

# American Rock Garden Society Bulletin



SOME CHILEAN PLANTS— <i>Phyllis J. Myhr</i> .....	85
MESSAGE FROM THE PRESIDENT— <i>Harry W. Butler</i> .....	92
COMMENTS ON THE SEED EXCHANGE— <i>Roxie Gevjan</i> .....	93
BERNARD HARKNESS— <i>H. Lincoln Foster</i> .....	95
ARGS AWARD OF MERIT TO ELIZABETH LAWRENCE— <i>Bernard Harkness</i> .....	96
MARCEL LE PINIEC DIES IN FRANCE .....	97
GERMINATION STUDIES OF SOME ALPINES— <i>Trevor J. Cole</i> ...	98
MARCEL LE PINIEC AWARD TO ROY DAVIDSON.....	104
THE BURREN OF COUNTY CLARE— <i>Kay Boydston</i> .....	105
THE FAIRY WORLD OF THE DOLOMITES <i>Nino Arietti &amp; Oscar Fervidi</i> .....	108
SOMETHING RARE AND VERY SPECIAL— <i>Glenn Lewis</i> .....	113
REQUESTS BY MEMBERS .....	116
STUDY WEEKEND— <i>Paul Palomino</i> .....	117
LETTERS FROM JAPAN... <i>Jack Craig</i> .....	118
OMNIUM - GATHERUM .....	123



# AMERICAN ROCK GARDEN SOCIETY BULLETIN

Albert M. Sutton, Editor

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## SOME NATIVE PLANTS OF THE CHILEAN COAST AND ANDES

PHYLLIS J. MYHR, *Seattle, Wash.*

The opportunity to live in Chile for a year (1970-1971) was an exciting one for my husband and me. He had been doing research, and bird-watching, and I had the equally rich experience of learning a bit about Chilean flora. Plant hunting in Chile leaves one in a bewildered state, however, when attempting to decide which plants to write about. For a novice like me, it was difficult, as well, to know what I was seeing since the illustrated literature on Chilean flora, particularly herbaceous plants, is scant.

Perhaps it might have been best to discuss only some of the Andean alpine. Unfortunately, our arrival and departure dates precluded seeing many of the alpine in full bloom (in Dec. and Jan.). There are also many lovely plants of the lower mountains and coast, some of which might find their way into the cultivated gardens of the world, and I do not want to neglect them altogether.

Because Chile is so long, 2600 miles from the desert in the North to Antarctica in the South, its flora is highly varied, And because it is so narrow (an average of 110 miles) many of its plants are endemic to the country due to the formidable geographic barriers of the Pacific Ocean and the Andes. I should mention that Chile, unlike its more northern neighbors in South America, does not have what we think of as a tropical flora. It does not lie near enough to the equator.

The great Atacama Desert of Northern Chile, the driest place in all the world, has its own special flora along the coast in its wetter areas. In the spring, during years when there has been rain, parts of the northern coast are carpeted with flowers for miles in every direction. We were fortunate to be in Chile during one of these relatively wet years (the first in seven years) and the spectacle of the desert in bloom was a sight I will never forget. Of the many beautiful plants that bloom there, one may single out the world's only yellow amaryllis\*, *Hippeastrum ananuca*. This lovely plant is about six inches high with a cluster of bright yellow, tubular flowers.

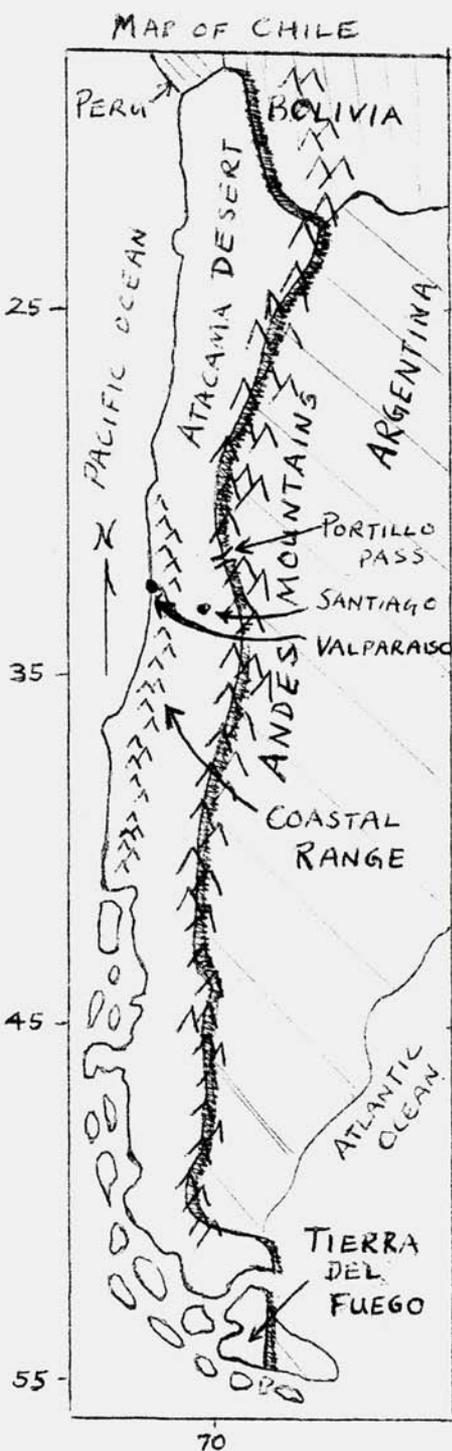
Another fascinating plant area is in southern Chile, between latitudes 37° 30' and 40° 30', an area of rain and heavy forests, similar to our own

Pacific Northwest. There, in the woods, grow many endemics including Chile's national flower, the copihue, *Lapageria rosea*, a vine with red (rarely pink or white) flowers so perfect they look as though they were made of wax. Because there has been too much commercial over-picking, the Chilean government is attempting to protect the copihue in the wild.

The far South, including the island of Tierra del Fuego, has still another unique flora. This part of Chile is a harsh but magnificent area of steppe and tundra, fiord, glacier and mountain. There grows *Primula farinosa* var. *magellanica*, as well as a choice rock garden plant, the distinctive *Calceolaria darwinii*.

However, I think I would like to concentrate on some of the herbaceous plants of central Chile because that is where we lived and I am therefore more familiar with them. Here again there is a bewildering variety. Perhaps the best way to deal with it would be to describe the perfect three-day weekend. We would start at the coast near Valparaiso in mid-September, then we would go up over the coastal range, 4-5000 feet, descend to the fertile central valley, and finally ascend to the Portillo Pass at 10,000 feet in the high cordillera of the Andes. In making this trip of less than 200 miles we would be crossing the entire width of Chile—starting at the coast and at Portillo Pass being practically on the border with Argentina. In order to see each of these areas at the peak of their bloom one would have to practice some magic in this three-day weekend: starting in Sept. (spring) at the coast, and ending in Jan. (summer) at Portillo.

We would begin our trip on the white sand beaches of the coast. The climate of central Chile is a Mediter-



ranean one with long, dry summers and mild winters of rain. There is more humidity and cloudiness along the coast, but in general the climate is clear, dry and invigorating. Rising behind the beaches abruptly are rocky cliffs, and in the spring these cliffs are covered with a profusion of beautiful plants. The spiral-leaved and succulent *Alstroemeria pelegrina* with its spectacular pink flowers on 6 inch stems, make vivid splashes of color among the gray rocks. This plant, much loved by the Chileans, is called the "lireo," and one's first glimpse of it is unforgettable. The English rock gardeners are said to be fond of this plant. Often growing near the lireo is the lovely *Calandrinia crassifolia*, a taller plant, but as are many of the beach plants, it is a succulent-leaved one. Bright, compact clumps of the yellow *Oxalis crassifolium* have been flowering for some 2 to 3 months now; they seem just to go on and on. The rocks are also covered with an endemic creeping succulent, the gray-green *Dolia tomentosa*, a member of the Nolanaceae family. This family is heavily represented in almost all parts of Chile. The *Dolia*, with its attractive foliage and small white flowers, is supposedly easy to grow, but doesn't like frost; it might be a good introduction for California.

Also abundant, and growing in the sand itself, is the *Doca*, or *Carpobrotus chilensis*, I am told, similar to the creeping plant with vivid flowers growing on the California beaches. Another sand-loving plant is the lavender mallow, *Cristaria glaucophylla*. A description of this type of plant area would be incomplete without mentioning the small barrel cactus, *Eriosyce ceratistes*, tucked in among the rocks. It has small, pink, pointed flowers clustered in its center. Also growing on these cliffs is the tall native cactus, *Cereus chilensis*, with white blooms of great beauty growing at sharp angles to the plant. Also plentiful are various species of bromeliads, notably the *Puya* genus. *Puya berteroniana* has huge flower spikes 8-10 feet tall of intense turquoise, one of the most unusual colors in a flower we have ever seen. More common is the yellow-flowered *Puya chilensis*.

A small plant which one could easily overlook in the heady variety of this natural rock garden above the sea is the tiny crucifer, *Schizopetalum brongniartii*. Its tiny flowers are like magnified snowflakes or scraps of lace. If this plant is not in cultivation in rock gardens it at least deserves to be tried. I am told that it has an unpleasant odor; although I collected it, I didn't notice that. Another interesting and pretty plant likely to be encountered in this type of environment is *Loasa tricolor*. The yellow and red flowers always nod downward. Just don't touch it; its prickles are worse than the ubiquitous stinging nettle.

In damper pockets in the rocks, usually near springs, one may find the delicate fern, *Blechnum auriculatum*. Also growing in such spots are various orchids, such as the showy *Chloraea ulanthoides*, with its extraordinary green and white flowers, or the spikes of the white-flowered *Azarca sinuata*.

After a day enjoying the sea, the beach, and the lush rock gardens of the coast, one can move inland only a few miles the next day into the coastal mountain range. This range is lower than the geologically newer cordillera further inland still. The coastal mountains, like the beaches, are lush and beautiful in the spring. Within two months they become dry, brown, and generally uninviting. From their heights, 4-5000 feet, one can look toward the Pacific or toward the snow-covered peak of Aconcagua in the



Natural sea coast rock garden near Valparaiso. The barrel cacti are *Eriosyce ceratistes* with small pink flowers.

Robert Myhr

Andes (23,000 feet), highest mountain in South America.

One of the most abundant of the spring flowers growing in these mountains is *Leucocoryne ixioides* of the Amaryllis family, in shades of pink, lavender, or unusually, white. The foliage withers before the flowers bloom in a small cluster about 5 inches high. It has a sweet vanilla aroma and grows in profusion on dry rocky slopes. It is typical of the many interesting and relatively unknown bulbs that grow in Chile. Another member of the Amaryllis family growing on these hillsides is *Hippeastrum igneum*. It is perhaps two feet high, very striking from a distance with its bright red flowers. It is a favorite of the Chilean country people who gather it in the spring to place in their tiny roadside shrines. These shrines, found all over Chile, usually mark the spot where someone died in an accident. They were quite helpful to me when traveling in an unfamiliar area. Whatever was currently in flower would be found in the shrines, letting me know what to look for!

In the coastal range, one's eye is often attracted by the climber *Tropeaeolum*, a genus of which there are many species in Chile. My favorite is the most common, *Tropeaeolum tricolor*, the red and yellow one that literally drips from the shrubs on which it grows. Less dramatic, but also lovely are *T. azureum*, a purple species, and *T. ciliatum*, which is yellow. Also growing on trees and shrubs, but as a parasite, is the pretty red "Quintral," (*Phrygilanthus* sp.) named for a 16th Century aristocratic lady famed as a *femme*

*fatale* and murdered by her enemies.

Often in wooded areas of the coastal range, one can find what I am told is the world's only climbing composite, the Mutisias. In this case, we see the large pink-flowered *Mutisia ilicifolia*, with prickly leaves, and looking very much like a climbing aster. Nearby are growing the airy spikes of the lily, *Pasithea coerulea*. It has small blue flowers along the branched stem and stands about a foot high. It is, like the *Tropeolum* and *Leucocoryne* sp., abundant all over central Chile in the spring. It is endemic to the country. Under the trees and shrubs, one may encounter a whole swath of the tiny yellow iris, *Solenomelus chilensis*. It is a jewel of a plant with its sharp pointed petals and dark center. This iris would look very well in a cultivated rock garden, I should think, should it want to grow there. A bit taller and less spritely, but nevertheless a pretty plant, is the pink *Sisyrinchium junceum*. About  $\frac{2}{3}$  of the way up the stem a cluster of flowers shoots out, each flower with a long yellow stamen. This plant is also found at the alpine level where it is more compact and attractive. If we are very lucky, we will find a specimen or two of *Calydorea speciosa*, a rare sisyrinchium-like plant, which is occasionally found in this region. It has two or more huge blue flowers with darker shading on the petals and has golden centers. The flowers lie almost flat on the ground; it might be a perfect rock garden plant. Hopefully, someone can collect some seed sometime and attempt to preserve for the world what may be a doomed plant.

After a day spent climbing on the slopes of the coastal range, we spent the night in preparation for the next day's trip into the true high country of Chile, the Andean cordillera. The next day dawned dry and clear as usual and we started down into the broad central valley. It is intensively cultivated because there is so little flat land in this part of Chile. The alluvial soil is some of the most fertile in the world, we have read. Here, many of Chile's truly marvelous fruits and vegetables are grown, as well as the grapes for its famous wines. The central valley is not, however, a good place to search for native plants. Introduced ones, such as the California poppy have taken over. After crossing the valley, we began to ascend the lower Andes. Within an hour we were in the shadows of the big ones and the scenery was magnificent. The huge masses of the Andes are unlike other mountains with which we are familiar; they are so steep, so rocky and so bare. Soon we arrived at the world-famous Portillo ski resort, near the top of the pass. Let us say it is mid-December now. We stand in a bowl-like area at 10,000 feet. Snow remains on the higher peaks but there is none where we are standing, and the ski lifts are all empty. The view is too grand to describe with words. There are no alpine meadows here; nor are there many in the Andes because the mountains are too steep and the water runs off too quickly. We are far above tree line, surrounded by enormous mountains, and a large alpine lake, named for a legendary Indian princess, sweeps away to the foot of one of the highest peaks. Here, all the plants are in pure scree. There are several dwarf forms of shrubs which grow further below, such as the odd "pingo-pingo," *Ephedra andina*, with its stiff, leafless branches and tiny white flowers.

Many of the herbaceous plants that we see are dwarf forms of those seen at sea level, or yellow-flowered composites. A *Senecio* sp. is here in abundance. So is the compactly-leaved *Haplopappus foliosus* and the big-thorned

*Puya chilensis*

Robert Myhr

*Chuquiraga oppositifolia*. Growing beside the *Haplopappus foliosus* is a lovely white-flowered mat of a *Sisyrinchium* sp. Its white mingles with the yellow of the *Haplopappus*. This *Sisyrinchium* sp., with its starlike flowers and tiny, sharp, grass-like leaves, impressed us as a choice alpine indeed.

A little further on we encountered a mat of the fuchsia alpine *Oxalis rosea* and near it are the minute blooms of an alpine *Calandrinia* sp. The sky is clear, the air is invigorating, the view is fantastic, and one feels completely exhilarated. So did Charles Darwin in 1834 when he went through this pass on horseback, studying its geology, collecting its plants and insects, and marveling at the great black Andean condors which he saw a few thousand feet further below. He described it all in his famous *Voyage of the Beagle*. He said that those days at the top of the Portillo Pass were among the most wonderful he ever spent, and after seeing it, we understand why.

Near a stream of melting ice we came upon a lovely sight; *Calceolaria biflora*, in a niche in the rocks. It stands less than a foot high and its small yellow balloons bob and dance in the breeze. Nearby is a striking display of *Schizanthus grahamii*. With its pinky purple blossoms and feathery green foliage it is clearly superior to its domesticated cousins which are cultivated in North American gardens.

Suddenly we found what we had been hoping to see, the famous Andean violet, *Viola reichei*, named for a famous botanist of Chilean flora, Karl Reiche. Unfortunately it was not in bloom at the moment. Nevertheless, it is a striking and unusual plant looking a bit like a sempervivum. Somehow,

one does not expect to see such a form at this altitude; it looks as though it belonged at sea level. I dug a few specimens which I tried out in my garden at Santiago and one did quite well until the gardener dug it up by mistake.

I understand that two Englishmen, Mr. Watson and Mr. Cheese are collecting Andean alpins as I write this article. They are probably deciding now which seed to gather from the plants they have been studying throughout the Chilean summer. Hopefully, we will be able to read about their expedition someday. Their report should have much learned comment on Chilean alpins.

It is about 4:30 at Portillo now; the wind has begun to blow, as it does in the late afternoon and suddenly it is *cold!* The temperature extremes at this altitude are great; intense sun at mid-day to bone-chilling cold in the late afternoon, and quickly. So, reluctantly, we leave this great high place and start down again towards the central valley and home.

I would like to express my appreciation to our two Chilean ARGS members who helped me understand and appreciate their flora better: Dr. Otto Zollner of Quilpue, and especially to Dr. R. Wygnanki of Santiago. Dr. Wygnanki spent several evenings identifying slides and dried specimens for me. He has long been a faithful contributor to the ARGS seed exchange.

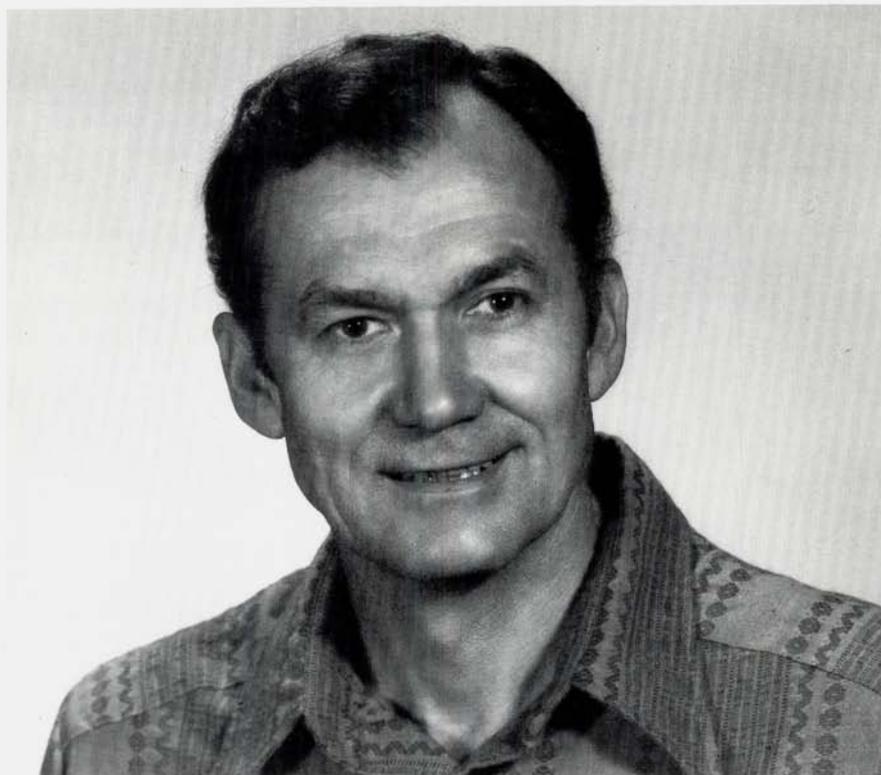
I would also like to thank several Peace Corps volunteers in Chile who were working with native plant material: Mr. Les Landrum, botanist, and Mr. and Mrs. Robert Hess. They also helped me to learn more about the fascinating flora of this part of the world. Lastly, I would like to thank my husband, Bob, who took photographs, made the map for this article, and shared the many wonderful days I spent on the beaches and in the mountains of Chile.

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 \*Munoz, Carlos Pizarro. *Flores Silvestres de Chile*. Universidad de Chile, 1966, p. 21.

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*CORNUS NUTTALLII*—" . . . *Cornus nuttallii* is ordinarily confined to the Pacific Slope, from British Columbia . . . to central California, occasionally even to the Sierra foothills. It is also known from an extensive colony in the Bitterroot foothills in central Idaho, an area of cold winters, frequently to well below zero. Possibly there may be a cold tolerance inherent in this form from the Lochsa River that could enable it to be grown in some places where the coast form will not succeed; it is not otherwise different." (Re Number 689 Seed List 1972). This is an excerpt from a letter to the Seed Exchange from Roy Davidson of Seattle.



Harry W. Butler—Our new president.  
Com'l Photo Dept. of WHIO-AM-FM-TV

## A MESSAGE FROM OUR NEW PRESIDENT

HARRY W. BUTLER, *Spring Valley, Ohio*

I suppose no one ever joins the American Rock Garden Society with the thought, "Here's an opportunity for me to contribute something to a worthy cause." We join because we expect to get something for our money!

And what a bargain it is to have the opportunity to select seeds from 3500, or more, species and varieties carefully collected from gardens and in the wild—from Main to Mongolia; to learn from experts at the annual winter symposium; to participate in the plant sales, plant shows, and garden visits at the annual meeting. Beside these nationally inspired activities, the various regional divisions of the Society provide, in many instances, monthly meetings, field trips, garden tours, shows and plant sales—all opportunities for members to mingle and talk rock gardening and alpins and to exchange knowledge and plants. There is always something for every member.

For those too far away to join in such activities, the slide library is ready to take them on a world-wide garden tour, or into the mountains, with no tired muscles. The *Bulletin* ties it all together, providing the kind of information we were hoping for when we joined.

Yes, we get a lot from our membership. And one day it is realized that a great many members are contributing a lot of time and effort to make all this work. Then someone comes along and says, "We have a job for you." You think of a dozen reasons for declining. But the debt to all is there, so you say, "I'll do my best."

That's my pledge to the oldtimers and the innocent newcomers. Our congratulations to Bernard Harkness, our retiring president, on the condition of the healthy, growing plant he exhibits at the end of his term. We promise, with your help, to propagate it.

## SOME COMMENTS ON THE SEED EXCHANGE 1972

ROXIE GEVJAN, *Newtown Square, Pa.*

There is no doubt in my mind that donors to the 1972 Seed Exchange have surpassed all their previous performances. So many members have written and commented on the fine selection of seed listed that I feel compelled to pass on this information by quoting just a few:

Mrs. E. D. McDonald, New Zealand—" . . . Thank you for a wonderful seed list of so many desirable seeds. It is hard to choose which ones to list . . ."

Mrs. W. B. Jackson, Texas—"It is as much fun looking up the flowers as it is planting the seeds . . ."

Mr. Norman Crick, England—"The A.R.G.S. has excelled itself, a really wonderful collection of seeds. Making a choice from such a surfeit of riches has been a pleasant problem . . ."

Mr. Robert Gamlin, Mass.—". . . I am amazed at the list of seed available and the work that goes into it . . ."

Mr. Vaclav Plestil, Czechoslovakia—" . . . thanks for the Seed List—it is one of the best for the last years. There are too many interesting plants to choose from all groups . . ."

Mr. Dennis Cook, England—"May I congratulate your Society on a really excellent seed list."

None of these comments could be made if our donors had not really done such a splendid job. I urge you to continue this high quality performance and to make every effort to add to your contributions, for they are very well received. All the seed has been tabulated to indicate supply and demand. There was short supply and great demand on:

Arctica nana	Panax quinquefolium
Arenaria tetraquetra	Podophyllum emodii
Calypso bulbosa	Polemonium elegans
Campanula pulla	Potentilla nitida & varieties
Dicentra (except eximia)	Primulas, Farinose Section
Douglasia	except the type.
Draba lutescens, mollissima,	Primulas in general (!)
polytricha	Rhododendron, most species,

Eritrichium	especially dwarf or uncommon
Haberlea	Ramonda
Kalmiopsis	Shortia
Kelseya uniflora	Soldanella
Linum salsoloides	Solidago
Loiseleuria	Vaccinium
Lupinus lepidus lobbii	Viola adunca, beckwithii,
Mertensia virginica alba	labradorica, variegata, and
Paeonia	yakusimanum

In good supply, but also in great demand were the following:

Cyclamen—all  
 Dodecatheon—all (Only *D. meadia* was in surplus)  
 Lewisia—all (Except *LL. heckneri* & *brachycalyx*, in surplus)  
 Narcissus species  
 Opuntia  
 Phlox, all  
 Plagiorhagma dubia  
 Trillium

This is only a brief insight into SOME of the popular material, and given only as a guide at the request of several members. However, a complete tabulation has been made of all the seed in the 1972 list, indicating supply and demand. If you are interested in any particular items, please send me a self-addressed post card listing the items about which you are inquiring, and I shall be glad to tell you the need. The above list is only a sampling. If seed you contributed is not listed above, please do not interpret this to mean that it wasn't wanted. This would be fallacious reasoning as the omissions are purely arbitrary, for the sake of brevity.

Much on the above list is difficult to collect and all donors are to be congratulated for their untiring efforts. I hesitate to single out any donors, but do feel compelled to mention two, namely, Mr. Lawrence Crocker, Oregon and Mr. Bruce Robertson, Scotland, each of whom sent in 250 kinds of seed, much of which was not contributed by any other donor. Unfortunately, Mr. Robertson's seed arrived too late to be listed but was incorporated into the distribution whenever possible.

Finally I would like to make two requests. First, in order to avoid many disappointments, please read carefully the directions in the Seed List, noting particularly the dates given. Many requests for seed arrived long after the deadline date and had to be denied, as the seeds in surplus had already been distributed to the various regions. Also, much excellent seed was never listed, due to late arrival. Regular mail service is often erratic, and we do suggest using air mail. Secondly, if you disagree with nomenclature, please let me know. We welcome comments, corrections and suggestions. Three members have written to us pointing out errors and we are very appreciative!

As a forward look, keep November 1, 1972 in mind as the CLOSING date for seed or lists of seed you hope to harvest. December 1, 1972 is the closing date for seed providing that the list has already been mailed at least

one month earlier. If you send in seed after November 1, without having sent in a list previously, it is unlikely that we will be able to give you credit for it, even though we can still distribute it, if it already appears on the list because of other donors. We hope to hold to these dates more strictly in order to have more time to edit the list before the final printing and avoid making so many errors. Your cooperation will be greatly appreciated.

**ERRATA 1972 SEED LIST—WITH APOLOGIES**—There were some errors in number sequence which were so obvious that they can be rectified with no explanations. But the following must be pointed out. So writes the Director of the 1972 Seed Exchange.

1. #346 is *Arnica fulgens* NOT *Armeria*.
2. #347 is *Arnica mollis* NOT *Armeria*.
3. #1266 is *Glaucium flavum* NOT *Glaucidium*.
4. #2426 to 2428 inclusive are *Scabiosa*.
5. #2455 to 2476 inclusive are *Sedum* NOT *Scabiosa*.
6. #2583 and 2584 are *Spraguea* NOT *Spiraea*.

Will those of you who received these items, please make the proper corrections, and those who donated the seed please accept my apologies.

## BERNARD HARKNESS

H. LINCOLN FOSTER, *Falls Village, Conn.*

In the January 1972 *Bulletin Board*, the President of the ARGS announced that our membership had for the first time passed the 2,000 mark. This is a milestone very quietly acknowledged, when you consider that it took nearly 30 years to enlist the first 1,000. But more important than the number is the flourishing health of the population.

For the past four years, under the guidance of Bernard Harkness, the American Rock Garden Society has grown strong.

May I borrow from our own world of plant culture a metaphor? Bernard Harkness has been that combination of rare trace elements that mysteriously work wonders to enable plants to reach their best development. Sometimes we are lured into the notion that a quick dose of high potential fertilizer will bring our treasured alpine to the peak of perfection. But often such treatment distorts the most wholesome growth patterns and we get a quick flush, all too prone to the attacks of aphids, drought, or the mugs. You may relate these various maladies to facets of various plant societies if you are so inclined.

Happily ARGS has been growing sturdily and soundly under the stewardship of Bernard Harkness. He passes on to the next president, to whom we extend our hearty best wishes, a society of rugged strength and vigorous health. It will, I am sure, continue to flourish and flower magnificently not least because it has been enriched and made strong by the rare trace elements so essential and so inconspicuous.

And dare I extend the trope to suggest that Bernie's wife, Mabel, has buffered these trace elements to render them most available and nourishing.

To both of them, as they turn over to their successors the proper tending of this flourishing society, all its members wish them well.

## ARGS AWARD OF MERIT 1972

TO MISS ELIZABETH LAWRENCE

In this year when we have wished to make our Award of Merit in one particular branch of gardening, it is gardening literature that we celebrate with this recognition of Elizabeth Lawrence of Charlotte, North Carolina. I am tempted to let Miss Lawrence write her own citation. How better could one express her spirited approach to gardening than in the preface to her *Gardens in Winter*: "I never did care for fair-weather gardeners. Standing behind glass doors, they look out at the cold ground and leafless branches, and exclaim, 'How beautiful this must be in spring.'" And then, "How beautiful it is now, I want to cry."

In *Herbertia*, the yearbook of the American Plant Life Society, for 1943 Miss Lawrence contributed a short autobiography on the occasion of being named the William Herbert Medalist in that year for outstanding work on the use of Amaryllids in gardens. Again I cannot express as beautifully and succinctly her first approach to horticulture than her statement of the truths learned from her mother's reading of the Parable of the Sower: "Once the relation between poetry and the soil is established in the mind, all growing things are endowed with more than material beauty."

After spending four years of college in New York City at Barnard, her enjoyment of the next spring at home in Raleigh, North Carolina led her to choose gardening as a profession. To implement this decision she entered the first class in landscape architecture at the North Carolina State College.

This academic training completed, she still found most of the gardening literature to be for a far different climate and that she would have to grow plants in her own garden in order to know them. She then turned her talents to the sharing of her knowledge by means of a newspaper column and by three books: *A Southern Garden*, *The Little Bulbs* and *Gardens in Winter*.

Lastly we come to *Lob's Wood* which celebrates a long friendship with Carl H. Krippendorf, ARGS member and benefactor of Cincinnati gardeners and naturalists by the gift of his woodland garden for public enjoyment. This epitome of Miss Lawrence's literary art expresses what most of us feel about gardening, I am sure.

Bernard Harkness

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APPRECIATION SHOWN—Paul Palomino, Seaford, New York, wrote as follows: "Mr. Roy Davidson has done an expert job in writing "*Synthyris Today*" which appeared in the January, 1972 issue of the *ARGS Bulletin*. It was a genus of plants that most of us knew little about until Roy raised the curtain of mystery and uncertainty which has shrouded the genus *Synthyris* for years. We now have a clear, concise and accurate reference to which we can turn in our quest for information on the genus. It was very well done, but of course, there will be other authorities who will not agree in all particulars, which is good as the differences of opinion will help further to clarify the subject."

## MARCEL LE PINIEC DIES IN FRANCE

Marcel Le Piniec, 78, former resident of the Applegate area, gardener, nurseryman and wild flower authority, died March 24 in Nantes, France.

Monsieur Le Piniec returned to his native France in April 1966 and was living with his two sisters, Georgette Le Piniec and Louise Le Piniec, at the time of his death. His ashes will be interred on the Coast of Brittany with those of his ancestors.

Born Aug. 14, 1893, he came to the United States in 1909 and soon became recognized as a leading textile designer in New York. In 1920 he moved to New Jersey to garden and grow some of the mountain plants he had loved in his youth in France and Switzerland.

It was then he became involved in rock gardening which led to his phenomenal success and recognition in the creation of the Marcel Le Piniec Award authorized by the Administrative Committee of the American Rock Garden Society and presented to Lawrence Crocker and Boyd Kline of Medford in 1969.

M. Le Piniec opened a nursery called the Mayfair after he entered the Spring Flower Show of the New York Horticultural Society in the spring of 1923. The interest in his exhibit convinced him there was need for a reliable source of rock garden plants in the metropolitan area.

He soon expanded his nursery business to include design and construction of rock gardens. In 1927 he made a trip to Switzerland to recruit help for his growing enterprise. For many years in the New York Flower Show the Le Piniec rock gardens were recipients of numerous awards. His rock garden was the Gold Medal winner in 1932 and at the same time he was awarded the sweepstakes cup for the best garden in the show.

In 1944 after touring the United States he decided upon the Medford area as suitable to the particular kind of gardening and nursery business in which he wanted to engage. He had sold his Mayfair Nursery and he was soon in business again in the Rogue Valley.

He made frequent trips into the Cascade and Siskiyou mountains exploring for plants. On one of these expeditions he discovered the rare yellow *Lewisia cotyledon* now known as 'Carol Watson.' On another expedition he found the form of *Kalmiopsis* which he named Le Piniec.

His landscape gardening in this area included the grounds of Rogue Valley Hospital. His nursery business, Garden City Nursery, was located at Phoenix. (Reprinted from the Medford, Oregon Mail Tribune of March 29, 1972).

\* \* \* \* \*

SMALL TRIUMPH DEPT.—“In a pot marked *Aquilegia jonesii* there are several glaucous cotyledons opening out! I'll let you know when they bloom in the wall! Of course, they may be WEEDS in your garden.” This message, full of hope came to the editor from an eastern member. It seems that the legend of our western ability to grow western plants successfully has gotten out of hand. *Aquilegia jonesii* will never become a weed in anyone's garden.

# GERMINATION STUDIES OF SOME ALPINES

TREVOR J. COLE

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## INTRODUCTION

The immediate problem facing the alpine enthusiast following receipt of seeds from the seed exchange, is how to effect rapid and efficient germination. No one enjoys having to care for pots of seed for months on end while awaiting the appearance of seedlings.

The recent publication of "Seed Germination of Rock Garden Plants" by Dara E. Emery does much to simplify this problem. This booklet covers 780 species and varieties and was compiled from records kept by members of the A. R. G. S. It provides data regarding germination temperature (cool, warm or hot), the number of days to first germination, and a record of germination (none, poor, fair or good).

In recent years very little work has been carried out on the problems involved in the breaking of seed dormancy of alpine. Present day growth cabinets which provide a controlled environment were not available when Schroeder and Barton (3) published their results in 1939. In 1964, Emery (1) dealt with native California plants, some of which are grown by rock garden enthusiasts.

Work done by Thompson at Kew (5) showed that pre-soaking treatments in gibberellic acid improved germination of all the species that he tested. He noted that germination was slightly better with the A<sub>4</sub> formulation as compared with the A<sub>3</sub> form.

The objective of these trials was to determine the optimum seed germination treatment for specific species. In each case the method employed was one that could be readily adopted at home.

## METHODS

Surplus seed was obtained from the A.R.G.S. Seed Exchange and was counted into batches of 25 (a total of 1200 seeds for each species). Unless otherwise noted, four samples of each species were sown for each treatment. The various germination treatments used are described in Table 1.

Each lot of 25 seeds was sown in a 3-inch square fibre-board pot and kept in a greenhouse (unless otherwise specified), at day and night temperatures of 65° and 55° respectively. Sand and peat moss were used as stratification media for seeds which were given an initial cold treatment.

The temperatures selected for cold treatments were 40° and 32°F. A temperature of 41°F is generally accepted as the maximum low temperature required for seeds which need a cold period prior to germination (6). It was thought that the temperature fluctuations around 32°F would cause alternate freezing and thawing which might have an effect on the seed coat, particularly in the presence of peat or sand. These temperatures can be approximated in the domestic refrigerator by placing seeds on the top shelf to obtain 40°F and immediately under the freezer chest to give 32°. It may be necessary to turn the cold control down a mark or two to obtain these

temperatures.

It is known that some seeds germinate best when kept in light (4); it was therefore reasoned that perhaps some would germinate better in the dark. To provide a dark environment the seed pots were placed in a temperature controlled growth cabinet. When required, a fluorescent desk lamp with the tube enclosed in a green filter was used to provide the light necessary to record seed germination. Plants do not respond to green light (2).

The A<sub>3</sub> gibberellic acid formulation, which can be readily obtained, was used as a source of gibberellic acid. The 25 seeds were placed on pre-soaked filter papers in covered petri dishes and left for 24 hours. The 0.1% (1000 ppm) gibberellic acid solution must be made up fresh prior to application. The seeds were then picked off with forceps and placed directly on the seeding medium. Because of the small seed size on many of the species tested it was thought inadvisable to wash the seeds following the acid treatment. However the subsequent watering tended to remove any excess acid adhering to the seed.

The treatment involving subdued light at 75°F alternating with darkness at 40°F was to simulate seed falling on the ground from a parent plant and receiving only filtered light.

As the seeds germinated they were removed, counted and the date recorded. In this way it was possible to determine the length of time before germination started, the period of time of germination and the total percentage of seeds germinating. These three factors must be borne in mind when selecting a "Recommended Treatment". It is sometimes better to obtain a 60% germination in 14 days, than a 90% germination over a period of three months. The pots of seeds were kept in the greenhouse for 3 months. Any seed which did not sprout in this period was either not getting the right treatment or was not viable.

Seed of 14 species and cultivars of *Lewisia* were sown in duplicate. One set was placed in a greenhouse at 65°F and the other was initially put into 40°F cold storage for 60 days and then placed in the greenhouse.

## RESULTS

The data on the three most successful treatments for those species which germinated is presented in Table 2. A complete record of the results of all treatments is available from the author on request, at Plant Research Institute, Canada Department of Agriculture, Ottawa, Ontario, K1A 0C6, Canada.

Figure 1 illustrates the rate of germination for five species, using the data from the most successful treatment in each case. The germination was most rapid during the first few days and then tended to taper off. One exception to this trend was *Meconopsis horridula* which germinated rapidly and continuously over a limited period. Thus for practical purposes it would appear that for many species ample germination would occur in a relatively short period.

*Aciphylla subflabellata*—Only 40° treatments gave any germination. Sixty days cold treatment would probably be enough as in two cases germination occurred in storage.

Table 1. Description of treatments used in germination studies of alpines.

Treatment number.	Treatment
1	Control. Compost + sand covering.
2	Compost + milled sphagnum moss, uncovered.
3	Compost + sand + 24 hours light at 65°F.
4	Compost + sand, no light at 65°F.
5	Presoaked 24 hours in gibberellic acid, sown on compost + sand.
6	Compost + sand, subdued light at 75° and dark at 40°F for 12 hours alternating.
7	Compost + sand, 90 days at 40°F, then to greenhouse.
8	Compost + sand, 90 days at 32°F, then to greenhouse.
9	Stratified 90 days in moist sand at 40°F, then sown.
10	Stratified 90 days in moist sand at 32°F, then sown.
11	Stratified 90 days in moist peat moss at 40°F, then sown.
12	Stratified 90 days in moist peat moss at 32°F, then sown.

*Aethionema recurvum*—Germination was low in the two cold treatments with peat moss, and in all the untreated sowings.

*Allium crenulatum*—Germination was poor and erratic in nearly every case. Only in the treatments with peat moss did germination occur in every sample.

*Alyssum saxatile*—The germination rate was quicker and higher in the three 32° treatments than in the 40° ones. The time in cold storage could probably be reduced to 60 days.

*Anemone magellanica* 'Rosea'—With the exception of the seeds germinated under lights, those stratified in sand or peat moss gave best results.

*Aquilegia flabellata*—Any of the cold storage treatments gave good germination in a reasonable time.

*Armeria montana*—Owing to a shortage of seed only certain treatments were used, with three samples in each. None gave good germination.

*Arnica chamissonis*—Storage at 32° gave better germination than storage at 40°. In treatment 6 only 1 seed germinated.

*Arthropodium candidum*—Very slow to germinate regardless of treatment. Generally the cold storage treatments resulted in low germination.

*Asclepias tuberosa*—Most treatments gave good germination, but those without cold treatment were much slower.

*Aster undulatus*—Germination was poor and occurred only in the cold treatment samples. Since Aster normally germinates fairly readily it is presumed that the seed was not very viable.

*Camassia leichtlinii*—This species obviously requires a cold treatment, but in view of the large percentage that germinated in cold storage, 60 days would probably be long enough.

*Campanula barbata*—Storage at 32° was better than at 40°, but in peat stratification the germination was much poorer than in sand.

*Campanula punctata* 'Pink Form'—Again storage at 32° gave better results than at 40°. However the untreated samples (1 and 2) germinated best.

*Celmisia armstrongii*—No germination in any treatment.

*Celmisia coriacea*—Only two seeds germinated, one each in treatments 1 and 5.

*Celmisia traversii*—A total of three seeds germinated, 2 in treatment 9, and 1 in treatment 10. *Celmisia*s are well known for having short-lived seed. This is probably the cause of non-germination with these samples.

*Cimicifuga racemosa*—No germination in any treatment.

*Draba X salomonii*—Germination was better without a cold treatment; the moist peat in particular reduced the percentage greatly.

*Gentiana crinita*—With the exception of two seedlings, germination only occurred in samples which had received a cold treatment.

*Gentiana lutea*—No germination in any treatment.

*Lewisia taxa*—Only two of the 14 pots placed directly into the greenhouse after seeding, germinated, while 12 of the 14 which had been in cold storage germinated within 6 days. The remaining two required a further cold treatment to induce germination.

*Meconopsis horridula*—Storage at 32° was better than at 40°, but the best results were obtained from germinating in the dark.

*Osmorhiza claytonii*—Only 3 seeds germinated, 2 in cold storage in treatment 9 and 1 in treatment 11.

Table 2. Germination data of some alpine seeds following different treatments

Species and cultivars	Germination rating										
	1			2			3				
	Try#	Days	Per. %	Try#	Days	Per. %	Try#	Days	Per. %		
<i>Aciphylla subflabellata</i>	11	22*	14	42	7	12	36	9	26*	17	20
<i>Aethionema recurvum</i>	5	11	7	80	10	2	75	9	2*	22	81
<i>Allium crenulatum</i>	11	7*	46	20	12	10	51	9	43	46	6
<i>Alyssum saxatile</i>	10	1*	13	89	5	9	73	2	11	3	48
<i>Anemone magellenica</i> 'Roses'	9	13	33	59	3	26	31	12	20	23	32
<i>Aquilegia flabellata</i>	11	19	19	81	12	14	23	9	15	22	83
<i>Armeria montana</i> †	7	2	1	20	1	11	5	19	8	3	53
<i>Arnica chamissonis</i>	12	4	11	58	5	14	12	55	7	5	31
<i>Arthropodium candidum</i>	5	40	28	51	3	58	29	43	9	13	41
<i>Asclepias tuberosa</i> **	3	18	27	74	1	30	49	70	7	5	7
<i>Camassia leichtlinii</i>	11	0*	0	100	9	0*	0	93	10	7*	18
<i>Campanula barbata</i>	4	17	4	43	8	12	11	53	10	5	12
<i>Campanula punctata</i> 'Pink Form'***	2	15	8	88	1	15	25	94	8	7	10
<i>Draba X salomonii</i>	4	7	5	90	1	14	3	86	3	13	6
<i>Gentiana crinata</i>	8	19	15	35	9	15	5	27	7	21	6
<i>Meconopsis horridula</i>	4	11	5	86	2	18	11	60	12	13	11
<i>Oxypetalum caeruleum</i> †	2	27	24	80	11	16	21	74	10	16	21
Penstemon 'North Platte Hybrid'	4	7	15	46	9	5*	9	51	10	5	3
<i>Phyteuma spicatum</i>	10	14	15	22	5	25	7	13	7	19	13
<i>Pulsatilla vulgaris</i> 'Deep Purple'	12	21	18	17	9	21	6	9	10	25	3
<i>Symphandra hofmannii</i>	1	18	11	73	2	20	8	71	5	17	10
<i>Veronica douglasii</i>	10	19	18	24	11	33	13	14	7	37	18

Try# - Treatment number.  
(see Table 1)Days - Days to first  
germinationPer. - Period of germination  
in days% - Total percentage  
germination\* - Part of germination  
occurred in the  
cold store

+ - Three samples only

++ - Two samples only

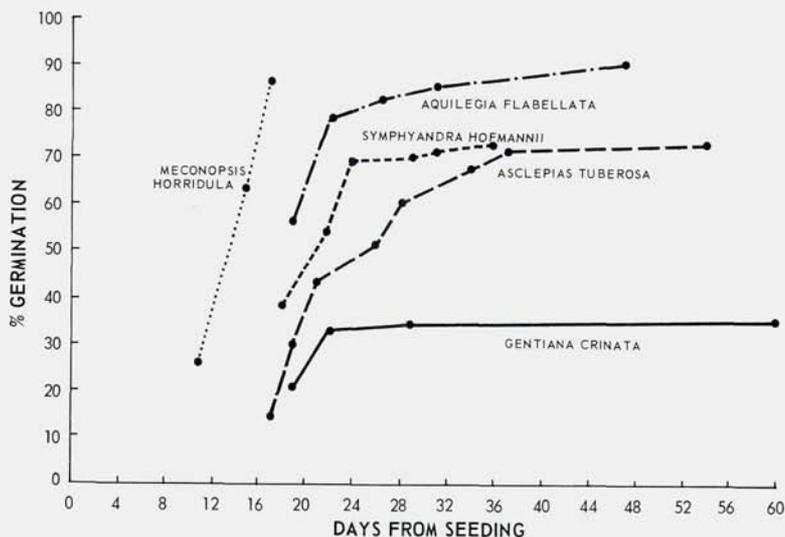


Figure 1. The rate and percentage germination of 5 alpine species, each based on the best of 12 treatments..

*Ourisia macrophylla*—Only one seedling grew in treatment 7. Emery stated in "Seed Germination of Rock Garden Plants" that this species gave good germination after 208 days at 50-60°F.

*Oxypetalum caeruleum*—Germinates easily without a cold treatment.

*Olearia insignis minor*—(Received as *Pachystegia insignis minor*)—Only two seeds germinated, one in treatment 8, the other in treatment 12.

*Penstemon* 'North Platte Hybrid'—Cold storage gave improved germination except in the treatments using moist peat. Germinating in the dark also gave good results.

*Phyteuma spicatum*—Germination was not very good under any treatment.

*Pulsatilla vulgaris* 'Deep Purple'—No treatment gave good germination.

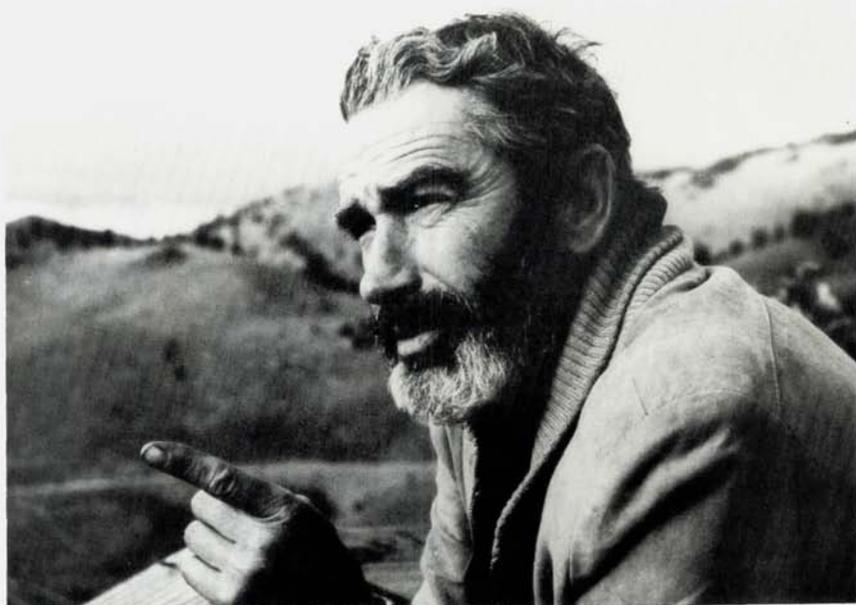
*Symphyandra Hoffmannii*—Good results were obtained in most of the treatments; 3, 4 and 6 being the poorest.

*Veronica douglasii*—The only germination was in the samples which received a cold treatment.

Further trials are presently under way and the results will be made available later.

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Roy Davidson on a field trip.

Jim MacPhail

## THE MARCEL LE PINIEC AWARD 1972

TO BYARD LEROY DAVIDSON

The presentation of the Marcel Le Piniec Award to Byard LeRoy Davidson (Roy) brings honor to the award as well as to Roy, who began with an insatiable interest in native plants as a youth growing up on a ranch in southeastern Washington State. Here he created and tended his own rock garden as a prelude to ever deeper penetration into botanical and horticultural research, the fruits of which he has shared unstintingly with others.

Evidence of his succinct writing about his observations may be found in the *ARGS Bulletin* beginning with an article on *Lewisia* in 1963 and, from then on to the present, covering a wide range of subjects as diverse as *Eritrichium*, *Synthyris*, *Kalmiopsis* and *Douglasia*. He has also contributed to the publications of other horticultural organizations such as the Alpine Garden Society, the Alpine Garden Club of British Columbia, the Hosta Society, the Iris Society and the Penstemon Society. He has delved deeply into our heritage of scientific nomenclature of plants with a mind keenly attuned to innovation and progress.

His formal education in Ornamental Horticulture and Landscape Design at Washington State University led the way to work in the Seattle area in landscape and floral design. The practical expression of Roy's artistic talent and love of beauty has resulted in a two-and-a-half acre show garden in the

midst of a twelve-and-a-half acre tract near Bellevue, Washington. An unusual house of his own design adds to the magnetism which draws many visitors whenever the garden is generously shared with interested groups.

An attempt is made in this garden to provide optimum growing conditions for a wide range of subjects including a vast number of alpinists. No narrowness of outlook limits the choice of material.

Observation of native western plants is a never ending crusade for Roy as his field trips cover highways and byways with no effort too great if the result is ever deeper knowledge and closer familiarity with western flora.

Notable, too, is Roy's first hand acquaintance with the flora of Japan, gleaned from a probing trip there and shared with us in two ARGs Bulletins in 1970.

We hereby acknowledge our indebtedness for service in research, both technical and practical, for generosity in sharing knowledge articulately; and, for continuing endeavor in horticultural pursuits as we present the Marcel Le Piniec Award to Roy Davidson.

## THE BURREN OF IRELAND'S COUNTY CLARE

KAY BOYDSTON, *Niles, Michigan*

(Editor's Note)—A copy of *Fernwood Notes*, a regular publication of Fernwood, Inc., (a Garden and Nature Preserve, located near Niles, Mich. under the Directorship of Mrs. T. Walter Boydston, a long time member of the ARGs) was recently received by the editor. This issue was No. 67, Jan.-Feb. 1972 and the whole twelve-page publication concerned the rock gardens of the British Isles. It was written by Mrs. Boydston and is an account of the rock gardens she visited as a member of a tour to these gardens led by Mr. and Mrs. Harold Epstein in conjunction with the 4th International Rock Garden Plant Conference and Show at Harrogate in April, 1971. For years to come we will be harking back to this conference as those who attended and took the offered tours write in about their experiences. (We will be hearing more about Fernwood, as well). One part of Mrs. Boydston's account is of an area, unknown to so many of us, so beautifully written that it is imperative that it be reprinted in our own Society's *Bulletin*. This portion of her account is subtitled, "And One is a Botanical Enigma."

Any treatise on the Rock Gardens in the British Isles, no matter how brief or casual, should include mention of the Burren, a plateau region of Ireland's County Clare, a natural rock garden of 100 square miles. It is a rough and rugged territory with an aura of stark loneliness and mystery about it. It seems unreal or at least unlike any land ever seen before. Vast distances, gray with limestone boulders strewn about thickly as far as the eye can see, sometimes formed into terraced hills and even mountains, sometimes just piled around every which way as though so many had been rained down at some prehistoric time they had had to come to rest in jumbled piles. Other very large areas are of limestone pavement crossed and crisscrossed with vertical fissures, some as much as three feet deep. Growing in these cracks and protruding from them are all manner of rare plants, some from

the warm Mediterranean countries and others from high alpine areas of the north—all consorting happily together. No one knows why nor how this is possible.

This is a rich study area for archeologists, geologists, and antiquarians as well as naturalists, botanists and rock gardeners. There are remains of churches, castles, towers, stone tombs—some crumbling, some in remarkable condition—telling about a prehistoric people who lived here as long ago as 2,000 B.C.—others dating from the earliest Christian era. Legends and folk lore about earliest inhabitants have been carried down by word of mouth from generation to generation, with some of the most imaginative tales later described for us by early writers and historians.

“The footprints of an elder race are here,  
And Memories of an old heroic time;  
And shadows of an old mysterious faith  
So that the place seems haunted and strange  
sounds float in the wind.”

Mystery belongs here, and at the first impression, the whole land seems bleak, lonely, rugged and certainly a most unlikely place to look for rare alpine plants. But here they are in unbelievable and prolific array! Our group was exceedingly fortunate to have lunch in Lisdoonvarna at a very old, pleasant hotel owned and operated by Mr. and Mrs. Keane who had printed on the day's menu cards a “Welcome to Flora and Travel.” At each table a small bouquet of spring wild flowers and unexpected alpinists bore close study. After lunch Mrs. Keane gave a short talk with slides about the unusual area, touching on some of the archeological rarities as well as the plants. Even so we were scarcely prepared for what we saw when Mrs. Keane, who rode with us after lunch, had the bus stop every few miles in the seemingly endless stretch of grey stony landscape.

Each stop, we found, was at precisely the right spot to see some special plant growing in abundance far removed from its native habitat. At one, great stretches of *Dryas octopetala*, a Mountain Avens at home usually at high altitudes, were showing buds and opening white flowers among the tiny oak shaped leaves. At another we could scarcely be persuaded to leave, we were treading on the most marvelous natural rock garden—growing against the stones or in the tiny patches of mossy turf or showing at the tops of cracks and openings, a far misplaced native ajuga, two little orchids, many many harts-tongue ferns, some of the daintiest of all ferns, the little Wall-rue; even southern Maidenhair was uncuring its graceful fronds in a few places. All those mentioned and many others were here in large number scattered everywhere.

Our group spread out in all directions with eyes not for long on the high blue sky above, or the great splashing waves of the Atlantic Ocean dashing against rocks below us, after each crash sending a fine spray high into the air. Mostly our eyes had to be on the ground not only to avoid a chance mis-step into one of the flowery crevices, but also to see all we could of the gay bits of blossoming carpet among the stones. Most thrilling of all and to be longest remembered were the patches of the little spring gentian, bluer than the sky—*Gentiana verna*. Long coveted and only once a single

bud brought into bloom at Fernwood (a gift plant from Fred Case), these had been especially enjoyed a few at a time in English and Scottish rock gardens we had just visited, or with their glorious blue crowded into pots at Harrogate, but here—scattered with abandon in small groups as far as the eye could see! This must be the way they would look in their high meadows in the Alps—yet here they were at sea level every bit as content and as blue. This surely was one of the highest of all high points in the whole three weeks of plants and gardens. Never will they be forgotten and never will Mrs. Keane and her beloved Burren country, so well known to her, be forgotten, either.

Two other verses quoted from the Burren guide book purchased at the hotel give an impression of the timeless mystery of this place, surely unique in all the world—

“Now feathered fingers of the fern uncurl  
Beside the bell-loud stream whose waters spill  
In crystal loneliness where sculptured crags  
Are etched in evening silver on the hill.

Soon will the gentian and the crane's bill bloom  
In stony spaces when Dawn's sea-borne showers  
Slant through the rainbow's arch, and noonday brings  
The baggage drone of bees among the flowers.”

B. P. O'Connor

“Rock gardens of exquisite flowers, gorgeous  
cranesbills, creamy mountain avens, ferns and  
sedums adorn the nooks and shelves of the  
limestone.

Magnificent sheets of colour carpet it, when the  
Spring Giver makes it bloom with flowers like  
sapphire and the loveliest of its flowers,  
blue gentian and violet, sheet the ground and  
primrose and foam-white anemone the ledges.”

Thomas Johnson Westroop—1895

\* \* \* \* \*

A NEW BIRD?—In Phyllis Myhr's article in this issue mention is made of an interesting war club-like plant, *Puya chilensis*, with the inflorescence in the club head. The accompanying picture does not show clearly the rather large flowers whose throats are a storehouse of yellow pollen. It happens that the native blackbirds have a habit of sticking their heads into these flowers and when flying away appear to have converted themselves into golden-headed blackbirds—very ornamental. Robert Myhr, being a bird watcher, upon first beholding this golden-headed bird, was certain that he had discovered a new species not listed in his book of Chilean birds. One may imagine his disappointment when the truth become evident as he watched the transformation from black to gold with the aid of *Puya chilensis!*

## NATURALISTIC ITINERARIES OF ITALY THE FAIRY WORLD OF THE DOLOMITES

NINO ARIETTI, *Brescia*, and OSCAR FERVIDI, *Milano, Italy*

(Editor's Note)—This is the third article under the title "Naturalistic Itineraries of Italy." The first, subtitled "The Lake Region of the Southern Alps," appeared in the January issue of 1970. The second, "The Mediterranean Region," appeared in the October issue of the same year. The present article is being printed in almost exactly the way it came to the editor, relayed to him by Elmer Baldwin, our Slide Library director. The translation from the original Italian into English is refreshing and in many instances very beautiful. The editor feels that any attempt to edit it would be a disservice to the readers.

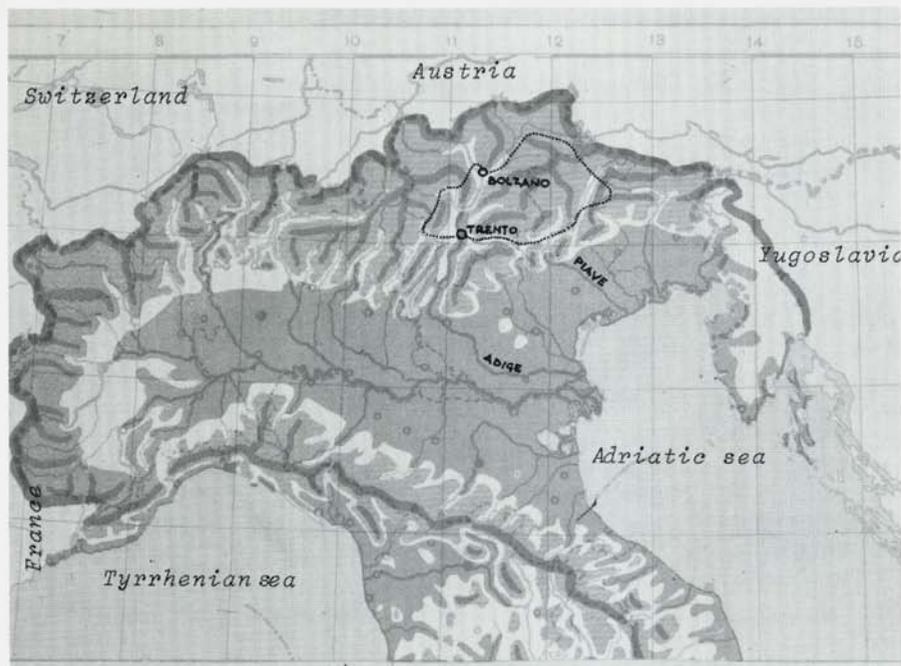
The southeastern part of the alpine arch, which takes the name of Dinaric Alps, is characterized by an articulate series of mountain forms, once believed to be constituted of calcite. It was the French geologist, Deodat Dolomieu (1750-1801), who discovered that, in fact, they contained a double carbonate of calcium and magnesium— $\text{Ca Mg}(\text{CO}_3)_2$ —and in his honor the new mineral was named Dolomite. Dolomieu could not imagine that the name of Dolomites—later given to the mountain region between the Pusteria and Sugana Valleys, respectively at the north and south, between the beds of the Adige River at the west and of the Piave at the east—was going to become renowned and famous for a reason quite different from geological interest, even if their name had originated from geology.

Now the renown of the denomination "Dolomites" and of "dolomitic landscape" has overstepped the frontiers both of Italy and Europe, and also thanks to the many well-known tourist centers which in the Dolomites have developed, as Cortina d'Ampezzo, Ortisei, Dobbiaco and Canazei. Still, it would be improper to refer only to the dolomitic formations in describing the landscape; there is the airiness and boldness of rocky embroideries being exalted by the pedestal they are resting on: soft, soothing-lined basement, sometimes woody and covered with coniferous forests going down to the depths of the valleys, sometimes alpine, with colorful, flowerful pastures, seas of grass which just before June haytime can exceed one meter in height, as on the hanging dell of the Alpe di Siusi.

### GENESIS OF THE ALPINE SYSTEM

The ancient Thetis, the wide, warm sea originally dividing the compact African shelf from the southwestern part of Europe, at the beginning of the cretaceous period (some 130 millions of years ago), under the pressure of the huge mass coming from the south gradually lost width, until it was reduced to the closed basin which is today's Mediterranean Sea.

The structures on the bottom of Thetis, formed through sedimentation and coralline growth, were no more contained by the smaller and smaller basin, and were pushed northward in gradual waves. Thus originated the Alps, at the same time as similar orogenetic movements were erecting the



The article describes the area within the dotted lines.

Caucasus, the Himalaya, the Rocky Mountains, and the Andes. Still, the removal did not affect only the Mesozoic calcareous-dolomitic structures, but also and in different degrees their pedestal: the compact, Permian red sandstones, the flaking schistous-cristalline formations, and the endogenous ones of porphyries and of the many late-paleozoic vulcanites.

Dolomite, stratified in huge, stout, rigid banks, tends to split perpendicularly to the direction of the strata. Its towering masses, cracked by degradative phenomena, thus assumed with time their present boldness of lines: remains of fantastic castles, the embattled ramparts conveying down the heap of their ruins in steep white castings, stopped at the bottom by the deep green watch of coniferous woods. And before these, going ahead in the ascent, the low entangled rumps of the prostrate *Pinus mugo* Turra, and still higher, the pioneer sentries of *Pinus ceambra* L. Cathedrals ornamented with slender Gothic spires, pinnacles, turrets, resting on the green churchyard of the pastures; and, dramatizing the contrast, the variety of colours; whether due to the presence in the Dolomite of iron, manganese and lead, whence come sometimes rose, reddish, ochraceous, or suddenly sombre shadings; or due to the last sun rays at twilight, which, under the opaline cyma of the snowy summits, reflect fugacious shades, purple first, then bright red; whence the legends of fairy palaces among the flaming roses, the "Enrosadira" of Ladin peoples (\*).

## THE FLORA OF THE DOLOMITES

This mosaic of geomorphological situations, where basic and acid rocks blend and there are frequent contacts between carbonates and silicates, is also

the reason for another colorful and exciting world, the one of flora. To increase its preciousness there is the survival of the endemic dinaric-east-alpine element, in scattered microclimatic islands, and, after the glacial paroxysm, the westbound penetration of remarkable contributions from Illyrian and Carpathian floras.

An analysis of the vegetation on the altimetrical levels following each other from the valleys up to the steep summits, would not increase the interest of this subject, as the Dolomitic flora is mainly an aesthetical fact, a polychromous component of the landscape, mutable with the seasons and the morphology of the environment, still always joyfully flowering, brighter in its colors and lively in its forms as the roughnesses increase, and discontinuous on meeting the moving moraines and the steep walls.

Let's begin the ascent! We first enter the band between the woods and the high pastures; that bonnet of twisted shrublets blazing in June with the purple-rose tones of the flowering *Rhododendron ferrugineum* in closed groups on acid soil, *Rhododendron hirsutum*, its shrubs more scattered and humble, on basic ground, and not seldom—on contact zones at almost neutral pH—their hybrid, of easier culture, being more tolerant in respect to the exclusive soil requirements of the parents.

We cast a glance at the hilly pastures, where, at the beginning of spring-time, among the last spots of melting snow suddenly spring up in thousands the Crocuses (*Crocus albiflorus* Kit.), white, bluish or variegated, replaced after the halfth of August, with equal abundance, by the frail, long-tubular, lilac corollas of *Colchicum autumnale* L., the melancholic flower heralding the coming autumn. We greet in haste the early magnificent Gentians, their large funnel-shaped corollas mirroring with metallic shades the indigo of the sky: basic-soil-loving *Gentiana clusii* Perr. et Song and lime-hating *Gentiana kochiana* Perr. et Song.

We go on with a rapid step along the rich alpine meadows, where, at the beginning of summer, waves profusely under the breeze a sweet-scented, many-flowered white diminutive lily, *Paradisea liliastrum* (L.) Bertol.

Where, more showy and pompous, rise other lilies: *Lilium bulbiferum* L. which prefers to commit its descent to the bulbils, embryos of future plants developed in the axil of its leaves: *Lilium martagon* L., with its elegant high raceme of hanging, reddish-rose flowers sprayed with black, the tepals curiously curled backwards; the endemic *Lilium carniolicum* Bernh., with lesser flowers, similar in their shape to *L. martagon*, but of a bright orange-red.

Where a pretty small pink, *Dianthus superbus* L., with rose-purple flowers long and softly fringed, enlivens here and there with its tufts large patches of the pastures, its penetrating perfume blends with the one, deeper and with shades of vanilla, of a tiny orchid, *Nigritella nigra* (L.) Rchb., which to the green harmony of the alp adds the sombre note of its globular brown-purple inflorescences.

## IN THE MOBILE DEBRIS AND ON THE ROCKS

We have to hurry, on high we are awaited by the true flora of the Dolomites. In some gravelly dells, the slopes of opposite lithological nature, one side the whiteness of dolomitic debris held by the rigid *Carex firma* Host.,



The Canali Valley which leads from south to the group of the Pale di San Martino. From the base of paleozoic vulcanites, covered with green pastures and dark fir woods, soar the dolomitic peaks.

Flavio Faganello, EPT Trento

on the other side the sombre ruins of the vulcanites where our steps make a hoarse sound as of scrap iron or crocks of earthenware—as for instance in the group of the Monzoni east of Fassa Valley—we can happen to be surprised by amazing approaches. Right, the exclusively acid-loving flora: *Ranunculus glacialis* L., its rose-tipped white flowers and the juicy leaves particularly prized by the chamois (*Rupicapra rupicapra* L.); the large yellow, bristling daisies of *Doronicum clusii* (All.) Tausch.; the cushions quilted with rose-purple, yellow-throated starlets of *Androsace alpina* (L.) Lamk. Left, only some meters away, the members of the flora which do not fear the high calcium concentration: brightly green mats on which crowd the tiny pink corollas of *Silene acaulis* (L.) Jacq., prostrate cascades of the rose-flowered *Rhodothamnus chamaecistus* (L.) Rchnb., a diminutive Rhododendron endemic of the Alps; lively tufts of the little *Campanula caespitosa* Scop., with hanging corollas of a pale blue-lilac; the hard viridian rosettes of *Saxifraga caesia* L., its large white flowers on slender stems; and, if good luck assists, on sandy sods a little primrose, opening its stemless flower with a fleshy, lighter-throated lobate corolla on a bright green rosette of shining leaves: it is *Primula tyrolensis* H. W. Schott., endemic and exclusive, of the Dolomites.

Now we have to cope with the moving landslides of small debris, to approach the vertical walls, where we are awaited by the most exciting part of the climb. But life thrives even on these seemingly barren gravels; under the surface slowly filters the water from melting snow, and the debris wanderers reach it with their long roots. They are, among the Cruciferae, *Thlaspi*



The rose-flowered *Potentilla nitida*, in a Dolomite fissure.

Sen. Paolo Berlanda

*rotundifolium* (L.) Gaudin., prostrate, and with litmus blue, sweet-scented flowers; the tiny *Hutchinsia alpina* (L.) R. Br., a small nebula of white flowers: *Arabis caerulea* All., one of the few blue-flowering Arabis, which pursues the withdrawing strips of snow. Then there is *Armeria alpina* (DC) Willd., with the glaucous tuft of linear leaves approaching Gramineae, but whose belonging to Plumbaginaceae is testified to by the globose glomerule of long-lasting, light purple flowers of a silky-papery consistency.

And, showiest of all, the gregarious *Papaver rhaeticum* Ler., its trembling, large petals of the liveliest rich gamboge on the upright, dark-felted stem, going farther toward the impending cliff.

Now, to go on, we need also our hands, and we have to unwind the rope to secure the less-trained partner, who, coming to a gravelly cornice, would stop to pick the woolly, white Edelweiss, *Leontopodium alpinum* Cass. This, since it has become the symbol of a questionable alpine pseudo-glory, has disappeared from the lower meadows of *Sesleria* and *Carex* to take refuge here; a pull of the rope warns the partner that we have to go on and that the plant has to be respected. Later he will be the one to protest because of a precarious stop on a thin edge, for the leader has stopped to admire the pink grace of the endemic *Potentilla nitida* L., recalling the blossoms of the peach tree, and crowding on a thick mosaic of silky, silvery leaves; or to salute the hanging blue raceme of *Paederota bonarota* L., one of the most ancient, isolated endemisms of tertiary stock; or to look for a better handhold, for from the one he was going to grasp had leaning out of it a tuft of another noble isolated endemite, *Campanula morettiana* Rchnb., the large corollas of the lively cerulean of the sky, which had been its only companion

during the millennia of its isolation.

Here we are, finally on the top. The hand caresses the compact, soft cushion of *Petrocallis pyrenaica* (L.) R. Br., almost disappearing under the myriad of tiny pink flowers, while our glance soars over an unreal cloister of arches, towers, chimneys, rocky unfinished construction, and from the valley come up slowly milky fogs, to give freshness and water to the noble representatives of the rocky flora we met during our ascent.

Sometimes, we hear of a spirituality of alpinism. Climbing of the Dolomites adds a deep love for this world of its own, for those gorges and cliffs and towers, at the same time imposing and delicate, mighty and elegant, open and secret, like the hidden palace of King Laurin, still enclosed in the rocks, which you see indistinctly only at twilight, when the flaming of its rose garden transpires through the cliffs.

(\*) Ladins of the Dolomites, like the Romanshes of Switzerland (Grisons) and Friulians of northeastern Italy, belong to the Rhaeto-romanic alpine peoples who developed their language and traditions independently from other neo-latins, starting from the common Latin stock. Though separated by the boundaries of two nations, Italy and Switzerland, they constitute a unitarian folk, tightly bound to the Alps, which played such an essential role in their history.

## SOMETHING RARE AND VERY SPECIAL

GLENN LEWIS, *Los Angeles, California*

Any rock gardener warms to these words "rare and special" and if "choice" or "gem" is added, one can expect warmth to become fire. Saying "new" adds fuel to the fire.

What is this rare, very special, choice, new gem? Ah, ha! Through the influence of this article, it is the selected strain *you* are going to develop and offer to the seed exchange.

It's easy. You can't imagine how easy until you have tried it, nor can you guess the excitement that comes with achievement.

If you've collected from the wilds, you know some plants are superior to others—better color, form, size, etc. These differences are your material.

Plants may look the same at first glance, but each is different. There is no such thing as one exact and true form. Some species vary more than others. Plants of one area are often different a few miles away. Sometimes the difference is in the blooming time or it can be an adaptation to different conditions that is genetic. The method given here is simple.

Choose a native plant of likely possibilities, yet one that does not grow within a mile of your garden. Plants of your own area offer the widest choice of traits when abundant; you tend to know the material, have easy access to stock, and growing conditions are less a problem than with more exotic material. If the plant grows nearby, cross-pollination from non-selected plants will degrade your work.

In almost any area there are countless species to choose from. Your choice of species and your choice of goal are the most important points. The factors of practicality and the worth of what you are likely to end with need

consideration.

Most of the work is in collecting—the more plants you see and the greater your range of travel, the more likely you are to find a choice in variety. Once your eye is sharpened, the range of differences is quite amazing.

Blue dicks (*Brodiaea capitata*) grow in a California canyon. At first glance they look alike. Some have genetically larger florets than others. If you dug the largest, and from this seed chose the largest, in one generation you would surpass the average by far. Some have deep coloring, some are very pale. Some tend toward the blue, others, toward the pink. If the pinkest were crossed with the pinkest, a good pink should be available. Then, crossed with one of size—a large pink. If you were working with bees doing the crossing, working with more than one color goal at a time would bring confusion.

This simple method is: bring your selection into the garden and plant the seeds that develop, later discarding those that least fit your goal.

Some years ago, I selected the largest and the bluest of the blues (*Houstonia caerulea*). Local meadows were carpeted with them. As far as one could see they were alike—pale blue stars which appeared light gray from a distance due to the yellow center degrading the soft blue.

The goal was to increase the size from the norm and deepen the color to overpower the yellow that they might be blue from a distance. (Out of the millions upon millions viewed, none was ever without the yellow center).

Two meadows, 60 miles apart, had such superior points of variation that earlier collected stock was discarded.

Blooms were removed from the 8 plants selected and they were planted in the rock garden. They re-bloomed in a few days to cross with one another, and the resulting seeds were planted.

The following year all but the 10 best plants were discarded. The clumps were slight since it was their first year, yet the blooms were deep cobalt blue and 3 times normal size. The next year, now to size, the clumps produced blooms of fantastic beauty. A real gem had been made—mounds of cobalt stars. Some proved to be both spring and fall blooming—a bonus. The spring bloomers were removed.

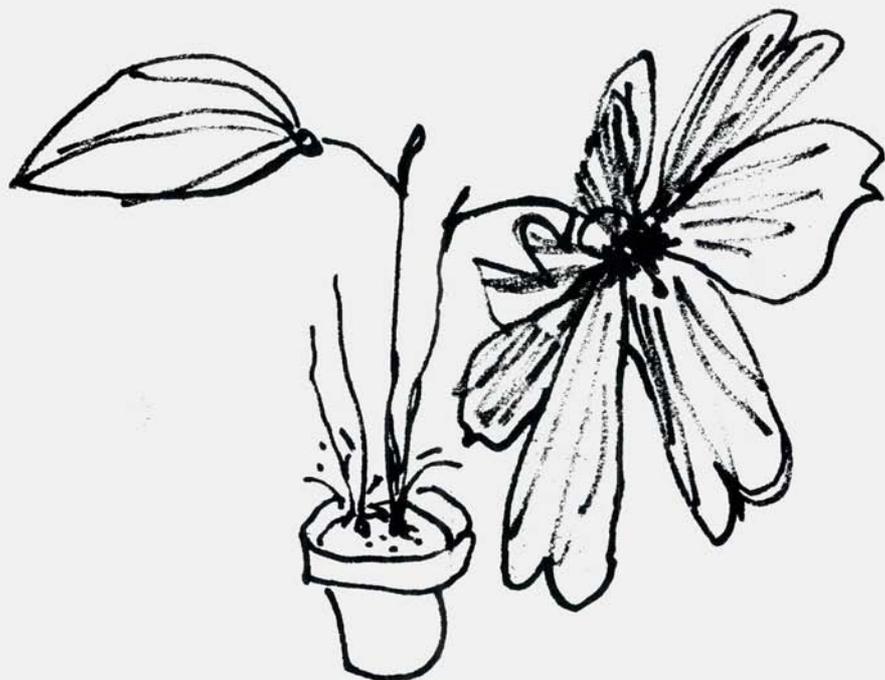
I moved to California from New York and the strain was lost. Yet, someone can do it again; with the wisdom to pass it on as I did not.

Dr. Lee W. Lenz of the Rancho Santa Ana Botanical Gardens of California has developed from natives some *Brodiaeas* and *Iris* that are astonishingly beautiful. While the *Brodiaea* is a bit over-spectacular for rock gardeners, some of the *Iris* would cause a protest march if gardeners only knew what hadn't yet been given to the public. There is one *Iris douglasiana* of such an azure that it burns the mind.

Who knows what traits lie at hand for your selecting?

I know where there is a stand of giant penstemons of ugly, grayed-purple tones, except a few are of a shocking blue. If you were to plant just any seed of it, the chances are that you'd get the uglies. However, if you selected for color and form . . . . .

A red *Delphinium* grows in the canyons. Some are better than others. *Calochortus*, some five species, grow around canyon homes. If one were to look for those growing in well-watered gardens, a deep-resistant strain might be found. (No, they are not planted in gardens here, but rather, are treated



Much too much.

Glenn Lewis

as weeds one tries to keep out of the roses and the lawn.)

Further north, there are some great Azaleas. Again, some are better than others. And, in the East, I've seen *Arbutus* of a raspberry color.

Do try your hand at selection. There is no telling what wonders you may be able to offer after only a few generations of choosing for special traits.

Of course, size, an odd or bright color is no sure bet for beauty. We've seen so many garden flowers blown all out of proportion and grace. We've seen items that come in a lovely pink pushed to an ugly purple, or items that are naturally blue pushed to an ugly pink, all in the name of achievement. No, this is not the goal!

However, the fact remains that in the wildest of wild flowers, some plants of a species exhibit traits that are more appealing than others. Those are the traits to select for.

Thus, when a species is grown for a few plants, one doesn't have to grow hundreds upon hundreds to get a superior form. Do try your hand!

And—oh, yes, don't look down upon your common natives nor seek the rare and difficult. Rather, the reverse, for yours may not be common elsewhere.

Remember that common here are *Calochortus* and *Brodiaea*. Wild *Delphinium* is scarlet and blue and there are *Arctostaphylos* and *Gilia*, *Paeonia* and *Penstemon*—well, too many such common weeds to list.

Put it this way—if you lived where the common field daisy were abundant, but the seed listing said, "Selected for extreme dwarfness," wouldn't you be interested? What about a white *Sisyrinchium* selected for blooms 3

times normal size? Sound good? Even if your back yard is jammed with the typical!

I can see it all. Five people work up the super-Sisyrinchium. When they appear in the seed list, the five strains are crossed and selected again. If we see *Sisyrinchium bellum album*, selected for blooms the size of a bushel basket," we will have gone too far.

## REQUESTS BY MEMBERS

Will the members who are able to fulfill any of the requests below please contact directly the person making the request!

Jaroslav Krecmer, nam. J. Krautwurma 14, Plzen, Czechoslovakia requests seed of the following. *Delphinium cardinale*, *D. muscosum*, *D. nudicaule*, *D. zalil*, *Liatrix* (blue and white forms), *Dianthus alpinus* 'Alwoodii', *Lobelia* (perennial and hardy), *Platycodon* (double forms), Rhododendrons, and *Briggsia*.

Mrs. Herbert Sheppard, Burlington Road, Harwinton, Conn. 06790 would like to find the book *The Garden of Bellflowers* by Baily. She would like to sell a new copy of *The Propagation of Alpines* by Hills. She is also looking for seeds or plants of the following: *Polemonium mellitum*, *Petrocallis pyrenaica*, *Salvia caespitosa*, *Anchusa caespitosa*, *Daphne petraea* (grafted plant), *Asperula suberosa*, *Draba bruniiifolia* and *Hepatica triloba* (double rose form).

Could anyone send seed of the following to Mrs. Tom Henderson, Opihi, Pleasant Valley, Timaru, New Zealand: *Jankaea heldreichii*, *Sanguinaria canadensis* 'Plena', and she would also like to correspond with persons interested in alpines, Primulas, Trilliums and Hostas.

Teddy VanSteen is planning a cross-country trip in the future and would like information as to where he can find information on western American flora, a book for plant classification and collecting. His address is 331 Centre Ave., Lindenhurst, N. Y. 11757.

Please supply information, seed or plants of a small succulent plant, *Diamorpha*, spores or plants of ferns, especially the genus *Botrychium*, particularly *B. lunaria* for Mrs. Leonard J. Wiese, Dodge, Nebr. 68633.

Mr. Joseph Halda, Narodni trida 23, Praha 1, Czechoslovakia would like to receive seed of *Primula suffrutescens*. In exchange, he can supply seed of European *Gentiana*, *Cortusa*, and others.

Seed or a plant of the following Vacciniums are requested by Mrs. H. C. Olson, Jr., 2003 128th S.E., Bellevue, Wash. 98004: *V. nummularia*, *V. versicolor*, and *V. cylindraceum*.

Mrs. Joseph F. Moodie, 3005 84th S. E., Mercer Island, Wash. 98040, is lacking one issue of the Alpine Garden Society Bulletin to form a complete set. Can you help her locate Vol. 1, No. 3?

Sallie Allen would like a small plant of *Laurentia tenella*, *Ledum nipponicum*, *L. decumbens*, and botanical information on South American *Pernettyas* and *Gaultherias*.

Ben Haines, 1902 Lane, Topeka, Ks. 66604 needs seeds and seed collectors. Suppliers may obtain permanent supplying jobs. Send list of those seeds you can supply, or send \$1.25 for my 10 page list of seeds sought. Many of the seeds I seek may have to be collected.

Please send your requests for seed, plants, books, slides and information to Mrs. Sallie D. Allen, 18540 26th Ave. N. E., Seattle, Wash. 98155. For inclusion in a specific issue of the *Bulletin*, requests must be received by the first of the month, two months prior to publication date. It is not possible to acknowledge receipt of requests. We would like to hear the results, if any, from those who have utilized the "Request by Members" column in the past.

## FOURTH ANNUAL MIDWINTER STUDY WEEKEND

PAUL PALOMINO, *Seaford, New York*

Congratulations to George Pride and his committee are definitely in order for the masterful way in which they handled the Study Weekend of January 28-30, in Boston. This was, by far, the best Study Weekend to date. Some two hundred and sixty members attended.

The first talk to start the Study Weekend was on Friday night and was Dick Redfield's "Springtime in New Zealand's South Island." It was captivating and most educational. Saturday's program started with a panel discussion with the following panelists: H. Lincoln Foster, Chairman, Eleanor Brinckerhoff, Norman Deno, Harold Epstein, Kristian Fenderson and Marjorie Walsh. The subject was "Special Sites for Special Plants." Much could be learned from this discussion. After lunch and a lively book auction and sale, Eleanor Brinckerhoff, our seed-growing expert, inspired her audience by lecturing about growing alpiners from seed. In the evening Oleg Polunin enlivened the occasion when he took those in attendance on "Pony Trekking for Plants in Kashmir."

Sunday morning a seed sale was held, followed by Alfred Fordham, lecturing on "Dwarf Conifers and Witches'-brooms." This talk gave the members a good idea as to the availability of the dwarf conifers of all sizes, shapes and colors they may look forward to obtaining for their rock gardens or conifer collections. Again, in ending the program, Oleg Polunin captivated his audience with "Journeying for Plants through Greece, Crete, Yugoslavia and Bulgaria" masterfully presented.

All hats off to George Pride for a weekend we were sorry to see end.

## LETTERS FROM JAPAN

JACK CRAIG, *Penang, Malaya*

FOREWORD by Roy Davidson of Seattle: Prior to their return to live in Japan, Jack and Ginko Craig had extracted a half-promise that I would come there to visit them, but before they left California I insisted they must see some of the Pacific Northwest. During a brief excursion, we sought out places (they were both enchanted with the Columbia Gorge on a misty day), plants (a rare climb to Mendocino Heights for Fritillaries), and people; it was a pleasure introducing this sensitive and knowledgeable couple both to people and to plants. Ginko's special love is ferns, and although Jack has grown things all his life, he entered into a new field on that visit. Now they are bidding farewell to Japan to live in Penang, Malaya, and to yet another realm of plants—those of the tropics. Following are excerpts from letters from them too good not to be shared, which will always continue to poignantly transport me back to the month I spent with them in their home.

Dear Roy,

We have just visited a rather remarkable garden—a collection really—and a little nightmarish in that the owner, Mr. Okuda, grows only variegated plants, over 400 sorts, in his very small area. We are hoping to do some trading for some of them, such as a golden-blotched *Nuphar* and an absolutely knockout small cat-tail (*Typha*), one of the most sensational variegated plants I have ever seen, the slim leaves over half given to creamy-white, striped with lines of green. An *Iris laevigata* had the most bizarre pattern, sort of haphazard and no two leaves alike, yet strangely attractive, with the rhizomes and the flowering stems showing the markings also. An *Equisetum* with golden mottling is probably highly unstable and undoubtedly will require constant vigilance to keep the normal green portions removed. There were three forms of tea (*Thea*); one with small white flaking that formed a sort of halo effect around the central part of each leaf and would be stunning for flower arrangement, suggesting a light snowfall. The *Deutzias*, with lots of white mottling, were really most attractive in much the same way, but the several *Wistarias* were even more so; my favorite of these had white spattering so close in places as to be pure white. There was a pine called 'Nishiki', the best variegated one I've seen, with big bold blotches of pure golden growths here and there. Among the some thirty maples—all variegated differently—were many beauties. One of the most gaudy of spectacles was a bounding hedge of *Althaea* with blotches of bright yellow over about half of each leaf—the loud purple flowers a little too much! In the shade area, large clumps of *Hosta tokudama* var. *aureo-marginata* were the largest and most lush we have seen. In his vegetable garden, the owner boasted squash plants on which both leaves and fruits were variegated!

Watch for red spider on those *Lysichiton* seedlings. In the heat of the summer here in the civilized lowlands these mites move right in and make short work of them. Those first seedlings Mr. Hashimoto gave us when you

were here were devoured that first summer before I recognized what was the trouble, but I was able to find a few more of that form with the attractive markings of deeper green. (The American species sometimes produce this interesting pattern also).

Here are a few scraps of the Manchurian *Pyrrosia* species known locally as "Hime hitosuba", an extremely rare fern, much coveted and pampered by collectors, as are all of these relatives of the bean fern. It is epiphytic in mosses and rocks, and planted in soil it just sulks and slowly dwindles away. We put all of these onto sections of fern-tree trunk and they shoot out into new growth like wildfire and soon fill the tree trunk with their slender, wiry rhizomes. Keep them moist in a shaded position. One of the most striking of this kind of fern is the tender *P. polydactylis* from Taiwan, a beauty and probably not frost hardy. The leaves are very broad and deeply divided, finger-like, thick and leathery, similar to the staghorn ferns, *Platycerium* ssp., growing to about a foot tall. It forms a clump, rather than running about and the effect is more "palmy" than "ferny."

We took a day off recently to go with Hamada-san in his car to an area down by Hamamatsu [famous epicurean center for eel, about halfway from the Craig's home, in Shimizu, to Kyoto] to search out the last few places for *Rhododendron sanctum* in the wild, said to now consist of but two stations, one at Shibu-gawa and one in the Iso shrine precincts. We found it, got a few layered portions and think it to be exceptionally beautiful in its foliage, borne in threes, each leaf quite large and round, covered with hairs. It grows best there in sun and had flowered heavily.

Two of the finest forms of *Tricyrtis macrantha*, known horticulturally for many generations, are perpetuated under the labels "Kil-Joro" and "Tosano-Joro." The first, considered the choicer, is also the slower of the two, but I find equally good increase on both. Each has large, waxen Lapageria-like flowers [*Lapageria* is the stunning national flower of Chile] and the effect of these yellow bells is incomparably exquisite when trailing down a raised bank with ferns and Hostas, where the pendant flowers can be fully appreciated.

We asked around, and were told that, with luck, you might expect some flowers on your grafted plant of *Rhododendron pentaphyllum* var. *nikoense album* in about ten years, instead of the 15-20 you anticipated! It will do best in a sheltered, though sunny, spot and will stay in best vigour and health with lots of sun. It will not flower in much shade. [This tree Azalea is usually pink; we had seen and photographed the white form in the Nikko Waterfall area, where Mr. Atjuya Hamada had selected several for propagation; the graft mentioned was from a plant bearing five-inch flowers!]

*Campanula lasiocarpa*, which we collected together on Ontake, is just opening its first flowers—what a shade of blue!—in a pan of gritty humus in the shade house at the base of a *Pinus pumila*. The little bluebell grows like a weed down here, 10,000 ft. lower than on the sacred mountaintop,

and in a steamy summer climate. Its stems reach up to as much as five inches. But alas, the *Diapensia* which were all over up there, and which flowered so very beautifully, to be photographed the day you left, immediately began to disintegrate and not one survived, though given identical treatment except in full light. It continued to pour incessantly for three weeks after your departure, and though they remained under cover as you saw them, the humidity at a steady 70 degrees was too much for them, apparently. I must admit it was rather a sudden change bringing them down from an area that froze nearly every night!



Some of the interesting plants mentioned in Jack Craig's "letter:" (Left to right-top to bottom) the pendant and spotted waxen yellow *Tricyrtis macrantha*, most akin to *Disporum*. Haphazard variegation of leaves of a form of *Iris laevigata*, a perplexed, irregular pattern rather than a regular one. Curiously deep-parted growth of the Formosan fern *Pyrrosia polydactylis*, its basic structure very similar to the completely different five-fingered *Adiantums*. Six examples of the wide variation in small *Hosta* species, until very recently almost unknown outside Japan: A. One of the smallest known cultivars, plain green, possibly of *H. gracillima*, from the Suzuki collection; B. Undulate lance-leaf, yellow with green margin, a cultivar from Hamada; C. Thick small leaf, rich emerald with sharp white contrasting margin-zone, cultivar from a Kyoto market; D. Unusual oval blade with sharp pointed apex, green and rather puckered, from Suzuki as *H. longipes*, the petiole stippled maroon; E. Oddly elongate petiole, long-tapered to small, blunt shining olive green blade, collected Hachimongu Shrine; F. Sharp-pointed and cordate, slightly undulate, paper thin, pale yellowish blade on distinct fragile petiole, collected Shikoku by Watabe. L to R. The leathery Manchurian *Pyrrosia*, known in Japan as "Hime Hitosuba;" slender wiry rhizome, epiphytic on mossy rocks, probably the hardest of these broad-bladed, vellum-like ferns. About half size.

Drawn by Roy Davidson

We continue to search out sources for some of the unique plants that are enjoyed in culinary ways, especially the condiments. I enclose some seed of the green leaved form of "Aoi shiso," very exotic; you will probably enjoy using it in green salads. Here, in season, it is always served with sashimi, (raw fish) and in many other dishes. Leaves are slivered with a very fine, sharp blade and thrown over as a garnish. Save seeds for another year, as it is an annual.

The Chinese grow the "Demon's Lotus" (*Euryale ferox*) for the edible seeds borne in the Lotus-pod-like capsules. This is also an annual and closely related to the Amazon *Victoria regina*. The leaves grow nearly as large as that South American giant and are extremely, and wickedly spiny beneath, so be careful in handling it. Seedlings started early should be put out into warm, shallow water as summer begins and will amaze you with their rate of growth.

Another of the condiments is "San Sho" and the thornless one is grown merely because, in the small growing spaces here in Japan, the common one is most uncompanionable to have to work around. Its aromatic leaves are chopped and used with a variety of foods to please the nose. [Harold Epstein tells of conducting a group of Japanese visitors through his garden and of their extreme joy on finding "San Sho" growing in New York!]

[Jack and Ginko spent some time in Formosa before exploring Southern Asia, and the following was written from Sun-Moon Lake in the interior.]

This lovely spot is one of the most scenically renowned in all Formosa, reached from air connections at Taichung in 2½ hours by bus. The lake is 2508 ft. above the sea; on its large surface boats are for hire to visit several points of interest along the shores, including a very much commercialized aboriginal village. As recently as fifty years ago, the mountainous eastern parts of the land were uncharted and known only to be peopled with various native tribes. Little is known therefore of the plant life of this part. We fell into conversation with a young man in one of the plant stalls in the market

place (he spoke passable Japanese) and were invited to his home where a greater selection of his collected orchids, ferns, etc. were established, including big clumps of what could only be the long-lost *Iris formosana*. [Like a larger *I. japonica*, and one of a complex of the Asian *Evansia* or crested Irises, related to American *I. cristata*.]

Taiwan was just the first stop; we were gone well over a month, and in North Borneo climbed Mt. Kinabalu, where the epiphytic Rhododendrons, Nepenthes, ferns, orchids, etc., etc., all met our wildest dreams of expectation. We are now all set to pack up and move to Penang. Penang is an island, a free port like Hong Kong, but off the coast of northern Malaya. There is little seasonal change there and it is constantly much like August in New York, where we lived only a few (?) years ago. It is going to be hard to give up Japan and such things as Azaleas, and the cherries, Irises and Hostas, the rock plants especially. But we have just gotten a couple of plants of *Platycerium holtumii*, a species of staghorn fern, named only a few months ago in a German publication! And there will be all those challenging new things to intrigue the quizzical. We found most of the growth there in the tropical lowlands; so large and so coarse that we would scarcely care to grow any of them. However, the ferns are most exciting, with orchids coming close second, and in nearby places like Singapore they are even more varied and exciting.

We have been madly packing plants and disposing of some of the things we cannot take with us. Several truckloads have been sent off and still the place seems as full as ever. How I envy you your established garden! We have managed to move around so much that we have all the work of gardening but very few of the rewards!

As ever, Jack.

\* \* \* \* \*

AN INVITATION FROM NEW ZEALAND—From a letter to the Seed Exchange from Mrs. Tom Henderson, Timaru, New Zealand: "I get a lot of pleasure out of belonging to your society and am wondering how and if I could repay some of this pleasure to any member visiting our country by way of offering free board, etc. We live just a few miles from the heart of our very best alpine country where I and many interested friends spend happy hours hunting the treasures which we would be delighted to share." Mrs. Henderson's address is Opihi, Pleasant Point, Timaru, N. Z.

\* \* \* \* \*

PIXIES—May we please have a discussion on the Pixies? Question?—Is it *Pixidantha brevifolia* Wells or *P. barbulate* var. *brevifolia* (Wells) Ahles? The question has arisen since the appearance in an English alpine publication of an article in which it was categorically stated that what had been previously known as *P. brevifolia* was since 1964 in reality but a variety of *P. barbulate* on the authority of H. E. Ahles. Do other American authorities agree?

## OMNIUM-GATHERUM

Because there is not much space left in this issue of the *Bulletin*, Omnium Gatherum will be very short. First of all, the editor wishes to express his personal appreciation to Bernard Harkness, our retiring president, for the restrained, but nevertheless effective manner in which he has handled the affairs of our Society during the four years of his incumbency. To work with him has been a pleasure—a time of no strain, rather a quiet, yet busy time in which problems have been few and those few quickly and efficiently resolved. These four years have been years of steady growth for the Society and of mounting influence in the world of rock gardening. Bernard has had the help of Mabel, his wife, in conducting the affairs of the Society and it is the editor's wish to add his thanks to those of the entire membership for their accomplishment in guiding our Society on its way.

Secondly, to our new president, Harry W. Butler, we offer our congratulations and assure him that we will do all in our power to help him maintain the pace set by Bernard Harkness so that at the end of his term in office we may find our Society even more effective in furthering, throughout the world, the knowledge of rock gardening and of the plants that make such gardens possible. The real wealth of our Society is in the cumulative knowledge that is stored in the minds of our membership and the love of gardening, and all it entails, which fills their hearts. To share this knowledge and this love as widely as possible is the real reason for our Society's existence.

The Society has been fortunate, indeed, in the caliber of its presidents. Without going very far back in its history we find such stalwarts as Harold Epstein and H. Lincoln Foster, men who have truly served us. Likewise have we been fortunate in our secretaries. Such men as the late Edgar L. Totten and Lawrence Hochheimer are remembered as highly efficient secretaries who performed exceedingly well their exacting duties. Now, Dick Redfield retires from the secretaryship for a well-deserved rest. He has added to our realization that to be an ARGS secretary one must be a dedicated and very efficient man in accomplishing the required duties. It has been likewise a pleasure to work with Dick, and his retirement will leave a temporary emptiness which we are all confident will be wiped from our minds by the incoming secretary, M. S. Mulloy, undoubtedly another dedicated man. We will undertake to help him, too, and ease his burden by promptly paying our dues.

**VISITING FLOWER SHOWS AND MEMBERS GARDENS**—One of the ways in which to share knowledge and love of gardening is to attend flower shows and to visit gardens, particularly those of our members. The editor and his family as well as other ARGS members from Washington and Oregon visited the Spring Flower Show at Vancouver, B. C. on April 22 and 23. Those who have been denied the opportunity of visiting this show sponsored by the Alpine Garden Club of British Columbia each April should make an extra effort to visit some future show. It is a wholly delightful experience; flowers, people and a beautiful city. Gathered there are flower-loving people who radiate hospitality as naturally as some flowers spread forth their lovely

fragrance. One finds happy people, members and non-members alike, mingling joyfully in a transient temple to the goddess Flora. Where else could one see *Douglasia laevigata*, native of the Olympic Mts. and the Columbia River Gorge, *D. nivalis* var. *dentata* from the Wenatchee Mts., and *D. vitaliana*, the only European of the genus, all blooming within a space of three feet. In the show were many beautiful plants and interesting features. Naturally, host and hostess gardeners led us to private gardens where we were privileged to gaze on *Eritrichium nanum* var. *argenteum* and *E. howardii*, small buns sprinkled with their truly blue blossoms; *Aquilegia jonesii*, as yet only in bud and *Trillium hibbersonii* in earliest full bloom, rosy pink and petite, no more than two inches high. Beautiful flowers, happy people who may easily become friends, if not already, and a vital city with its backdrop of snowy mountains. Come to Vancouver next April!

**THE GLIDE WILDFLOWER SHOW**—More about this 1972 show in another issue. Also accounts of visits to the gardens of James R. Baggett near Corvallis, C. L. McDonald at Salem and Mr. and Mrs. Kenneth Bayles on the eastern outskirts of Portland, all in Oregon.

\* \* \* \* \*

**NOSTALGIA**—Selma Fuller, Easton, Conn., writes, "We like to drive around in the very early morning when gardens first bloom and look at them while the dew is on them. It was such a time when we first saw John Osborne's garden. This garden usually has an emotional impact on the beholder. The many small perfect gardens blend into a united whole that makes one great picture that cannot be forgotten. But all the rest of the day I was haunted by a strange emotion. It was nostalgia! It was connected with my childhood. I could not get rid of the feeling, nor understand it. It was many months before the explanation flashed on me. I was a very small girl in Kentucky, standing by a body of water we called the Bottomless Pool. On the other side from where I was standing was a sheer limestone cliff with the most beautiful flowers in the world growing in a few little pockets in the cliff face. But the deep pool made them for me forever unobtainable. That was it! Here was the nostalgia! The perfection of that garden was for me forever unobtainable."

\* \* \* \* \*

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