

THE SPECIES LILY

The Newsletter of the Species Lily Preservation Group
Affiliated with The North American Lily Society



L. michauxii
Autumn, 2005

SLPG GOALS

- * Growing as many species lilies as possible, especially those rare and in danger of extinction.
- * Making excess species bulbs available to members.
- * Collecting, preserving, planting, growing and distributing species seed.
- * Collecting all possible information on each species: its habitat, distribution, cultural needs, etc.
- * Disseminating cultural information on each species.
- * Assembling a slide and photo record of all species lilies.
- * Identifying areas where specific species grow and seeking protection for these areas.

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Angela Gnypl: *L. candidum* seedlings, 26; *L. regale*, back cover
Charlie Kroell: *L. michauxii*, front cover, 5, 10, back cover
Warren Summers: Kristen, 13

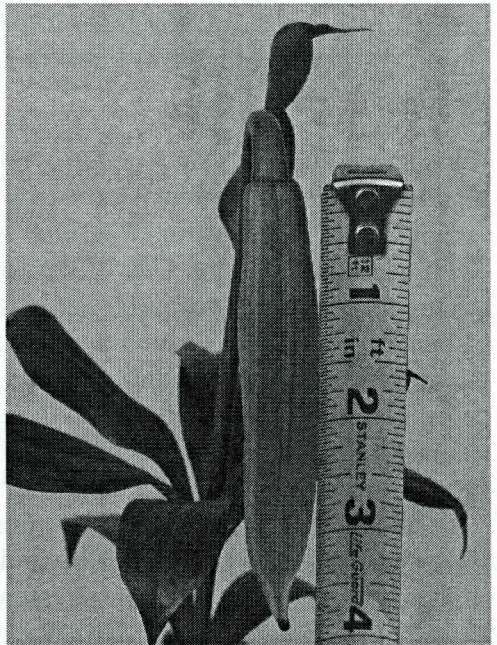
Flowering *L. michauxii*
Charlie Kroell, Troy, Michigan

In the 2001 Arrowhead Alpines catalog I noticed with more than casual interest a listing of *L. michauxii*, one of many species lilies I had never seen before but concerning which I had heard favorable descriptions — especially that it was nicely scented. The following year it was listed again and temptation proved too great. I ordered two of the “grape sized bulbs” at a bullet-biting \$12 each. These arrived in late March, potted and already having short blind stems but looking strong and healthy. They were put with the new crop of three month old seedlings still under fluorescent lights in the basement, soon to be moved outdoors for “hardening off” to the real world. This is done by gradually increasing their exposure to sunlight, then waiting until the danger of frost has passed and finally transplanting safely into the garden. There is invariably *a bit* of leaf burning involved with the seedlings but generally without significant consequences. The *L. michauxii* plantlets, however, appeared to be more sensitive and less tolerant — be it to excessive sunlight or something else. After the acclimatization period *appeared* to have been completed, in the course of some two to three days of full exposure to the sun, the foliage of both stems turned from green to purple — always an ominous sign. When examined, the bulblets were found to be rotting.

The AA catalog write-up had credited the bulblets as having come from a Ralph Harvell in South Carolina. Knowing of my involvement with lilies and great interest in the species, Bob Stewart, the inimitable proprietor of Arrowhead, kindly provided me with Ralph’s address. Without further belaboring the history involved, I will note only that a new long distance friendship ensued and that I acquired additional bulblets of *L. michauxii*, with which to try again.

A small potted plant was carried successfully through the summer and fall of 2003, *never being exposed to direct sunlight*, then ver-

nalized over the winter in the basement refrigerator. It looked very healthy when repotted in the early spring of 2004 and grew slowly but surely under the fluorescent lights — again, never seeing ambient daylight (except for brief periods of photography) up until the time Marijean and I left for a three week trip to Europe in mid June. By then one nicely swelling bud, about an inch long, had developed, and it seemed that flowering might well occur during our absence. Our granddaughter was to look after the house and lawn and was further charged with the tasks of picture taking and pollen collection/drying/freezing, if this should happen. It didn't. When we arrived home a large bud, about three inches or so in length and still quite green, was hanging like an emerald pendant on a beautifully arched pedicel. As the days passed, it elongated, ever so slowly, to just shy of four inches in length; then a hint of yellow coloring began to appear and spots could be discerned through the translucent tissue of the sepals. It seemed though to be somewhat in a state of suspended animation, but the excitement now was building. I began to move it, during the day, from the cool basement to out of doors on the north side of the house for exposure to higher temperatures but *out of direct sunlight*; and I had planned to use the camera at this stage of development to supplement the few pictures taken just prior to leaving for our trip. On Friday night, July 23, I had talked with my friend Jerry Reece, a Field Biologist in western North Carolina, who lives near the habitat of *L. michauxii*, and he assured me that my potted plant was behaving exactly



L. michauxii bud

as it does in the wild —seeming to wait *forever* in the long bud stage before opening. But with the trace of color showing, it seemed prudent to play safe and get the picture taking done early Saturday morning. Well, you know the rest of the tale. After breakfast when I went downstairs, the bud was well on its way in the process of opening. The flower, at first glance, looked very much like a *L. michiganense* or *L. superbum*. In comparison, however, the filaments, style and anthers were all quite long, in the *L. henryi* fashion (although the stigma was comparatively large). The anthers were very nearly an inch in length, and (at least up until the time they were removed from the filaments) did not contract longitudinally with aging. Also, the throat was an attractive creamy white, but a green nectary star was *not* visible, as it is with *L. superbum* but not with *L. michiganense*. Then there was the scent! A delicious, heady scent, to my nose reminiscent of *L. kelloggii* and *L. rubescens*, which had reminded me a bit of *Hyacinth*. At night it pervaded the room, continuing to do so for several days. While this had not been a good year for my garden in general and the lilies in particular, here was one grand “moment” of loveliness to buoy the spirit just as the season was beginning to end.

This same bulb was once again wintered over in the refrigerator and repotted sometime in March of this year (wish I had noted the exact date). Once again, a strong stem emerged and elongated with each passing day. One of the four foot, two-tube fluorescent fixtures was kept constantly *just above* (practically touching) the ascending tip. What ensued was a virtual replay of last year. The stem was a little taller and possibly a bit stouter but again bore only a single bud which slowly lengthened to ~ four and a half inches. And once again I missed the process of anthesis, returning from work on July 25 (*one* day later than last year!) to find the single, magnificent flower almost fully open and waiting to greet me. We enjoyed its beauty and scent, as before, for several days. Now, in early October, the stem continues to sit beneath the lights, the foliage still a dark healthy green, just beginning to show early signs of senescence. Water is given very sparingly.

Last fall when the bulb was removed from its pot for overwintering, an increase in size was apparent. With the excellent growth again this season comes a hope that further increase will have occurred and that next year possibly *two* buds will be carried. Ralph has told me that the highest bud count, in the wild, of which he is aware is five. Indeed, there is an excellent black and white photograph of a five bloom *L. michauxii* on p. 196 of Woodcock and Stearn's *Lilies of the World*.

Finally, given below are a few measurements and notes made concerning this year's plant:

Stem

24" tall, glaucous, ~ 5 mm dia., with five full whorls of 5-7 leaves each and 3 scattered below the bottom whorl

Leaves

Spatulate, pointed at tips

~ 100 mm long, decreasing to ~ 75 mm in top whorl

Somewhat undulate; 23-25 mm at greatest width

Bud

Triangular in cross-section, typical of eastern North American species; ~ 115 mm long just prior to anthesis

Flower

Caliper diameter of reflexed ball ~ 71 mm

Anthers ~ 30 mm long (prior to removal)

Pollen chocolate brown

Stigma large, ~ 8 mm dia. and extending ~ 10 mm beyond tips of naturally suspended anthers, covered with what *appeared* to be short stiff hairs having chocolate brown tips — not quite like any other I can recall seeing

Other measurements were made, of the tepal length/width and of the length of filaments and style, but much to my chagrin, I cannot locate these at this time.

There was enough soil contained in the shipment of bulblets from South Carolina to test for its pH level. I used a Hanna Instruments

Model HI 98127 meter and obtained a reading of 5.5.

The method described above of growing *L. michauxii* exclusively under fluorescent lights (~ 17-18 hours/day) and at near constant temperature (~65-68° F) has been wholly successful now for two successive years. There are currently in the basement at various stages of development: *L. polyphyllum*, *L. ledebourii*, *L. szovitsianum*, *L. mackliniae* and a *L. rubescens* x *L. bolanderi* cross. If all continue to survive, I plan to attempt growing and flowering them in this same manner.

Following is a summary of additional information obtained through conversations and e-mail exchanges with *Ralph Harvell* and *Jerry Reece*, both of whom live in *L. michauxii* country and have had many opportunities to observe and study the “Carolina Lily,” doing so with the eye, the interest and the attentiveness of serious and dedicated liliophiles. Their first-hand observations help to further characterize this delightful, but inadequately known and appreciated, native *Lilium* species:

L. michauxii and *L. catesbaei* probably represent the most highly specialized and evolved of the eastern lilies. This advancement, of course, comes with a price since they are less able to adapt to other habitats and environmental change. *L. michauxii* probably has evolved for efficiency: few wide leaves to maximize photosynthesis in a shady environment; few large fragrant flowers to maximize the probability of cross-pollination and gene flow; small bulb size with just enough capacity to support the stem, leaves, and flowers/seed pods; small stem strong enough to support leaves and flowers; leaves and stem waxy to prevent water loss in a drier habitat; and flower fragrance, large pollen grain size, large anthers, and large stigma to aid in pollination, which could involve both primary and secondary pollinating agents (bees, butterflies, and moths). Although *L. michauxii* does bear some similarities (in stem/foliage characteristics and scent) to certain western North American dry land lilies, there probably is not a genetic affinity involved but rather an adaptation to a particular ecological niche. Clumps of leaves, which may arise from de-

tached scales, have often been found, but groupings or colonies of stems only infrequently. *L. michauxii* has not been encountered growing in close proximity to other lilies such as *L. superbum*, but the two can be found within cross-pollination distance. The bloom periods of these lilies rarely if ever overlap, *L. michauxii* flowering considerably later than *L. superbum*. Several different crosses onto *L. michauxii* have been attempted but with little success. Cut style, using *L. superbum* pollen, has produced some seeds; but there is doubt concerning a report of natural hybrids between these two species.

Although *L. michauxii* is reported in Woodcock and Stearn as having stem roots, like *L. superbum*, this has not been observed, at least to any significant degree. In its habitat, at least in the western Carolinas, it is found growing in partial shade and acidic soil among pines, oaks, hickories and ericaceous shrubs, the bulb being only four to five inches deep, often including two inches or so of organic matter.

The bulb is not stoloniferous, as are those of *L. superbum*, *L. michiganense* and *L. canadense* — possibly best being called subrhizomatous — and is said not to “tarnish,” or yellow, with age. *L. michauxii* has not been transplanted with much success, and the fact that it has done so well in a potting mix under artificial light and relatively constant temperature has come as a most happy surprise.

Literature Cited

Woodcock, H.B.D and W.T. Stearn. *Lilies Of The World*. London & New York, Country Life Limited & Charles Scribner's Sons, respectively, 1950.

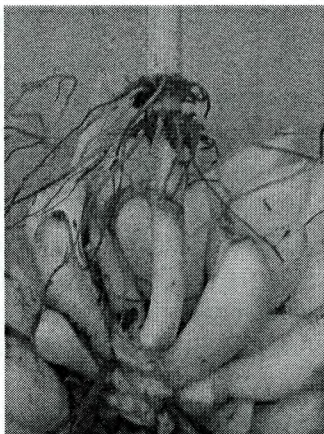
Postscript:

By late October the stem had almost fully senesced and on 10/27/05 was removed from its pot. Three significant observations were made:

L. michauxii is indeed a stem rooting lily. A network of fine roots had sprung from two nodal rings ~ 3/16" apart and located immediately above the bulb.

The bulb had increased substantially in size to ~ three inches in length

Much to my dismay and chagrin, the bulb was found to be *exceedingly* fragile, more than a dozen scales eventually becoming dislodged in the process of "careful" handling, washing and photographing. The bulb remains large, but what the lost scales might mean for next year's performance is a question I'd rather not dwell upon.



L. michauxii
stem roots

Royal Horticultural Society Lily Group Alisdair Aird, England

The RHS Lily Society Group has several hundred members in various countries. Its main activity is a good seed distribution (stronger on lily species than hybrids), with non-lily species as well (currently this is not available to US members until the Group has worked out a way of dealing with the new US import rules). It produces *Lilies and Related Plants*, successor to the *Lily Yearbook*, every two years, and a short quarterly newsletter. In the UK, the Group runs an annual bulb auction each autumn and arranges garden visits, displays and lectures. It has expert advice panels and hosts an occasional International Lily Conference. The annual subscription is £10.00 (or £30.00 for three years). [The Group accepts credit cards for those not in the UK.] Further information from Mrs. Rose Voelcker, Lanjique, 32380 ST Leonard, Gers, France; phone 003305062043076; email rvlanjique@wanadoo.fr.

Two Years in Review for the SLPG
Warren Summers, Past President
Birmingham, Michigan

This is an update on the status of the SLPG. Three elements make up the backbone of our group: 1) our species newsletter, 2) the growing and sale of high quality species lily bulbs by our Conservator and 3) presentations about species lilies at the annual SLPG membership meeting during the annual NALS show.

This year our membership approved the necessary by-law changes that protect our status as a not-for-profit organization. [See page 15.] We also changed the description of the Conservator to allow for multiple conservators in order to ensure the availability of excellent species bulbs for our members in the future.

The SLPG is financially sound. Our objective of encouraging the preservation of species lilies has progressed to the point where the SLPG Board of Directors officially established the Species Lily Preservation Conservation Trust with an initial contribution of \$1,000 from the SLPG funds. [Proceeds from the auction devoted to the SLPG were also added to the fund, making a total of \$1,590.40 US dollars. Thank you Ed McRae, Warren Summers and Barbara Small for donations to the auction.] Details and guidelines still need to be formulated, but the future for meaningful conservation activities is in sight. Our vision is that this fund will work as the NALS Research Trust that began around 1990 in a similar manner. If regional groups and individuals have an interest in conserving species, their contributions to the "kick off" of this project in the year of inception will accelerate the time to the point when assets can be used to do something really meaningful in species conservation. Because we are a not-for-profit and non-political organization, any contributions are tax-deductible.

Lastly, because the SLPG board only meets once a year and we

are still loosely organized with membership spread all across the Americas and overseas, I believe more work must be done through committees under the direction of our new President Kristen Swoszowski-Tran. This should enable the board to operate more effectively at the annual meeting. We are a small organization with well over 200 members with lofty ideas to preserve the species lilies of the world. I urge every member to do his/her small part to make these ideas reality. Increase public awareness of the species and their preservation. Support our group and encourage other species lovers to join us.

I wish to thank all of you for your support and for the privilege of helping move this group forward.

Donations to the Species Lily Preservation Conservation Trust should be sent directly to the SLPG Treasurer

Ted Sobkowich

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President's Message

As a teenager, I used to ride my horse out in the woods and on the power line trails near our family home in Massachusetts. Surrounded by wild blueberries, clethera, and other acid-loving plants, I recall the first time I noticed flashes of red and orange amidst the amber-brown grass. Closer inspection revealed lilies I had never seen nor noticed before. Maybe I had always been galloping by this spot, too distracted to notice the brush underfoot, but for some reason, that day, I paused and took a deep look. It was one of those moments when the hair stands up on your arm, producing a tingling sensation inspired purely by beauty. My first encounter with *L. philadelphicum* was memorable and sparked my love for species lilies. About fifteen years ago, my first try at growing a species lily was, well, nothing short of a learning experience. *L. canadense* var. *flavum*, obtained from a



plant sale at Framingham's Garden in The Woods, taught me quite a bit. Little did I know how finicky that plant would turn out to be, in contrast to the Asiatic hybrids that I had been accustomed to growing. If ever there was a lily that needed growing instructions, that was it. Although the plant was healthy when I purchased it, it didn't take long for my ignorance and the wrong growing conditions to take its toll. Despite its imminent demise, I did not give up and resolved to

learn how to grow species. Much has a great deal to do with carefully observing the natural environment and learning as much as one can about the habitat. I now live in the Mid-Atlantic region and have special growing conditions with which to contend (high alkaline, very dry soil). I grow many species lilies and enjoy a display from the end of May until September due to our region's climate.

Given their special, delicate beauty and provenance, it is important to try to figure out how to grow, protect, preserve, record, and distribute species liliium for others to enjoy. I am committed to this pursuit and thank you for belonging to this community of like-minded individuals and for allowing me to serve as President. The SLPG is a growing organization that needs your input and help, whether that is some of your precious time, expertise, or

other contributions, great and small. Please consider writing an article—even a brief one—discussing your encounters, success, and yes, failures, regarding species lilies. As there are ever more rare liliium (and related plants) being introduced from far and wide, particularly China and the Himalayas, we would benefit from accounts on how they are faring in different kinds of settings. Drop Barbara Small a note describing your ideas and/or experiences and consider sharing them with the SLPG membership. Others will be glad that you did. Additionally, as this is a community of people who are bound together because we enjoy species lilies, please do not hesitate to voice your opinion about the direction that you feel the group might take concerning the SLPG goals. I will be glad that you did.

Best regards, Kristin Swoszowski-Tran, SLPG President

Treasurer's Report

Ted Sobkowich, Treasurer

Total Assets	\$8088.51
Total Liabilities	\$0.00
Retained earnings Start	\$6467.15
Net income/loss	\$1621.36
Retained earnings end (Canadian Dollars)	\$8088.15

Money Held in the United States

June Taylor, Membership

Total Assets (US Dollars)	\$2180.67
Trust Fund (US Dollars)	\$1000.00

Membership Report

June Taylor

United States Members	156
Canadian Members	40
Other Members	<u>30</u>
Total Members	226

Approved Changes to the SLPG By-Laws

SECTION III. CONSERVATIONIST/S

ARTICLE I.

The conservationist/s shall be appointed yearly by the board of directors at its annual meeting.

ARTICLE II.

The conservationist/s shall grow and distribute species lilies with an emphasis on those listed as being threatened or endangered.

ARTICLE III.

The conservationist/s shall meet the guidelines set by the board of directors. The conservationist/s shall pay all expenses for and receive all profits from the sale of species lily bulbs.

SECTION IV. BOARD OF DIRECTORS

ARTICLE I.

The board of directors shall consist of four (or three if the secretary-treasurer is combined) elected officers, and three to six members who shall be elected by the membership of the group at their annual meeting.

ARTICLE II.

The board of directors shall consider proposals made to the group and make their considered recommendations to the members at the annual meeting. Proposals may be made by individual members through the president or secretary of the group.

The board of directors shall determine guidelines for the conservationist.

Lilium K.W. 13999
F. Kingdom Ward
Recently from England

It has been said that sooner or later a criminal always returns to the scene of his crime. If that is true, it would account for my return to the Assam Himalaya in April, 1938, to the very scene in fact where three years earlier I had, in the official phrase 'incurred the severe displeasure of the Indian Government.' My crime, so it was alleged – in less official phraseology – was that I had gate-crashed the Tibetan frontier.

However, by 1938, I was, thanks to a certain amount of tact and to diplomatic approaches by some of my friends, if not precisely *persona grata* to the Government of India, at least on amicable terms with most of the people who really counted, in an official sense, with the happy result that I was once again permitted to travel far beyond the 'inner line' on the Assam frontier, away up through the tortuous Himalayan valleys in the heart of 'unadministered territory' and over the crest beyond crest of ever higher mountain ranges until I came to the last mighty snow barrier which is the Tibetan frontier itself. But not of course over *that!*

It is not my purpose to write here of all I saw during my six months' tour of the Balipara Frontier Tract. (This name will not be found in any atlas, but the name Assam Himalaya, of which the B.F.T. forms the southwest end, sufficiently indicates the location.) I write of one plant only, a Lily of no little distinction and of some interest too, which for the present I will call by the non-committal number given above. Its precise status is, I understand, still *sub-judice*. In my original field note I called it *Lilium nepalense* var. ? but later I was led to believe, hastily perhaps, that it was not *L. nepalense* at all.

The finding of a new plant is often a matter of luck. Of course if one visits a botanically unexplored region – and how much of the world *is* botanically explored? – one expects to find two or three new plants. But the discovery of this Lily was, in a special sense, a fluke, and yet not altogether so. I did happen to know a little about the environment of eastern Lilies. I had found *L. wardii* in Tibet in 1924 and again in 1933. I had seen *L. ochraceum* in North Burma in 1914 and *L. wallichianum* in Bhutan (fruit only) in 1925. So as I tramped over the Pine-clad mountains of Balipara in 1935, I came to the conclusion that a Lily must exist there somewhere; would certainly grow there. But, if so, I failed to find it.

In 1938 I decided on a more intensive search. That much at any rate was not luck. Yet it was pure chance that persuaded me to follow a certain route, marked on no map, back to my base camp in May, after a week spent in the Rhododendron forest. I chose this route partly because it saved a day, partly because it was new. Every plant collector knows that simply by varying his route he may be fortunate enough to pick up on a new species. The day happened to be fine after a week's rain on the pass. Even so I was lucky to see the Lily at all in the surging young grass and bracken; it was barely six inches tall with a tiny bud, and I noticed only one plant, though naturally after spotting one I kept a sharp lookout for more. However, visible or invisible, I was confident there were others; I need only be patient and they would reveal themselves. The young plant I had found *looked* like a *Nomocharis*, for which at first I mistook it. But I reflected that even *Nomocharis pardanthina*, which occurs at comparatively low altitudes, rarely descends so low as 8,000 feet. It could, therefore, only be a Lily.

We had but lately emerged from the Hemlock-Rhododendron forest, and were descending an open spur which plunged headlong down towards the valley 3,000 feet below. We had just reached the upper limit of blue Pine (*Pinus exelsa*) and deciduous Oak (*Quercus Griffithii*) which forms an open park-like forest – more

park than forest – on precipitous slopes between 5,000 and 8,000 feet. The undergrowth, such as it is, grass and bracken chiefly, is burnt annually, or at any rate frequently, to encourage the growth of grass for grazing. It has probably been so burnt for a century or longer, thus throwing back the natural succession until the vegetation, quite discouraged, has stabilized itself at a certain level lower than the climax. One would expect to find bulbous plants and plants with deep rhizomes, or large woody rootstocks sending up annual flowering stems, besides a few annuals, on these slopes, for they are just the type of plant least affected by the annual fires which sweep through the grass – and in fact one does find them; but – and this is important – where rocks outcropped, or a shallow scupper grooved the steep slope, giving a little extra shelter on one side, not grass, but a thick growth of *Gaultheria*, *Vaccinium*, and the dwarf yellow-flowered *Rhododendron lepidotum* maintained a precarious existence.

It might be expected that the soil in such a situation would be peculiar. To begin with it was tenacious – it had to be to stay on that hillside! It was black, and it was full of angular stones, large and small. Obviously it was a rich mixture, full of decayed vegetable matter, with all the heating properties which that implies. Its colour was partly due to the accumulated charcoal content, and partly to humus. Nor, except for the stones and the slope, could it be called well-drained. Certainly it was not porous, being almost unctuous to the touch. Digging through the top crust was like digging through a layer of cotton wool. The stickiness was due to the presence of clay, and the fibrous tissue was composed of the fine roots of innumerable grasses and other plants. The stones, which were dotted about like currants in a rock cake, were simply the more resistant fragments of the disintegrating subsoil. Luckily the tiny white bulbs lay not far below this integument.

Time passed. In June, I returned to my base camp from a trip to the Bhutan frontier. It was now some weeks since I had picked the lily bud, and the flowers, I thought, might have opened. As it was a rather tedious three days' journey there and back I sent my

head man, Tashi Thondup, a stocky Sherpa from Darjeeling who had been with me in Tibet, Yunnan, Burma and elsewhere. I could rely on Tashi. He returned on the third day with a sheaf of Lilies which, although they had lengthened out considerably, were still only in bud. To my uneasy eye he appeared to have scooped the pool, and still I did not know what the Lily looked like, but he met my glance of horror with a bland smile and assured me there were plenty more. This was not strictly true; there were never plenty. Tashi had brought the specimens complete with bulb attached and I planted them out, hoping they would presently open their buds. They did not, but I prized one open myself to reveal what was destined to be a pale daffodil-yellow flower without spot or blemish.

Nothing more happened until the second half of July; at least nothing concerned with the Lily. That month I made a tour of the country to the northeast of my base camp with special reference to the Pine forests. It was wet and I was haunted by two fears: (i) that it would be raining when I came to the hill of the Lily, and (ii) that the flowers would be over before I got there. If my worst fears under (i) were realized (ii) mattered little, if at all.

Returning from the high and hostile Poshing La, I camped on a grassy knoll in the forest. That very night the rain ceased. Next morning the pale sky rapidly deepened to turquoise and the white spires of the eastern Himalaya seemed to rise just over a near fringe of Hemlock Spruce, though in fact they were 25 miles distant. So it was going to be a fine day, mysteriously begotten by good luck out of turn. But immediately fresh fears assailed me. We were five days late on schedule. What if the Lily were over! Well, I could do nothing about it, but I almost ran down the ridge, past the herds' huts, where in May we had stopped to drink hot milk, until I came to the spot. It was now high noon. The sun still shone brightly but puffy clouds had gathered and rested lightly on the mountain tops. From time to time they hid the sun. I soon spied the first flowering Lily and then another, but both of them, as I feared waning. Nevertheless, they told me what I

wanted to know of the flower. The plant was, one might say, dwarf, hardly a foot tall, but the flower itself was large and substantial. It was some time before I found two or three recently opened blooms somehow delayed, nor was it an easy matter to set up my stand camera on that steep and rugged hillside. To crown all, the sun no longer shone to order. An hour passed before I got the photographs I wanted. There, to my great surprise, at the bottom of the valley over 2,000 feet below, in gorgeous array in the high bracken, I saw the magnificent flowers of *Lilium Wallichianum*, its tall leaning stems with their grass-like leaves, each ending in a single immense white trumpet. It was a unique experience to see two beautiful Lilies in the course of a single day's march.

In October, I sent Tashi Thondup, armed with a hand pick, to the spot. He returned two days later with a bagful of little marble white bulbs, linked together like chain-shot by the tenuous underground stems, except that each bulb in turn drags a smaller bulb in its wake; sometimes there were as many as five in descending order of magnitude. Altogether Tashi produced about a hundred bulbs – but only a solitary capsule. He reported that it was the only one; not another lily had dallied with the uncertainties and disappointments of seminal propagation. Indeed the entire colony might well represent a single clone. However, the solitary capsule, a tiny three-sided pyramid standing on its apex, contained a few viable seeds.

I dried the bulbs gradually in the shade, wrapped each one in dry moss and packed them in two open bamboo baskets, which were then sewn up in stout cotton cloth. I carried the baskets with me down to the plains, where I arrived on November 1st. One, containing about 80 bulbs, I sent by air mail to professor Sir William Wright Smith at Edinburgh. The other, containing a dozen or so bulbs, together with bulbs of *L. Wallichianum*, I sent to my friend, Mr. J.P. Mills, I.C.S. Special Adviser to His Excellency the Governor of Assam, to be planted in the grounds of Government House, Shillong. This was a gesture of gratitude for His Excel-

lency's staunch support of my request to the Government of India to lift the embargo on my crossing the 'inner line.' Both parcels arrived in good condition.

I have spoken of luck in plant hunting. It amuses me to reflect that if I had not found that six-inch tall plant in bud there was no earthly reason why I should ever have followed that route a second time, and there is the curious fact that I never saw this Lily anywhere else. It was that rarity – a rare plant! So far as I know it occupies only these few acres in all the thousands of square miles where it might grow. I do not think there were a hundred plants altogether, but judging from the number of bulbs it was probably increasing.

The soil is, of course, acid and possibly this is a lime-hating Lily, although it may prove to be indifferent. Whether it is hardy or not of course I cannot say, but it is likely to be much hardier than *L. Wallichianum*, which is definitely a sub-tropical species and, in Britain, a greenhouse plant. Over 2,000 feet vertical interval separated the highest *L. Wallichianum* I saw, and No. 13999. *L. Wallichianum* is not only reasonably wide-spread in the sub-tropical Pine forests of the Assam Himalaya, but in places abundant. I met with it at a minimum elevation of rather below 4,000 feet and up to 6,000 feet, but not higher. At about 5,000 feet I saw hundreds of plants, often in colonies numbering several dozen. No. 13999 is definitely a plant of the temperate forest belt, at 8,000 feet, more or less. It just touches the top-most rim of the Pine forest. Of course, this may be its upper limit, but then again it may not. On the other hand it could not expect to find the peculiar soil conditions it seems to demand at elevations much over 8,000 feet. There would be more humus and less charcoal. There would also be snow. While No. 13999 flowers in June-July, *L. Wallichianum* flowers in July-August and August rather than July. The two species are fairly closely related, at least sufficiently so to be placed in the same group (Section *Leucolirion*).

Finally, if No. 13999 turns out to be a var. *concolor* of the vari-



Fox, Derek. *Growing Lilies*. Croom Helm, London, 1985, 164, Figure 7.8

able *L. nepalense*, discovered a few years ago by that able and energetic Tibetan botanical explorer, Captain G. Sherriff in Bhutan, and so named by Mr. A.D. Cotton, nevertheless a fine dwarf *L. nepalense* of delightful colour and good substance, *which may prove hardy*, would be a worthy addition to our rock and border gardens.

Note. In a letter since received Mr. A.D. Cotton informs me that it is *L. nepalense* var. *concolor*.

[Reprinted from the *Lily Year-Book*, 1938. London, with the kind permission of the Committee of the RHS Lily Group.]

["The var. *concolor* Cotton has no claret-purple colouring in the throat and it has been suggested that this occurs more frequently in the eastern part of the range, but the evidence does not prove this. It is complicated by there being many intermediate forms where the central dark colouring is faint."] Fox, 164-5.

Growing Species Lilies in New Zealand

Margaret Liddell
Morrinsville, New Zealand

What a challenge trying to grow species in my area of New Zealand. Morrinsville is situated in the middle of the North Island and is commonly referred to as the Waikato. We have high humidity throughout the summer and in winter freezing cold days

with fog that can last all day on occasions. These frosts are often minus three or four degrees [centigrade] during July. One frost is fine, but when we get seven or eight in a row things start to suffer. We get plenty of rain, and it often comes at five centimeters (2/3 inches) at a time. Summer can be 28 to 32 C. degrees with high humidity and very little rain. Such weather is very trying on species lilies.

Asiatics hybrids are not a problem in New Zealand as they grow very easily, so those species lilies from Asia also grow well. Trumpet forms just love my climate, so these too are easy. *L. auratum* also survive with very little effort, but they do last longer when the bulbs are given shade. *L. speciosum* just love this climate, growing anywhere.

So, you might ask, why bother with species? I feel it is a challenge to make a lily grow and survive for more than one flowering season and to have that seed pool to expand our crosses. We all look at your martagons flowering in the states and wonder in awe at their beautiful inflorescence. We are so envious. The largest flower count that I got to enjoy was 15 on *L. martagon* var. *alba*.

I used to plant the species lilies in the garden, but over time I have lost so many that I either gave up or got serious about growing them. So far my problem is solved and I am keeping them flowering year after year.

How I keep them alive

The seed is treated as hypogeal or epigeal depending on what lily seed I have. I use a seed-raising mix that has no wetting agent in it. (I get this specially made.) Our climate's high rainfall and humidity prove death to any lilies in a mix that contains a wetting agent. Yes, even seedlings. These seedlings do get sprayed for *botrytis* or they would just disappear.

The seedlings are grown in a shade house covered with 30% shade cloth. After 12 months or September, they are taken out of this mix and planted into a 15 cm (6 in.) pot with a potting mix that once again has no wetting agent. These pots are placed outside in the cold. They are left to grow naturally with added water when required. As each one reaches flowering size they are planted up into a bucket. Yes, they are fertilized like any lily. Come their normal flowering time, normally December/January here in the Waikato, they are moved again into another shade house to continue growing after flowering. I encourage the growth for as long as possible and this seems to work. Our summers are just too hot to leave them outside; they die off very early and eventually die as the bulbs get smaller rather than larger. Come autumn they are all moved outside for our cold winter.

Yes, I play musical pots with my lilies, but it seems to work. They flower and set seed if I try to make a cross. Yes, I use the species pollen on my other lilies with some success. I treat all my species lilies this way even those with Asiatic backgrounds. My martagon lilies only give me a head of five or six flowers, but I am happy as we can't seem to get the inflorescence any larger in our climate.

On the show bench, species in containers are acceptable. We can either show a cut spike or the lily in the container. Our species are just so difficult to grow and to keep growing that they need every leaf that they manufacture to assist in their survival.

I enjoy the challenge of flowering these species, and I love to take them to meetings to show others what they look like and what we can achieve if we put the time into them.

Celebrating Lilies on the Web

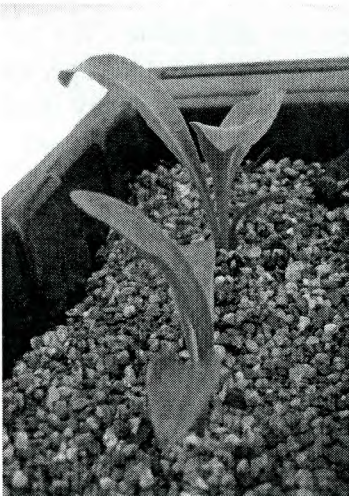
Angela Gnyp
New Zealand

As a new member of the Species Lily Preservation Group, I appreciate the opportunity to write about my website – de Florum.

Its name is derived from Latin, meaning 'of flowers', and also pays part-tribute to my favorite species, *Lilium longiflorum*. It was a few years ago that I made a first effort to find out about this lily's background, its commercial usage and status in the wild. This led me to researching other lily species and discovering a common theme: under threat or endangered.

With this knowledge, I decided to create something on the Internet that could in some way represent the beauty and vulnerability of these flowers while acting as a source of information for others interested in growing species, particularly those rarely cultivated.

Taking a year of part-time research, it took a further eight months to write and design the site before deflorum.com was launched in October 2004.



L. candidum seedlings

The well-being of plants such as lilies beyond my home in New Zealand has become increasingly influential for me, but it is also of concern that there are many more plant species that are not safe in the natural environments where they have always lived. It is clear we all must be responsible for helping plants to survive – even if only preserving species lilies in our own backyards away from the destruction of habitats occurring in different parts of the world.

Having said this, I have to admit that I myself do not grow a lot of lilies (yet, anyway!) despite a life-long love for gardening. My first attempt at growing species was with some *L. longiflorum* seed last year, obtained through the New Zealand Lily Society. I had the initial success of some seedlings growing well, each developing a stem and flower bud before the few bulbs rotted away to nothing. Since then, I have learnt to avoid using moist, peat-based potting mix in plantings.

I have gone on to trying others from seed and at present I have various seedlings 'on the go' including *L. pardalinum*, *L. cernuum* and *L. auratum*. *L. washingtonianum* is another species I am trying to grow from seed at the moment. It was sown almost four months ago and hopefully positive results will come from that!

My main success to date has been eight *L. candidum* seedlings of reasonable size and a tray of *L. lancifolium* bulbils which are now beginning to sprout. These I am very happy about and I am looking forward to getting them established. It is species such as these that make growing a somewhat special experience. I think it is amazing to have the chance to grow these symbolic plants that, with long histories dating back to ancient times, fortunately are still around for our enjoyment.

It is the challenge of growing something that takes a lot of time and patience that also provides my motivation to learn more about growing species lilies from seed. One good thing is that at least the slowness of seed raising will allow me time to prepare permanent areas for these lilies in my new garden — that is if I should be so lucky to have them develop into a significant size for planting!

For those who may not have visited www.deflorum.com, I hope that you will visit the site soon. You are also welcome to contact me at angela@deflorum.com



L. michauxii, top
L. regale, bottom