

American Rock Garden Society Bulletin



NEW PLANTS FOR THE ROCK GARDEN— <i>William R. Van Dersal</i>	1
<i>RAOULIA LUTESCENS</i> — <i>James R. Baggett</i>	8
THE GREAT LEPIDIUM HUNT— <i>Bob Woodward</i>	10
THE GREAT BASIN PHENOMENON— <i>Roy Davidson</i>	15
THE GLIDE WILDFLOWER SHOW— <i>Lois Wesley,</i> <i>Mildred Thiele and Joan Fosback</i>	19
THE SEED EXPLOSION— <i>George Schenk</i>	21
BOOK REVIEW— <i>F. K. Roberson</i>	26
1974 ANNUAL MEETING— <i>F. Owen Pearce</i>	28
OMNIUM-GATHERUM	30
AN OPEN LETTER— <i>Dorothea De Vault</i>	31
REQUESTS BY MEMBERS	32
A FEW MORE CAMPANULAS— <i>Betty Jane Hayward</i>	33
INDEX FOR 1973	34

DIRECTORATE

BULLETIN

Editor Emeritus

DR. EDGAR T. WHERRY, 41 W. Allens Lane, Philadelphia, Pa. 19119

Editor

ALBERT M. SUTTON

9608 26th Ave. N.W., Seattle, Washington 98117

AMERICAN ROCK GARDEN SOCIETY

President Emeritus

HAROLD EPSTEIN, 5 Forest Court, Larchmont, New York

President.....HARRY W. BUTLER, 2521 Penewit Road, R. R. #1, Spring Valley, Ohio 45370

Secretary.....M. S. MULLOY, 90 Pierpont Road, Waterbury, Conn. 06705

Treasurer.....ANTON J. LATAWIC, 19 Ash St., Manchester, Conn. 06040

Vice-Presidents

MRS. ANITA KISTLER

DONALD E. HAVENS

BOYD KLINE

MRS. SALLIE D. ALLEN

JOSEPH A. WITT

Directors

Term Expires 1974

Mrs. Herbert Brinckerhoff

H. Lincoln Foster

Lee Raden

Term Expires 1975

Miss Viki Ferreniea

Henry R. Fuller

Richard W. Redfield

Term Expires 1976

Mrs. D. S. Croxton

Carl A. Gehenio

Roy Davidson

Director of Seed Exchange

DR. EARL E. EWERT

39 Dexter St., Dedham, Mass. 02026

Director of Slide Collection

ELMER C. BALDWIN

400 Tecumseh Road, Syracuse, N. Y. 13224

CHAPTER CHAIRMEN

NorthwesternNORMAN CLARK, 8608 39th S. W., Seattle, Wash. 98116

WesternMRS. DONALD S. CROXTON, 6309 Green Valley Road, Placerville, Cal. 95667

MidwesternMRS. LILLIAN M. LEDDY, Box 612A, R.D. 3, Mena, Arkansas 71953

AlleghenyCARL A. GEHENIO, R.D. 3, Box 341A, Tarentum, Pa. 15084

Potomac ValleyRALPH W. BENNETT, 5607 N. 22nd St., Arlington, Va. 22205

Delaware ValleyJOHN F. GYER, Jessup Mill Road, Clarksboro, N. J. 08020

New EnglandKRISTIAN FENDERSON, Grout Hill, South Acworth, N. H. 03607

Great LakesWILLIAM S. THOMAS, 1805 Greenleaf Drive, Royal Oak, Mich. 48067

Wisconsin-IllinoisIZA GOROFF, 1043 Forest Ave., Oak Park, Ill. 60302

Columbia-WillametteMRS. L. C. GROTHAUS, 12373 SW Boone's Ferry Rd.,

Lake Oswego, Ore. 97334

ConnecticutH. LINCOLN FOSTER, Falls Village, Conn. 06031

Long IslandWILLIAM E. BROWN, 4 Wellsley Ct., Coram, N. Y. 11727

Hudson ValleyHAROLD EPSTEIN, 5 Forest Court, Larchmont, New York 10538

MinnesotaMRS. BETTY ANN MECH, 1315 66th Ave. N.E., Fridley, Minn. 55432

Published quarterly by the AMERICAN ROCK GARDEN SOCIETY, incorporated under the laws of the State of New Jersey. You are invited to join—annual dues are: Ordinary Membership, \$5.00; Family Membership, \$7.00; Patron Membership, \$25.00; Life Membership, \$150.00; Overseas Membership, \$3.50. The subscription price per year is \$4.00. The office of publication is located at 90 Pierpont Road, Waterbury, Conn. 06705. Address communications regarding membership, dues, and other matters relating to the Society to M. S. Mulloy, 90 Pierpont Road, Waterbury, Conn. 06705. Address manuscripts and other matters relating to the *Bulletin* to Albert M. Sutton, 9608 26th Ave. N. W., Seattle, Washington, 98117. Second class postage paid at Waterbury, Conn.

AMERICAN ROCK GARDEN SOCIETY BULLETIN

Albert M. Sutton, Editor

VOL. 32

JANUARY, 1974

No. 1

NEW PLANTS FOR THE ROCK GARDEN

WILLIAM R. VAN DERSAL, *Arlington, Va.*

Rock gardeners, no less than general gardeners, are constantly on the lookout for plants that can be grown successfully in their own home gardens, wherever those gardens happen to be. Who among us had not tried plant after plant in the hope of getting something new and interesting? Wherever the plants or seeds come from—seed exchange lists, from friends, from a vacation trip, or whatever—we try to grow the plants we'd like to have. We use the best methods we can read about or learn from friends, or deduce from growing conditions where the plants came from. And, we have an occasional success, but a discouraging lot of failures.

With the failures we are always aware of the nagging feeling that we really might not have cultured the plant correctly. Maybe the plant would have grown if we had treated it in some other way than the way we did. Who knows? So, maybe we try it again, and perhaps again, especially if it is something out of the ordinary.

In this article I should like to make some suggestions about transferring rock garden plants from one part of the United States to another, and from parts of various other countries of the world to areas in this country. In doing this, I am interested only in a reasonable conservation of effort, most certainly not in discouraging trials of interesting and beautiful species. There is considerable data about possible movements of this kind insofar as trees and shrubs are concerned. The question is whether such data may have application to rock garden plants. We have some tentative answers to such questions. I offer them with some trepidation, but perhaps a discussion of the matter may generate some thinking that may turn out to have real value in rock garden work.

PLANT GROWTH REGIONS

Better than fifty years ago, Furman Lloyd Mulford, a horticulturist in the old Bureau of Plant Industry, undertook to develop a series of recommendations for growing roses, fruit trees, and other garden plants in various parts of the United States. Mulford spent a number of years on this project. At various times he published bulletins containing a map of what he called

growth regions. His first map, in 1920, had 13 such regions. His intent, as he himself said, was "to delimit areas with growing conditions sufficiently similar so that a large proportion of the plants that will grow in any one part of each zone will grow reasonably well in all of it."¹ He was, of course, careful to point out that any plant requiring special conditions must be grown under those conditions, within whatever region it was generally successful.

Later on, after additional work, Mulford increased his plant growth regions from 13 to 32. A map of these regions was published in 1938. This map is reproduced with a few slight alterations on page 4. It covers the 48 contiguous states; Mulford did not work with plants from our new states of Alaska and Hawaii.

We should note at this point that Mulford developed a concept about plant growth regions that is quite different from the concept of plant hardiness. A hardy plant, as we all know, is one that can withstand the conditions of a given area. But, as we also know, it is the severe winter cold that we think about when we say that a plant is hardy. If it must be brought indoors in order to survive, it is during the winter that we take it inside. If it can come successfully through the winter outdoors, then we call it a hardy plant. All this revolves essentially around the factor of average, annual, minimum, winter temperatures. Published plant hardiness maps reflect this.

Instead of basing his growth regions on one factor, such as temperature expressed in degrees on a thermometer, Mulford used a much more precise indicator. *He used the living plant.* All the factors affecting the growth of a plant are correlated by that plant and expressed in its success or failure, wherever its seeds land or are planted by a gardener. It is quite clear that no thermometer, anemometer, barometer, rain gauge, soil probe, or other instruments, used singly or in combination, are as accurate as the plant itself in determining where the plant will survive or where it will fail.

Mulford used data he assembled from study of all sorts of plants—garden subjects, shade and ornamental trees, crop plants of many kinds, natural vegetation areas, and so on. He was, as he said, trying to delineate areas in the United States that had reasonably uniform growing conditions throughout—as indicated by the growth of plants. Very commonly, as experienced gardeners know very well, it is difficult to ascertain which factor or factors are responsible for success or failure of a garden plant. But the living plants have no such difficulty; they solve the problem, so to speak, every day.

The map reproduced with this article must be understood to be a *generalized* map. Major areas, in other words, are recognized, but the many local physiographic areas within them are not. They cannot be, in fact, on a map this small. For example, the mountain tops in growth region 11 will all be characterized as growth region 14, with the growing conditions of which they more nearly coincide. It should also be noted that the lines bounding the various regions should not be taken to mean a sharp limit of any given region. Rather, they are drawn to indicate the changes from one region to another.

For the interested reader, the correlations between the plant growth regions and climatic provinces as well as soil regions can be found in the work already cited.

HOW TO USE PLANT GROWTH REGIONS

Recalling that each region has reasonably uniform growing conditions, as shown by the growth of plants, we may now consider how the map may be used.

The way it works is really quite simple. For example, *Rhododendron catawbiense* is a shrub found growing naturally only in the southeastern Appalachians. If the growth region concept is correct, it should be possible to grow it anywhere in region 27. And, we have learned long since that this beautiful shrub will indeed grow anywhere in that region.

Similar examples are to be found in *Leucothoe recurva*, *L. catesbaei*, *Fothergilla anifolia*, a number of species of rhododendrons or azaleas, several shrubby species of *Robinia*, and a number of other shrubs and trees. On the Pacific Coast, Monterey cypress occurs naturally about on the boundary line between growth regions 1 and 5. Over many years this tree has been grown successfully from south to north in region 1, and from north to south in region 5. The cultivated range of the tree, in other words, has been extended from a few locations in California to a coastal strip from Canada to Mexico.

Examples such as these could be multiplied many times. For trees and shrubs of the United States, this was done in the publication already cited, in 1938. Especially worthy garden types of native shrubs were treated in 1942 somewhat more fully.² A few, more recent treatments may also be noted.^{3,4}

What this means is that if a plant will grow successfully in any part of a growth region, it can be grown anywhere else in the same region. This general conclusion has been worked out not only with trees and shrubs, but also with some herbaceous perennials. Even here, however, there may be occasional exceptions. We can express the idea then as "chances are that a plant successful in one part of a growth region will be successful in all of it." Apparently the converse of the idea may also be stated: "chances are that a plant that fails in one part of the growth region will fail in all the rest of it."

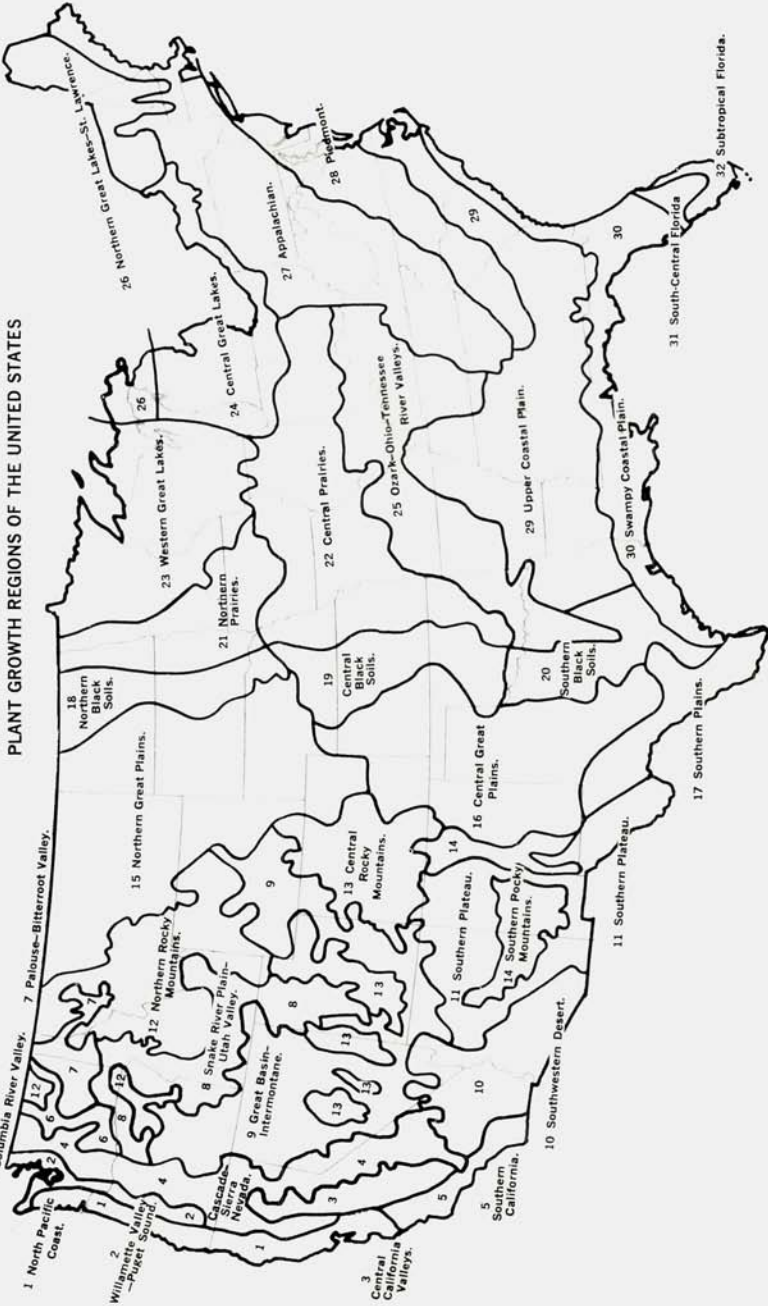
From the standpoint of a rock gardener it seems quite probable that the growth regions can be used with as much confidence as with trees and shrubs. Many rock garden subjects are dwarf trees or shrubs, although most of them are herbaceous perennials. Mulford worked with all three types of plants to develop the regions. This point is developed further on.

TRANSFERS BETWEEN REGIONS

Nearly a hundred years ago, Charles Sprague Sargent discovered that Douglas fir grown from seeds or seedlings obtained in the Rocky Mountains (growth regions 12, 13 and 14) would succeed in Boston (27). Attempts had been made for years to grow Douglas fir obtained from the Pacific coastal area (regions 1 and 2) and from the Cascade-Sierra Nevada mountains (4). All of these had failed at Boston.*

Later on, Sargent was able to report the same thing to be true of a number of other species of trees, including the western yellow pine, Colorado blue spruce, Engelmann spruce, and western arbor-vitae.

* The Douglas firs are now thought to be two separate varieties.



Reproduced from the U. S. Dept. of Agriculture Yearbook, Design for Living, Washington, D. C., 1972, page 180. With permission of the editor.

Over the years since, it has become abundantly clear that trees from growth regions 1, 2, and 4 will fail in 27. But if the tree ranges into 12, 13, or 14, plants from these regions will succeed in 27. The reverse is not true. Trees from 27 fail in 12, 13, and 14. They also fail in growth region 4, but they succeed in growth regions 1 and 2.

Quite a number of shrubs that have been tested have displayed the same pattern of success and failure, for example, *Ribes sanguineum*, *Holidiscus discolor*, *Rubus nutkanus*, various species of *Arctostaphylos* and *Ceanothus*, and *Prunus ilicifolia* (all from regions 1, 2 or 4), fail repeatedly in region 27. But shrubs from the Rockies generally succeed, as for example *Mahonia aquifolium*, *M. nervosa*, *M. repens*, *Ribes aureum*, *Amorpha canescens*, and a number of others.

Insofar as trees and shrubs are concerned then, a series of possible transfers between regions have been worked out. These are as follows:

1. Plants from region 12, 13, and 14 are usually successful in regions 22, 24, 25, 27, and 28. The reverse is rarely true.
2. Plants from 27 and 28 are usually successful in 1, 2, 24, 25, and 29. Plants from 27 usually succeed in 28 as well.
3. Plants from 1, 2, and 4 will usually grow in 29 and 30. They usually fail in 27. Data about transfers from 2 to 28 are somewhat uncertain. Some succeed, some don't. Plants from region 4 will usually grow in 1 and 2.
4. Plants from region 5 usually succeed in 31 and 32, and the reverse seems also true.
5. Plants from region 20 usually do well in 29.
6. Plants from region 11 usually do well in 5.

ROCK GARDEN PLANT TRANSFERS

Here we are on much less certain ground. We grow a good many types of plants in rock gardens—dwarf conifers, low or dwarf shrubs, perennials that persist underground as corms, bulbs, rhizomes, tubers, or perennials that persist above ground as rosettes or leafy stems, and annuals. The annuals, of course, survive over winter as seeds. They grow and flower during a growing season provided conditions are present that have much to do with their success—such as length of day, light, temperature, humidity, and many other factors.

With the exception of annuals then, we are probably safe in saying that rock garden plants must survive and succeed under essentially the same conditions as must be tolerated by large trees and shrubs. Thus we may conclude that rock garden plants should display the same patterns of growth in plant growth regions that trees and shrubs do.

This conclusion appears sound despite the lack of organized systematic data about rock garden species, as compared to data that has been assembled for trees and shrubs. I can only say here, that in discussing the rock garden species with rock gardeners of experience, many of the transfers noted above for trees and shrubs seem to fit rock garden plants as well.

An additional factor of importance has to do with what the ecologists call plant association. These associations of plants are well known and have been worked out for many trees and shrubs.⁵ In these associations, certain

trees and shrubs, as well as some of the larger or more conspicuous perennials, are almost always found growing together in the same general area. Obviously all the species are growing under essentially the same conditions.

Now, if we use this fact along with the plant growth region concept, then if one or two members of an association succeed or fail when moved from one growth region to another, then it should follow that all associated species should succeed or fail similarly. Actually this has been found to be true where it has been studied. Shrubs associated with the Rocky Mountain Douglas fir have proven successful in 27 just as the Douglas fir has. Shrubs associated with the Pacific coastal form or variety of Douglas fir have failed in 27. I am not aware of studies of rock garden forms, but rock gardeners far more expert than I tell me this appears to hold true as far as their experience goes.

What I am suggesting therefore, is that successes and failures shown above for trees and shrubs can be used with reasonable confidence for the rock garden species. We use the woody plants as indicators. We check their associates, and where desirable rock garden species are involved, we undertake to grow them in the same regions where their associated trees and shrubs have succeeded. Where there have been failures perhaps we may be wasting time—or having an interesting adventure, depending on how you look at it!

TRANSFERS FROM OTHER PARTS OF THE WORLD

Here again, much of the organized and published data has to do with trees and shrubs. On the basis of information available to me, here are some of the possible conclusions:

1. Trees and shrubs from South America, Central America including Mexico, Africa, and southeastern Asia fail in growth region 27. They fail almost everywhere else except possibly in region 5. An exception is the cedars which succeed in 27, 28 and 1 and 2.

2. Trees and shrubs from northern, central, and southeastern Europe succeed in region 27, as well as in 22, 24, 25, 28, 1, and 2. The reverse seems also true.

3. Trees and shrubs from eastern Australia have done quite well in regions 5, 31, and 32, but nowhere else. The reverse seems also true.

4. Trees and shrubs from Siberia, northern China, and northern Japan succeed in regions 1, 2, 27, 28, and probably in 22, 24, and 25.

5. With few exceptions, Himalayan trees and shrubs have failed in region 27, but succeed in England and southern Scotland as well as growth regions 1 and 2 in this country.

This last item (5) points to another idea in the matter of plant transfers. Plants grown successfully in England and Scotland in gardens, and whether native there or not, can apparently be grown with success in regions 1 and 2, but not in regions 22, 24, 25, and 27. Successful growth of Himalayan rhododendrons from England at Seattle attests to this point. I have personally been able to use garden books from England in growing my garden plants, including rock garden plants, in Portland, Oregon (region 2). But I

cannot use the same plants or methods in Arlington, Virginia (region 28)

What all this tells us is that if you live in growth region 27, for example, your best bet for getting new and different plants would be from the Appalachians, the Rockies, northern China, northern Japan, and Siberia. This gives you choices running into many hundreds of plants. If you try things from the Sierra or Cascades, or from Australia, South America, or Africa, be prepared for failure.

On the West Coast, if you live, for example, in growth region 2, you may have a wider selection. Chances are good you can grow plants from 4, 12, 13, 14, 22, 24, 25, 27, and 28. You can also grow most things from northern England and Scotland, Europe (except the warmest southern parts), Siberia, northern China, northern Japan, and probably the Himalayas. If you try things from South America, Africa, or Australia, be prepared for failure.

Similar examples could be worked out from the data given in the preceding material as well as other sources. If plant growth regions had been worked out for other parts of the world, we could do much better. Obviously there is tremendous variety in the continents of the Southern Hemisphere. Exactly which parts might have growing conditions similar enough to one of our 32 regions, we may not know at present. But we could learn.

In view of the possible value of such information, it would seem well worth while to try to assemble additional data about other parts of the world as well as in our own country. This author would be pleased indeed to learn of experiences from other rock gardeners.

- 1 In *Native Woody Plants of the United States* by William R. Van Dersal, USDA Misc. Publ. 303, 1938: see pp. 16-17
- 2 *Ornamental American Shrubs* by William R. Van Dersal. Oxford, New York, 1942.
- 3 *Soil Cover and Stabilization* by the same author, in *Wildland Shrubs*, USDA Forest Service Tech. Report INT-1, 82-87.
- 4 *Adventures With Native Plants That Passed Their "Tests,"* by the same author, *USDA Yearbook*, 1972:176-184.
- 5 A book in which the associations of trees and shrubs (and a few perennials) are set forth for the United States in *Agricultural Handbook N. 271: Silvics of Forest Trees of the United States* by H. A. Fowells. Forest Service, USDA, Washington, D.C., 1965, 762 pp., Illus. U. S. Gov. Print. Office. \$4.25

* * * * *

A WORD FOR NEW MEMBERS—Or members who are in the toddling stage of rock gardening. Read Dorothea De Vault's "open letter" appearing in this issue. Find some way to add to your reference library the books she mentioned. Read the ARGS Store ad in each *Bulletin*. These books are not expensive. Of course, there are helpful books in your library, but the books you own are always at hand when you need them. In these books you will find the answers to most of your rock gardening questions.



Raoulia lutescens in the author's rock garden

The Author

RAOULIA LUTESCENS

JAMES R. BAGGETT, *Corvallis, Oregon*

Raoulia lutescens belongs to a group of plants known in New Zealand as the "scabweeds." Sharing this unglamorous designation are several other small Raoulias, *Scleranthus uniflora*, *Pimelea* and *Epilobium* species, all plants which sometimes colonize dry river beds. Thriving on heat and sending roots down into the sand and gravel for water, these plants help modify this harsh environment so that other kinds of small plants can become established. Scabweeds are not confined to dry river beds, however, so if you do not have one handy, try *Raoulia lutescens* in any sunny, well-drained rock garden site. Giving the tight mat some rocks or other irregularities to spread over will make it more interesting to garden visitors, who will have an irresistible urge to touch it with the palm of their hand.

Technically, according to the latest botanical work at least, *R. lutescens* is a form of *R. australis*. However, rock garden books and nurseries list it as a separate species, and this is appropriate because it is distinct in appearance, being much finer in texture and differing in color. While *R. lutescens* is grayish green, *R. australis* is distinctly silver, apparently because of the more

prominent covering of silky hairs. Both have reddish stems underneath which show through to contrast with the leaf color. In my garden I also grow *R. tenuicaulis* which is slightly coarser and much more open in growth, and *R. glabra* which has much larger rosettes and is much less interesting, though still well worth growing.

Although *R. lutescens* is grown primarily as a foliage plant, the tiny flower heads are bright yellow and definitely an asset. The picture shows a typical colony with non-flowering rosettes around the edge, open flower heads in the lower center, and the darker faded flower heads above and surrounding the open ones.

Propagation is simple by cuttings or layered pieces established in a container, but I have had little success with planting such layers directly into the garden, a procedure which has worked well with *R. australis*.

The big question in the culture of the Raoulias is that of hardiness. *R. lutescens* is at least as hardy as *R. australis* proper, perhaps a little more. Gardens subjected to winter temperatures much below zero F. will probably not have them for long, unless a lot of protective cover is applied. In my garden they have survived 8 or 10 degrees with bare soil, and about 8 degrees below zero with 8 inches of snow. Over a period of six or seven years some colonies have been eliminated by winter cold or wet, but my over-all supply has not been endangered. To many people, *R. lutescens* would be well worth the trouble of holding stock plants over in the greenhouse or coldframe. Young plants set out in early spring will easily make interesting conversation pieces before the season is over.

* * * * *

JOE-PYE-WEED—Certainly far from being an alpine or rock plant, this eastern American monster may nevertheless find a good use in many gardens, in one of several manners. Among the more useful conveners of its genus (allied to garden *Ageratum* remotely) it is a useful "filler" in cut flower bouquets and may be dried for winter arrangements, but possibly its greatest utility is in its towering growth. If one part of one's surroundings is enjoyable in spring or winter, but objectionable or in need of screening for privacy or shade in the dog days, this may be the plant to use. Up to June this plant is the same as nonexistent; then stout, pinkish asparagus spears shoot up at an incredible rate, whorled about to their seven to ten foot summits with attractive rugose greenage and topped out with big, loose, pink-amethyst false umbels, which last through August. The tall and stately canes seem akin to bamboo, with some of their majesty, and when autumn has come, they defoliate, and find themselves useful for compost. Joe-pye-weed is said to have been named for a New England Indian doctor who used one or several species in various decoctions to treat a variety of the maladies of the day; *Eupatorium maculatum* is the one here referred to. It may be found in damp places from Canada to the Gulf Coast, and it will be useful in a range of dry-to-wet and light-to-dark situations, prospering in all but the extremes of these combinations. Propagation is by seed (slow), or by simple division of the asparagus-like non-invasive crowns. Try it; you may like it. Easy. Pretty. Useful. Roy Davidson, *Seattle, Wash.*

THE GREAT LEPIDIUM HUNT

BOB WOODWARD, *North Vancouver, B. C.*

Lepidium nanum is one of the great American alpiners. While most *Lepidiums* are as weedy and nondescript as their close relatives, the cresses, this one forms diamond-hard, marcescent cushions with sessile, draba-like flowers, reportedly of a greeny-white hue. Like draba, *Lepidium nanum* is a crucifer. The following tale is an account of the search for this plant on July 4, 1973. This was one memorable day among many on the Great Basin Swing organized and shepherded by Roy Davidson this summer. The cast of characters on the *Lepidium* hunt was as follows: Roy Davidson, Paul Palomino, Jamie McPhail, Sherry Sutton, Margaret Williams, who was the official guide, myself, and a green van-camper, make and year anonymous in the interest of preventing libel suits. We were all staying with Margaret and Loring Williams in their beautiful Sparks, Nevada home and when Margaret asked us what we all wanted to do on the morrow (the 4th) a cry in unison responded . . . "Find *Lepidium*!"

Thus we were up early, to find Margaret had already stored away one of her fabulous picnic lunches (I could never for the life of me find out when she managed to do all this) and thermoses of liquids, for we were heading into the desert depths of Nevada. The round trip would be nearly 500 miles so it would be a full day. We would occasionally stop on the way to observe flora, collect seeds, generally investigate.

All went well on the way out. Sherry, Jamie, and I traveled in the van-camper and we all fell to responding to the landscape. To me barren climes in hot, dry tones had always produced a wave of near-depression: a kind of soullessness about it all. But somehow this was different. There was a strange, almost eerie, warmth to the near desert and I found myself responding positively. The colours were soft, modulated, mercurial. There were large saline lakes, almost moonscape in effect, and at one point a colossal monument of sand pyramids, almost archaeological in effect.

Occasionally we stopped for seeds. There were many *Eriogonums* but the best was grey, prostrate, tiny-leafed *E. caespitosum*. *Haplopappus acaulis* is a neat, most attractive yellow-daisy plant. One silvery cushion in seed may well have been *Townsendia condensata*. The spiny cactus, *Opuntia erinacea*, was in bloom and Margaret was looking for reds to add to her immensely fascinating cactus garden. It is so amazing what a range of plants she can grow in what superficially seems so inhospitable a climate for alpiners, where there is so little rain and so much scorching sun. The bursting white seed pods of *Astragalus purshii* were ripe for the picking: for once beating out the insects that feast on them. It would be wonderful to see this plant gain at least a toehold in cultivation.

We would drive through little towns where the 4th of July celebrations were in full swing. It was somehow pleasant to watch the unassuming, unsophisticated approach to the holiday shenanigans. It rather stirred Jungian memories of simpler times, simpler places. A very small omen occurred here



Lepidium nanum growing in tufa in the Great Basin

Sherry Sutton

which should have alerted us of things to come. We were about 15 miles past a gas stop, admiring the very showy and tall prickly poppy, *Argemone munita*, when we discovered the gas cap on the camper missing. The dear man who had filled us up had somehow forgotten to re-cap. Oh, those celebrations!

In any case we retrieved it and headed out, now on Nevada backroads where we would seldom if ever encounter other vehicles. We lunched in the shade of a fine piñon tree at one of many summits. In bloom was pristine and pure *Calochortus nuttallii* var. *brunonianum*, and we couldn't resist seed collecting for some choice small composites such as *Aster scopulorum* and *Erigeron aphanactis* and some strange-to-us Nevada shrubs such as *Grayia spinosa* of the *Chenopodiaceae* or Goosefoot family.

On we went. It was Sherry who first noticed what we had all gleaned must be the case: a totally and radically different land form for the *Lepidium*. The selectivity of these rare plants never ceases to amaze me and I wish I could study more deeply the adaptive forces which necessitate these outlying stations for a plant and no others. Mind you, Margaret in the other car knew the station and was leading us straight to it. Finally we arrived and marvelled at a deep underground spring surrounded by a massive tufa outcropping where grows the *Lepidium*. It took me rather a long while to notice the spring as I was so ecstatically taken by the *Lepidium*. Everyone was on his knees: gathering the ripe seed, photographing madly, inspecting, studying, even in pure adoration. To me, even without its apparently inconspicuous flowers there is something strong and forceful and immensely appealing about this plant. The foliage is yellow-green, as densely packed as grains of sand on the beach, and

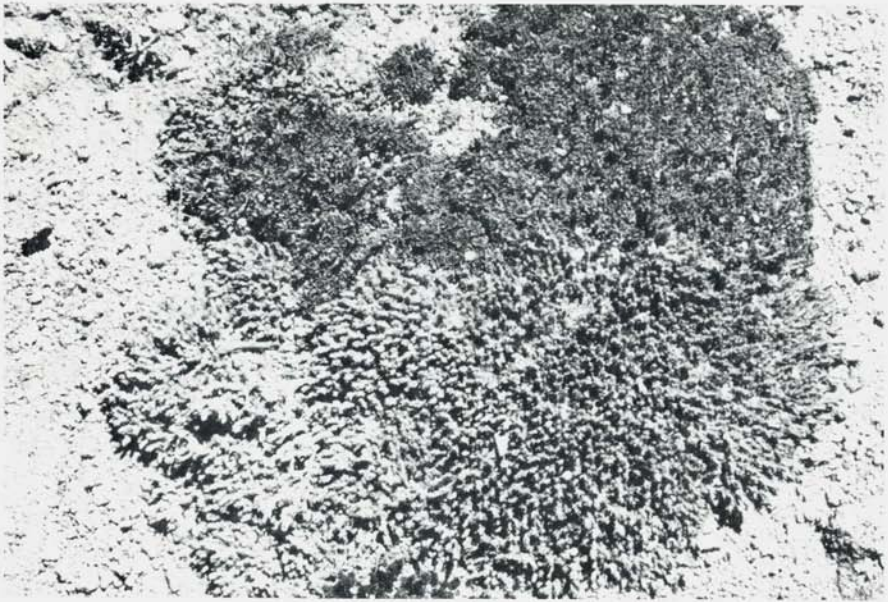
hummocked into cushions sometimes as much as a foot across. We all did our thing for about two hours and then Margaret reluctantly but determinedly summoned us to our cars to set off in return. She knew how far we had to go.

There were many other interesting plants in the area and strangely enough none of them grew elsewhere except in the tufa scree. Two superb Phloxes: humpy, grey, spiny *Phlox covillei* var. *tumolosa*, which is apparently horrendous to grow and *Phlox griseola*, which forms a green and pleasant mat. *Gilia congesta* was here, about six inches tall with attractive white flowers. But again and again one returned to the *Lepidium nanum*.

And so the return journey began and also the fun! Strange are the ways of fate and who would have thought Jamie's rather innocuous comment to Sherry after about ten minutes of travel would have started anything? "Stop," he said, "I believe Roy has dropped his hat on the road back there." Stop she did and it turned out not to be Roy's hat at all. But—go the nameless camper would not. The other car had raced ahead with a vague "you-know-the-way-back-don't-you?" and we were stuck. Now again as fate would have it the only other car we had seen for a long time brought a group of young people near the spring and we had wished they would go their way in the rather proprietary way plantspeople have. But now they showed up behind us and did we ever bless them. Jumper cables into action and we were mobile again. We caught up to Car No. 1 and regaled them about our troubles and as they could now keep a watchful eye on us we all relaxed a little. Mind you, we could never let the engine die or we were in trouble again. But Sherry kept the motor running and more seed-collecting ensued: *Mertensia oblongifolia* var. *nevadensis* being one of the choicest items.

We sailed along for quite a few miles when Jamie, now driving, announced that we were running out of juice and we glided to an improbable but undeniable halt on the road in the middle of a huge salt flat, luminous in the late evening light. No worry. Car No. 1 to the rescue and after much spluttering and fussing, Jamie and Paul managed to get us mobile again. We even paused to search out, futilely, a dwarf asclepias that Margaret had been seeking for some time. But darkness was descending and we couldn't afford to use any power on headlights so Margaret's car acted as our pathfinder and I was assigned to scan the rear in case any other vehicle did not see us without lights and plow into us. I felt like a navigator on a dangerous flying mission. By now we were definitely limping along but managed to get to a sizable town where the fireworks part of the 4th celebrations were commencing. A policeman yelled at us to turn on our (non-existent) lights and despite our frantic signals he was forced, along with a reinforcement car, to give chase. We had to stop. We explained our dilemma and the policemen were most helpful and offered to escort us to a garage for a quick battery charge. "You will have to do more than that," we explained, "because we can't start again." Jumper cable time. We managed to get to the garage, which was just closing, to join the festivities, but with the policemen's gentle intervention did the battery charge. We also refuelled ourselves with delicacies from a local drive-in which we ate with much laughter in the service station grease pit.

Mobile again and only a few miles to Sparks, we sailed along. Suddenly



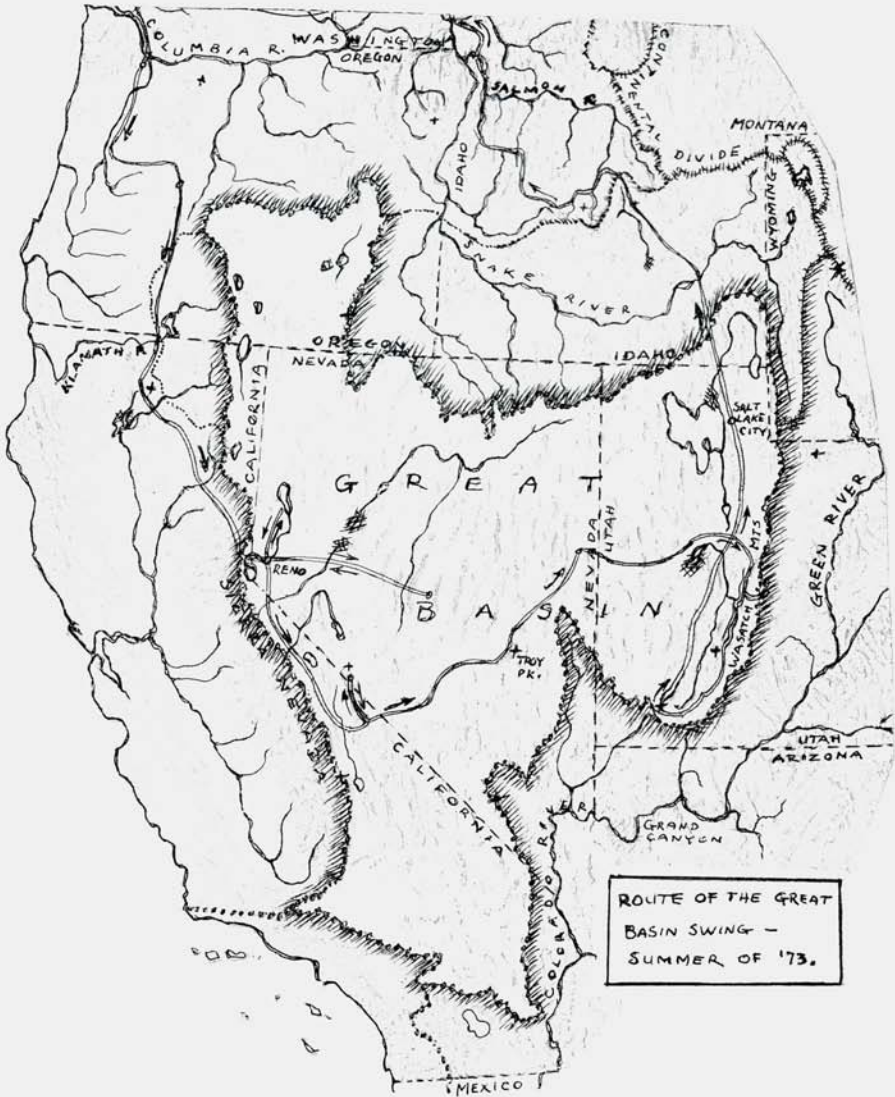
Happy companions of the Great Basin tufa scree forming a mat of blending hues—*Lepidium nanum* at top, *Phlox covillei* var. *tumolosa*, the large plant at the right bottom and *Phlox griseola* to the left.

Sherry Sutton

Jamie made frantic signals to the lead car: our power was failing again. It was too late: they couldn't make the turn off but we had just enough power to get us off the highway into the exit ramp leading to the city dump! Another omen? Sherry and Jamie, both of whom I am convinced have had commando training, leaped from the camper and before I realized what was happening, had set up flares. It was about one o'clock in the morning. But fate intervened again. Along came another patrol car of the same make as the van-camper and inquired about our problem. He said he would send out a wrecker to rescue us. At that moment he received an emergency call and sped away. Margaret managed to find a way to beat the divided highway and return to us and we all sat and waited for the rescue truck. And we waited and we waited.

Finally a big, heavily lit truck turned off the highway toward us and we all gave a cry of welcome as if we were stranded at the south pole. But north pole might have been more appropriate for our "rescuer" was not a wrecker but a snowplow—a snowplow on the desert outside Reno on the Fourth of July! It made us wonder a bit. Though not a wrecker at all it was something with a two-way radio and between Jamie and the driver they managed to discover that the poor policeman had things of greater moment and had forgotten about us. Finally a wrecker arrived and dragged the accursed camper to a garage and we all got back to the Williams' and it was nearly three o'clock in the morning.

Now I recite all these harrowing details for those who may receive some of the precious *Lepidium nanum* seed so they will remember the story of its collection and cherish it even more. It was quite a day. And we loved it!



THE GREAT BASIN PHENOMENON—SUMMER OF '73ROY DAVIDSON, *Seattle, Wash.*

Western United States, beyond the Continental Divide, consists geographically of the Pacific Slope and the drainages of two great river systems, that of the Columbia to the northwest and the Colorado to the southwest plus that vast self-contained mid-section known as the Great Basin. One of the Earth's great deserts, 570 miles broad and 880 miles long, the Great Basin is a physiographic province of some 210,000 square miles, and consists of roughly ninety separate valleys, each its own individual drainage basin, with no outward flow. The whole encompasses most of Nevada, half of Utah, the eastern edge of California (reaching nearly into Mexico), a large "bowl" of Oregon, bits and pieces of Idaho, and a sliver of Wyoming.

There is certain evidence that these present northern boundaries may not have been constant with time, that more of Oregon and Idaho were once component to the Great Basin at one period or another of damming by basalt flows and/or subsequent channel cutting of the Snake River, fed by overflow from the Great Basin during frequent long-ago pluvial periods. Yet their physiographies remain similar and their floras related, if not indeed closely similar. Such an example might be the Klamath Basin, partially drained at present time.

The Great Basin lies within a cordilleric syncline, having alternately been submerged beneath the seas and uplifted (much limestone is evident), so that fault-block mountains comparable to the Alps and Andes once caught the atmospheric moisture, gathering it into floods and glaciers, the combined efforts of which have eroded these heights down to low ranges separated by broad plains, deep in detritus, sometimes, if conditions are right, containing a playa lake, a marsh, or a lake basin. Of the latter, all of them shrinking in dimension in present time, Great Salt Lake is, of course, the largest, over a million acres in extent, while such as Pyramid Lake are far smaller (120,000 acres); others are smaller still.

The Sierra Nevada form the main portion of the western rim, while the Wasatch Range is its eastern counterpart in Utah; lying between is that series of eroded parallel fault-block ranges separating the Great Basin into its ninety components, each with its own peculiar identity, elevation and climate. Included is a broad spectrum of life-zones, from the Sonoran to the Canadian, and one can rather quickly experience several of them within a short climb in these "Included Ranges."

Oddly, the eastern reaches of the Great Basin do not border on the Continental Divide, but rather there is a broad separation, the headwater drainages of the Snake River (running to the Columbia) and the Green River (to the Colorado), lying in southwestern Wyoming, in what is essentially a high, dry desert that is paradoxically adjacent to a small arid basin squarely situated astraddle the Continental Divide itself! These areas are by their character part of the Great Basin, but not geographically so. It was through this high desert that the great wagon trains of western migration were to pass, thus avoiding the canyonlands of both the major drainages, and leading to the civilization of Oregon and to the goldfields of California's Mother Lode,



"The Great Basin . . . , having alternately been submerged beneath the seas and uplifted (much limestone is evident along the shores of Pyramid Lake)."

Sherry Sutton

as well as others, and to the demise of the Stone Age culture of this inland area.

John C. Fremont was the first explorer to realize the existence of such an inward-draining area when, in 1844, in search for the mythological San Buenaventura River, said to have been the mightiest of western drainages, he realized—not only that there was no such—but that the great area presumed to have been its drainage was in reality "a great inland basin", an area of wondrous grandeur and simple beauty; of pure, clear atmosphere and great distances; of clear skies and intense sunshine and of fresh, invigorating fragrances, as true today as for thousands upon thousands of years. It is likewise—in most of its vastness—as inhospitable to the inroads of civilization as forever, and it may well remain the last of "Last Frontiers".

Here had developed the ethnological Desert Culture of aboriginal man-

kind, a race whose precarious existence was so dependent on the exhaustive harvest of shoots and leaves, of seeds and fruits, and of roots and bulbs. Their intense, simple way of life has been likened to that of the very plants themselves! It is most absorbing to read of this culture, wherein every possible resource was of necessity fully exploited in order to merely keep life and limb together. It is likewise completely engrossing to travel through this land today, to marvel that mankind could have existed there, and sad to realize that his unique Stone Age culture was still alive a century ago, and that it vanished with the coming of the wagon trains.

The Indians of the Desert Culture were all but parasites on the deserts; they could only reap for there was no chance to sow. Similar peoples of the Southwest practiced limited agriculture, but this particular culture demanded a nomadic existence. The drought conditions which had reduced their domain from one of forest and savannah to one of desert and marsh had extinguished the once-plentiful mastodons and mammoths, the camels and horses and armadillos, the bison and sloth and peccary, leaving, in certain places, the pronghorn and the ubiquitous jack-rabbit as game, plus the migratory waterfowl. The Desert Culture thus came to be based on vegetation. Water, that greatest of life's necessities, both limited and directed their lives, not so much by its existence as by its absence. This shall here always be so.

While plotting *Synthyris* distributions on the range map, it became obvious that some cataclysmic changes in the environment could only be responsible for the perimeter pattern; no less than four of the taxa were to be found disposed around the basin but none within (one exception on Mt. Iapaha, in western Utah). A field study has borne this out and also revealed a great wealth of other plants in a great diversity, many of them well worth cultivation for some one or more good traits. From the southern valley floors (most of these a mile or much more in altitude) and to the mountaintops, upward to 12,000 feet, were found particularly startling diversities and many subjects to pour over.

The expedition of the summer of 1973 we termed "The Great Basin Swing". It left Washington on the last day of June, and while only of eighteen day's duration, covered almost five thousand miles and was to circumscribe the Basin's perimeter-boundaries, except for the Mojave extension into southern California and southernmost Nevada; it is far more advisable to attempt this portion in spring because of heat. Traveling southwards into Oregon on the Pacific Slope, we crossed the Cascade Range in mid-state over Santiam Pass, having passed through cinderfields and great snakes of relatively recent lava flows rich with a variety of interesting growth, to emerge on the high desert of the eastern Cascades, here into a northerly drainage to the Columbia, whose sources included enormous springs of phenomenal volume. We were soon to see evidence of similar fountainheads within the deserts, their sources all but dried up, if not completely so, at present time.

Proceeding southwardly, we were soon within the Klamath Basin drainage, in an arid, stony landscape set about thinly with lodgepole and ponderosa pines over a porous basalt bedrock. This pattern was to be repeated day after day, the species to differ perhaps, but the basic picture not much. We passed Klamath Lake and the channelled outflow of its river to the Pacific,



Calochortus leichtlinii at 8,000 feet elevation on the eastern slope of the Sierra Nevada.
Sherry Sutton

between the Trinity and Siskiyou Ranges of the Klamath mountain system, the only major mountains of the west to extend in an east-west axis.

Our first plant stations were in the vicinity of Mt. Shasta and Lassen Peak, where the Cascades cease and the Sierra Nevada commence. From here on we were within the Great Basin proper, though nearly on its borders, and the flora was by and large Sierran. Many short, swift rivers flow from this vicinity out into the desert, to find themselves entrapped and doomed. Some few terminate in rocky basins as lakes, grown brackish with time and shrinking in dimensions while others simply disappear into the stony valley floors on exposure to the thirsty desert atmosphere. When in a wet season they may attempt to push further, they only succeed in exposing more of a vulnerable surface, to be soaked up just as quickly, by both the earth and atmosphere.

We followed the eastern Sierra southward from Lake Almanor, a diked impoundment resulting from volcanic activity in the Lassen vicinity, to Donner Lake, and from there climbed up into the Sierra to find at ca. 8000 feet such subjects as *Eriogonum lobbii*, *Artemesia arbuscula* and *Calochortus leichtlinii* (among many of only lesser interest) and in another station, in a rubble-plain of granitic derivation which must have been thoroughly soaked and soaking in melt time, the rather infrequent *Lewisia kelloggii* with the diminutive *Allium tribracteatum*: here the timber was scattered pine. Some few of the subjects of this west rim of the Great Basin are strictly confined there, whereas others may be spread somewhat into the Basin itself to a more-or-less degree, if not specifically, then by rather closely related members of their genus. Although in the main the flora of the Great Basin floor seems to be uniquely its own, the widespread species are disposed above at various strata suiting their tolerance or rejection of local conditions. We were to find

Phloxes, Penstemons, Drabas, Astragali, Eriogonums, particularly adapted and widespread, with certain few other genera widely represented, though not so diverse, in the days to come.

(Editor's Note)—This article sets the stage for two additional articles which will appear in future Bulletins. Their sub-titles will be The Thirsty Desert and Basin Echoes.

THE GLIDE WILDFLOWER SHOW

LOIS WESLEY, MILDRED THIELE, JOAN FOSBACK, *Roseburg, Ore.*

(Editor's Note)—Read this account of the Glide Wildflower Show carefully. This show is not ARG'S sponsored nor is there an admission charged. It is much more than a flower show. It is a continuing year-long project. To attend the show is an educational experience. The dedicated people responsible for the show are tireless as they work, study and find time to inspire the young and the old to a more wholesome and knowledgeable attitude toward nature in their area.

Because of their efforts many children will grow up with a love of nature and a realistic commitment toward conservation; some may become ARG'S members. It is to the youth of today that the ARG'S must look for its perpetuation as this century draws to a close. The Glide Wildflower Show sponsors are doing a worthwhile job and should be an inspiration to many of our ARG'S chapters. Some chapters, where the membership is close-knit geographically as well as otherwise, might well follow the Glide example.

Nestled in one of the "Hundred Valleys of the Umpqua" at the confluence of the North Umpqua River and Little River lies Glide, Oregon. The people there are friendly, warm, energetic, and take great pride in their community and its activities. This will explain their tremendous success for the last nine years in producing the Glide Wildflower Show the last weekend in April.

The show with an initial attendance of twenty-six has increased to a fantastic three and four thousand, with visitors from as far away as London and Australia. Botanists and their classes from several nearby colleges have taken advantage of the wealth of information available. Groups and organizations are always in attendance. The Native Plant Society of Oregon is well represented. A bus load of senior citizens from Medford, Ore., an outdoor club from Eugene, Ore., members from the American Penstemon Society, a large contingent of American Rock Garden Society members from the Seattle area, as well as many interesting individuals specializing in one phase or another of botany, were present last year. The show serves a dual benefit to those attending—the displays plus the opportunity to meet and visit with interesting and knowledgeable people. Last year a day was added for elementary and secondary students. It proved to be a most informative day for them.

Let's go back to the beginning. The Glide Community Club, in searching for a fund raising idea, asked Reggie Miller to be program chairman at a silver tea. Reggie had recently attended a wildflower show and had the idea

of arranging and identifying a few specimens for the tea. She generated so much interest and enthusiasm at the first show, there was no doubt about it—the Glide Wildflower Show was on its way!

Many talents from many people in the community were needed for such an endeavor. Collectors and botanically oriented people to help classify, name and display specimens; organizers, cooks, and endless workmen! Audrey Young's creation of native mosses, lichens, rocks and old woods has always been a center of outstanding beauty. Cone and tree specimens were furnished by members of the Glide Ranger Station. Each year new ideas and displays were added. Reggie's yarns dyed with native plants were highly praised. Many visitors were delighted by the enlarged color photographs furnished by Alice and Fred Parker. There was also a comprehensive lichen display. Many specimens from the extensive collection of pressed flowers by Thiele, Fosback, and Wesley have been displayed, stressing plants from the local area that are not available for the flower show. These are in addition to the three to four hundred individually displayed plants artistically arranged and properly labeled.

In 1973, despite the tragic terminal illness of the founder, Regina Miller, the show did go on under the direction of Audrey Young, Mona Riley, Mary Powell and the spirited Community Club.

Continuing to assist, as they had for several years, were Mildred Thiele, Joan Fosback and Lois Wesley. These three women, long interested in the native flora, have spent years in botanical field work and research. They are presently working on the project of cataloguing the flora of Douglas County, a challenging area, which stretches from the high Cascades to the beautiful Pacific Ocean. A current issue of *Madrono, A West American Journal of Botany*, lists two of their Oregon plant records. It was only natural that as people became more interested in the native flora there was a demand for classes of specific knowledge for technical as well as personal enjoyment. Picturesque Umpqua Community College, a short distance north of Roseburg filled this need. So, in a team teaching situation, these three have taught several classes in wildflower identification. The participants in these classes, as well as those from Reggie's field classes, have given considerable time and invaluable help in assisting in preparation for the Glide Show.

Preplanning is very necessary in a venture of this kind, but the bulk of the work must be done in the last two days. The hustle and bustle is very exciting as everyone has his assigned job to do. Collecting is carefully planned to prevent duplication. Teams go in separate directions to designated areas for specific specimens. The building committee has tables, chairs, label stands, vases, and all else in readiness. The food committee has solicited the things that are needed for the tasty refreshments to be served, and the Forest Service people have planned tours of the nearby area. The workers often stay well into the night to catalogue and display all of the material.

Come show morning the lovely arrangements are complete. All is quiet and serene. There is a soft fragrance of flowers in the cool morning air. One could never envision all the activity of the preceding day. The first two hours on opening day are reserved for camera fans. Some photograph specific flowers, perhaps one they have been looking for for several years. Others

just want to capture the atmosphere of the show.

These botanical shows have developed an acute awareness of wildflowers and enriched the lives of many people. Drives in the colorful countryside are much more meaningful when one meets an old plant friend around each bend, and people are more apt to cherish and protect what they understand. As people move into the outlying areas we must all work for the preservation of the wild plant communities. Our creed might well be:

Flowers are loveliest where they grow.
 Love them, enjoy them but leave them so.
 Jewels of sunshine, gems of shade,
 Why do you pick them to wither and fade?
 Flowers are loveliest where they grow.
 Love them, enjoy them—but leave them so.
 Unknown.

THE SEED EXPLOSION

GEORGE SCHENK, *Bothell, Wash.*

What is there about our annual Seed List that brings out the troglodyte in me? Once a year on the winter day I receive the new list, I change: I shed a few thousand years of civilization as if it were bothersome clothing. My older, lupine self leaps forth to apply massacrous hatch marks to scores of the more deliciously attractive entries in the list. By springtime, those plant names that most disquieted me are living loot in my garden—or my quarry remain names, aloof, elusive and more tempting than ever. By fall I become primed to practice certain rituals of propitiation: I gather seeds from my garden with which I seed the new year's Seed List. The new list will surely be longer, choicer, more learned, more beguiling than the last. And the new list is about to be delivered unto my hot hands.

In the year 1974 who will remember the great seed harvest of 1973, the year that brought us so many marvels and so many unanswered questions; the year in which, it must not be forgotten, our ARGS Seed List took off?

There were 3,684 seed lots, up from 2,950 in 1972. (How amazed I was—recalling the years when there were only hundreds). The harvest had grown in nicety as well as in size. For the connoisseur, the 1973 list contained more than ever such *wunderkinder* as *Mandragora officinarum*, the mandrake of Moses (Genesis 30) and of dire legend, and *Sisyrinchium filifolium*, the Fair Maid of the Falklands—that phantom belle made of moor mist. But for me the strength of the list lay (as always) in its rosters of such commonplace, durable furnishings as *Allium* (the list offered 89 kinds of rock garden onions, enough for some vicious Freudian to deduce that all rock gardening is misplaced food gathering), *Alyssum saxatile* variations (there were three baskets of gold), *Dianthus deltoides* (eight shades of maiden pink), *Lavandula* (eight lavenders), and *Veronicas* (27 speedwells, or is it speedswell?). Without these and other stalwarts my rock gardening would be a kind of vanishing act. Now you see alpines, now you don't!

Wunderkinder? We rock gardeners are the real wonder kids. Wonderment upon us all for our mass expenditure year after year of millions of

bending, searching, tapping, pulling, snipping, winnowing, and enveloping motions needed to harvest all those seeds. Perennial gratitude to the Seed Staff for coping with the massiveness of the Exchange, the burden that grows yearly heavier—and perhaps, in the present arrangement, approaches load capacity. There are sounds! The most important entry in the 1973 list is, I believe, this request by the Seed Staff for easement of the burden: “We hope that all donor numbers will be eliminated in the future as the value of their inclusion is not commensurate with the time involvement. We also believe that the Donor Listing is an adequate measure of appreciation.” I earnestly hope not and believe not. For me, the donor numbers are far and away more than superfluous thank you’s. They are as germinative as the seeds they accompany. Doing away with the donor numbers would inhibit the growth of rock gardening itself. Let me demonstrate by summing nearly a year’s experience with the plants on the 1973 list.

Albica humilis is the first plant that halts my downward pursuit of the great list of 1973. There is the true name of the plant for so many years known as *Albica species*, Basutoland (as clarified in the *Alpine Garden Society Bulletin*, December, 1971). I turn to No. 46 in the donor listing and greet a gentleman in Birmingham, England. Honored to have something from your garden, I think, prematurely, as I write the plant’s number on my seed ballot. P.S.S. January 26: I’ve received four seeds and have sown them at once. May 6: a solitary, broadsword seedling has thrust up as brave as Excalibur. August 4: the seedling has opened a white, wine-speckled flower held four inches high. There are more to come. October 5: The seedling carries a seed capsule still green; in shape a miniature bell pepper—and almost certainly gravid. October 26: I had forgotten to check until today, I have found the capsule brown, dry, split wide open but still holding seven shiny, carmine-colored seeds. (Flowers and seeds from a seedling perennial? Fertilizer—lots of it. Once a month I pour on solute 8-12-4 or 12-6-6 or whatever I have in the cupboard. Just now I’ve had to check the numbers on the labels and offhand I can’t remember what they mean. I’m not really a very pharmaceutical gardener and I suspect that the values of most fertilizer formulas have the approximate sameness of breakfast muncho-crunchos. In response to my dumb applications, though, many perennials—*Lewisia*, *Thalictrum*, *Solidago*, *Geranium*, *Cyananthus*, and others—flower here the first year, not as a rule extravagantly, but sufficiently to show their colors. It is rather devilish fun having plants break one of the most hallowed rules of botany. And the superseedlings are if anything hardier the trying first winter than unfed plants; nor do their lives seem to be shortened).

Albica sp. is next on the list. I’ll bet that’s the same plant. Could the word “Basutoland” have been omitted? Better bypass this puzzler. On to:

Epilobium angustifolium album. White Fire weed here at last! I had begun to think that I loved all alone. What other gardener is exuberant enough to consider this acreage-grabbing wildflower garden-worthy? The donor number leads to the name of a lady in Connecticut. Verily, no person is an island. P.S.S. I didn’t get the seed; evidently we fireweed lovers are a scattered tribe but far from extinct. I received, however, an unexpected (and clairvoyant?) letter from the donor. In answering her I mentioned my try for the

seed. She kindly sent me cuttings. August: the cuttings are now plants in flower—in glorious white wildflower. I have had to talk the flower arrangers in my family out of them. September: flowers still and much seed in wand-like capsules that split and release the plumed seeds to the slightest breeze. Have to get busy.

*Geranium richardsonii** 8800. The donors, I discover, are neighbors of mine. Over the phone I learn that the seed came from the Canadian Rockies. P.S.S. September: one of my seedling plants has resoundingly popped its perennial cork. Bud after bud opens into pleasantly sharp, vinous flower—wine from a cold country. The bounty demands to be shared and today, September 15, I've taken the plant to the donor as a gift.

*Geum rivale**. Collected seed the asterisk proclaims. But collected where? Virginia? Scotland? The Continent? The plant is cosmopolitan. Who, I wonder, omitted the place name? The donor? The seed staff? The typesetter? (Place names that I supplied with collected seed are missing from the 1973 list; from the 1972 list, too. Mystery and enigma). But let's see: the donor lives in Iceland. Eagerly I assume the Icelandic origin of the plant. An Icelandic *Geum rivale* should be a fine, small thing modeled by Arctic cold. Quickly I order the seed. P.S.S. I received 42 seeds—a fuller packet than I would expect from the best seed houses. Two seedling geums are up today, February 26, a month later after I sowed all my Exchangees, dressed all the pots with ¼"-size crushed rock and placed them out in the weather. March 14, a stormy day: I've been outside on my knees counting cotyledons in a miserly way, bending closely over my seed pots, glimming fervently (as if eyes could project growth rays) through the lurking half light of our late winter and scarcely feeling the bullwhip wind. Twenty-seven Icelandic Geums are up and twenty other kinds of ARGS seed (about half my donor's share) show green. I'm a daily pot watcher, nowadays.

Hosta. Nearly all the donors of Hostas are New England gardeners. I'm becoming convinced that New England is the center of interest in this genus. One donor lives in Chicago, a place too cold, my sense of ecology tells me, for these Japanese forest plants. Is mulch the answer? Or do I have too little faith in the hardiness of Hostas?

Stachys lavandulaefolia. Several quite serviceable cowbirds, *Lavandula stoechas* for one, but impostors all, have grown up from my several sowings of seed by this name. Should I try once again? A Czechoslovakian sent in the seed—a good sign. The Czech alpine gardeners are among the sharpest in the world and the plant is native to their country. But quite apart from all reason stands my faith in the magic sparks in mere names in seed lists. That old flintsmen in me marks the number 3,209 on my seed ballot as he once marked his quarry on a cave wall.

Now, if all those seeds had been given anonymously, I would have missed nearly all that information, intuition, hardy assumption, internal gossip, romance over plant geography, and several excuses for communicating with other gardeners. And my gardening needs fertilizing by this intellectual chemistry. I suppose that every gardener's gardening does, too.

There is, of course, the indispensable cure for these symptoms of busyness: solitude and bed rest with a good book on any subject but gardening

or botany. If docking the donor members would serve to inhibit the growth and society of rock gardening, the idea is not entirely unattractive. I admit the community growth of rock gardening to my sympathies the way I admit an unknown plant to my garden. Is this thing a weed or an acquisition? In any case the new life makes demands. For me, the question of the donor numbers calls into examination our growth processes and our growth potential. I'll own up at once that these are matters I know next to nothing about. Dauntless, I would like to open discussion.

During the last twenty years our Seed List has quadrupled in length and has generally shown longer internodal growth each year. The astonishing new length of the 1973 list—a 20% increase in one year—may represent a short-lived sport or it may represent the pattern of growth in years to come. We'll soon know. Growth is the fact; the rate of growth will be interesting to see. Where are we going with this growth—or where is it taking us? Are we coming into some kind of grand corporate flower—a glorious umbel of rock gardening? After furious activity will we go to seed and dormancy? (Run along now, hyperbole). Seriously, some play of action and reaction would seem inevitable. Say in the years to come hikers and climbers are only half as interested in gathering seeds as we are today; say future backyard seed gatherers, too, lack our old-time verve. Suppose during the next twenty years the growth of our Seed List slows by half, lengthens to only 7,000 (the same number of rock plants, by the way, that the nurseryman and author, Henri Correvon of Geneva grew early in this century—when rock gardening reached a first flowering). If, on the other hand, our Seed List keeps growing for another twenty years at the same rate that it has grown during the last twenty, we'll have a selection of 16,000 seed lots (four times the expected number of lots in the 1974 list) by the mid-90's. The chance seems to lie somewhere between merely great growth—and vast growth.

Our growing Seed List serves horticulture more generally nowadays; grows wider in its offerings as well as longer. I hope that the process will be encouraged; that the list will grow to include, not less, but more information; more kinds of plants; not only "rock plants" but more trees, shrubs, and plants of all kinds and sizes—extraterritorial flora that the list has already begun to include. The docking of the number of seed lots (never yet suggested in print; I admit to presumption) or any of the information accompanying the seeds would, in my belief, nip away at the horticultural viability of the ARGS.

There is, however, this first call to abbreviate the listings to save the Seed Staff. Will there be louder calls later to restrict the list still further to save the staff from still heavier burdens—and to save on the mounting costs of printing and postage? These are all crucial questions. I would suppose that in athletic terms the sheer number of movements necessary to carry out the packeting and distribution of one year's Seed Exchange will eventually become impossible for one group of rock gardeners.

In that eventuality, what could we do as an alternative to cutting the list? Divide the labor of packeting the seeds into the regional groups of rock gardeners, perhaps? I should think that in some way or another the Seed Exchange could become a more broadly delegated project with less

burden on the individual.

There may be a way to save the data sent in with the seeds that is now jeopardized: remove the data from the Seed List, encourage additional data and distribute it all separately. A Seed List supplemented by a seed data sheet would gain much in value. Plants that are new to horticulture are being introduced constantly through the ARGS Seed List. Quite often these plants are known, apart from their listing, only taxonomically in buried tomes or fleet journals. For gardeners who are eager for more information than: *Solidago nemoralis longipetiolata*, as the full entry appears in the 1973 list, let me supply my firsthand experience. Actually the seed came from twenty miles east of Butte, Montana, a region of savannah summers and tundra winters with uncertain snow cover, from foot tall plants growing in limestone gumbo in community with *Coryphantha missouriensis* in seed and *Liatris punctata* in flower in late September. Why not compile and offer for separate subscription a sheet of just such information; the height, locality, exposure, community, native soil, and month of collection of seed gathered wild; for garden seed, the name of the nursery (if nursery it was) from which the parent plant came, and in the case of hybrid-prone species are there other plants of the same genus growing close by or was the seed plant supposedly isolated from eagerly related species, and is the plant fully hardy for the donor, at what extreme, and if it is a named variety, is the seed plant a vegetatively produced specimen, or a seedling? Such data could be dovecoted by the thousands in a few pages of box graphs. A place on the information sheet would be relevant for seed of new and rare plants, and for all seed collected wild; irrelevant for garden-grown seed of plants that are commonplace or hybridized practically beyond geneology.

But perhaps the most welcome function this sheet could serve would be as a medium for sharing the experiences of many rock gardeners who might never get around to writing an article for the *Bulletin*.

If the information sheet remains an untried idea, or is tried and abandoned for want of subscribers, a quite modest change in the regular Seed List could bring us a wealth of information: allow each donor to supply with each seed lot that seems to deserve it, two full lines of information, that is 68 letters and spaces' worth of information following the present-day format of the List. Each donor could count up the letters per word and the spaces between words and allow four spaces for a donor number. If several donors send in seed of the same species, the Seed Staff should, I suppose, have standing permission to drop any data. In practice the adding of data to the Seed List would work best with rare seed and collected seed.

And please, Seed Staff, whenever possible, save such information from premature burial, kidnapping, the guillotine, or whatever it is that now happens to it.

Rock gardening requires a solid mounting in science if its special beauty is to be fully seen and enjoyed. In its present state, rock gardening is chuck-a-block with puzzling plants of unknown or badly known backgrounds. More scientific information could well be introduced in our Seed Exchange system to keep confusion from growing apace with our avocation—and to keep some of the best of our art from being lost.

BOOK REVIEW

THE GENERA OF THE MESEMBRYANTHEMACEAE by H. Herre. A. A. Balkema, Rotterdam, 1973. Printed in South Africa. 316 pp., 125 color plates, 125 distribution maps, additional illustrations, bibliography, glossary. Price \$41.00.

The moment when one first looks into this book on THE GENERA OF THE MESEMBRYANTHEMACEAE is the beginning of a pleasurable journey with H. Herre, its author, into the realm of complicated relationships within this extensive family of South African plants.

Mr. Herre (b. 1895) speaks from rich experience stemming from his work as curator of the University of Stellenbosch Botanical Garden in South Africa, to which he went in 1925 after first an apprenticeship at the famous Garden at Wörlitz near Dessau, then service in World War I, and, later, various educational pursuits. Mr. Herre collected mesems extensively and sought identification assistance from Dr. H. M. Louise Bolus (b. 1877), curator of the Bolus Herbarium at the University of Cape Town. This remarkable woman enriched botanical knowledge extensively, especially that pertaining to the *Mesembryanthemaceae*. Her profound influence on the work of Mr. Herre led to the dedication of this book to her "in honour of an indefatigable spirit".

The biographical notes on Dr. Bolus and on more than twenty other botanists make up a fascinating chapter which is introduced with a statement about the beginning of research on South African flora by Jan van Riebeeck in 1652. The reader is awed by the dedication of so many scientists to the untangling of the knotted skeins of kinship within this family. There were collectors of both living and herbarium material, students of the reproductive processes of mesems who grew them in order to find the answers to their questions, and, to our profound delight, botanical illustrators whose work, accompanying the plant descriptions, gives even a layman ample reason to covet ownership of this book.

As an aside it is interesting to note that some of these botanists who contributed much information on succulents did not limit themselves to botany or horticulture. Baron Jacquin, for example, was a professor of chemistry.

The preface, written by P. G. Jordaan, Professor of Botany at the University of Stellenbosch, gives credit to Mr. Herre for building up the collection of succulents at the Botanical Garden of that institution by his expeditions to Namaqualand and elsewhere. It emphasizes Mr. Herre's expertise in cultivating succulents "from seed to seed" and states that about three hundred new species were cultivated in the Garden. No doubt the worldwide correspondence with other botanists, mentioned in the preface, benefitted the author and thus made his writing more valuable as well as unifying the continuing research on succulents.

Three separate keys are shown, one by Prof. Dr. G. Schwantes, the second by the aforementioned Dr. Bolus, and the last by the author and Prof.

Dr. O. H. Volk. This is, of course, the most definitive part of the book but inhibits review or opinion by an amateur. Suffice it to say that identification of specimens should be much easier in the light of so much assistance.

The following chapter briefly explores unanswered questions concerning past revisions of the taxonomy of *Mesembryanthemum* and the possibility of further simplification and delimitation. Differences of opinion are aired in detail and references are cited so that the reader may search out the opinions of other scientists. Mr. Herre speaks of the mystery of this taxonomy and suggests that morphological characters have led to an inordinate increase in the genera and species while the reproductive organs give more accurate information but do not allow the researcher to make detailed classification.

The enlarged detailed drawings accompanying Prof. Dr. H. D. Ihlenfeldt's chapter, "Some Aspects of the Biology of Dissemination of the Mesembryanthemaceae", clarify the discussion which includes dispersal of seed and how that is one means by which these plants adapt to their surroundings. One reads a tale of Nature's intrigue to counteract her own harsh forces so that certain species will not be lost.

Dr. S. Dupont has contributed a couple of pages "On the Interest of the Seedlings and the Epidermis of the Mesembryanthemaceae" which he concludes by stressing the continuing evolutionary adaptation of the family.

"Poisonous Mesembryanthea" receive a page of interesting treatment by Mr. Herre.

So far what we have considered is only preamble to the main section of the book which is "Descriptions of the Genera of the Mesembryanthemaceae". Each of one hundred twenty-five species is described with an accompanying distribution map on a left-hand page, faced by an exquisite color illustration and black and white flower part details. Many monotypic genera such as *Cerochlamys* occur. The other extreme is represented by *Ruschia*, in honor of Ernst Rusch, with three hundred fifty species. Two other genera, *Ruschianthemum* and *Ruschianthus*, are named for this same botanist. Descriptive generic names abound as, for example, *Conophyllum* (cone-leaf) and *Conophytum* (cone-plant). *Herrea* and *Herreanthus* honor the author. *Jensenobotrya* combines Emil Jensen's name with the Greek word for a bunch of grapes. The uniqueness of this plant stems from its inaccessibility in its one known locale where it may be reached only from the sea or by helicopter, and from the age of individuals which may be one hundred to two hundred years. *Skiatophytum* (shade-plant) lives up to the literal interpretation of the Greek words giving it its name.

The amateur as well as the professional botanist will find this volume a welcome addition to his library.

F. K. Roberson, Seattle, Wash.

* * * * *

FIRST INTERIM ROCK GARDEN PLANT CONFERENCE—The date is set—July 18 to 22, 1976—In Seattle, Washington, USA first, and then Vancouver, British Columbia, Canada. Optional tours before and after—details later.

1974 ANNUAL MEETING

San Francisco, California—April 19-20-21

San Francisco, famed "Jewel of the Pacific," will be the locale of the 1974 Annual Meeting of the American Rock Garden Society. San Francisco and the area around San Francisco Bay has much to offer horticulturally, and it will be the aim of the Western Chapter of the Society to acquaint those who attend with the best to be found.

Registration is programmed for Friday afternoon, April 19 at the Westbury Hotel, the center of our celebration. Located at Powell and Sutter Streets, one block from the well-known Union Square, it is close to theaters and shopping, and the cable cars start their steep climb up Powell Street at that corner. Before the dinner that evening, during the cocktail hour, there will be an exhibition of California native flowers, prepared by Mrs. Barbara Menzies, one of three dedicated ladies, who, for many years staged a Spring Wild Flower Show at Stinson Beach, some twenty miles north of San Francisco. The Stinson Beach Show attracted visitors from all over the state, and we are extremely grateful to Mrs. Menzies for her willingness to go all out for us on this occasion, especially since the annual show was staged for the last time last spring (because the ladies were tired!).

After the Friday dinner we will be treated to two feature talks, one by Boyd Kline, of Medford, Oregon, who, with Lawrence Crocker, received the Marcel Le Piniec Award at Seattle in 1970. Mr. Kline will show slides of western native plants and will talk on their cultivation and propagation, as well as the handling of mail order plants after arrival at destination. Since he, together with Mr. Crocker, operate a nursery specializing in rock garden plants, their information should be invaluable. Then Wayne Roderick, of the University of California Botanic Gardens in Berkeley, will talk about the rock garden plants of the California Coast Ranges and of the High Sierra. He gave a similar program at the International Rock Garden Conference at Harrogate, England, in 1971.

On Saturday we will visit four gardens, two in San Francisco and two in the East Bay. Victor Reiter, Jr., who, with great knowledge, has been growing rock garden material for some forty years, will open his garden, with its fine collection, to us. The Strybing Arboretum, in Golden Gate Park, well known for its grand collection of dwarf conifers, planted in conjunction with rock garden plants, will be visited. Harland Hand, in El Cerrito, just north of Berkeley, uses plants for purposes of artistic composition. And in the University of California's Botanic Gardens, in addition to a grand display of mature rhododendrons in flower, we will see a garden of California native plants, both lowland and high montane, which exemplifies Wayne Roderick's talk of the evening before.

On Saturday evening, during the cocktail hour, before dinner, and also after dinner, a plant sale will be held. Plants contributed by visiting members will be welcomed. Even though it is a sale, the exhibit of plants should be worth studying. The Awards Dinner, on the program for this evening, is always interesting, and we will have a splendid speaker (not yet announced) after



After dark from offshore, San Francisco's skyline is a sparkling necklace reflected in the deep blue of the Bay. Telegraph Hill, topped by Coit Tower and bracketed by the lacy network of the Bay Bridge, looms above the Embarcadero.

San Francisco Convention and Visitor's Bureau

the awards have been made.

A word about plants contributed by visiting members: the sale will not be a success unless we have generous contributions from everyone who can supply plants. But be cautioned! All plants brought across the California border, particularly by automobile, are subject to inspection at the border. Because of the Japanese beetle problem in the East, and other insects and diseases, it is recommended that plants be bare-rooted and wrapped in sphagnum and polyethylene bags (around the roots, leaving the foliage exposed). It is further recommended that a U. S. D. A. inspection certificate be attached to the plant. This could probably be obtained from your local nursery. It is not known whether or not plants brought in via airplane in personal baggage will be inspected.

There will be bus trips on Sunday to Point Reyes, on the rugged California coast, some forty miles north of San Francisco. En route, we will visit Muir Woods, a National Monument containing a magnificent stand of native California redwoods (*Sequoia sempervirens*). The short walk through this fairyland will never be forgotten. Then travelling through the California countryside we should see many of the California wild flowers, hopefully in great drifts or sheets of bloom. At Point Reyes, adjacent to Point Reyes National Seashore Park, there are many beautiful and rare endemic flowers which should excite all rock garden enthusiasts.

Two other bus trips, one pre-meeting, are being arranged for those who, as long as they are in this area, wish to see more of the region near San Francisco. Here the Western Hills Nursery has accumulated a splendid col-

lection of rare plants and shrubs well worth seeing; and nearby Manning's Heather Farm has a nursery devoted to heathers, many of them quite rare, but tender to colder climates.

We hope to see you in San Francisco in April, 1974!

F. Owen Pearce, Chairman 1974 Meeting.

OMNIUM-GATHERUM

THE INDEX—Previously the Index to the *Bulletin* of the American Rock Garden Society has been prepared on a two-year basis, printed separately and mailed to each member as an insert in the April issue of the *Bulletin* in the year following the two years being indexed. This procedure has been changed. The Index will now be on a yearly basis, will be printed as an integral part of the *Bulletin*. The Index for the year 1973 appears in this the January issue for 1974—the issue you are now holding in your hand. Turn to the back pages.

This change has been made for several reasons. First of all there will be eliminated the possibility of loss or misplacement of the Index, easily done when it is separately printed. From now on, if you have kept your *Bulletin* within easy reach (it is hoped that most members do) your yearly index will always be readily available. There are other reasons for making this change which concern cost of printing, postage and the saving of the Secretary's time in inserting the separate Indexes in the Bulletins to be mailed. The format of the Index has not been changed.

It is hoped that this change will meet with the approval of most of our members.

THE GASOLINE SHORTAGE—With the expected rationing of gasoline in the very near future (as you read this such rationing may well be in effect already) it is not too difficult to envision changes in our driving habits for 1974. The result should be more hours spent at home. The question is how to use those added hours. For rock gardeners this should be easy. More time for reading, more time to work in the rock garden or alpine house, and for those who have neither, what an opportunity here presents itself. Now you will have time to start a rock garden. Think about it and make plans during the early months of 1974. This is the time for dreaming, for study and for planning. Turn to page 42 of this issue and read the ARGs Stores ad. Send to our Secretary for the books listed there. They are not expensive and they will help you in all aspects of rock gardening. When spring comes your rock garden can be started and at least a small part of it planted. Instead of burning gasoline you will be burning your own energy and will be well paid for it in fun, in healthful exercise, in the added beauty of your home surroundings, in a deeper appreciation of nature and in the fact that you have started a rock garden. If you already have a small rock garden, make plans to enlarge it. It is a little-known fact that less than 50% of ARGs members have rock gardens. So, during this time of restricted travel become a real rock gardener and turn an enforced tribulation into a grand opportunity.

AN OPEN LETTER TO MRS. MURIEL T. BARRON AND OTHERS WHO WISH THEY HAD WRITTEN THAT LETTER

DOROTHEA DE VAULT, *Monroe, Conn.*

Welcome! In reply to your letter, an excerpt of which was printed in the *Bulletin* of October, 1973, it may comfort you to hear a tale of one couple's initiation into the American Rock Garden Society. By accident we learned of the group and joined in February, 1968. Our gardening had been "normal" for over twenty-five years—vegetables, roses, the usual shrubs, a perennial garden—a typical suburban plot. We never suspected how ignorant we were!

The first meeting my husband and I attended was held at the Snuff Mill of the New York Botanical Garden. The subject happened to be "Dwarf Conifers" with the Bergmans of Pennsylvania the principal speakers. Our interest had been whetted a few years before; we had a small collection of such shrubs and were thus reasonably familiar with that particular nomenclature.

I warn you, Mrs. Barron, collecting dwarf conifers and rare plants is a disease. It is addictive. There is no cure.

Well, anyway, we sat on the edge of our chairs that wonderful day, thrilled at long last to be with truly knowledgeable (in the botany field) people. We did not yet fully appreciate what we were letting ourselves in for—the depths of our lack of botanical information, the difficulty of learning the genera and species at our mature? age.

Other meetings, annual meetings, study weekends, the *Bulletin* followed. ALL THAT LATIN! Those beautiful slides that flashed on the screen with the lecturer glibly reeling off the botanical names too quickly for us to grasp the unfamiliar. We read, we studied, we suffered.

Five, almost six years later at a recent meeting at Skylands as Mr. Case, that splendid teacher, working with two screens and two projectors, rolled off those scientific names—lo and behold we could cope! We knew, for example, *Tricyrtis*. We had come a long way!

However I quite agree with you. ARGs should do more for the inexperienced members. Perhaps each issue, even at the risk of repetition, should devote a page to "How to plant seeds, make cuttings, find sources"—an endless list.

I would like to close this letter by mentioning a few books which have been helpful to us. They might be handy to put on Christmas and birthday lists:

ROCK GARDENING by H. Lincoln Foster

ALL ABOUT ROCK GARDENING AND PLANTS by Walter A. Kolaga

(You spoke of "Mayfair" — perhaps you already know Mr. Kolaga is its owner).

A GARDENER'S BOOK OF PLANT NAMES by A. W. Smith

This book was a tremendous help with pronunciation for me.

COLLINS GUIDE TO ALPINES by Anna N. Griffith

This is an English book, perhaps hard to acquire. It has lots of colored photographs by Valerie Finnis.

HANDBOOK ON ROCK GARDENS from the Brooklyn Botanic Garden's selection of fine booklets.

Good luck! You are going to have a good time as a member of that Graduate School for Gardeners—the American Rock Garden Society.

Cordially,

(Signed) Dorothea De Vault, *Munroe, Conn.*

REQUESTS BY MEMBERS

Vickey Sauer, Rt. 7, Walton, Oregon 97490 has three choice plants to share with anyone interested in an exchange of plants. They are: *Synthyris reniformis*, *Scoliopus* sp. and *Pityrogramma triangularis* (the Goldback Fern). She would like rare Campanulas, not too tall, Saxifrages, or Lewisias.

Ionopsidium acaule is wanted by Mrs. John S. Kistler, 1421 Ship Road, West Chester, Pa. 19380. Will exchange. Send your "Want List."

Mr. Thomas R. Driscoll, Swedesford Road, Ambler, Pa. 19002, would like to obtain a copy of Doretta Klaber's *Rock Garden Plants*.

ARGS Bulletins Needed—Copies of July, 1972 (Vol. 30, No. 3) are in demand. Your secretary has a waiting list for this issue and will welcome any that are no longer needed. Also copies of earlier numbers are sought. Members who are house-cleaning, disposing of libraries, cleaning out attics will find your secretary receptive. (See inside front cover for mailing address).

* * * * *

STUDY WEEKENDS—1974—EAST AND WEST—Details of the Study Weekend, East were given in the *Bulletin Board* that accompanied the *Bulletin* of October, 1973. The place is New Haven, Conn. and the dates are January 25, 26, and 27. Time and place for the Study Weekend, West were not given but are now available. Time is February 1, 2, and 3 and the place is Providence Heights, a secluded Convention Center, a few miles east of Seattle amid hills, woods and fields. An interesting and instructive program has been arranged. The theme is "Alpines of the Americas—North and South." The program will include talks by John Watson, a member of the Cheese, Watson Expedition to South America and Bob Woodward's "Lantern Show" of Harold Comber's pictures taken in the Andes in 1924.

Details of the program, accommodations and a registration sheet form will be sent all members living west of the Mississippi River shortly. Should members in the East desire information concerning the Study Weekend, West, they can obtain it by writing to Mrs. C. R. Bennett, 17015 26th Ave. N. E., Seattle, Wash. 98155. Which ever event you attend, or if you attend both, you will come away well informed on gardening subjects that interest you. You will have had the opportunity of greeting old friends, making new ones, and generally enjoying yourselves.

A FEW MORE CAMPANULAS

BETTY JANE HAYWARD, *Scarborough, Maine*

Campanula excisa is among the dear departed, but for many years it grew and persisted in a place that was the remains of a so-called scree, with little but grit to live on. Each year it moved from one spot to another and produced a few of the little flowers with the poked-out hole at the base. *C. portenschlagiana* (Syn. *C. muralis*) is so well known it needs neither description nor recommendation. However, it is truly one of the best and long-lived species. Though it may increase and spread with vigor, it never becomes a pest. When in summer, the neat, dark ivy-leaved foliage is hidden with open trumpets of light purple, its appeal is evident. Its best use is in the wall, as its second name indicates. Planted in pockets between the stones part way down on the face, it creeps in and out in the narrow space, making a lovely adornment when other bloom is waning.

C. poscharskyana is a later introduction to gardens. A native of Dalmatia, some consider it aggressive and over-powering. This depends on placement, for if on level spots among choice plants, it might take over. However, introduced into a wall as in the case of the last species above, it is kept within bounds and can be a real ornament as it covers the stones with the vining growth and starry flowers.

C. barbata, the bearded bellflower of the Alps, is not necessarily biennial if cut back. The rosette will live to produce flowering spikes another year. The large bells of blue are filled with silvery hairs in the throat and at the edges of the petals. Once, in the garden in company with *Arnica alpina*, it brought a bit of the atmosphere and association of the mountains to the lowland scene. *C. sarmatica* and the foregoing are welcome for use among taller plants. The unique grayish-blue color of the blossoms and the fact that in each the stems rise from the rosettes and are somewhat devoid of leaves, give an airiness to the effect.

* * * * *

A TWINING GENTIAN — A plant of greatest intrigue found several times last autumn in Japan and again at Taiwan seemed to be a twining gentian. We were first to see it in pale sky blue, scrambling through low shrubbery, morning-glory fashion, and later in the depth of pure blue that makes gentians so glorious. At Alishan we found it in a mixed spruce-cryptomeria forest surrounding Asia's highest railroad station (ca. 7500 ft.) where it flowered in a pallid no-color, but we managed to locate one that was snowy white, and unexpectedly came upon one in purest pink. Once classed as a *Gentiana*, it is now called *Triptospermum japonicum*. It is also known from Korea and as far north as Sakhalin. There is a slender underground rootstock by which the plants spread and the short spurs on the current growth should root as cuttings. Unfortunately, however, none struck for us.

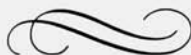
Roy Davidson, *Seattle, Wash.*

BULLETIN

OF THE

AMERICAN ROCK GARDEN SOCIETY

Index to Volume 31, 1973



AUTHORS

Alexander, Gordon	31:124
Allen, Sallie D.	31:50, 144
Arneson, Gus N.	31:34, 137
Arnold, Dr. H. H.	31:147
Baggett, James R.	31:81, 109
Barneby, Rupert	31:118
Boswell, Paul H.	31:107
Brinckerhoff, Eleanor	31:36
Brownmiller, A. J.	31:104, 149
Chaloupecky, Vladimir	31:32
Davidson, Roy	31:21, 63, 98, 173
Deno, Norman C.	31:142
Ewert, Dr. Earl E.	31:146
Foster, H. Lincoln	31:78, 95, 140
Freeman, Mary Tibbetts	31:160
Halda, Josef	31:54, 152
Harkness, Bernard	31:117
Havens, Donald E.	31:64
Humphrey, Donald W.	31:6
Le Comte, James R.	31:112
Lewis, Glenn	31:18
Lodewick, Kenneth	31:26
Lodewick, Robin	31:26
Löve, Åskell	31:119, 127
Löve, Doris	31:127
Merelie, Garth	31:13
Merrill, Clifton L.	31:16, 130
Nickou, Dr. Nicholas	31:72
Plestil, Vaclav	31:10
Pollock, Gordon	31:101
Prince, Martha	31:74
Rawson, William	31:159
Redfield, Richard W.	31:89
Roberson, Kenneth	31:70
Senior, Robert M.	31:176
Spingarn, Joel W.	31:66
Starling, Barry N.	31:1
Sutton, Albert M.	31:31, 80, 82, 122, 126, 166, 177, 178
Wherry, Dr. Edgar T.	31:62
Wiley, Leonard	31:45
Woodward, Bob	31:48, 171

SUBJECTS

An asterisk (*) denotes an illustration

- Abandon Rock Garden, The 31:18
 Addenda Farreriana 31:130
 Alaska, A Wildflower Pilgrimage to 31:89*
Aciphylla, In Search of 31:112
 Alpines from Seed 31:36
 Alps, Hunting a Garden in the 31:101
 Annual Meeting—1973 31:64
Arisarum Again 31:117
 Awards—1973
 Barr, Claude A. 31:142*
 Brinckerhoff, Eleanor 31:140*
 Lohbrunner, Edward H. 31:144*
 Reid, Alex D. 31:146
 Book Reviews:
 Beyond the Aspen Grove 31:124
 Compleat Naturalist, The 31:16
 Jewels of the Plains, The 31:82
 Land above the Trees 31:124
 Plants of Southern New Jersey, The 31:126
 Bulgarian Mts., Plant Hunting in Part I 31:54*
 Bulgarian Mts., Plant Hunting in Part II 31:152*
 Central Europe, In 31:10*
 Cohosh, A Dwarfed Blue 31:107
 Collector's Notebook 31:173*
Collomia larsenii 31:48*
Cryptogramma crispa 31:109*
Cyclamen neapolitanum 31:81*
Daphne petraea, in the Wild 31:13
 Desirable Strains, Anyone 31:149
 Dr. Worth's Garden 31:160*
 Dwarf Conifers 31:66*
 East, At Last, The 31:21
 Garden Club, A Remarkable 31:147
Gaultheria versus *Chiogenes* 31:118
 Genetic Definition, A Question of 31:127
 Genus *Marshallia* 31:6
 Huckleberry Creek Revisited 31:34*
 Just for Fun, Postscript 31:50
 Light Boxes 31:78
Meconopsis, Footnote on 31:159
 Nomenclature, Notes on 31:62
 Obituaries
 Alexander, Gordon and Marion 31:178
 Stuart, Margôt 31:177*
Oenothera andina var. *hilgardii* 31:63
 Of Canyons and Canoes—*Pyrolas* and Paddles
 31:1*
 Omnium-Gatherum 31:31, 80, 122, 166*
 Penstemon Field Identifier 31:26*
 Plant Families, One Man's Choice 31:171
 Red, White and Green 31:95
 Requests by Members 31:25
 Rock Garden Plants on China — A Review
 31:119*
 Rock Garden Society of Ohio and the ARGS
 31:176
Saxifraga, Section *Kabschia* 31:32*
 Seed Exchange Dates 31:146
 Seedlings Without Tears 31:104
Shortia, The Elusive 31:74*
 Skunk Cabbage, In Praise of 31:137*
 Sticky Wickets 31:98
 Tetramerous *Trillium hibbersonii* 31:45*
 Unique Plants, Two for the Rock Garden 31:72
 Up North January, An 31:70*

PLANT REFERENCES

- Achillea atrata* 31:152
borealis 31:70
chrysocoma 31:153
clypeolata 31:153
lanulosa 31:126
multifida 31:59
schurii 31:157
Aciphylla congesta 31:112, 115
crosby-smithii 31:112, 114, 115
cuthbertiana 31:116
hectori 31:113
horrida 31:116
kirki 31:113
lyallii 31:115, 116
pinnatifida 31:116
similis 31:113, 116
simplex 31:116
spedenii 31:116
Aconitum delphinifolium 31:89, 93
judenbergense 31:54
wagneri 31:54
Adiantum pedatum 31:35
Adonis amurensis 31:160
vernalis 31:101, 103, 106, 154
Agrostis rupestris 31:55
Allium narcissifolium 31:171
sibiricum 31:56
Alyssum repens 31:156
Anacamptis pyramidalis 31:102
Andromeda polifolia 31:70, 92
Androsace aizoon 31:171
chamaejasme 31:93, 155
hedraeantha 31:55
helvetica 31:60
latifolia 31:105
pyrenaica 31:164
sempervivoides 31:171
villosa var. arachnoidea 31:60, 152, 156
wulfeniana 31:171
Anemone baldensis 31:106
biflora 31:161
blanda 31:101, 160
caroliniana 31:144
hupensis 31:106
magellanica 31:106
narcissiflora 31:90, 91, 93, 101, 157
parviflora 31:93
richardsonii 31:93
sylvestris 31:106
Anemone thalictroides 31:164
Angelica paniculata 31:54
Anisotome haastii 31:114
Antennaria carpatica 31:157
dioica 31:56
Anthemis cupaniana 31:105
Anthriscus vandasilii 31:105
Anthyllis erinacea 31:165
Aquilegia scopulorum 31:164
vulgaris 31:103
Arabis alpina 31:157
blepharophylla 31:105
flavescens 31:58
Arctostaphylos alpina 31:91
uva-ursi 31:70
Arenaria arctica 31:91, 93
biflora 31:55, 58, 59
humifusa 31:5
lithops 31:21
rotundifolia 31:157
Arisarum proscoides 31:117
vulgare 31:117
Armeria alpina 31:56, 58, 103, 155
a. var. balcanica 31:153
arenaria 31:103
Artemisia baumgartenii 31:156
frigida 31:70
Arum maculatum 31:117
Asarum canadense 31:74
Asperula nitida var. puberula 31:21
suberosa 31:164
Asplenium platyneuron 31:150
ruta-muraria 31:153, 155, 156
septentrionale 31:58
trichomanes 31:4, 153, 155
Astelia linearis var. novae zealandae 31:114
Aster alpinus 31:60
likiangensis 31:105
Astilbe simplicifolia 31:164
Astragalus alpinus 31:155
barrii 31:143
monspessulanus 31:153
Astrantia major 31:157
Aubrieta 'Fire King' 31:106
'Victoria' 31:106
Azalea 'Flame Creeper' 31:165
Balsamorhiza careyana 31:174
hookeri 31:174
rosea 31:173, 175
sagittata 31:174
Bartsia alpina 31:56
Betula nana 31:119
Biscutella laevigata 31:156
Blechnum spicatum 31:35
Botrychium lunaria 31:59, 156, 157
matricariaefolium 31:150
Boykinia richardsonii 31:92
Bruckenthalia spiculifolia 31:54, 56, 59, 154
Bryanthus gmelinii 31:52
Bulbocodium vernalis 31:160
Bupleurum diversifolium 31:156
Calamagrostis arundinacea 31:54
Calamintha alpina 31:56
Calandrinia umbellata 31:105, 106, 150
Calceolaria falklandica 31:165
mexicana 31:165
polyrrhiza 31:165
Calochortus kennedyi 31:20
Caltha palustris 31:103
Camassia leichtlinii 31:123
quamash 31:123
Campanula abietina 31:59
allionii 31:164
alpina 31:55, 156
bucegiensis 31:156
carpatica 31:156
cochlearifolia 31:156
lasiocarpa var. alpina 31:91
orbicella 31:55, 58
portenschlagiana 31:106
pusilla 31:156
rotundifolia 31:89
scabrella 31:48
shetleri 31:98
x stansfieldii 31:164
Camptosorus rhizophyllus 31:150
Cardamine amara 31:54
purpurea 31:93
Carex atrata 31:57
curvula 31:55, 156
goodenovii 31:56
laevis 31:56
rupestris 31:55
sempervirens 31:156
Cassiope tetragona 31:92, 93
wardii 31:145
Caulophyllum thalictroides 31:107, 108
Celmisia asteliaefolia 31:108
bonplandii 31:114
coriacea 31:113
c. var. stricta 31:114
du-rietzii 31:114
gracilentata 31:114
hectori 31:114, 115
lanceolata 31:114
laricifolia 31:113, 114
longifolia 31:108
lyallii 31:113, 114
petrei 31:114
ramulosa 31:114

- r. var. tuberculata* 31:113, 114
sessiliflora 31:52, 113
traversii 31:114
verbascifolia 31:114
viscosa 31:114
walkeri 31:114
Centaurea montana 31:54
Cephalanthera alba 31:157
rubra 31:157
Cerastium alpinum 31:103
lanatum 31:56, 57, 153, 155
lerchenfeldianum 31:157
Ceterach officinarum 31:153, 154, 155
Cetraria nivalis 31:155
Chamaecyparis thuyoides 31:23
Chamaeorchis alpina 31:157
Chammissonis hilgardii 31:63
Chaptalia tomentosa 31:7
Cheilanthes densa 31:109
Cherleria sedoides 31:56, 58, 60, 155
Chiogenes hispida 31:15, 24, 53, 82, 99, 118, 119, 127, 129, 151
japonica 31:119
Chionodoxa gigantea 31:160
Chrysanthemum alpinum minimum 31:103
rotundifolium 31:157
Chrysogonum virginianum 31:24
Chrysosplenium alternifolium 31:54
Cirsium appendiculatum 31:54
Claytonia acutifolia 31:92
scammaniana 31:92, 93, 94
sibirica 31:92
Clematis occidentalis 31:144
Clintonia uniflora 31:35
Collomia debilis 31:49, 63, 121
d. var. ipomea 31:121
d. var. larsenii 31:49
grandiflora 31:48
larsenii 31:48, 49, 121
Conandron ramondioides 31:165
Corallorhiza trifida 31:70, 92
Corydalis diphylla 31:161
pauciflora 31:93
solida densiflora 31:160
Cornus canadensis 31:4, 34, 35, 90
'Eddy's White Wonder' 31:23
florida 31:21, 23
nuttallii 31:23
Cortusa matthioli 31:156, 157
Cotoneaster horizontalis 31:104
Cotula goyenii 31:113, 114
Crocus beluchensis 31:56
chrysanthus 31:160
heuffelianus 31:56, 154, 157
veluchensis 31:59
vernus 31:157
Cryptogramma acrostichoides 31:89, 110
crispa 31:55, 109, 110, 111
c. var. acrostichoides 31:109
c. var. raddeana 31:110
densa 31:109
stelleri 31:4, 109
sitchensis 31:110
Cyananthus lobatus 31:105
Cyclamen africanum 31:165
cilicicum 31:165
cyprum 31:165
europaeum 31:14
libanoticum 31:165
mirabile 31:165
neapolitanum 31:81
persicum 31:165
pseudo-ibericum 31:165
Cypripedium acaule 31:150
arietinum 31:169
calceolus 31:157
passerinum 31:89
reginae 31:5, 151
Cystopteris fragilis 31:4
Cytisus hirsutus 31:59
sericeus 31:59

Dacridium laxifolium 31:51, 52
Daphne arbuscula 31:165
blagayana 31:165
collina 31:165
mezereum 31:15, 157
oleoides 31:59, 153
petraea 31:13, 14, 15

p. grandiflora 31:13, 14, 15
tangutica 31:165
Delphinium triceorne 31:148
Deschampsia flexuosa 31:55
Dianthus alpinus 31:105, 150
arenarius 31:105
barbatus 31:157
compactus 31:157
deltoides 31:105
gelidus 31:156, 158
glacialis 31:105, 156
gratianopolitanus 31:105
microlepis 31:50, 55, 58
m. ssp. degenii 31:59
neglectus 31:105
nitidus 31:105
panicii 31:58
scardicus 31:55
tenuiflorus 31:156
Diapensia lapponica 31:91, 93
Dionysia aretioides 31:164
Dodecatheon amethystinum 31:62
frigidum 31:92, 93
lemoinii 31:105
meadia 31:17, 64, 105, 166
p. 'Prairie Ruby' 31:144
pulchellum 31:62
p. 'White Comet' 31:144
Doronicum austriacum 31:54
carpathicum 31:157
columnae 31:57
Douglasia arctica 31:94
vitaliana 31:103
Draba carinthiaca 31:57
compacta 31:156
fladnizensis 31:156
haynardi 31:156
mollissima 31:164
Draconophyllum muscoides 31:113
prunum 31:113
Drapetes diffenbachii 31:113
lyallii 31:113, 114, 145
Dryas densifolia 31:94
integrifolia 31:70, 92
octopetala 31:60, 92, 93, 105, 154
Dryopteris fragrans 31:92

Edraianthus pumilio 31:163
Elliottia racemosa 31:73
Epizaea repens 31:151
Epilobium alpestre 31:54
angustifolium 31:70
latifolium 31:89, 90
Epimedium flavum grandiflorum 31:164
warleyensis 31:164
Epipactis atrorubens 31:157
Erica carnea 31:103
Erigeron scribneri 31:144
uniflorus 31:61, 156
Erinacea pungens 31:165
Erinus alpinus 31:105
Eriogonum hausknechtii 31:48
Eriophorum vaginatum 31:56
Eritrichium aretioides 31:93
jankae 31:155, 158
Euphrasia minima 31:55
zelandica 31:112

Festuca amethystina 31:156
glacialis 31:155
vallida 31:58
vivipara 31:155
Fraxera albicaulis 31:174, 175, 176
montana 31:176
Franklinia alatamaha 31:9, 74
Fritillaria kurdica 31:162
michaelovskii 31:171
pudica 31:162

Galanthus corcyrensis 31:47
elwesii 31:47, 160
graeus 31:47
nivalis 31:160
n. luteus 31:47
n. viridi-apice 31:47
n. var. scharlockii 31:47
octobrensis 31:47

- olgae* 31:47
plicatus 31:47
plyphyllus 31:47
rachelae 31:47
Galax aphylla 31:74
rotundifolia 31:74, 76
Gaultheria hispidula 31:5, 15, 24, 51, 53, 82, 95, 96, 99, 118, 119, 127, 151
humifusa 31:97
miqueliana 31:97
ovalifolia 31:97
procumbens 31:95, 96, 118, 128, 129
shallon 31:118
trichophylla 31:97
Gentiana acaulis 31:101, 103, 105, 156
andrewsii 31:62
angustifolia 31:105
asclepiadea 31:157
bavarica 31:60
bellidifolia 31:112
calycosa 31:48
clusii 31:157
djmilensis 31:56, 57, 59, 152
excisa 31:156
frigida 31:56, 57, 58, 156
glauca 31:92
gracilipes 31:105
hexifarreri 31:106
'Inshriach' 31:106
'Inverleith' 31:105
kochiana 31:156
lagodechiana 31:105
linearis 31:62
lutea 31:157
makinoi 31:105
moesiaca 31:59
nivalis 31:12
orbiculare 31:60
ornata 31:106
prostrata 31:92
punctata 31:56, 59
purpurea 31:105
pyrenaica 31:56
tibetica 31:105
verna 31:60, 101, 103, 105, 106, 149, 156
Gentianella nivalis 31:157
Geranium erianthum 31:90
sylvaticum 31:54
Geum bulgaricum 31:57, 58
coccineum 31:59
reptans 31:57, 152, 153, 157
Gnaphalium hoppeanum 31:156
mackayi 31:113
supinum 31:58, 156
s. var. balcanicum 31:57
minimum ssp. balcanicum 31:58
Gregoria vitaliana 31:103
Gymnadenia conopsea 31:12, 157
odoratissima 31:157
Gypsophila petraea 31:156

Habenaria dilitata 31:89
hyperborea 31:90, 92
obtusata 31:90
Haberlea ferdinandi-coburgii 31:165
rhodopensis 31:153, 154, 155
Hebe astonii subsessilis 31:51
propinqua nana 31:51
Hectorella caespitosa 31:113, 114
Hedysarum alpinum 31:90
obscurum 31:157
Helianthemum alpestre 31:157
nummularium 31:102
Helichrysum marginatum 31:10
Heliosperma alpestre 31:105
quadrifidum 31:157
Helleborus niger 31:161
Helonias bullata 31:72
Heloniopsis breviscarpa 31:72
Hepatica nobilis 31:102
triloba 31:161, 164
Heraclium verticillatum 31:54
Hieracium rhodopaeum 31:55
villosum 31:157
Hippion nivale 31:12, 157
Homogyne alpina 31:57, 59, 156, 158
Hudsonia tomentosa 31:23
Hulsea nana 31:48
Hutchinsia alpina 31:157

Hypericum olympicum 31:153
transsilvanicum 31:59
Hypoxis hirsuta 31:166

Iris biglumis 31:100
bucharica 31:162
cristata var. lacustris 31:169
danfordiae 31:160
ensata 31:100
gracilipes fl. pl. 31:165
graeberiana 31:162
'Harmony' 31:160
histrio var. aintabensis 31:160
histrioides major 31:160
'Joyce' 31:160
kaempferi 31:100
orchioides 31:162
persica 31:162
'Purple Gem' 31:161
reticulata 31:160
r. 'Clairette' 31:161
setosa 31:89
sindpers 31:162
tridentata 31:6
urmiensis 31:99
versicolor 31:5
willmottiana alba 31:162
winogradowii 31:161

Jasione orbiculata 31:55, 58
Jeffersonia diphylla 31:63
dubia 31:63, 165
Jovibarba heuffelii 31:59
Juncus trifidus 31:56, 57
Juniperus nana 31:55, 58

Kalmiopsis leachiana 31:122
Kernera saxatilis 31:156

Lachnanthes caroliniana 31:7
Larix decidua 31:157
Ledum decumbens 31:91
groenlandicum 31:2
Leontopodium alpinum 31:12, 155
nivale 31:60, 61
Leucocerinum montanum 31:144
Leucogenes grandiceps 31:114, 115
Leucorchis albida 31:157
Lewisia brachycalyx 31:21
cotyledon 31:105, 106, 107
c. var. howellii 31:25
rediviva 31:25, 50, 105
r. var. minor 31:50
stebbinsii 31:98
tweedyi 31:25
Ligularia sibirica 31:157
Ligusticum mutellina 31:59, 156
Lilium martagon 31:157
philadelphicum 31:5
Linaria alpina 31:157
vulgaris 31:62
Linnaea borealis 31:16, 17, 34, 35, 89
Linum capitatum 31:59
extra-axillare 31:156
Listera cordata 31:89
ovata 31:157
Lithospermum canescens 31:166, 172
Lobelia cardinalis 31:8
Loiseleuria procumbens 31:91, 92, 119, 154
Lupinus breweri 31:173
lepidus 31:173
l. aridus 31:173, 175
l. lobbii 31:173
lyallii 31:173
Luzula nemorosa 31:54
spicata 31:56
sudetica 31:156
Lycopodium clavatum 31:135
Lysichitum americanum 31:137, 138
camtschatcense 31:137

Marshallia caespitosa 31:6, 7, 9
c. var. signata 31:7
graminifolia 31:6, 7
grandiflora 31:6, 7, 8, 9
laciniarioides 31:6
mohrii 31:6, 8, 9
obovata 31:6, 7
o. var. obovata 31:7

o. var. scaposa	31:7	glandulosus	31:28
ramosa	31:6, 8, 9	glauclus	31:28
trinervia	31:6, 8, 9	glaborus	31:28
williamsonii	31:6	gracilentus	31:28
Meconopsis betonicifolia	31:159	heterophyllus	31:28
b. var. baileyi	31:159	humilis	31:28
cambrica	31:159	iwabukuro	31:27
heterophylla	31:159	laetus roeslii	31:28
horridula	31:159, 160	lemmonii	31:28
quintuplinervia	31:159	miser	31:28
Menyanthes trifoliata	31:156	memorosus	31:28
Mertensia lanceolata	31:144	newberryi berryi	31:28
paniculata	31:90, 93	nitidus	31:144
Mimulus guttatus	31:89	ovatus	31:28
primuloides	31:48	parvulus	31:28
Minuartia biflora	31:60	payettensis	31:28
gerardii	31:156	peckii	31:28
recurva	31:55, 157	pennellianus	31:28
Moneses uniflora	31:70, 89	pinifolius	31:166
Muscari comosum	31:103	pratensis	31:28
Myosotis alpestris	31:59, 92, 152, 157	procerus	31:29
kernerii	31:153	p. brachyanthus	31:28
palustris	31:54	pruinosis	31:29
pulvinaris	31:113	pumilis	31:29
Narcissus asturiensis	31:160	radicosus	31:29
bulbocodium nivalis	31:161	rattanii	31:28
b. var. tenuifolius	31:161	richardsonii	31:28, 29
cyclamineus	31:161	roeslii	31:28
minimissimus	31:160	rupicola	31:28, 29
minimus	31:160	rydbergii	31:28
poeticus	31:103	seorsus	31:28
Nardus stricta	31:157	serrulatus	31:28
Nemastylis acuta	31:144	spatulatus	31:28
Nigritella leucantha	31:157	speciosus	31:28
nigra	31:157	subserratus	31:28
rubra	31:157	triphyllus	31:28
Oenothera andina	31:63	venustus	31:28, 30
a. hilgardii	31:63	wilcoxii	31:28
contorta	31:63	Petrocallis pyrenaica	31:103
hilgardii	31:63	Philesia magellanica	31:172
Orchis globosa	31:102, 157	Phlox alyssifolia	31:142
italica	31:103	andicola var. parvula	31:143
majalis	31:157	condensata	31:62
mascula	31:103, 157	griseola	31:62
masculata	31:12, 157	hoodii	31:142
rotundifolia	31:90	pilosa	31:148
tridentata	31:102, 103, 157	Phyllachne colensoi	31:113, 114
Ophioglossum vulgatum	31:150	rubra	31:113, 114
Ornithogalum umbellatum	31:103	Phylodoce caerulea	31:53
Ourisia sessilifolia	31:114	Phyteuma comosum	31:14, 164
s. var. splendens	31:114	confusum	31:56
Oxalis acetosella	31:158	nanum	31:156
Oxyria digyna	31:57, 157	orbiculare	31:103, 156
Oxytropis carpatica	31:157	Picea excelsa	31:157
sericea	31:155	morrisonicola	31:99
Pachysandra terminalis	31:105	pungens 'Glaucu Pendula'	31:68
Papaver alpinum	31:103	Pinellia ternata	31:62
kernerii	31:152, 153	Pinguicula alpina	31:155
pyrenaicum ssp. corona-sancti-stephani	31:157	leptoceras	31:56, 57, 59
radiatum	31:90, 93	vulgaris	31:92, 156
somniferum	31:10	Pinus albicaulis	31:48
Paris sp.	31:47	cembra	31:157
Parnassia palustris	31:90, 156	leucodermis	31:54
Pedicularis arctica	31:92	mugo	31:54, 56, 58, 59, 156, 157
capitata	31:92	m. pumilio	31:52
flammea	31:92	Plagiorhagma diphylla	31:63
lanata	31:93	dubia	31:63, 165
oederi	31:156	Platanthera bifolia	31:157
ortantha	31:55	chloantha	31:157
verticillata	31:57, 156	Poa violacea	31:156
Penstemon acuminatus	31:28	Podophyllum emodi	31:163
anguineus	31:28	Polemonium acutiflorum	31:90
attenuatus	31:28	mellitum	31:165
azureus	31:28	reptans	31:121
barrettiae	31:28	viscosum	31:125
cardwellii	31:28	Polygala calcarea	31:164
cinicola	31:28	Polygonum bistorta	31:157
cusickii	31:28	viviparum	31:154, 155, 157
davidsonii	31:28	Polypodium vulgare	31:35
d. var. serpyllifolium	31:51	v. var. malahatense	31:145
deustus	31:28	Polystichum lonchitis	31:157
elegantulus	31:28	munitum	31:35
eriantherus	31:28	Polytrichum juniperinum	31:155
euglaucus	31:28	Populus tremuloides	31:70
fruticosus	31:28	Potentilla alpina	31:105
gairdneri	31:28	apennina	31:60
		aurea	31:56
		crantzii	31:119, 120
		haynaldiana	31:57

nitida	31:60, 103	aphylla	31:103
ternata	31:56, 58, 155	ascendens	31:157
tridentata minima	31:101	baumgartenii	31:57
uniflora	31:93	bryoides	31:56
verna	31:103	caesia	31:12
Primula abschasica	31:161	caespitosa	31:106
albocincta	31:14	coriophylla	31:60
allionii	31:164	corymbosa var. luteo-viridis	31:59
auricula	31:103	cotyledon	31:106
clarkei	31:164	'Cranbourne'	31:78
cuneifolia	31:92	cymosa	31:55, 56, 60
denticulata rosea	31:161	demissa	31:156
deorum	31:10, 56, 57	discolor	31:152, 153
elatior	31:103	engleria	31:105
e. ssp. carpatica	31:157	'Faldonside'	31:78
exigua	31:56, 57, 59	ferdinandi-coburgii	31:59, 60, 152
farinosa	31:156	flagellaris	31:93
fauriae	31:164	gelbe	31:106
japonica	31:105	grisebachii	31:154
'Linda Pope'	31:164	heucherifolia	31:54
longiflora	31:55, 60, 157	hirculus	31:92
marginata	31:103	hostii	31:105
minima	31:25, 55, 58, 154	'Iris Prichard'	31:78
mistassinica	31:65	irvingii	31:52
'Mrs. J. H. Wilson'	31:64	juniperifolia ssp. pseudosancta	31:57, 58
rubra	31:103	latina	31:158
spectabilis	31:14, 164	lilacina	31:32, 33
'The General'	31:164	luteo-viridis	31:59, 60, 152, 154, 156
veris	31:101, 103	moschata	31:55, 60, 157
villosa	31:103	mutata	31:105
viscosa	31:103	oppositifolia	31:57, 92, 94, 103, 119
x pubescens alba	31:164	o. var. latina	31:59, 156
x p. 'The General'	31:178	paniculata	31:59
Ptilotrichum spinosum roseum	31:163	porophylla	31:153, 154
Pulmonaria officinalis	31:101	purpurea	31:105
rubra	31:54, 56, 58, 155, 157	purpurmantel	31:105
Pulsatilla alba	31:157	retusa	31:53, 57, 58
alpina	31:101, 103, 105, 150	serpyllifolia	31:93
a. var. sulphurea	31:103	squarrosa	31:103
patens	31:10	stellaris	31:106
pratensis	31:103, 154	stribnyi	31:153, 154, 155
vernalis	31:101, 103, 152	tolmiei	31:53
vulgaris	31:103	tricuspidata	31:92
Pygmaea ciliolata	31:114	Scabiosa lucida	31:59, 157
c. var. fiordensis	31:114	Schizocodon soldanelloides ilicifolia	31:165
thompsonii	31:113	Scilla bifolia alba	31:160, 165
Pyrola asarifolia	31:2, 89	Scleranthus neglectus	31:55, 59, 156
grandiflora	31:2, 3, 4, 90	Scorzonera rosea	31:157
secunda	31:2, 89	Sedum album	31:153
Pyxidanthera barbulata	31:50	alpestre	31:57, 157
brevifolia	31:50	brevifolium	31:52
Ranunculus myconi	31:163, 164	dasyphyllum	31:153
Ranunculus alpestris	31:157, 164	libergii	31:52
a. var. traunfelneri	31:50	pilosum	31:164
buchananii	31:114	sempervivoides	31:165
crenatus	31:57, 58, 156	Selaginella ciliata	31:157
glacialis	31:119	selaginoides	31:157
montanus	31:55, 58, 103	Sempervivum arachnoideum	31:152
platanifolius	31:54, 59	heuffelii	31:59
riloensis	31:59	Senecio abrotanifolius ssp. carpaticus	31:55
Raoulia bryoides	31:116	carpaticus	31:59, 156
buchananii	31:116	nemorensis	31:54
eximia	31:116	transsylvanica	31:58
grandiflora	31:113	Sesleria caeruleus	31:155
mammillaris	31:116	comosa	31:55
Rhamnus rupestris	31:153	orbelica	31:58
Rhodiola rosea	31:58, 106, 157	Sherardia arvensis	31:148
Rhododendron carolinianum	31:74	Shortia galacifolia	31:74, 75, 76
'Cornell Pink'	31:22	Sibbaldia procumbens	31:58, 156
ferrugineum	31:102	Sieversia montana	31:55, 156
kotschyi	31:154, 156, 158	reptans	31:57, 152, 157
lapponicum	31:93	Silene acaulis	31:58, 60, 90, 92, 103, 154, 155
lowndesii	31:172	a. var. balcanica	31:56
reticulatum	31:73	hookeri	31:123, 162
roxiceanum var. oreonastes	31:172	ingramii	31:123
Rosa acicularis	31:70	laciniata	31:165
Rumex arifolius	31:54	lerchenfeldiana	31:57
Salix herbacea	31:58, 59, 156	saxifraga	31:153
myrtifolia	31:4	virginica	31:148
reticulata	31:60, 155	Sisyrinchium inflatum	31:98
retusa	31:60	Smelowskia calycina	31:48
Saponaria lutea	31:105	Smilacina stellata	31:34, 35
Saxifraga aizoon	31:4, 59, 105	Soldanella alpina	31:102
a. baldensis	31:105	montana	31:59, 102, 103, 154, 156, 158
a. brevifolia	31:155	m. var. australis	31:58
a. minor	31:59	pusilla	31:57, 58, 59, 154, 156
androsacea	31:157	Solidago virgaurea	31:54, 157
		Sphaerostigma andina var. hilgardii	31:63
		Stellaria nemorum	31:54

<i>Stylidium graminifolium</i>	31:108, 168	<i>Tsuga canadensis</i> 'Pendula'	31:69
<i>Stylomecon heterophylla</i>	31:159	<i>Tulipa aucheriana</i>	31:162
<i>Swertia alpestris</i>	31:56, 57	<i>bakeriana</i>	31:162
<i>caroliniensis</i>	31:148	<i>oculus-solis</i>	31:103
<i>radiata</i>	31:148	<i>pulchella</i>	31:162
<i>Symplocarpus foetidus</i>	31:137, 139	<i>p. violacea</i>	31:161
<i>Synthyris stellata</i>	31:98		
		<i>Urtica dioica</i>	31:54
<i>Taraxacum bithynicum</i>	31:55		
<i>nigricans</i>	31:157	<i>Vaccinium gaultherioides</i>	31:59
<i>Taxodium distichum</i>	31:111	<i>hispidula</i>	31:82, 128
<i>Thalictrum coreanum</i>	31:164	<i>myrtilus</i>	31:57, 59, 154
<i>kiusianum</i>	31:164	<i>ovatum</i>	31:35
<i>Thamnomia vermicularis</i>	31:155	<i>parvifolium</i>	31:35
<i>Thesium alpinum</i>	31:59	<i>uliginosum</i>	31:56, 70, 154
<i>Thlaspi alpinum</i>	31:58	<i>vitis-idaea</i>	31:154
<i>kovatsii</i>	31:157	<i>v. minus</i>	31:51, 55, 90, 92
<i>rotundifolium</i>	31:152	<i>Veratrum album</i>	31:157
<i>Thymus caespitosus</i>	31:71	<i>flavum</i>	31:59
<i>carnosus</i>	31:71	<i>Verbena canadensis</i>	31:148
<i>herba barona</i>	31:71	<i>Veronica alpina</i>	31:58, 59
<i>hirsutus ssp. ciliato-pubescens</i>	31:60	<i>bellidioides</i>	31:55, 156
<i>membranaceus</i>	31:71	<i>fruticans</i>	31:119
<i>micans</i>	31:71	<i>fruticulosa</i>	31:152
<i>nitidus</i>	31:71	<i>Viburnum lantana</i>	31:102
<i>parviflorus</i>	31:105, 155	<i>Viola alpina</i>	31:155
<i>pectinatus</i>	31:71	<i>biflora</i>	31:92, 101, 157
<i>serpyllum</i>	31:103	<i>cenisia</i>	31:101, 152
<i>vulgaris</i>	31:103	<i>declinata</i>	31:156
<i>Tiarella trifolia</i>	31:34	<i>demetria</i>	31:22
<i>Tofieldia calyculata</i>	31:156	<i>glabella</i>	31:35
<i>pusilla</i>	31:52	<i>grisebachiana</i>	31:152, 153
<i>Tradescantia bracteata</i>	31:148	<i>langsдорffii</i>	31:92
<i>Trichophorum austriacum</i>	31:56	<i>macedonica</i>	31:59
<i>Tridentalis latifolia</i>	31:35	<i>palmata</i>	31:21
<i>Trilochin palustre</i>	31:156	<i>palustris</i>	31:4
<i>Trillium erectum</i>	31:21	<i>pedata</i>	31:23, 147
<i>grandiflorum</i>	31:21, 108	<i>p. var. lineariloba</i>	31:166
<i>hibbersonii</i>	31:45, 46, 47, 98	<i>sempervirens</i>	31:35
<i>nivale</i>	31:161		
<i>ovatum</i>	31:35, 130	<i>Woodsia alpina</i>	31:4
<i>Tripetaleia bracteata</i>	31:73	<i>ilvensis</i>	31:4
<i>paniculata</i>	31:73		
<i>Trochocarpa clarkei</i>	31:108	<i>Zygadenus elegans</i>	31:126
<i>Trollius europaeus</i>	31:102	<i>glaberrimus</i>	31:6
<i>laxus</i>	31:106		

* * * * *

ADVICE FROM A MEMBER OF LONG STANDING—Mrs. Alice Hills Baylor, Stowe, Vermont, writes: "You asked in the July issue of the ARGS Bulletin if any one knows why there is a large number of drop-outs in memberships in our Society; if so to let you know. I have heard some reasons; 'Articles only were about rare and difficult plants, members vying with one another to see who can raise the most difficult alpine, not enough on construction, succession of bloom and companion plants.' Those are some of the reasons but I believe those people are not thinking of the finest advantage, the personal contacts. The friendships I have made in the last thirty years are beyond measure. The friends in the N. E. unit, the annual meetings I have attended as well as the study groups in winter are most important. The opportunity to visit gardens alone is worth keeping our membership.

"No member can know all there is to know about the marvelous plants that grow upon our planet. After all these years I read and then reach for my reference books because there is a name of a plant I do not know."

ECHOS FROM THE ARGS TOUR TO CENTRAL EUROPE — SUMMER OF 1972 — The Epstein-led tour to Central Europe has brought forth many comments. Mr. and Mrs. Loring R. Williams of Sparks, Nevada were members of this tour. Margaret wrote, "Time flies too fast! Our six weeks in Central Europe were marvelous—absolutely perfect. Our heads are still whirling, trying to sort out all we saw and did. It was especially wonderful to get a little better acquainted with long-time correspondents and to make new friends. We just wish we could have stayed longer at each place we visited on our trip!"

* * * * *

THE SEEDLIST HANDBOOK

For ARGS, AGS, and SRGC List Scanners
One line descriptions of over 8,000 names
as found in about 150 reference works

BERNARD HARKNESS

Three Dollars, Postpaid
from

KASHONG PUBLICATIONS
Box 90, Bellona, New York 14415

This Space is Available

For

Your Advertisement

— Rates —

ARGS MEMBERS \$20.00

NON-MEMBERS \$25.00

per Year

MEDITERRANEAN sea and flora

THE RIGHT PLACE

a place few people go,
wild and undiscovered.
Glorious uncrowded rocky beaches,
warm whitewashed villages,
splendid baroque palaces and churches,
unique unspoiled Mediterranean flora:

APULIA

deep in the South of Italy,
in the heel of the boot,
a comfortable quiet, brand-new hotel
is waiting for you.
Famous Italian cuisine, local wines,
two swimming-pools,
rooms arranged in small individual
groups matching local architecture,
tennis, boat, and whatever you
may like (just ask).
Directly on the sea.

THE RIGHT TIME

April to June, when everything is flowering,
Irises and Orchids, Alyssum and
Scillas, and when nobody in Italy
is on holiday (most Italians take their
holidays in August). Tariffs in spring
are about half the ones in summer.

May I send you a brochure, please write me,
Mrs. Loredana Ascalone, proprietor,
HOTEL RISTORANTE PICCOLO MONDO
73030 CASTRO MARINA - ITALY
Airport is not far away, I can fetch you
with my car.

AND ITALY IS NOT SO FAR AWAY

RAINIER MT. ALPINE GARDENS

Dwarf and Species
Rhododendrons
Dwarf Conifers, and
other plants for
your Rock Garden

Free Plant Listing
2007 So. 126th
Seattle, Wash 98168
Cherry 2-4090

Grower of ROCK PLANTS, HERBS PERENNIALS ANNUALS

Large Selection, Field Grown

No Catalog

All Plants for Sale at Nursery Only
SAMUEL F. BRIDGE, JR.
437 North Street
Greenwich, Conn. 06830

URGENTLY NEEDED—BACK ISSUES ARGS BULLETINS FROM MEMBERS PLANNING TO DISPOSE OF COPIES

The Society's Reserve Stock of Back Numbers for Resale to Members (as on back cover) is Exhausted in the Following: Vol. 1 to 10—any and all issues needed (6 per year)

Vol. 10 Nos. 1 & 4	Vol. 16 Nos. 1 & 2	Vol. 23 No. 3
Vol. 11 No. 3	Vol. 17 all 4	Vol. 24 No. 2
Vol. 12 No. 4	Vol. 18 No. 1	Vol. 25 No. 3
Vol. 13 Nos. 1 & 2	Vol. 20 No. 1	Vol. 27 No. 3
Vol. 14 No. 1	Vol. 21 No. 2	Vol. 28 No. 3
Vol. 15 No. 1	Vol. 22 No. 2	Vol. 30 No. 3

If you have no further use for your copies, your contributions of any of the above will be most welcome additions to the Society's reserve stocks. Please send to the Secretary, who will also entertain offers on extensive "runs." (See back cover for address).

GARDEN ROCKS

FOR SALE, WHOLESALE AND RETAIL

at location in the

ILION GORGE, ILION, NEW YORK 13357
Calcareous Tufa, also called "Horsebone,"
the proper kind of stone for rock gardens
and religious grottos. Large variety in size,
shape and appearance.

In Large Quantities — \$25.00 per Ton

In Small Quantities — \$1.00 per Bu.

2¢ per Lb.

Selected specimens somewhat more
depending on size and appearance.

MRS. F. F. CHAYA

TOM THUMB NURSERY

Dwarf and Exotic

CONIFERS

South Blvd. at the Big Red Mailbox
Upper Grandview, Nyack, N. Y. 10960

914—358-3269

No Shipping

Announcing—

THE JEWELS OF THE PLAINS

BY

CLAUDE A. BARR

To be published in 1973, the awaited work
by "one of the great plantsmen of our
time."

WITH AN INTRODUCTION BY

H. LINCOLN FOSTER

Pre-Publication Offer: \$10.00

THEOPHRASTUS P.O. 458 Sakonnet Point, Little Compton, Rhode Island 02837

REPRINTS

Farrer, *My Rock Garden* [1907] \$8.50

Bowles, *My Garden in Spring* [1913] \$12.50

Gabrielson, *Western American Alpines*
[1932] \$10.00

Hornbrook, *Dwarf and Slow-Growing
Conifers* [1938] Pre-Publication \$8.50

Albertson, *Nantucket Wildflowers*
[1921] \$10.00

Kingdon Ward, *The Land of the Blue
Poppy* [1913] Pre-Publication \$10.00

Colorful

SEMPERVIVUMS

10 Varieties (labeled)

Prepaid \$7.00

Over 100 Different Varieties

MacPherson Gardens

2920 Starr Ave.

Oregon, Ohio

43616



Announcing: **Jewels of the Plains**, distinctive native flora descriptions, now in hands of publisher:

Regional, geological and climatic basis of hardiness and adaptability to be detailed; plus culture. Amply illustrated in color and black and white. Publication date will be announced.

No plant shipments in '74, please.

CLAUDE A. BARR

PRAIRIE GEM RANCH

Smithwick, South Dakota 57782

SPECIALIZED HOLIDAYS

for plant enthusiasts

A selection from our 1974 programme is outlined below. Every tour is escorted by a knowledgeable tour leader—often by a distinguished botanist—and full details will be sent immediately on request.

ETHIOPIA—it's Sites and Flowers

The itinerary of these tours—two leaving in January and February and another two in September and October—offers a wide variety of interests, from the flowers and bird life of the Rift Valley to the superb mountain scenery of the famous Historic Route with its wonderful sites and decorated churches. Quite unlike any other country, Ethiopia must be seen to be believed.

21 days from London back to London: £389

GREECE AND TURKEY—two Sites & Flowers Cruises

Leaving on the 5th and 19th April, each with its distinguished Guest Lecturers and a botanist these are the 84th and 85th cruises we have organised with the *Society for Hellenic Travel*. The itinerary has been imaginatively planned to visit sites from the prehistoric era to the fine Crusader castles which abound along the lovely shores of Southern Turkey; and special attention is given to areas where wild flowers are to be found growing in variety and profusion. We take 100 passengers only in the small but comfortable and steady *Semiramis* to ensure a relaxed and friendly atmosphere on board and ashore.

15 days from London back to London: £175 to £350

INDIA AND NEPAL—for gardeners and botanists

This holiday from 2 to 24 May, has been arranged to give an opportunity of seeing the Rhododendron forests from Kathmandu and Pokara in Nepal, and the alpine flora of Kashmir from Gulmarg and Khellinmarg above Srinagar. The tour ends with a short stay in houseboats on the Dal Lake at Srinagar.

23 days from London back to London: £444

INDIA—A KASHMIRI PONY-TREK

The sixth of a series, this holiday from 18th July to 8th August is for those who enjoy the peace and beauty of the high mountains, walking, riding, fishing and plant-hunting. It is truly *out-of-this-world*.

22 days from London back to London: £429

DALMATIA UNDER SAIL

Five cruises in the elegant m/y *Adria*, a three-masted schooner with cabins for 40 passengers, leave in May, June, August and September. The earlier sailings afford an excellent opportunity for flower lovers who will have ample leisure for walking in the countryside.

15 days from London back to London: £219

Other holidays include Spain, Italy and Switzerland for alpine gardeners; a foot and horse safari in unspoiled Northern Kenya; and tours of Persia, Asia Minor, Pakistan and Afghanistan.

FAIRWAYS & SWINFORD

(Travel) Ltd (ARGS/4)

**18 Saint George Street, Hanover Square,
London W1R 0EE, England**

*Members of the American Society of Travel Agents
and the
Association of British Travel Agents*

Your ARGS STORE offers:

1. Foster, H. L.: *ROCK GARDENING* \$3.00
"Only available edition, hard-cover reprint"
2. Emery, D. E., Compiler:
SEED GERMINATION OF ROCK GARDEN PLANTS \$1.00
Report of cooperative record-keeping on selected rock garden seed-planting experiments; paper.
3. *THE ROCK GARDENER'S HAND BOOK* \$1.50
The 1965 re-issue of selected articles from back numbers of the ARGS Bulletin; hard cover.
4. Library *BINDERS* for the ARGS *Bulletin* \$2.00
Each holds 12 issues, easily inserted; permanent; neat; dark green with gold lettering.
5. Kolaga, A. W.
ALL ABOUT ROCK GARDENING AND PLANTS
(Reprint) \$2.35
6. GEORGE FORREST, V. M. H. 1873-1932 \$3.00
The Scottish Rock Garden Club Centennial re-issue of 1935 memorial to this great explorer.
7. Back issues of the *Bulletin*; see back cover \$1.00
8. **ARGS EMBLEMS** \$3.00
(ALL THE ABOVE available from the Secretary, 90 Pierpont Road, Waterbury, Connecticut 06705)

Please remit with order, by check or money order, payable to ARGS. Overseas payments in U.S. funds. U.S. destination **must** include the Postal Zip Code. All orders sent postpaid, surface mail (for air mail shipment, add 10%).

WATNONG NURSERY

The place to get the
"HARD TO FIND" PLANTS

Gaylussacia brachycera

Leiophyllum — Kalmiopsis — Vaccinium

Dwarf Rhododendrons and Conifers
600 Named Varieties

By Appointment, at the Nursery Only

Hazel and Don Smith

201 — 539-0312

Morris Plains, New Jersey 07950

WILDWOOD GARDENS
CHOICE ALPINES

Rock Plants Bog Plants
Alpine Rhododendrons
Dwarf Conifers

10 Cents For List

Anthony Mihalic

14488 Rock Creek Road
Chardon Ohio 44024

"SORRY, no Canadian or Foreign Shipments"

SEDUMS and SEMPERVIVUMS

Pink, Red, Purple, Blue and Green

Hardy Named Varieties

Trial Collection 10 for \$5.50 Postpaid

OAKHILL GARDENS

Helen E. and Slim Payne
Rt. 3, Box 87J Dallas, Oregon 97338

We Ship All Year

PLANT JEWELS OF THE
HIGH COUNTRY

Sempervivums and Sedums
by Helen E. Payne

111 Full Color Photographs
Autographed Copies \$15.00 Postpaid

ALPINES
DWARF CONIFERS
HEATHERS
RHODODENDRONS

Cash and Carry Only

FAMOSI NURSERY
138 Concord Road
Westford, Mass. 01886
692-8900

THE ROCK GARDEN

Maine Hardy Plants

Choice Cultivars — Uncommon Species
Grown and Mailed in Peat-lite
New Varieties Annually
Seedlings from Several Exchanges
and other European Sources

Mail Order Catalog Free to ARGS Members

LITCHFIELD, MAINE 04350
Visitors Welcome — Nursery in W. Gardiner

**"PLANT JEWELS
OF THE HIGH COUNTRY"**

Sempervivums — Sedums
by Helen E. Payne

The first book written and published in the U.S. on these two fascinating plant types—A handsome 7 x 10 design with 158 pages and 111 color plates—covering 187 species hybrids, varieties, etc. A book every rock gardener should have—or anyone interested in the exotic, beautiful and amazing "Hen and Chicks."

\$15.00 Postpaid



ALSO AVAILABLE

**"Wildflower Trails of the
Pacific Northwest"**

by Art Chipman

156 pages — 236 color pictures
6 x 9 hard back — \$15.00



Pine Cone Publishers

2251-A Ross Lane, Medford, Oregon 97501

**THE ALPINE GARDEN SOCIETY'S PUBLICATIONS
OFFER OUTSTANDING VALUE IN ILLUSTRATIONS AND LETTERED WISDOM**

THE GENUS LEWISIA By R. C. Elliott

The only monograph in existence on this fascinating American genus.

DIONYSIAS By C. Grey-Wilson

The first English monograph of this exciting family, with drawings of every known species.

SAXIFRAGES By Winton Harding

This authoritative and readable guide should be on the bookshelf of every rock gardener.

Price \$1.50 Postpaid

ILLUSTRATED GUIDES FOR THE PRACTICAL GARDENER

PROPAGATION OF ALPINE PLANTS — ALPINES IN POTS — BULBS UNDER GLASS
ERICACEOUS AND PEAT-LOVING PLANTS — A GARDENER'S GUIDE TO SEDUMS — SILVER-FOLIAGED PLANTS
Price \$0.80 Postpaid

A.G.S. Publications are available ONLY from:

M. H. DRYDEN, Distribution Manager, 30 Sheering Lower Rd., Sawbridgeworth, Herts, England

SISKIYOU RARE PLANT NURSERY

Our catalog offers an unrivaled selection of the world's most unusual and desirable alpine, native and rock garden plants.

50 cents brings our catalog. Cost refunded first order.

Sorry we cannot accept Canadian or Foreign orders.

L. P. Crocker

B. C. Kline

522 Franquette Street, Medford, Oregon 97501

PRAIRIE SUNSHINE SEED CO.

Collectors and Propagators of
Mid-western Plants
And Southwestern Alpines

— Free List —

Richard Clinebell, Wyoming, Ill. 61491

BULBS CORMS PLANTS

suitable for Rock Gardens, Alpine Gardens
troughs, boxes and for naturalising.

We are specialists in miniature bulbs
and in **HARDY CYCLAMEN** of which
we have the finest selection available.

All bulbs and corms
are top quality and home grown.

We also grow **PLEIONES, CYPRIPEDIUMS,**
ORCHIDS, NERINE HYBRIDS, etc.

Catalogue free on request.

J. A. MARS of HASLEMERE

(Mars & Kettle)

Haslemere, Surrey, England

READ'S NURSERY

Growers of

Rock Garden Plants

ALPINES — DWARF CONIFERS

388 FOREST AVENUE

PARAMUS NEW JERSEY

Cold Climate Cactus and Succulents

Plants which live through below zero winters

List 30 Cents

Pictorial Book \$3.00 ppd.

Also Succulents from South Africa
and other Cactus

all of which are frost tender

List \$1.00 extra

BEN HAINES

Dept. IRGB-5

1902 Lane, Topeka, Kansas 66604

For Plant Hunters,
the

1973 PLANT FINDERS

Hardy and/or Tender

➤ \$2.25 each postpaid ◀

Your best chance to find the right place!
Hundreds of sources for thousands
of plant types.

HHH HORTICULTURAL

68 Brooktree Road Hightstown, N. J. 08520

**DWARF CONIFERS, ALPINE PLANTS,
SEMPERVIVUMS, HOSTAS
EXOTIC MAPLES AND IRIS**

All sold by mail order (lists available)
Or at nursery.

Over 3500 Different Plants Available.

Nursery open evenings and weekends
only September through May. Open
daily June through August.

Telephone: Quakertown 215-536-4027

PALETTE GARDENS

26 West Zion Hill Road

Quakertown Pennsylvania 18951

ALPINES WEST GARDENS & NURSERY
(Formerly Thurman's Gardens)

NEW CATALOG WITH OVER 150
ADDED RARE DWARF PLANTS

(Alpines, Wildflowers, DWARF:
Conifers, Shrubs, Rhododendrons,
and Ferns)

UNRIVALED IN CULTURAL & PLANT
DESCRIPTIONS

CATALOG 50¢

Route #2 Box 259 Spokane, Wash. 99207

**DWARF and PYGMY
CONIFERS**

MINIATURES FOR THE
ROCK GARDEN AND BONSAI
JAP MAPLES

DWARF RHODODENDRONS

Other Rarities for the Connoisseur
Send 50¢ for Latest List

JOEL W. SPINGARN

1535 Forest Ave., Baldwin, N. Y. 11510

Alpines 70¢ each Airmailed ANYWHERE IN THE COUNTRY

Selections of Charm and Easy Growth:

Androsace carnea brigantiaea, A. sarmentosa,
Campanula x Stansfieldii, Dianthus alpinus,
Dianthus brevicaulis, Douglasia vitaliana,
Gentiana acaulis, G. scabra, Globularia
bellidifolia, Silene acaulis grandiflora,
Viola yakushimana nana, Veronica incana nana

THE WILD GARDEN

Box 487, Bothell, Washington 98011

*Offer closes, 1974. Minimum: \$6.30. Thank you.
(Washington orders go by land, tax paid.)*

Descriptive Catalog, \$1.00

MAYFAIR NURSERIES

R.D. 2, Box 68, Nichols, N. Y. 13812

DWARF CONIFERS

DWARF SHRUBS

HEATHERS

Catalogue \$1.00

GOODWILL GARDEN

Specializing in Rare Alpines and
Rock Garden Plants

Sale of Plants

Terminates June 30, 1974

**New list features rare and unusual
Primulas not included previously.**

Extended list of Alpine Plants given.

10¢ Handling and Postage

required with request for copy

Betty Jane Hayward

Box 409

U. S. Route 1, Scarborough, Maine 07074

RARE PLANTS and SHRUBS

Dwarf slow growing conifers that
stay dwarf and other shrubs all
suitable for Bonsai culture.

Large collection of Alpines as well
as unusual plants are listed in our
catalogue.

ALPENGLOW GARDENS

13328 King George Highway
Surrey, B.C. Canada

A cordial invitation to you to join

SALLIE ALLEN'S SPRINGTIME GARDEN TOUR OF GREAT BRITAIN

DEPART APRIL 29, 1974, 26 DAYS \$1550. Tour price includes
airfare from Seattle, share of double room, transfers and two
meals each day. Private motorcoach escorted touring of Scot-
land, the beautiful Lakes District, the Midlands, Wales and
southern England. (Cost is adjustable for departures from other
cities.)

VISITS TO MANY PRIVATE
GARDENS HAVE BEEN AR-
RANGED BY SALLIE ALLEN
EXCLUSIVELY FOR THIS
TOUR. IT WILL BE A RARE
OPPORTUNITY TO ENJOY
FAMOUS GARDENS AS
SPECIAL GUESTS!

Sallie Allen is an active mem-
ber of the A. R. G. S. and Presi-
dent of the Northwest Ornamental
Horticultural Society.



For reservations & information:

COOKS

WORLD TRAVEL SERVICE
847 WHITE-HENRY-STUART BLDG.
1318-4TH AVENUE
SEATTLE, WASHINGTON 98101



 PanAm.

THE ALPINE GARDEN SOCIETY invites you to join its band of enthusiasts who enjoy a *Bulletin* every quarter, have opportunities to buy specialist publications, have tours to see alpinists in their natural habitat, have a panel of experts to call upon to advise on alpinists and their cultivation, and can participate in the distribution of the seed of more than 4,000 distinct alpinists each year.

Home Members £2.50

Overseas Members £3.00 (\$7.20 at time of going to press).

Secretary: E. M. Upward, The Alpine Garden Society
Lye End Link, St. John's, Woking, Surrey, England

THE SCOTTISH ROCK GARDEN CLUB



Offers you . . .

its twice yearly Journal, well illustrated in black & white, and containing authoritative articles on all aspects of rock gardening, rock plants, and their world wide haunts.

Its excellent annual scheme for the distribution of rare & unusual seed, amongst its international members.

for £1 per year (\$2.60)

R. H. D. Orr, C.A. 70 High Street, Haddington
East Lothian, Scotland will be glad to send particulars.

THE ARBORETUM BULLETIN

A Journal of Horticultural Information

Distributed quarterly to members of the University of Washington Arboretum Foundation. For Information — write . . .

ARBORETUM FOUNDATION, SEATTLE 5, WASHINGTON

AMERICAN PRIMROSE SOCIETY

offers

Quarterly publications beautifully illustrated, an international seed exchange of approximately 100 different Primulas and a culture chart to assist in the growing of species Primulas.

U.S.A. \$5.00 per year

Mrs. Thelma Genheimer, Treas.
7100 S.W. 209th, Beaverton, Oregon 97005

THE AMERICAN PENSTEMON SOCIETY

Cordially invites you to join its growing list of enthusiastic members.

If you are interested in Penstemons, you will be interested in the activities of the society.

Write to the Secretary,
MRS. RUTH T. SCHMEECKLE
Route 2, Box 61
Cozad, Nebraska 69130

for Particulars

BACK VOLUME OF THE BULLETIN

We have for sale an accumulation of back volumes and individual numbers of the BULLETIN. The available material is listed below.

- VOLUME 1 Individual number 2
- VOLUME 7 Individual number 4
- VOLUME 8 Individual numbers 3 & 4
- VOLUME 9 Individual numbers 1, 3, 5 & 6
- VOLUME 10 Individual numbers 2 & 3
- VOLUME 11 Individual numbers 1, 2 & 4
- VOLUME 12 Individual numbers 1, 2 & 3
- VOLUME 13 Individual numbers 3 & 4
- VOLUME 14 Individual numbers 2, 3 & 4
- VOLUME 15 Individual numbers 2, 3 & 4
- VOLUME 16 Individual number 3
- VOLUME 18 Individual numbers 2 & 4
- VOLUME 19 Individual numbers 1, 3 & 4
- VOLUME 21 Individual number 3
- VOLUME 22 Individual numbers 3 & 4
- VOLUME 23 Individual numbers 1, 2 & 4
- VOLUME 24 Individual numbers 3 & 4
- VOLUME 25 Individual numbers 1, 2 & 4
- VOLUME 26 Individual numbers 1, 2, 3 & 4
- VOLUME 27 Individual numbers 1, 2 & 4
- VOLUME 28 Individual numbers 1, 2 & 4
- VOLUME 29 Individual numbers 1, 2, 3 & 4
- VOLUME 30 Individual numbers 1, 2 & 4
- VOLUME 31 Individual numbers 1, 2 & 3

All individual numbers are one dollar each.

A large accumulation of certain numbers permits us to offer ten different numbers, the Society's selection, for \$5.00. (Order the "Bargain Package.")

Postage will be paid by the Society.

Members desiring issues containing articles referred to in the index by volume and page number may obtain the issue, if available, by referring to volume and page number in ordering. Order from the Secretary. *Please make checks payable to —*

American Rock Garden Society

90 Pierpont Road

Waterbury, Conn. 06705