growthy shrubs rob the soil of moisture. Check when in doubt, with a trowel or shovel. Water run in the surrounding path may be sufficient. However you manage, never apply water to the leaves, but the bed depth must never be allowed to completely dry out.

Botrytis is particularly prevalent among some lilies. It affects the leaves, sometimes the buds and stems, but not the bulb itself. A badly infected stem can be starved for most of the growing season and consequently the bulb may fail to survive. Spray regularly every ten to fourteen days starting in early May, and after heavy rains. Continue after the blooming season till early September. Spray thoroughly both the top and undersides, paying particular attention to the lower leaves. Bordeaux has been used for years. Benlate is a newer and highly recommended treatment.

In some gardens a tiny borer enters the stem at about the six inch height. A systemic poison sprayed then will save the bulb, but the stem above the entry eventually dies, and there will be no bloom that season. Anticipate the attack by a regular poison spray until the stems become too tough to be inviting, around 16-18 inches height.

After fall frosts, remove the stakes. Cut the stems to ground level and destry to prevent the spread of disease. By cutting, the tiny stem bulblets which may have formed below the surface are at exactly the right depth to continue to develop next spring. You may wish to remove these and replant in order to give them more space and nourishment. When the ground is completely frozen apply the winter mulch. Your only problem now is to curb your enthusiasm until the next lily growing season.

FURTHER NOTES ON THE 1974 N.A.L.S. SHOW, MINNEAPOLIS, MINN.

(Robert S. Barber, Fred H. Hayes,)

Some six months ago, Fred Hayes, Ross Martin and myself, on the way to Minneapolis and nearby Bloomington, where the annual North American Lily Society show was being held, each agreed to write a report of the proceedings of the next few days. (John Rutledge, flying in with Mrs. Rutledge, escaped this commitment, with his usual good luck, but otherwose lont considerable weight to the Ontario viewpoint in the business discussions.) It was uncomfortably hot at the time, and the thought of a relaxing shower and pleasant meal at the end of the day probably influenced my acceptance of this idea. Otherwise you might have been spared this helated and, by now, clouded account of that yearly gathering of lily enthusiasts.

Never before had the N. A. L. S. show and annual meeting been held in the area, and it was natural to expect to see many of the new hybrids produced by the lily growers in the middle western states. And since it was reasonably close to our prairie provinces, seedlings produced in this section of Canada were displayed for the first time within the writer's memory of these shows.

It is remarkably noticeable how prominent the amateur has become in producing good hybrid lilies, and some of the top awards were went by a few of these indomitable back-yard gardeners. Charles Kroell, Michigan, received a Certificate of Commendation for his bronze asiatic seedling B-71, and also went the Emsweller Trophy for an artificially produced L. longiflorum tetraploid. Robert Haring, Connecticut, was awarded three trophies for a single trumpet seedling, QG-1-The Isabella Preston Trophy (best lily in the show), D. G. Griffith Cup (best stem of an unnamed hybrid seedling grown from seed by the exhibitor) and the N. A. E. S. Directors' Cup (best trumpet lily in show). He also went the Stone and Payne Gift Certificate for the best asiatic lily of New England crigin, with his seedling EC-11. Both of the above gentlemen are among the amateur breeders who win many ribbons in these shows. Another amateur, Mrs. Esther Gontorek, Minnesota, also received a Certificate of Commendation for her yellow upfacing asiatic seedling EG-1.

Is believe there were more entries than ever before, and in spite of the high temperature - between 80-90 degrees - most of the blooms remained in good condition throughout the three days. A remarkable testimony of their excellent substance and durability. (Ed. Note: approx. 500 entries were in the show.)

Space was a factor of some concern, especially to the judges in attempting to pick the best stems on the crowded tables in the main hall, and the display would have been even more spectacular if there had been ample room. Even so, the mass and variation of colour was magnificent to see.

The artistic division comprising the arrangement classes was on the floor above, where a view from a balcony onto the lower floor was most impressive. All the entries in this division were exceptionally well done, more than a few including several varieties of lilies not usually used for this purpose. The theme "Minnesota Vacationland" was very artfully demonstrated by the imagination of the arrangers in their interpretation of such subjects as "Land of 10,000 Lakes", "Sport-Twins &Vikings" (the favourite teams of Minnesota) "Iron Range" using rocks and/or minerals, to name only a few.

Further Notes on 1974 N.A.L.S. Show (Continued)

Several Commercial displays enhanced the foyer where the latest introductions of Oregon Bulb Farms, Stone & Payne, and several other lily growers were on view. Spectators gaped in awe at six foot stems of the most gorgeous orientals with 12" wide blooms, massive containers full of asiatics in all the colours of the rainbow except the evasive blue, the stately trumpets in pink, yellow, orange and white, and several diminutive American hybrids in delicate hues of pale rose and yellow, derived from the introduction of L. kelloggii into this line.

Many of us were there to attend the several business meetings, a necessary part of our function as members of the society. Some of these were held at the Raddison South Hotel, a good 10 miles from the location of the show, and where we had our "bed and board". Others were at the Landscape Arboretum of the University of Minnesota where the show itself was held. Also at the Arboretum a series of lectures on various subjects of lily culture was held and those who could bear the sticky atmosphere were rewarded with some of the most practical and educational talks ever given at these yearly events. The preparation of the soil and subsequent planting, feeding and general care of lilies, hybridizing, exhibiting and judging lilies, and others of a more technical nature were among the popular subjects discussed.

It would be a mistake to leave the impression that all was serious and business-like. There was, as always, a lighter side, when the daylight hours having passed, one could "blow off steam" as it were. Some, with too much steam, would perhaps later regret the consequences, but it was a time when old friends and new could relax and enjoy good talk, good food and good fellowship in an atmosphere of mutual pleasantry. These moments are the most memorable of all and leave a feeling of satisfaction at being part of this yearly gathering, and prompt the thought of looking forward to the next one.

(R.S.B.)

My report of the 1974 International Show will start at Bloomington, MInnesota. Our stay at the Radisson Hotel was most pleasant and added quite a diversion to all the business meetings and lily show itself. I think one of the most enjoyalbe events that takes place at a lily show is to greet and talk to people one has met before at previous shows — at a different place and time. Lily people are friendly and generous with their time and lily knowledge.

Staging the lily show in Minnesota offered the opportunity to meet other lily people from the mid-west, and west coast, and also to see many lilies not seen in the east. We came away from the show with many pleasant memories of new friends and new ideas of growing and showing lilies.

Chasta, Minnesota, the site of the show, was nearly twenty miles by road from the hotel in Bloomington. The site of the Arboretum is the typical rolling land of Minnesota that combines open land with bush and some low lying swamp areas. Some hundred acres comprise the area, and as this is all new development, the grounds are being developed yearly. The area had suffered drought and hot weather and therefore the gardens were not at their peak. One can drive through the Arboretum by car or take a conducted tour. The tour passes well identified group plantings of trees, shrubs, and perennial plants. These were donated by various horticultural groups and garden clubs of Minnesota. The main building is large and well appointed. Built of grey stone, brick and stained wood, it is landscaped with ponds, flower beds and trees. The interior of three levels contains a cafeteria, library, lecture rooms, extending in both directions from the main lobby. There is a large auditorium in which the lily show was held, with the administrative offices on the upper floor. (Continued)

Further Notes on 1974 N.A.L.S. Show (Continued)

The commercial displays were grouped in the main lobby. Exhibits from Stone & Payne, Honeywood Nursery, Cheshire Bulb Farms, Julius Wadekamper, and Oregon Bulb Farms created a magnificent entry point to the show.

The competative classes filled the auditorium to capacity, making judging and viewing somewhat difficult. Entries from all over the United States and Canada were indeed a sight to see. The show committee had made an excellent effort to have entries in all classes. The work involved in holding early bloom in storage, and trying to force later blooming lilies to open can only he appreciated by those of us who have attempted it. It is my firm belief that not enough recognition is given to those who labour all through a show to set it up, to take it apart, and to maintain the exhibits in good condition — and with such a large show, an uncomfortable heat wave, all those responsible surely did a splendid job.

An excellent and informative series of lectures and group discussions by knowledge-able academic people doing research on plants especially lilies, proved interesting. Classes on flower arranging, and a movie on Lilies of Japan, rounded out a very full programs. Such a series of events should what the applitude of any who hesitated to make the long trip. I'll look forward to the time the N. A. L. S. ventures into the mid-west again.

The return trip took us north to Superior Wisconsin, and along the south shore of Lake Superior, and finally into how territory at Soult Ste. Marie. We saw many wild lilies - L. michiganense, and L. philadelphicum - and have many slides to prove it. In all, a very pleasant return trip from a very excellent show.

(F.H.H.)

O.R.L.S. BRIEFS

Mabel Watson, Treasurer, reported a successful auction Oct. 5/74 with \$215.25 realized from auction sales, \$171.40 from Wargain table sales, and a further \$25.25 realized on the lucky draw for a giant bulb of June Fragrance donated by Charles Robinson, and won by John Rutledge.

At the Board Meeting, Jan. 22, 1975, Miss Watson reported that the Society had 1 honourary member, 106 single members, and 26 family memberships. The financial report at Jan. 17, 1975 showed \$1104.24 in our general account, with a further \$518.83 in our bonus savings account. (A further \$500.00 will be transferred to this account.)

A donation to the N. A. L. S. of \$100.00 was authorized by the Board of Directors. A further supply of Benlate for sale to members, and iron stakes, will be made available. The Society has a new supply of "Let's Grow Lilies" at \$2.00 per copy. Staging for the single bloom specimens for our annual show is being purchased.

Charles Gardner, Waterloa, Ontario has been appointed Show Chair an for 1975, with Michael Ketyk, St. Catharines, as assistant chairman. Show dates are set for July 12 and 13th, 1975, at the Royal Botanical Gardens, Hamilton, Ontario.

The Society is investigating purchase of note paper depicting a native species for sale to the membership. Authorization was given to purchase five hand-painted plates for the major swards, if these were still available. The George Holland Award will be purchased for awarding at the 1975 N. A. L. S. Show. This is awarded for best stem of a lily introduced by a Canadian.

A REVIEW OF HYBRIDIZING PROGRESS WITHIN THE CANDIDUM -- CAUCASIAN GROUP

(Charles Robinson)

It is indeed very satisfying for lily breeders and 'cultivateurs' to look back over the past and attempt to evaluate the progress we have made thus far. As we peruse the subject further, however, we are faced with one fact ... that only very limited progress has been made within the liriotypus group, generally referred to as Division 3, and which includes L. candidum, the mediterraneum species, the Caucasian group, also liliums bulbiferum and polyphyllum. To overcome this situation our ideas and efforts, of necessity, will have to be futuristic in their application. With the exception of L. polyphyllum all species within 3 have their origin in Europe. A few were known and grown in gardens as early as the sixteenth century, while the Madonna lily (candidum) was a treasured inmate of medieval gardens. Quite naturally, the question now arising is 'Why has so little development taken place within this division three complex?' The answer, I think, lies in the fact that the western European species -- with the possible exception of L. candidum and L. bulbiferum -- are exceptionally short-lived in gardens. It is logical to assume that hybrids have occured hetween species of the so-called mediterraneum group...L. pyrenaicum, L. pomponium, L. chalcedonicum etc. but any such hybrids, like the parents, would also be short-lived and hence go unrecorded. Ignoring the modern-day hybrids between the species of division three, the only hybrids of note are L. x testaceum and the backcrosses with its parents, L. candidum and L. chalcedonicum. But more of these later. During the past two or three decades far more hybridizing has been carried out withing Div. 3 than is generally recognized, and it is my intention to review the work that has been done in the hope that it will give direction to those interested in lilies and lily improvement. For a start we will examine the western Europeans and their hybrids, hybridizing programs presently being undertaken, and what part the individual species may play in future lily development.

For the sake of convenience and practicality I have divided all species falling into division 3 into two main groups...the Western Europeans, and the Eastern European and Caucasian species. The Westerns are made up of the following species; L. carniolicum and its varieties albanicum, bosniacum and Jankae; L. chalcedonicum and variety maculatum; L. Heldreichii, which is probably merely a geographical form of L. chalcedonicum; L. pomponium, and L. pyrenaicum and its variety rubrum. Also included are L. candidum and L. bulbiferum, which we will not deal with here but under separate headings. A study of the aforementioned lilios indicates starkly that all are very subject to both botrytis and basal rot and can in no way be regarded as good garden plants. Hence, as such traits are transmitted to following generations any breeding plan which included the above species must, of necessity, also include a program to overcome this susceptibility through the use of other breeding material. L. chalcedonicum has already made an important contribution through L. x testaceum and its lovely hybrids. Candidly though, I don't believe that any of the other western species has any more to offer than L. chalcedenicum has already done. Time, of course, may prove me wrong.

We will now discuss L. x testaceum and its hybrids. Lilium x testaceum is indeed a magnificent hybrid and undoubtedly one of the aristocrats of the lily garden. In spite of it being temperamental and subject to basal rot and hotrytis this hybrid between L. candidum and L. chalcedonicum has survived, and in some (Continued)

Review of Hyhridizing Progress Within the Candidun-Caucasian Group (Continued)

cases even thrived in gardens for about a century and a half, yet it is so capricious that it will often fail miserably under excellent growing conditions. It is generally conceded that L. x testaceum arose as an accidental hybrid in Holland senetime after the year 1800. It was first recognized growing among a batch of imported bulbs by Franz Anton Haage of Erfurt, Germany in 1836. It reached England some five years later so we can assume that it received wide distribution early in its life. At first it was thought to be a Japanese species, but later was suspected of being a hybrid. In the last half of the 1800's the cross was duplicated by several lily growers by crossing L. candidum and L. chalcedonicum. Its parentage was not definitely established, however, until 1944 when a chromosome examination was made. The intrinsic beauty of L. x testaceum has indeed inspired many breeders during the past one hundred years to undertake extended hybridizing programs. Many exceedingly beautiful hybrids between L. x testaceum, L. candidum and L. chalcedonicum have been produced but because of the L. chalcedonicum influence they have been short-lived.

A few of the finer named varieties from this candidum-testaceum-chalcedonicum complex are as follows: L. x Beerensii (L. testaceum x L. chalcedonicum) resulted from a cross made in Europe sometime prior to 1895 and was siad to be an exceedingly beautiful lily with recurved and nodding red flowers. It also had a delightful fragrance. Although it has long since gone, the cross which produced this historical hybrid has been repeated many times and fine replicas such as the ones raised by D. Boyes of Cambridge, England and Isabella Preston of Ottawa received wide acclaim. Incidentally, a hybrid with this parentage was exhibited by Earl Tesca at the 1972 N. A. L. S. show. At the 1974 N. A. L. S. show Mr. Tesca exhibited stems of (L. chalcedonicum x L. testaceum x'L. candidum), (L. chalcedonicum x L. Candidum), and (L. testaceum x L. chalcedonicum)x L. chalcedonicum)). From accounts, Mr. Tesca's entry in the 1972 show had somewhat lighter flowers than the original L. x Beerensii. L. x White Knight, a L. x testaceum x L. candidum hybrid, has been well described as one of the 'lost jewels of the lily world'. The cross was originally unde by Prof. F. Scheuhel of Germany but shortly thereafter it passed into the hands of R. W. Wallace of England who named it and described it in the Gardeners! Chronicle in August 1923. Mr. Wallace described it as being similar to L. x testaceum but having large, glistening white flowers of unblemished purity. and having golden pollen. Similar crosses have been made from time to time, hut once again have been very short-lived. A somewhat similar hybrid, but more resembling the candidum parent in form, was raised in New Zealand and named L. xLilac Weeks. Similar hybrids have been raised in England by Wyatt, and in the U. S. A. by Oregon Bulh Farms and others. Oliver E. Wyatt, prominent English lily authority, has over the years carried out an effective breeding program within this group. Named varieties include Ares with crange-red flowers. Artemus has reddish salmon flowers, while Zeus has brick-red flowers. All have been described as varieties of outstanding beauty.

At this point we may well be excused for digressing for a moment to pender the question why so many of these hybrids have been so described? It is possible that Carl Feldmaier, well-known German lily grower, breeder and author has provided the answer. In a verbal communication to a mutual friend Carl stated "the flowers of L. candidum are entirely devoid of pigmentation and future candidum hybrids could have the clearest colours of any of the lily hybrids". It would appear to me that Herr Feldmaier's observations are valid — to a point. Chromatography tests have been shown candidum flowers to be free of any pigmentation. Thus, this purity of colour should be in evidence in many of its hybrids, but only as ong as there is a prependerence of candidum blood. In due course, (Continued)

Review of Hybridizing Progress within the Candidum-Caucasian Group (Continued)

Caucasian and even asiatic species will be involved in the progressive improvement of Division 3 lilies and hence it is logical to assume that except in a few cases the purity of colour derived from L. candidum will be lost. In all future breeding endevours, however, hybridizers must attempt to isolate and preserve this character whenever possible, particularly when selecting seedlings for further use in the breeding program. (Note: Chromatography is a sensitive method of fractionating or separating the substances which make up a mixture. Thus, where flower colour is made up of two or more colours in combination they can be extracted with a solvent, separated and identified.)

What appears to be an important hybridizing program within division 3 is that presently being carried out by Dr. C. North at the Scottish Horticultural Research Institute at Invergowrie, Dundee. Dr. North has reported the following crosses:

L. pyrenaicum x L. ponticum; L. pyronaicum x L. pomponium; L. pyrenaicum x L. szovitsianum; L. pyrenaicum x L. monadelphum; L. pyrenaicum x L. carniolicum variety Jankae; L. pyrenaicum x L. chalcedonicum; L. szovitsianum x L. candidum, L. szovitsianum x L. chalcedonicum; and lastly, L. pyrenaicum x L. ciliatum. This letter species is unknown to me and I can find no reference to it anywhere. Possibly it is one of the geographical forms of the very variable L. carniolicum. At the time of the last report only one of the North hybrids had flowered, namely, L. pyrenaicum x L. pomponium, said to have beautiful sealing-wax red flowers: of L. pomponium with the somewhat more vigorous habit of L. pyrenaicum. All seedlings from these crosses were raised by means of embryo culture using a nutrient agar medium.

We will now move along and take a look at L. candidum in its many forms. The Madonna Lily is undoubtedly one of the loveliest of all lilies and although its history has become lost in the mists of time it is generally conceded that it has a Balkan origin, a land mass located between the Andriatic and the Black Seas. The epithet 'candidum' was given to it by the poet Virgil and means 'of dazzling whiteness' referring, naturally, to the purity of its widespreading, bell-shaped flowers. The inability of L. candidum typicum to produce seeds except under conditions of high temperature and hand pollination may well have been an important reason why it has played such a minor roll in lily advancement. This trait, however, has largely been overcome by breeders who have given us seed-bearing strains. There is considerable variation within the species, as has been well demonstrated by the work of that great horticulturalist, Abbe H. Souillet of Milly Sur Gennes, France who over a long period of time acquired the most extensive collection of candidum forms ever gathered together in one garden. Within the confines of the lily world Souillet's work was monumental and I believe it to be an unpardonable error that we have not given this fine gardener and author the recognition he so justly deserves.

The best-known varieties of L. candidum are as follows: L. candidum var. aurecmarginatum. I have seen two forms of this - (a) with silver-edged leaves, and
(b) with leaves edged with gold. Neither form has any value for breeding.
L. candidum var. cernuum, commonly known as the Sultan Sambach, or in rural
France as the Sambac lily. The flowers are much inferior to the type, being
narrow-petalled or 'starry' in form. The stems are a deep black-red colour.
Produces seeds more readily than the type. L. candidum var. purpureum - for me
this is an extremely interesting variety in which the scales, leaves and flowers
are streaked or blotched with reddish-purple. It is an almost forgotten variety
but was known to be in cultivation sometime prior to 1675. Some authorities
attribute this streaking to a virus. This, however, is somewhat questionable by
virtue of the fact that this same colour is evident on many of the species found
in Division 3. (Continued)

Review of Hybridizing Progress Within the Candidum-Caucasian Group (Continued)

It is found on the stems of var. cornuum, and occasionally mutations are found among normal candidum typicum which have similar dark coloured stems. The flowers of L. monadolphum have zones of a similar colour; so, too, have those of L. armenum, L. georgicum, L. ponticum and several others. Furthermore, I believe there is a definite relationship between the colour of the flowers and colour of the stems and leaves. As a simple example, asiatics with dark red flowers usually have dark coloured stems and leaves; hence my supposition that the genes which control flower colour also play a part in the production of colour in other parts of the plant. Unfortunatly, L. candidum variety purpureum is extremely rare these days, so acquiring it may prove to be difficult. However, this purple colour is very interesting from a breeder's viewpoint. L. candidum var. Charles X is indeed a magnificent form of French origin, and still to be found in gardens there. A great favorite of the Abbe Scuillet. It attains a robust height of six feet and has twenty or more very large flowers. Said to be semewhat more susceptible to botrytis than the type. L. candidum 'Cascade' strain is a levely, large flowered, seed-hearing strain with widely expanded flowers. It was developed by the Oregon Bulb Farus from seed sent there by the Abbe Souillet. L. candidum var. salenikae: this native of Greek Macedonia flowers sone two weeks carlier than the type and produces seed freely. Its flowers are widely expanded while the leaves are narrow and quite undulated. It was one of the parents of June Fragrance. It is still relatively rare in cultivation and not easy to obtain, hence I suggest to breeders that the use of a strain such as that developed by Dr. George Slate is advisable by virtue of the fact that it is easy to obtain, produces seed freely and has alround excellence. L. candidum variety variegatum has leaves conspicuously blotched with yellow or silver. Strictly a novelty and of no value for breeding.

Now let us proceed further and examine some of the L. candidum hybrids -- those having a caucasian species as the second parent. L. x June Fragrance, a hybrid between L. candidum var. salonikae and L. monadelphum is now fairly well known. It has considerable hybrid vigor and experience so far indicates that it is much casier to grow and is more dependable than either parent. June Fragrance has been crossed with three of its sister seedlings but because of incompatibility problems very few good seeds have been produced. By way of compensation, however, ample seed is produced when it is back-crossed with L. monadelphum. Grosses have also heen achieved with both L. candidum and L. x testacoum. Progeny from these crosses are still in the early seedling stages. June Fragrance has created considerable interest on both sides of the Atlantic and preeders on this continent and in Europe are now working with it. Another hybrid of interest was that reported by Carl Feldmaier who, in 1972, effected a cross between L. candidum Cascade strain and L. kesselringianum. Unfortunately the seedlings failed to survive beyond the early stages. Another report which emanated from Russia many years ago stated that a cross had been made between L. candidum and L. ledebouri. Nothing further has been heard about it and we can only surmise that if the cross is a valid one it, too, failed to survive.

Before we set our sights on the caucasian species I think we should pause and study the remaining species left to us in the west, namely L. bulbiferum and its varieties croceum, Chaixii and the much sought after giganteum. L. bulbiferum is seldom available these days while Chaixii and giganteum are virtually non-existant in gardens. On the other hand, variety croceum (the Orange Lily) is a quite common and dependable garden plant. This species also belongs to Division three, and we cannot overlook its potential as a possible parent.

The following note gives us considerable encouragement. L. hulbiferum var. croceum x L. monadelphum; plants having this parentage were raised by R. E. Cooper of the Royal Botanic Gardens, Edinburgh and was reported in 1948. I understand that it has since been lost to cultivation, which is extremely unfortunate since the croceum parent is known to cross reasonably well with some asiatics. The Cooper hybrid, if we can possibly duplicate it (and we most certainly can) could assist in bringing some asiatic blood into the Div. 3. This would in turn give us better disease resistance and also dependability in the garden. Breeders could make an invaluable contribution to lily advancement by attempting to reproduce this cross. Mr. Cooper used croceum as the seed parent. Let me say here that I believe the introduction of asiatic blood is vital to Division 3 hybrids. We will be given a better insight into such a possibility when we examine the caucasian species and their hybrids in the next Newsletter.

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