American Rock Garden Society Bulletin

Vol. 31 **April, 1973** **No. 2**

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 ..... ALEX D. REID, 260 Boulevard, Mountain Lakes, N. J. 07046

Vice-Presidents
MRS. ANITA KISTLER — DONALD E. HAVENS — BOYD KLINE
MRS. SALLIE D. ALLEN — JOSEPH A. WITT

Directors

Term Expires 1973		
F. Owen Pearce	Mrs. L. N. Roberson	George H. Pride
Term Expires 1974		
Mrs. Herbert Brinckerhoff	H. Lincoln Foster	Lee Raden
Term Expires 1975		Richard W. Redfield
Miss Viki Ferreniea	Henry R. Fuller	

Director of Seed Exchange
DR. EARLE E. EWERT
39 Dexter St., Dedham, Mass. 02026

Director of Slide Collection
ELMER C. BALDWIN
400 Tecumseh Road, Syracuse, N. Y. 13224

CHAPTER CHAIRMEN

Northwestern ..... NORMAN CLARK, 8608 39th S. W., Seattle Wash. 98116
Western ..... MRS. DONALD S. CROXTON, 6309 Green Valley Road, Placerville, Cal. 95667
Midwestern ..... MRS. LILLIAN M. LEDDY, Box 612A, R.D. 3, Mena, Arkansas 71953
Allegheny ..... CARL A. GEHENIO, R.D. 3, Box 341A, Tarentum, Pa. 15084
Potomac Valley ..... RALPH W. BENNETT, 5607 N. 22nd St., Arlington, Va. 22205
Delaware Valley ..... JOHN F. GYER, Jessup Mill Road, Clarksboro, N. J. 08020
New England ..... KRISTIAN FENDERSON, Grout Hill, South Acworth, N. H. 03607
Great Lakes ..... WILLIAM S. THOMAS, 1805 Greenleaf Drive, Royal Oak, Mich. 48067
Wisconsin-Illinois ... DONALD E. HAVENS, 2323 W. Club View Dr., Glendale, Wisc. 53209
Columbia—Willamette ..... MRS. L. C. GROTHAUS, 12373 SW Boone's Ferry Rd., Lake Oswego, Ore. 97334
Connecticut ..... H. LINCOLN FOSTER, Falls Village, Conn. 06031
Long Island ..... OSCAR D'ESOPO, 18 Willow Street, Roslyn Heights, N. Y. 11577

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. 31 APRIL, 1973 No. 2

TETRAMEROUS *TRILLIUM HIBBERSONII**

LEONARD WILEY, *Portland, Oregon*

During a lifetime spent in the special world of botany, I have known many joys, thrills and delights. But the greatest of these came to me during my extended study of a new species of *Trillium* which I named *Trillium hibbersonii* in my book *Rare Wild Flowers of North America.*

I took many trips to British Columbia for no other purpose than to study this rarest of all species. One of these visits was to the University of British Columbia in Vancouver where I was the guest of Dr. Katherine Beamish, cyto-taxonomist in the Department of Botany.

Dr. Beamish brought about a dozen pots of *T. hibbersonii* into her laboratory for me to study and photograph. Among them was a plant in full flower with the parts in fours and multiples of four; four sepals, four petals, eight stamens, and a four-parted pistil. I knew that I was standing in the presence of what was probably the rarest *Trillium* plant in the world.

Dr. Szczawinski of the British Columbia Provincial Museum told me that there are an estimated number of no more than 120 to 150 plants of *T. hibbersonii* in the wild and at the time of my studies there were likely nowhere nearly as many in cultivation.

Dr. Beamish told me that this tetramerous specimen had come true for several years. It is likely that it is genetically stable and will retain its parts in fours and multiples thereof for as long as it lives.

The genus *Trillium* has long been known for its remarkable uniformity in general appearance. If you have seen one species of *Trillium* you should usually have little difficulty in recognizing other species. The genus is also known for its considerable variability from species to species in certain organs and for its radical variability in floral and vegetative segments in teratological specimens.

I wrote the wild flower articles for about five years for one of the local Portland, Oregon newspapers. Nearly every spring reports came in to me about discoveries of unusual variations in Trilliums, accompanied by such questions as: Are they rare? Will they revert to type? Will they come true from seed? Are they valuable? How did they originate?

As a youngster I had never heard of the word 'teratology' and I would neither have known nor cared what it meant. But this is a fascinating word—

Trillium hibbersonii, photographed at University of British Columbia. This specimen and one other similar in a private garden in Victoria, B. C., may be the two rarest Trilliums in the world. Floral segments of both plants have parts in fours or twice four. Greatly enlarged.

Leonard Wiley—Copyrighted

the study of monstrosities and malformations—and delving into it opened a strange and meaningful new door in the world of botany.

Many of these rarities are curiosities, oddities with little or no horticultural value, although they may be of great interest to botanists who are deep in morphology and phylogeny. But the best of them, with petals numbering two or three dozen, are fantastically beautiful, rare and valuable.

I have a list of 15 species of Trilliums in which teratology is known and it is reasonable to suppose that all members of the genus possess such characters.

The variations are numerous and so varied that it is possible to learn of almost any *Trillium* peculiarity imaginable.

There is a considerable difference of opinion whether teratological specimens will come true from seeds, if seeds are produced. It seems likely that these characters are recessive and if one is crossed with a type species the likelihood that a teratological form will be produced is remote. However, if two of these strange plants are crossed with each other, and if seed is pro-

duced, and if it is viable, and an assortment of other *ands* and *ifs,* teratological progeny may be produced. This could be one of the ways in which such specimens occur in the wild, but not the only way.

But if the stamens and pistils have been modified into petals or leaves, the reproductive organs will be lacking and sexual reproduction will not be possible. I have some of these plants in my botanical gardens. They may be increased, and very slowly, only by vegetative means.

Some of the tetramerous forms seem to be genetically stable and will be expected to come true year after year. Others, that lack stability, may revert to type. I have had tetramerous plants revert to type within one year in my gardens.

My interest in tetramerous Trilliums is phylogenetic. The genus *Paris* has nothing to do with the famous city on the Seine. It is derived from the Latin for *equal* and refers to the regularity of its numerical relationship of its parts which are usually in fours or multiples thereof although there are other variations.

There are at least 40 species of *Paris,* distributed over much of Asia and creeping into parts of Europe. The fact that tetramerous specimens of *Trillium* resemble normal specimens of *Paris* in the count of their floral and vegetative segments is one indication of a close relationship between the two genera. Some students of *Trillium* phylogeny think it likely that *Trillium* was derived directly from *Paris.* If this is true, and I consider it a likelihood, it is easy to understand why tetramerous specimens of *Trillium* occur. Simply stated these tetramerous specimens represent a partial reversion towards their original parents, *Paris.*

At the time when I first saw the tetramerous *Trillium hibbersonii* plant at the University of British Columbia there was no other such member of the species known in the entire world. Since then, one has appeared in the garden of Robert J. Hibberson in Victoria, British Columbia. Mr. Hibberson is the son of John Arthur Hibberson who discovered the plant in an isolated part of Vancouver Island. Whether this plant is genetically stable, or not, I do not know.

This season, 1972, a *T. hibbersonii,* tetramerous, appeared among the few of this species I have in my gardens. Up to this year the plant was a type species with parts in threes and multiples of three. It is likely unstable and may be expected to revert to the normal type. I can only hope I am wrong. I am saddened to know that there is nothing I can do to keep it but I am happy to have had it for one season.

* * * * *

REQUESTS BY MEMBERS—Wanted to purchase bulbs or seeds of the following *Galanthus* species: *graecus, elwesii, plicatus, plyphyllus, corcyrensis, octobrensis, olgae, rachelae, nivalis luteus, nivalis viridi-apice* and *nivalis* var. *scharlockii* or any of the other double forms, by Mrs. Raleigh Harold, 1034 N. W. Coast St., Newport, Oregon 97365.

COLLOMIA LARSENII

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

On a cold, wet, exhilarating day in near autumn of 1970, I was on a plant exploration trip on Mt. Adams, just north of the Columbia River in Washington, with Roy Davidson and Jim MacPhail. The mountain itself this day was shrouded in mists and the whole tenor of cloud and scape gave us all a feeling of being in Japan. There was definitely mystery in the air. The plants of the lower region around Bird Creek Meadows were mostly in seed except for the rampant patches of *Gentiana calycosa* and the lovely dank colony of *Mimulus primuloides.* But as we climbed, the plants were more and more riotous in bloom. And in the haunting light of the day they made unforgettable impressions; common enough plants—mimulus, lupine, pedicularis, arnica and other composites—but somehow more vibrant than I'd ever seen them. Add to these the bubbling waterfalls, the madly scurrying rills and creeks, the glowering sky, the mystical mountain, and this particular assortment of "plantnuts" and you have an idea of the sort of day it was!

We continued our leisurely ascent. I had my usual *idee fixe* about finding the rarest species reported from the area, *Campanula scabrella* (we never did although we had it on the best authority that it was "everywhere.") Beyond, Roy was meandering about from one happy discovery to the next, lost in wondrousness, and particularly eloquent about the forms of the alpine Penstemons here. Jim was camera-giddy, shutter-stoned! In our more mundane moments we were all looking for seed.

As we trekked ever higher, the startling winds of Adams began to swirl and sway, adding more to the drama of the day. Suddenly over a ridge we spied one of those special thrills of the higher regions, a stark and bleak talus slope, obviously dotted with classical-type alpine plants. We headed for the slope as if we were Scott and his crew heading for the Pole.

And here I first saw *Collomia larsenii.* It was a huddle of finely-dissected gray foliage with lavender, apricot-tinted tubular flowers, sessile on these beautiful mats. Roy recognized it. And, of course, then I could see the affinity to the ubiquitous showy annual, *Collomia grandiflora,* so noteworthy for its exserted violet-blue stamens. Here was the same effect only on a plant every inch an alpine. Its companion plants were also exciting; *Hulsea nana, Smelowskia calycina, Eriogonum hausknechtii,* among them. But again and again we marveled at the Collomia. Of course we had to try one or two. But the plant is tap-rooted with many branched rootlets and in that shifting scree the roots wandered about like drunken spaghetti. Very difficult! Suffice to say the following spring we had no Collomia.

The following year we again went in search of Collomia, mostly hoping for seed. This time the wind was enough to keep us near-recumbent most of the time. This is bonsai country to out-Caesar Caesar. Every pine tree *(Pinus albicaulis)* is stunted and whipped by these lashing winds into the most unbelievably gnarled shapes. You can imagine what the wind does to mere people. But Jim did manage to pot up *in situ* three plants of Collomia.

Collomia larsenii

James MacPhail

We planted one in a permanently glass-covered scree frame with a lean tufa-grit soil mix, one in a richly mixed trough devoted to North American alpines, and one in a pot with our usual alpine mix, ⅓ grit, ⅓ sand and ⅓ leafmould. All three survived, and indeed have been blooming beautifully on and off for four months now. They are not quite so compact as in their native talus, but they are in every way first class (and apparently growable) plants. They are kept dry all winter and at no time given too much water. We err on the side of drought in the watering of this plant.

Botanically, *Collomia larsenii* is a member of the *Polemoniaceae,* closely related to the Gillias, as anyone can see. *'Larsenii'* is really a variety of the only perennial species of these parts, *Collomia debilis.* However, when I saw *C. debilis* in its white form (it varies tremendously in color) in the Wallowa Mountains, of northeastern Oregon, it was less noteworthy than the Mt. Adams plants. The foliage was not so gray, the flowers were more in clusters than individually sessile—a good but not a great plant. However, the species is one of haphazard variation so we shall probably have to concur with the botanists about *Collomia debilis* var. *larsenii.*

The seeds collected germinated and quickly grew into good plants. But the surprise of all: one day as a matter of wildest speculation, Jim took some cuttings of half-ripe wood. The cuttings were taken about August 8, and by the end of the month had an almost 100% take. So if anything we are now in the euphoric state of being over-Collomia-ed. But next spring may well be another matter. This is still a miffy thing and a sideways glance can relegate it to its doom. There is still much to learn about Collomia. It would be interesting to hear how others fared who received seed of this plant from the 1971 Seed Exchanges.

JUST FOR FUN—POSTSCRIPT

SALLIE D. ALLEN, *Seattle, Wash.*

In the January, 1970 issue of the ARGS Bulletin, my article "Just For Fun" appeared. It described my first enthusiastic experience with trough gardening. I stated that I would report at a later date just what happened with my tiny experimental garden, and had fully intended doing so long before this. In response to letters from several kind members who wrote asking for a follow-up article, and considerable prodding by our persuasive Mr. Editor to do it *Now,* the following is an account of exactly what did happen:

It has been almost three and a half years since I first planted my little trough during which time I have learned a great deal about container gardening. Perhaps the most important single thing is that plants grown in this manner can be completely unpredictable, and will not necessarily grow the way you would like them to, or *know* they should. Despite some losses in plant material and several cases of completely unexpected growth behavior, I can say without reservation that I cannot imagine any gardening venture giving me greater pleasure.

They say that confession is good for the soul, so I shall begin with those plants that expired almost immediately. Sad as I was at the loss, I might have expected that *Lewisia rediviva* var. *minor* would be the first to go. The typical *L. rediviva* has never been an easy plant for me to keep on this, the western slope of the Cascade Mountains, even when very specialized conditions were provided.

The second loss was the rooted bit of *Pyxidanthera barbulata.* It undoubtedly should have remained in its pot and sunk in the ground at least another year before being transplanted to the trough. I like to think this is the reason for its demise, as it had grown well in the garden in the past (though never flowered). It seemed a natural for container gardening. I say "in the past" because my three plants of *P. barbulata* and two of *P. brevifolia* were among the very few losses in over 1200 plants and shrubs moved from the old garden to this one four and a half years ago. Once established I don't think they appreciate being disturbed. Happily, lovely plants of *P. barbulata* were sent to me just this last fall, giving me an opportunity to try again.

I was deeply saddened by my third and last casualty, the tiny jewel, *Ranunculus alpestris* var. *traunfellneri.* It was a perky little mound an inch across when planted, encouraging me by producing one delightful flower in the spring, but soon began to show its displeasure and after a few months disappeared completely.

In a charming letter from one of our very knowledgeable members, I learned that the Dianthus I had described as *Dianthus microlepis,* had probably come to me misnamed as the foliage of the true species is gray-green rather than the deep green of my plant. I am always most grateful when a member will take the time to write and correct an error in nomenclature. I'm sure we have all had the experience of purchasing a delightful plant despite the fact that we knew it was incorrectly named (but what is it?) so one wonders just how many, many other misnamed plants we acquire in blissful

ignorance, as was the case here. This particular Dianthus remained compact but grew at such a phenomenal rate that it soon had to be planted elsewhere where it could "do its own thing" without any restrictions imposed upon it.

The two little shrubbies that I *knew* would be ideal for my miniature garden were *Penstemon davidsonii* var. *serpyllifolium* and *Gaultheria hispidula.* From years of experience of growing them in the garden I *knew* they would retain their tiny leaves and their growth rate would be very slow, possessing all the qualities I was looking for. What did they do? They behaved identically, like naughty, willful children who had joined forces in an impish conspiracy. They grew and *grew* and GREW! The leaves enlarged, the stems elongated so that they looked stringy and untidy, and soon had not only grown over the edge of the trough but down the side to the ground. No amount of pruning improved their looks whatsoever. In utter disgust I dug them and planted them right back in the garden where they came from, in exactly the same soil used in the trough, I might add. To add insult to injury they have now reduced their leaf size, their growth rate has decreased, they are nicely branched and in every way are delightful to behold. One would almost think that they knew exactly what was expected of them but were not about to conform. Typical children!

As I had anticipated the possibility, little *Hebe propinqua nana* outgrew its allotted space in about eighteen months. Even so, it retained all of its natural characteristics which attracted me in the first place. It is now planted in a prominent spot in the rock garden where it never fails to attract the attention of garden visitors. It, as is the case of the many other whipcord Hebes in my garden, has never flowered, and is usually thought to be some unidentified dwarf conifer. In its place in the trough is planted *H. astonii subsessilis,* a much slower-growing species also of the whipcord group; the branches not quite as slender and the tiny leaves not closely adpressed. Taking a cutting or two so far keeps it in scale, and since it is always a favorite with gardening friends, it is pleasant to have little plants available to share.

Lest the reader is now coming to the conclusion that the entire experiment was a failure, I'll hasten on to the positive side to those original plants that responded favorably and the almost immediate replacements and additions that did likewise. The microform of *Vaccinium vitis-idaea minus* has retained its original tiny-leaved habit and has grown very slowly so that it has not become invasive. It was originally collected in the Fairbanks area of Alaska and does not scoot about in the manner of other plants collected in Southeast Alaska or those from eastern U. S.

I greatly appreciated a note from England relating their experience with the Pygmy Pine from New Zealand, *Dacridium laxifolium.* I learned that it was not considered reliably hardy there and is usually grown in the alpine house where its rate of growth is much faster than I had indicated. Unfortunately, I have neither alpine house nor any other protective manner in which to grow these plants of questionable hardiness, so it comes down to the point of sink or swim. If a plant cannot withstand what our variable winters have to offer, then it is not for me.

So far it has withstood three winters, two of which saw temperatures dropping to 8 degrees F. above, both with and without the benefit of snow cover. The trough has no protection, as it is on the far side of the driveway,

away from the house, with no large shrubs nearby. It is several inches off the ground, placed on two builders bricks, which are unobtrusive, and allow free drainage. I'm sure a better stand could be devised, which would be higher and would show off the plants to better advantage. I cannot be dogmatic about the hardiness of *Dacridium laxifolium,* however, because this winter, its fourth, is going to be a real test, with long periods of frozen ground, no snow cover and already a number of so-called hardy plants are severely damaged. It has remained slow growing, still looks healthy but never robust.

What could be sweeter or more satisfactory than *Saxifraga irvingii?* Although its growth is restricted considerably by the smallness of its rock crevice, it blooms faithfully each year. I am finally accepting the small form of *Celmisia sessiliflora* as an attractive foliage plant; it continues in good health but has never flowered. *Tofieldia pusilla* has increased slowly, the leaves have not elongated, and it still looks like the tiniest iris imaginable. I'm anxiously awaiting its first flowering in the trough . . . perhaps this spring! I know it can do it as it was in bloom when I first received the collected plant from Alaska.

Sedum liebergii has grown a bit faster than anticipated but not unusually so. When it mounds too far from its rock crevice, bits drop off on the soil beneath, rooting quickly and easily extracted for interested friends. The spring after the trough was originally planted, I was given a start of *S. brevifolium* with foliage like tiny white pearls evenly arranged in fours and closely packed along the half-inch stems, where at the base the pearls are soft green. It was immediately added to the trough and flowered profusely, white with just the subtlest hint of pink.

As a replacement for one of my misbehaving creeping shrublets, I planted a small *Bryanthus gmelinii,* a prostrate member of the Ericaceae family from Hokkaido. It was one of my smaller propagations from the original plant collected from the wild and sent to me many years ago. It is a much-branched little shrub, with very short needle-like foliage closely arranged to form a dense mat. The flowers are described as pink and wheel shaped, although my plants have never bloomed nor have I ever heard of it flowering in cultivation until just recently. A friend from Long Island wrote that the plant I sent him some years ago bloomed for the first time last spring, and as if it had finally made the supreme effort, turned up its toes and died. I now have plants of it in various situations around the garden; full sun, part sun, open shade, etc., to try to learn just what it takes to induce bloom. Perhaps the trough will be the answer!

Aside from the obvious challenge this little heath presents, I must confess that if it never flowers, it remains one of my favorites of the entire Ericaceae family. It has a lovely habit of growth and with each season the foliage changes; glaucous in spring, a good strong green in summer, a subdued reddish bronze in fall, deepening in winter.

In my original article I mentioned the possible need for a "tree" to balance the off-center placement of the rocky outcrop, a need that became more apparent as time went by. I wouldn't venture a guess as to the number of times I toured the entire garden with trowel in hand trying to locate just the right thing. Since my first thought had been an irregularly-shaped dwarf conifer, I kept returning to a very slow-growing, short-needled *Pinus mugo*

pumilio with a marvelous gnarled trunk. The only problem was that I liked it where it was and I was not convinced in my own mind that it would show off to advantage in the trough.

I also wouldn't venture a guess as to the number of flowering shrublets that suffered the indignities of being dug, practically bare-rooted, planted in the trough, twisted, turned and shoved, only to be pulled out and replanted in the open garden. None of them actually detracted from the miniature garden but they didn't add much either.

On one such tour of the garden I happened to notice what I would call a very poor excuse for a *Phyllodoce caerulea,* about three and one half inches high. It certainly was not the fault of the plant, but of Duffy, our "terrier-type" dog who loved to romp across the garden at that point, consistently breaking off branches of anything in his way. When I dug the Phyllodoce and looked at it with a critical eye, I discovered it did, indeed, have possibilities. It had an "arty" trunk where all the branches had been broken off completely, and where it began to branch those were quite short (pruned by the same method, no doubt). I have some simply beautiful large *Phyllodoce caerulea* in the garden, but curiously this one in the trough which proved to be the perfect "tree", has much shorter needles, smaller flowers and it blooms to perfection.

There have been no further changes in nearly two years. The losses in plants were undoubtedly due to my lack of knowledge of individual plants or of judgment. Other changes were because of the unpredictable nature of plants . . . bless them! I am sure the trial and error added that bit of spice that made the whole experience just that much more fun.

I almost forgot to mention the two strictly temporary residents of my miniature garden, *Saxifraga tolmiei* and *S. retusa,* awaiting what I hope will be the permanent home. You see, I have a new trough much like my little one in shape only considerably larger. Plans and possible plants to try are constantly running through my mind and I can hardly wait to begin!

* * * * *

GAULTHERIA AND CHIOGENES AGAIN—This time it is Robert B. Clark, of the Department of Parks, Monroe County, N. Y., who brings a bit of background into this discussion. He writes that on page 5 of the January, 1973 ARGS *Bulletin,* Barry Starling refers to *Gaultheria hispidula,* the creeping snowberry or moxie. On page 15 of the same issue, the editor invites discussion as to the "correct" name of this plant. He then writes, "I am not an authority on that group, however I am glad to submit the following: Professor Fernald, in Gray's eighth edition, p. 1126 writes: *Gaultheria hispidula* (L.) Bigel., Creeping snowberry, Moxieplum, Capillaire, Maidenhair-berry Petit thé or Oeufs de perdrix (Que.), and cites *Chiogenes* T. & G. as a synonym. Dr. Gleason in the New Britton & Brown *Illustrated Flora,* Vol. 3, p. 21 gives *Gaultheria hispidula* (L.) Muhl., with synonym *Chiogenes hispidula* Gray, B. & B., Small, Rhdb., . . . the species has usually been placed in a distinct genus adjacent to *Vaccinium.* The currently accepted name is *Gaultheria hispidula.* (Chiogenes) is not a part of the name and for clarity should be omitted."

PLANT HUNTING IN THE BULGARIAN MOUNTAINS

JOSEF HALDA, *Prague, Czechoslovakia*

Two days of quite toilsome driving by car from Prague to Sofia, in Bulgaria, come slowly to an end and above us are the ridges of Stara Planina. It is our hope that at last we need no longer swear at the phlegmatic walker on the road or steer carefully through the droves of cows, etc. We are through with the last of the climbing drive and above us are standing the shining cliffs of marble, most romantic in the sunset. In contrast there is a severe attack of a great many small flies. Somewhere below us is audible a small mountain river. Now, at the beginning of September, these mountains of Bulgaria are in their driest period. After some two hours driving south from Sofia we see the lights of the Rila Monastery in the distance. Then we follow a few kilometers on what, with a very good will, could be termed a very bad road. Then we are standing among trees to the trunks of which we affix our tent. Here, at an elevation of about 1200 meters it is cold, or so it seems to us who have just come from some very warm weather in the lowlands.

At four next morning I started to climb. After nearly running up the slope for a way I was no longer cold and so I continued up the valley of a small brook between granite banks and fields of large stones (all of these mountains are of acid rock). At the beginning I am accompanied by white bark pine, *Pinus leucodermis,* and the ground under the trees is full of interesting plants. Where the forest shade is lightest, *Senecio nemorensis* dominates, with *Doronicum austriacum, Ranunculus platanifolius, Rumex arifolius,* reddish-flowered *Centaurea montana, Peucedanum ostruthium, Geranium sylvaticum.* In the moister and more shaded places flourish *Aconitum judenbergense, A. wagneri, Anthriscus vandasii, Heracleum verticillatum, Angelica pancicii, Solidago virgaurea,* in a much taller form than grows on the ridges—up to 50 cm. Patches of *Cirsium appendiculatum* and sometimes *Urtica dioica* show that often sheep pasture here.

Shaded fields of boulders with small sources of water are covered with *Epilobium alpestre, Saxifraga heucherifolia, Myosotis palustris* and *Pulmonaria rubra,* which often blooms again with small red flowers that shine like jewels from shaded areas. All other space is filled with various large ferns and the ground between is densely covered by a carpet of *Stellaria nemorum,* mixed with *Chrysosplenium alternifolium* which is vivid yellow. The drier spots are occupied by *Calamagrostis arundinacea,* but in shade it is replaced by *Luzula nemorosa* with large rosettes of leaves up to 1 m long and 3 cm wide; its habit resembles some of the large Bromeliads. Here brooks are margined by a dense cover of *Cardamine amara.*

After two hours of walking, the high trees become more sparse and ahead appeared the first shrubs of *Pinus mugo* undergrown by *Bruckenthalia spiculifolia* which here replaces heather. Farther on comes large formations of *Nardus stricta* where the scattered stumps of *Pinus mugo* testify to the devastation of a beautiful bit of nature by pasturing. The best that can be expected is that in a hundred years a cover of blueberries and cranberries may appear, and a few hundred more years for the return of *Pinus mugo.*

On the brooksides are now more frequent screes with plenty of *Saxifraga cymosa, S. moschata* and *Cryptogramma crispa,* and on the miniature ridges of these screes are found shrublets of *Juniperus nana, Carex rupestris, Sieversia montana, Taraxacum bythinicum,* and the characteristic grass here is *Deschampsia flexuosa.* In moister crevices, among stones and below large boulders, *Arenaria biflora* form very thin, filigree-like carpets covered by minute white flowers and a mass of pretty small green leaflets and this cover is filled in by the shining golden yellow flowers of *Ranunculus montanus.*

Here at an elevation of about 2000 m.a.s. starts the typical sub-alpine meadows containing many low-growing plants. *Campanula orbelica* dominates the almost continuous cover of *Sesleria comosa,* (*Campanula orbelica* the dark violet sister of our own *C. alpina*). And everywhere around are the shining and dense compact tufts of *Dianthus microlepis,* each small clump with flowers of some different color. Its variability is so great that it is perhaps impossible to find two identical plants. The white, rose, pink, carmine or rose-violet flowers have their petals so variable in shape; rounded, elongate, entire or dentate. Some flowers have a red eye in the center and some are only rimmed in red. The white specimens usually have some darker star in the center. Likewise the leaves vary in shape and color, they can be bluntly or acutely tipped and their color from pale green, grassy green to dark green, grayish, bluish shades to silvery.

Among small rocks is often to be seen *Dianthus scardicus* with small white flowers on thin, to 20 cm high stems, which rise from very compressed tufts of minute, awn-shaped leaves. Often it catches one's attention by its pleasant fragrance before it is even seen. *Pedicularis ortantha* often leads to *Androsace hedraeantha* in the crevices. In the fall it shows again its pink flowers and with these grow the densely hairy and yellow-flowered *Hieracium rhodopaeum.* Among them grows *Primula longiflora* characterized by its long corolla.

Clumps of *Carex curvula,* with its slightly curved, thin leaves tells me that I shall soon see *Primula minima,* which does not bloom now though a few clumps are still covered with rose flowers with white eyes. But about it the area is full of the tiny annual, *Euphrasia minima* where shine the golden yellow small flowers on nearly leafless miniature stems. Many authorities tell us that Euphrasias, although they are very nice plants, are hard to grow. The same thing is said of Polygalas. I cannot agree as I grow several of the former in my garden and they do very well and are self-sowing.

Another distinct plant in this association is *Jasione orbiculata,* a minute plant whose flower heads resemble tiny Globularias. It produces a lot of small rosettes of miniature spathulate to nearly rounded leaves and during all the summer it produces many small, head-like inflorescences of soft blue flowers. It is miraculous that this, probably the smallest species of Jasione, is nearly unknown in culture, although it is not a difficult plant.

Senecio abrotanifolius ssp. *carpaticus* with its glossy and finely-incised and rich golden flowers on red stems is nearly ubiquitous, together with *Scleranthus neglectus,* which is nice for its silvery leaves but has inconspicuous flowers. Everywhere, among clumps of *Agrostis rupestris* and from the scree, are to be seen the snow white *Minuartia recurva,* blue *Veronica belli-*

dioides, rounded heads of *Phyteuma confusum,* which are nearly sessile in leaf rosettes. Dominating the stony fields are mostly *Luzula spicata* with reddish brown spikes, *Armeria alpina* with its pink heads, and now in autumn, old yellowish brown clumps of *Juncus trifidus.* Everywhere I find ripened fruits of *Crocus beluchensis* (close to our native *C. heuffelianus*), which give to this area a fine violet color. On drier spots are colonies of *Antennaria dioica* mixed with clumps of *Potentilla ternata*—a very nice alpine close to our *P. aurea.*

At an elevation of about 2300 m *Gentiana frigida* grows among the small rocks and is now in full bloom. In this place are flowers varying in color from pure white through yellow shades, pale blue to violet ones. Older clumps carry from 20 to 30 flowers and this is a wonderful sight. The small rocks are covered by carpets of *Cerastium lanatum,* an extra hairy form, *Saxifraga bryoides, S. cymosa,* very large mats of *Silene acaulis* var. *balcanica* with large, deep rose flowers and its constant companion, *Cherleria sedoides* with miniature greenish yellow flowers. At this elevation clumps of *Pinus mugo* are very scarce and around them in characteristic association are *Gentiana punctata, Vaccinium uliginosum,* big carpets of *Bruckenthalia spiculifolia* which varied here from pale rose to carmine (rarely an albino form), *Carex laevis* and *Calamintha alpina,* with small violet flowers. There are also a few scattered poor clumps of *Gentiana djimilensis.*

I am now above the Fish Lakes which are situated on the slope of Mt. Musala (2925 m), the highest mountain in Bulgaria, the second highest is Mt. Vichren (2915 m) in the Pirin Mountains.

The Rila Mountains, where I am now, were named after the old Slavic goddess of beauty, Rila. For the Turkish people, who occupied this country later, this name was pronounceable and acceptable, but the highest mountain they named Mus-Allah, Allah's Mount, today Musala. The Czech botanist, Velenovsky (died 1949), author of *Flora Bulgarica* (published in 1904) had found at the end of the last century a new Primula and after describing it deliberated a long time about what to call it. Finally he decided on an analogy: God's Mount (Mus-Allah)—God's Primrose, which he discovered here—*Primula deorum.* To this day this puzzles many botanists who do not know its origin.

Primula deorum is to be seen from 2000 m but the largest quantity of these plants is at an elevation above 2500 m. In the wet places and along brooksides and in damp, mossy spots, among *Carex goodenovii* and *Trichophorum austriacum* grow these miraculous and melancholy and beautiful primroses, together with large and rich clumps of *Gentiana djimilensis,* which is closely akin to the western European *Gentiana pyrenaica.* In association grow many minute *Primula exigua* (section Farinosae), *Pinguicula leptoceras* with relatively large and vivid violet flowers on thin wiry stems above flat, yellowish green small rosettes; mostly it inhabits the sides of clumps of *Eriophorum vaginatum, Primula deorum,* rosy *Allium sibiricum,* cobalt to blue to violet *Swertia alpestris,* blackish violet *Bartsia alpina*—all of these in large clumps of sphagnum. In the garden for *Primula deorum* and these other plants the ideal site is in the close neighborhood of a brook, or the moist scree.

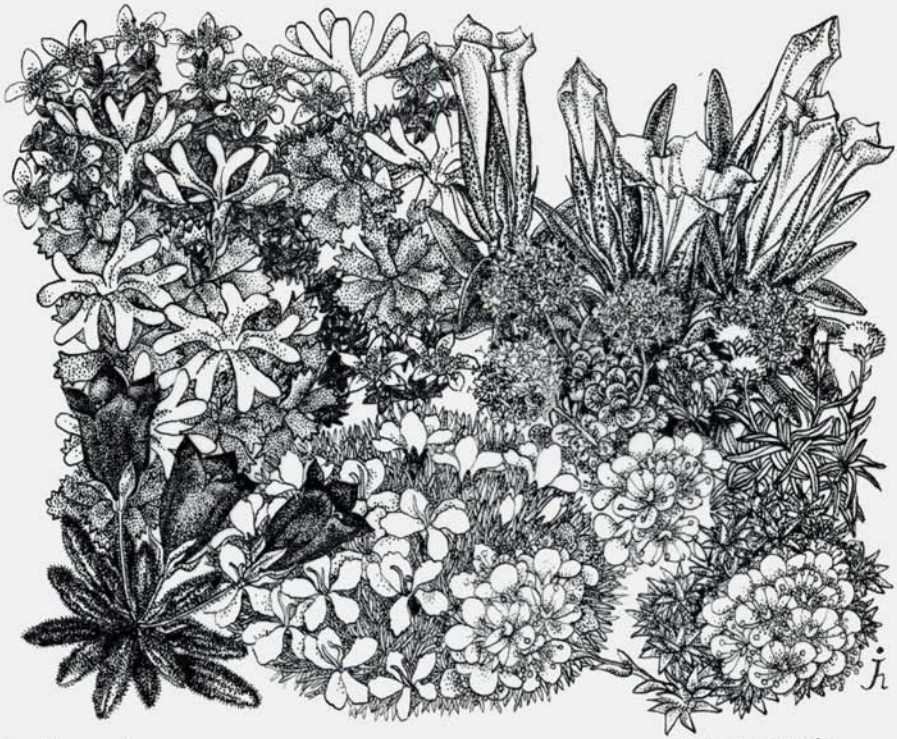
Primula deorum
Ranunculus crenatus
From the Rila Mts.

Swertia alpestris
Primula exigua

Gentiana djimilensis
Pinguicula leptoceras
Soldanella pusilla

J. Haldova

The north face of Musala seemed to be quite deserted from a distance but when I could look at it more closely I saw that it was really a paradise for the alpine gardener. All the cliffs are covered by the yellow-flowered *Saxifraga juniperifolia* ssp. *pseudosancta;* in crevices occur white to rose *Soldanella pusilla.* Other plants are white *Ranunculus crenatus* which has rounded and nicely dentate, leathery leaves, *Sieversia (Geum) reptans* with rich yellow flowers and reddish-haired fruits, carmine *Pedicularis verticillata,* yellow *Sedum alpestre,* reddish-tinged leaves in the sun, silvery mats of *Gnaphalium supinum* var. *balcanicum,* clumps of *Carex atrata* with blackish spikes and yellow anthers. Also the very beautiful *Saxifraga retusa (S. baumgartenii)* with carmine-red flowers with acute petals and dark green, glossy mats of the filigree-like tiny leaf rosettes, which grows together with *Saxifraga oppositifolia,* varying here in color from rose to bright carmine. In all spots with a good supply of sunshine are scattered clumps of *Gentiana frigida, Juncus trifidus, Homogyne alpina, Oxyria digyna* with small fruits turning to red, yellow-flowered *Doronicum columnae* and nice orange *Geum bulgaricum.* On sunny rocks in small crevices in full bloom are *Silene lerchenfeldiana* with white to pinkish flowers and nicely-cut petals, minute and low-growing *Potentilla haynaldiana,* tufts of *Cerastium lanatum, Draba carinthi-*



Saxifraga retusa
Primula minima
Campanula orbelica
From the Rila Mts.

Jasione orbicularis
Dianthus microlepis

Gentiana frigida
Gnaphalium supinum
Saxifraga juniperifolia var. *pseudosancta*

J. Haldova

aca, yellowish *Senecio transsylvanicus, Jasione orbiculata, Rhodiola rosea* and *Asplenium septentrionale,* which I admire.

Vegetation on the farther ridge is very poor and it resembles the tundra of the Far North. The main plant here is *Salix herbacea* and it is mixed with clumps of *Sibbaldia procumbens* with negligible yellowish green flowers, *Gnaphalium minimum* ssp. *balcanicum, Arenaria biflora, Soldanella pusilla Ranunculus crenatus, Veronica alpina* with minute blue flowers, small-flowered *Arabis flavescens* and among them are large mats of *Polystichum* sp. and *Primula minima.*

On the way back by the southern slope could be seen in grassy formations, composed of *Festuca vallida, Sesleria orbelica,* and numerous other grasses, such plants as the white or violet *Thlaspi alpinum,* plenty of *Campanula orbelica, Dianthus microlepis, D. pancicii* which is much larger and a very beautiful alpine with large carmine flowers and dentate petals. The altitude here of 2200 m is the limit of true subalpine vegetation; here ends *Armeria alpina, Silene acaulis, Cherleria sedoides* and *Geum bulgaricum.* Down to the forest go *Potentilla ternata, Ranunculus montana, Soldanella montana* var. *australis,* but the character of the formation abruptly changes. On the southern face grow *Pinus mugo* and *Juniperus nana* together with

Bruckenthalia spiculifolia and *Vaccinium gaultherioides, Scleranthus neglectus,* and *Senecio carpaticus* which are relatively high up. On the way down the plants in the meadow association are becoming taller—here occurs *Vaccinium myrtillus, Scabiosa lucida, Hypericum transsilvanicum, Centaurea* sp. with nice yellow flowers, plenty of violet *Gentiana moesiaca, G. punctata,* lots of *Crocus veluchensis, Myosotis alpestris, Achillea multifida* with white inflorescence, *Campanula abietina* with solitary flowers on thin, wiry stems, *Veratrum flavum,* lovely rose umbels of *Ligusticum mutellina, Geum coccineum,* violet and yellow *Viola macedonica,* and often there is *Botrychium lunaria, Thesium alpinum* and several Euthrasia and so many other plants. Lower, at about 2000 m is often seen yellow-flowered *Jovibarba (Sempervivum) heuffelii,* a relatively large plant.

The forest zone has less rich vegetation but there are masses of *Soldanella montana* and *Homogyne alpina* and many species of Rubus, Vaccinium, ferns and grasses. Perhaps it is interesting to be reminded that *Ranunculus riloensis* Velen., the yellowish white bog buttercup is endemic to Rila, but it is not a very attractive plant for the rock garden.

Should anyone visit the Rila Mountains they should not forget Rila Monastery, a very old orthodox monastery to this day with monks. Its walls are covered outside as well as inside by very beautiful and very old mosaics and pictures.

After three days on Rila, I left it for the Pirin Mountains which are about 50 km southward from there. The starting point is in Bansko from where a bus goes three times a day up to the Hotel Banderica which is situated at about 2000 m high and from there it is possible to reach a small hotel in about ten minutes.

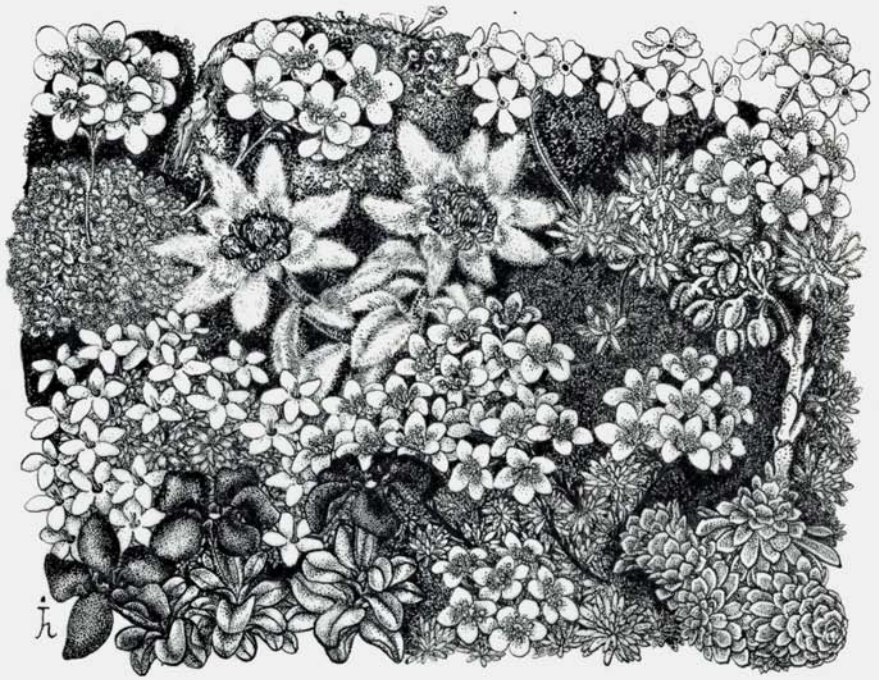
The vegetation of the Pirin Mountains is very near to that of Rila as both mountains are composed of granite and slate though the top of Mt. Vichren is of limestone. The first two things found close to the cottage that are scarce on Rila were *Cytisus sericeus,* all silky haired and resembling our *C. hirsutus,* and *Daphne oleoides* which here inhabits stony fields or grassy slopes abundantly and climbs up to 2300 m. Its flowers are white, rarely pale rose.

After starting the climb, the vegetation was found to be similar to that on Rila; *Dianthus microlepis* ssp. *degenii,* a yellow and very small *Linum capitatum, Soldanella pusilla, Veronica alpina, Arenaria biflora, Salix herbacea, Gentiana djimilensis, Pinguicula leptoceras, Primula exigua* and many others. At 2000 m starts the terminal part of Vichren which is limestone. This mountain is about 2915 m high (the data on mountain heights in Bulgaria show differently in various sources. Some consider Vichren the highest mountain in this country).

Here at the beginning of the limestone, vegetation changes in a few meters; here appears the very beautiful saxifrage, *Saxifraga ferdinandi-coburgii* forming mats up to one meter across with silvery, needle-like leaves in compact cylindrical rosettes. With it grow several other stone-crops; *S. aizoon* (now *S. paniculata*) var. *minor,* smaller in all respects than the type, *S. oppositifolia* var. *latina,* more robust than the type with silvery and bearded leaves, *S. luteo-viridis* (known also as *S. corymbosa* var. *luteo-viridis*) with yellow flowering stems, buds and flowers all densely haired and glandulose.

On cliffs and small rocks is *S. coriophylla,* quite hairy. Its non-flowering mats look like clumps of *Androsace helvetica* some places in the Alps. When blooming, it is white flowered with several flowers on a stem. Often growing together are *Saxifraga moschata* with greenish flowers and the white- and large-flowered *S. cymosa.* With these stonecrops grows *Androsace villosa* var. *arachnoidea,* a very nice alpine with white to pinkish flowers with yellow or rose central eye. Others are *Primula longiflora, Potentilla apennina* with white and rose flowers in a setting of a rich, silvery carpet of dwarf leaflets—it is smaller than *P. nitida.*

Omnipresent *Minuartia biflora* fills in each moister corner and is on wet rock walls. *Gentiana orbiculare* which is near to *G. verna* captures the eye with its rich blue flowers; rosettes are small, leaves blunt, rounded, somewhat between *G. verna* and *G. bavarica.* In the distance are the distinct mats of *Silene acaulis* and *Cherleria sedoides* which are present on nearly all the mountains of Europe. Also here is *Thymus hirsutus* ssp. *ciliato-pubescens,* one of the nicest thyme species with needle-like leaves, densely hairy and with rose flowers. Here it forms large carpets several meters across. From this low carpet is growing violet or white *Aster alpinus,* which is not too often seen here. The moister spots with thicker layers of humus are covered by *Salix reticulata* and *S. retusa.* Nearly everywhere is to be seen *Dryas octo-*



Saxifraga coriophylla

Silene acaulis
Gentiana orbicularis
From the Pirin Mts.

Androsace villosa var. *arachnoidea*
Leontopodium nivale
Saxifraga ferdinandi-coburgii
Saxifraga luteo-viridis

J. Haldova

petala in a minute form covering boulders and rocks. A relatively rare plant is violet *Erigeron uniflorus*. The pure white and long-haired *Leontopodium nivale* is very rare here.

These formations of plants cover Vichren on three sides, from the east, south and west. The northern side and especially the cauldron-like hollow has many species which are not seen on other parts of the mountain. Its bottom is formed by a moraine scree, but it is not easy to reach this spot. It is possible by climbing over a 50 m high, rocky wall (This way is not too difficult), or to descend from the main ridge down very sheer rock, but here people from the Mountain Service dislike to see tourists leaving the paths. The northern wall of Vichren is known as a relatively difficult terrain for alpinists (the 6th degree) for each year several people who are not too careful lose their lives.

To be continued.

* * * * *

ATTENTION TRAVELERS!—American Rock Garden Society members planning holidays in this country or abroad have written requesting information on private and public gardens they should visit and native plant areas where they can see alpines growing in their native habitat. With the increase of travel throughout the world there is need for a source of such information. If you plan to visit any country where we have an International Relations Committee representative, write to that representative and you will be supplied with the rock gardening and native plant information you desire. The committee representatives are as follows:

New Zealand—Mr. James R. LeComte, No. 2 R. D., Ashburton, N. Z.

Scotland—Mrs. T. A. Stuart, Millglen, Baledmund Rd., Pitlochry, PH 16 5EL, Scotland

England, Mr. Barry N. Starling, Little Marles Cottage, Severs Green, Epping Upland, Essex, England

Czechoslovakia, Mr. Joseph Starek, c/o Embassy of India, Valdstedjnska 6 Prague 1, Czechoslovakia

France—Mr. H. Ruffier-Lanche, Botanical Inst., 9 Place Bir-Hakeim, Grenoble, France

Canada—Mr. Rex Murfitt, 3673 Blenkinsop Road, Victoria, British Columbia

U. S.—Eastern—Mrs. William M. Flook, Box 3748, Greenville, Wilmington, Del. 19803

U. S.—Western—Mrs. Rodney B. Allen, 18540 26th Ave. N.E., Seattle, Wash. 98155

When writing please give full details, such as date of arrival, length of stay in the area or country, special gardening interests, if any, as there are many small specialists gardens that do not appear on tour lists as they are not generally open to the public. Allow enough time in case specific appointments need to be made. These International Relations Committee representatives will be happy to help you make your holiday a memorable one.

NOTES ON NOMENCLATURE

DR. EDGAR T. WHERRY, *Philadelphia, Pa.*

Plant classifiers have long been characterized as either "lumpers" who favor large, comprehensive genera and species, or "splitters", preferring small, restricted ones. In reviewing current literature, I have come to recognize a third sort, designated (in *Sida,* Vol. 3, p. 441, 1969) the "tossers," who unite more or less similar species differing widely in ecology and geography. Thus, in the 1966 Checklist of the *Vascular Plants of the Intermountain Region,* the dwarf Phlox of the desert highlands south of Ely, Nevada, which corresponding to the habitat is covered with gray wax and so was named *P. griseola,* was tossed into "synonymy" with the alpine Rocky Mountain *P. condensata,* in spite of this having thin, deep green leaves befitting that environment.

Attention is here being called to a case of tossing affecting representatives of our Society's emblem. In the *Contributions from the Dudley Herbarium,* Vol. 4, p. 73, 1953 (and concordantly in *Baileya,* Vol. 11, p. 84, 1963), *Dodecatheon amethystinum,* a native of eastern lowlands from Wisconsin to Pennsylvania, is tossed into "synonymy" with *D. pulchellum,* which ranges from southeast Alaska down the mountains to Durango, Mexico. Since it is contrary to all principles of American plant geography for an eastern lowland species to occur also in a far-western Arctic-alpine Zone, the relationship of these two shooting stars manifestly needs further investigation.

Even though the average rock gardener may not feel concern over nomenclatural quibbles, the respective cultural requirements of two plants so widely dissimilar in native habitat are of rock gardening concern.

Helping in the Seed Exchange—During the past autumn, Roxie Gevjan, Director of the ARGS Seed Exchange, arranged for me to spend several days with the Seed Exchange committee. Since it summarized the prevailing American views as to preferred choice of names where differences of opinion exist, Bailey's *Hortus* was primarily followed in selecting the names to be applied to seeds received. There were, however, other considerations. Thus, our eastern gentians are largely grown under incorrect names because the illustrations of the species in the widely used Britton & Brown *Illustrated Flora,* and accordingly in works based on it, are inaccurate. Two years ago *Gentiana linearis* was distributed in the Seed Exchange as *G. andrewsii,* a very different plant. It accordingly seems wise to refer to east American gentian seed as representing merely "blue-bottle species."

Then, when seeds came in of plants which can become weedy, it was decided not to include them. Two cases may be cited: *Linaria vulgaris,* Butter-and-Eggs, sends out slender rhizomes which yield innumerable leafy shoots. And *Pinellia ternata,* a dear little Jack-in-the-Pulpit, produces in its stems hidden bulblets which scatter around, each to yield a shoot and form a veritable pygmy forest. A rock gardener who tries to eradicate this is likely to use for it an adjective which does not end in "ear." The only way to get rid of such plants may be to rebuild the whole rock garden, so it is better not to invite them in at all.

In the course of straightening out the nomenclature of our 1972 Seed List,

I overlooked one case, for which my apologies are due. This concerned No. 1976, *Plagiorhegma (Jeffersonia) diphylla.* The genus name *Jeffersonia* was published many years before *Plagiorhegma,* so in accordance with the fundamental principle of priority is the valid name for the American Twinleaf, *Jeffersonia diphylla.* What name shall be used for the Asiatic relative is a matter of opinion. It was originally named, by a "splitter", *Plagiorhegma dubia,* and is quite reasonably kept in this distinct genus. When "lumpers" got busy, however, the two genera were combined. Under this viewpoint, the principle of priority requires the acceptance for the Asiatic plant the combination *Jeffersonia dubia.*

OENOTHERA ANDINA var. *HILGARDII* (GREENE) MUNZ 1928

ROY DAVIDSON, *Seattle, Wash.*

An ARGS field trip to the east Cascade foothills of central Washington in mid-June disclosed a "new" little annual which completely charmed everyone. Usually annual evening primroses are very easy to overlook or to forget, being so inconspicuous, but not this one. Our first sighting of it was along the shoulder of the road on the floor of Kittitas Valley where it flourished in the disturbed soil with extra moisture from the roadway. By contrast, just across the fence in the stiff clay of the stony pasture it was no cause for jubilation and would have been passed by without a second glance. Its response to the encouragement of the roadway disturbance and extra moisture did not give it a weedy aspect, only the promise of what an attractive thing it might well be in the garden.

But why an annual Oenothera in the garden? One would have to see it to understand: little mounded bushlets 3-4 inches high, free-branched and filled with long, narrow, clean-green leafage, each branch ending in a little nosegay of soft lemon yellow, as the best of the genus are, each blossom a third the size of a dime! The effect was as appealing as the little bouquets of pure amethyst happen similarly on the ends of *Collomia debilis* branchlets.

This plant was first described as *O. hilgardii* Greene in 1888 from the collection of Hilgard from "Klickitat swale, Washington territory," July 1882, and was removed with others of its ilk to the genus *Sphaerostigma* for a while, where it was called *S. andina* var. *hilgardii* A. Nelson 1905. In his 1928 Monograph, Munz reunited that genus to *Oenothera* and this little plant became a variety of *O. andina.* However, it did not rest in peace! Raven would have us call it *Chammisonis hilgardii,* with full species rank in that genus, and Peck related it to an entirely different *Oenothera, O. contorta,* as a variety thereof; the differences that distinguish *O. andina* and *O. contorta* are mainly in the very distinct capsules.

The subject differs from the typical *O. andina* only in more ample blossom—purely a case of splitter's taxonomy, but one the horticulturist should be according the applause of appreciation, for this phase of an otherwise worthless weed is deserving. There seems to be no record of this annual

plant in cultivation, a situation that was very promptly attempted correction. Seed should be ample and easy in a heavy and hot soil, very wet in early spring. It may find a good use in the spaces where Crocuses and other early bulbs have left a bit of open area, and a prettier filler could not be wished for.

1973 ANNUAL MEETING

Milwaukee, Wis. June 1 - 3

The Milwaukee Inn, a downtown motel in Milwaukee's East Town, overlooking Juneau Park and the city's beautiful Lake Michigan harbor, is the scene. Nearby is Milwaukee's Art Center. Great effort is being made to make this an eventful, worthwhile meeting.

Friday evening, following the banquet in the Great Lakes Room, our featured speaker will be Mr. Olafur Gudmundsson, ARGS member from Reykjavik, Iceland. Mr. Gudmundsson is the Editor Of Publications of the Islandic Garden Society, its Seed Exchange chairman, and a very knowledgeable plantsman. He is a heavy contributor to the seed exchanges of the ARGS, the Alpine Garden Society and Scottish Rock Garden Club. He has contributed articles to many publications, including our own *Bulletin*. Mr. Gudmundsson will give a photographic slide lecture on the flora of Iceland.

A plant show, under the capable direction of Carl A. Gehenio, Chairman, Allegheny Chapter, and Gerald Berg of Wisconsin-Illinois Chapter, will be assembled. Judging will be completed by 9:30 Saturday morning, June 2. Following the Annual Business Meeting Saturday morning, buses will depart for tour at 9:45 A.M., returning Saturday evening at 5:30 P.M.

Those not wanting to take the tour on Saturday will have available, courtesy of Milwaukee Inn, a station wagon and driver to take them to Milwaukee's new Public Museum, the new Performing Arts Center, Milwaukee Art Center, and shopping in Milwaukee's East Town, noted for its exclusive shops and Old World dining places.

The Saturday tour will take us to members' gardens, then to Boerner Botanical Gardens at Whitnall Park—one of the country's finest arboretums. A catered lunch will be served at the Gardens. Following the lunch, we depart for Chiwaukee Prairie, one of the few virgin wetland prairies left in the country. It runs to the shores of Lake Michigan. We promise height of the season bloom of *Dodecatheon meadia* (knee-high swales of it) and countless other jewels. Our guides will be professors and students from the Botany Department, University of Wisconsin-Parkside Campus.

We leave Chiwaukee Prairie for Hawthorne Hollow Preserve, created by Wisconsin-Illinois Chapter members, the Teuscher sisters. They have been guided in its development by Mr. Clarence E. Godshalk, Director Emeritus of the famed Morton Arboretum of Lisle, Illinois. Here we have more prairie (dry), a woodland and rock gardens enhanced by a collection of dwarf conifers.

Our final stop will be at Milwaukee's famed Mitchell Park glass-domed Conservatories, where electrically controlled environment is provided for plants from many regions. We shall see here award-winning entries of the

Milwaukee Cacti and Succulent Society, which were judged earlier in the day. Cocktails will await us when we arrive back at the Milwaukee Inn, 5:30 P.M.

The featured speaker for the Awards Night Dinner, Saturday evening, will be Dr. William C. Steere, recently retired Director of the New York Botanical Gardens. Dr. Steere, among other notable achievements, is an authority on the flora of the Arctic. His collection of superb photographs of arctic flora will be on display at Boerner Botanical Gardens for 30 days prior to and including our visit there.

Sunday morning, June 3, the plant sale will be the main feature until termination of the Annual Meeting at noon.

NOTE: Distant members wishing to ship show competition plants or plants contributed for plant sale, may ship them to:

Mr. John Voight, Director, Boerner Botanical Gardens,
5879 South 92nd Street, Hales Corners, Wisconsin 53130.

Send plants baled and wrapped or in containers. Mr. Voight will have them "heeled in" in shaded cold frames and held for the meeting. Plants will be taken to the Milwaukee Inn for you and given proper care at all times.

A post-convention tour is scheduled for a trip to Wisconsin's Door County Peninsula. It's frequently referred to as a "bit of New England." See March 1969 issue of *National Geographic* for a full description of this unique place. We are, of course, drawn by its pre-glacial, arctic and subarctic flora. For those members who have reserved accommodations, we leave Milwaukee Inn at noon, June 3, in air-conditioned, lavatory-equipped, almost new bus. We shall visit members' gardens enroute. We reach Baileys Harbor Yacht Club at 5:30 P.M. Following dinner, we proceed to Baileys Harbor Town Hall, where Roy Lukes, Resident Naturalist and President of the Ridges Sanctuary, a national monument, will entertain us with a photo slide show of the four seasons in the Sanctuary.

The following morning, Monday, June 4, we tour the Ridges Sanctuary under the leadership of Mr. Lukes. Next we will visit another nearby spot, Toft's Point, where many rare plants prosper, including *Primula mistassinica.* We proceed from Toft's Point along the Lake Michigan side of the Peninsula to its tip at Gills Rock, thence down the western side of the Peninsula beside the relatively placid waters of Green Bay, to Ellison Bay for a brief stop at "The Clearing," which was created by the late famed Chicago landscape architect, Jens Jensen, whose vision of over 30 years ago was decades ahead of his time and, in fact, decades ahead of today's Ecologist-Environmentalist Movement.

We proceed from "The Clearing" to Sister Bay for lunch and then nearby to member William Beckstrom's Red Barn Plant Farm. Here you can carry home, in space provided in the bus, many choice alpine and rock garden plants. We complete the circle tour of the Peninsula after leaving Mr. Beckstrom, returning to Baileys Harbor Yacht Club for dinner and informal program that evening.

We depart from the Yacht Club after breakfast Tuesday morning, June 5, for return trip to Milwaukee. A lunch stop enroute. Also members, gardens along Lake Michigan's western shoreline. We reach Milwaukee Inn, Tuesday, June 5, at 5:30 P.M.

Air travelers to Milwaukee should use Milwaukee airport, served by many of the major air lines. The Wisconsin-Illinois Chapter is making diligent efforts to make your visit pleasant. A final word to Show contestants: Show schedule will reach you from our national secretary not later than April 1.

Donald E. Havens, Chairman Wisconsin-Illinois Chapter

THE DWARF CONIFER: A CENTENNIAL OF POPULARITY

JOEL W. SPINGARN, *Baldwin, N. Y.*

Our mode of living is constantly being improved by an advancing technology and it follows that this change effects our avocational interests as well as the more serious aspects of everyday life. It is quite natural for the hobbyist to strive for perfection in the pursuit of his hobby. The golfer endeavors to improve his swing; the hunter his acumen in tracking the game; the artist his feel for good composition, color and sense of proportion. Many of the same attributes that comprise a work of art similarly apply to the creation of a beautiful garden. The garden becomes a work of art if serious thought, in its planning, be given to composition when planting out flowers, trees and shrubs. Their placement as to size, in order to use one as a background for another, or as a foil to enhance a floral display, or to create a contrast in texture of foliage, all contribute a measure of beauty. It is certainly artistic to group compatible colors of foliage and flowers together and to eliminate or subdue those that clash. A beautiful garden, like a work of art, also includes good proportion. With this thought in mind, today's gardeners are taking into account the fact that the average suburban lot has shrunk in size considerably in the past fifty years.

The gardening-inclined owner of a new house is very fortunate, indeed, to have a lot in excess of a quarter of an acre. Contemporary architecture frequently demands low spreading homes that require a good deal of ground. Add to this the driveway, walks, patio, children's play area etc., and it becomes apparent that we must choose plant material with considerable care, with emphasis on the slow-growing and low-growing forms, or all the effort and artistic ability expended in the planning of the garden will go for naught in a few years. The arborescent material that graced homes in the past would be out of place today, soon robbing the limited area on which we hope to pursue our interests, of light, air and space. While we still find an occasional arborescent tree peeking in a bedroom window, this intrusion of our privacy is diminishing as our sense of proportion in landscaping increases. This sense of proportion dictates the need of our seeking plants of dwarf stature that are in scale in our small gardens and it is reasonable that this search leads to the dwarf conifer.

Since gardeners were informed of the existence and beauty of dwarf conifers for use in cultivated gardens by Mr. Murray Hornibrook in 1923, these gems have never gained such wide acceptance and affection as they have today. They are a group of plants that have not only found a niche in today's garden scheme, but have become a staple item with a multitude of

A grouping of dwarf conifers of different shapes, colors and textures provide interest the year round

Joel Spingarn

uses in the well-planned garden. It is not uncommon to find them used in foundation plantings, as lawn specimens, as dwarf hedging plants, as ground cover on both sunny and shady sites and the pygmy forms are certainly at home on rock, trough and sink gardens, Additionally, their use for bonsai and as pot plants is unexcelled.

The one deterring factor to their increased use is the unfortunate fact that they are rarely available in specimen size and if one is lucky enough to locate a specimen, its high price is rightfully commensurate with the length of time required to attain its size. Dwarf conifer buffs find the logical answer to the problem is to keep a stock of small plants coming along. As they attain landscape size, they can be used to replace those plants that have become open and rank growing and that have generally lost their usefulness.

The question now arises as to where to purchase dwarf conifers. They are not so readily obtainable that one can go to any nursery expecting to find a selection and it is a notorious fact of horticulture that many dwarf conifers are flagrantly misnamed in the trade, so that obtaining a plant by name alone is a very risky business. It may take a number of years to determine that a new acquisition is not as slow growing as expected or possibly not dwarf at all, or once well established, the plant may bolt, putting on excessive growth and becoming arborescent. By this time the seller could be out of business or just not interested so the only course left is to start again, obtaining plants known to be true from a reliable source. It would be wise for the potential purchaser to request seeing the stock specimen plant if possible. In this way some idea as to the ultimate size, outline and suitability for its eventual site may be determined.

An important factor that influences the rate of growth of dwarf conifers is the method of propagation. Plants that have been raised from rooted cut-

tings are to be desired, these being more dependably slow growing and less apt to revert to their stately parentage. Grafted plants are often influenced by the understock which can substantially increase the vigor of the plant, causing it to lose its dwarf stature entirely. It is a fact, however, that grafting is the only way that many forms can be propagated and when such is the case, there is no choice but to accept a grafted plant. This is particularly true in the genera Pinus, Cedrus and Pseudotsuga but additionally, many forms in other genera must also be grafted. An example of this is the weeping form of the blue Colorado spruce, *Picea pungens* 'Glauca Pendula'. Many spruce can be rooted but this form defies all attempts. The vast majority of varieties of Chamaecyparis, Cryptomeria, Thuya, Thujopsis, Podocarpus, Taxus, Sequoia and Juniperus are easily rooted, so grafted plants of these genera should not be accepted except in rare cases.

The neophyte may find this a rather confusing business, so here again it is advisable to go to a reliable nurseryman whose aim is to produce plants on their own roots wherever practical. An innovation for the propagation of forms that require grafting is to use another easily rooted, compatible dwarf conifer as an understock which has less inclination to spur the plant to excessive growth. This, of course, is very time consuming and therefore costly but the conscientious grower of these plants is constantly endeavoring to improve his stock. It should be mentioned that the dwarf conifer, no matter how dwarf, will continue to grow a bit each year and that it will require light and space to remain beautiful. The ultimate size in a period of years should be determined before choosing a site, and the possible transplanting in the future to another site should be planned if it is to be planted near other shrubs. An occasional root pruning (about every three years) with a garden spade is good practice. This will slow the rate of growth and also induce the growth of new fibrous roots that make it an easier task to move the plant without serious setback when it is required.

The ease of cultivation of these plants is another attribute that has endeared them to today's mass of gardeners. For those of us who require the bolstering of our spirit by beauty in the garden and do not have the time nor the inclination to deal with more challenging flora, the dwarf conifers' needs are simple and their rewards great. Of course, anything said in praise of the dwarf conifer does not imply disfavor of the more difficult to grow plants and my hat is off to the adventurous gardeners who attempt their culture. Should the challenge be met with success, and a rare, difficult plant be successfully grown, what better background could be provided than a dwarf conifer to enhance its beauty? They will thrive on any lime-free, well-drained soil that is not overly rich in organic material and once established, require very little attention. An occasional spraying with a combination of insecticide and miticide such as Sevin and Kelthane is beneficial to eliminate pests that have an affinity to the compact growth of these plants. Fertilization is not required if proper planting procedure has been followed. When planting, if the soil is low in organic material, the incorporation of compost or peat moss is beneficial but care should be taken not to overly enrich the soil. If fertilization be required on established plants, it should be of a slow-acting organic type and used in small quantities. The annual application of iron chelates is also beneficial to maintain good color.

The recent publication of the two books * on conifers may be helpful in selecting plants, and articles appear from time to time in various horticultural publications pertaining to the subject but it is difficult to make a wise choice without seeing the plants. Individual preference in plants is extremely varied, some preferring the very diminutive, some the color and variegated forms, and some the open alpine look, just to mention a few. The wisest procedure would be to visit, where possible, collections of dwarf conifers. These can be found at the United States National Arboretum, Washington, D. C., The Brooklyn Botanic Garden, Brooklyn, N. Y., The New York Botanic Garden, Bronx, N. Y., The Arnold Arboretum, Jamaica Plain, Mass. and The Strybing Arboretum, San Francisco, Calif. Excellent collections may also be found in some collectors' gardens and it usually takes only a letter or a phone call to arrange a visit.

Murray Hornibrook wrote that dwarf conifers reached the high water mark of their popularity early in the 1870's for in contemporary catalogues of the time one found as many as forty-one dwarf forms for sale although they were rarely used properly except in Japan. Today it is not uncommon to find collectors listing as many as five hundred different kinds. So one hundred years later we find more than ten times the number of dwarf conifers available but I believe the interest in these gems has increased substantially beyond that point now that they have found their proper place in our gardens.

**Dwarf Conifers*—H. J. Welch and *Manual of Cultivated Conifers*—Den Ouden and Boom.

Tsuga canadensis 'Pendula'—Sargent's weeping hemlock being used as a lawn specimen

Joel Spingarn

AN UP NORTH JANUARY

KENNETH ROBERSON, *Glennallen Alaska*

Bitter cold, bone-chilling cold, a searching cold that seeks out every remnant breath of residual heat left in this frozen country. It's January, and the sun still spends a great part of its daily journey below the horizon and ventures only slightly into the northland sky as if awed by the cold. At midday the temperature may struggle to reach 30 degrees below zero. To the east, Mt. Drum and the other Wrangall Mountains soar into blue skies as if to escape the ever-deepening icy hush over the land. Glennallen rests in the middle of a spruce forest in this stalled car and broken water pipe river basin of the Copper River. In summer the country is warm, but in January propane occasionally will not flow unless heated, oil bills mount and beneath a fragile mantle of snow across the landscape all but the largest of the floral denizens lie dormant; the larger shrubs and trees merely exist.

Tall species poke dried or barren stalks into the frigid air but most lay beneath the white blanket awaiting a warmer season. Willows protrude above the snow only to become moose fodder; smaller shrubs succumb to camouflaged snowshoe hares as they struggle to survive the winter. Dry-stalked yarrow, *Achillea borealis,* raises its brown head with flecked white ray flowers still showing as if to view the winter scene. Tall fireweed, *Epilobium angustifolium,* shafts with dried flower pedicels and leaves that rattle in the wind can be seen casting shadows on a cold white crystal carpet. Beneath the snow one can only guess at the appearance of the myriad species common to this northern clime.

In which way does the tiny single flower, *Moneses uniflora,* spend the winter? How does the fragile orchid such as coral root, *Corallorrhiza trifida,* with its strange root tuber buried in woods moss protect itself to spring forth year after year, its white lip measle-spotted with purple? Dried leaves of *Dryas integrifolia,* leafless live twiggs of *Andromeda polifolia, Vaccinium uliginosum* and a multitude of sedge stalks lie quietly enveloped in natural packing near an ice-rimmed spring slowed from its summer pace through moss-covered stones.

Further into the silent woods, quaking aspen, *Populus tremuloides,* present a stark countenance to the persistent cold while black spruce and white stand with boughs weighted by month-old snow with little but a mat of moss buried under the white mantle beneath them. Nearby on a silty river bluff, dormant roots and dry, wrinkled leaves of the pasque flower, *Pulsatilla patens,* await the coming of spring to push up its flower of royal purple and rich gold which fades when the sun reaches higher to melt the remnants of a winter's accumulation of snow. Clumps of kinnikinnick, *Arctostaphylos uva-ursi,* trail their evergreen leaves and long runners under the white, wind-packed crust while down the bluff prairie sagewort, *Artemisia frigida,* and rose, *Rosa acicularis,* lie rigid and still engulfed by the yard-deep white sheet and yet protected from the intense cold hovering above the snow.

January, the coldest month, a time when the only flowers are ice rosettes. The floral denizens lie still and dormant awaiting the first warm

"Tall species poke dried or barren stalks into the frigid air"

Kenneth Roberson

breath of spring, waiting, waiting for the short growing season in which they race to complete sufficient growth to leaf out, bloom, set seed, dry and wither, to fall beneath the onslaught of fall winds and early snows and be held prisoner under a crystalline muffle for more than a half year. A January walk over a summer-traveled path can bring back the Andromeda, Artemesia, Dryas, and Pulsatilla, if only from memory, to enjoy during the winter season of a barren northern clime.

* * * * *

REQUESTS BY MEMBERS—Wanted information as to possible sources of supply of seeds and plants of the following species of *Thymus: membranaceus, herba barona, pectinatus, nitidus, caespititius (micans),* and *carnosus* by Mr. Philip S. Cheney, 623 N. E. Brazee, Portland, Oregon 97212.

* * * * *

1976 IS COMING NEARER—Yet it will be some time before the details can be definitized and brought to the members of the various interested societies. Right now this 1976 Conference is but a bright star seen at a distance. We can be fascinated by it and the promise it holds; the promise of a fine opportunity to acquire new knowledge, visit new scenes, renew old friendships and make new friends; even to mingle with lovely alpines new to one in their beautiful habitats. As this star grows brighter and nearer, we must renew our efforts to be present here in the Northwest when its light (the reality of the Conference) bursts upon us. We must be ready and present. Let's work toward that end!

TWO UNIQUE PLANTS FOR THE ROCK GARDEN

DR. NICKOLAS NICKOU, *Branford, Conn.*

About three years ago, I made an observation which stimulated me to study the first of these two plants more fully. Exploring a number of references revealed no similar observations. I had apparently found a plant whose viviparous ability had not been previously described—at least not in the references available to me.

Whether other species of the genus *Heloniopsis* display this characteristic I do not know as I have only grown *H. breviscarpa.* It is a member of the Liliaceae with evergreen, basal leaves looking much like a sedge when not in bloom. The spatulate, pointed leaves bear tiny plantlets at their tips in late summer and fall. Each little replica of the parent has two leaves, each about ¼″ to ⅜″ long and one or two roots about ½″ long. It appears to be a long-lived plant—the clump becoming larger each year and with a tendency to have a larger percentage of plantlets at the leaf tips as the years go by.

The attractive pinkish flowers are borne on 8″ scapes quite early in the spring and even in seed the plant makes an eye-catching accent in the rock garden.

All of the species are native to Japan and Formosa which brings up another unique feature of the genus. It is mentioned in Asa Gray's 1859 paper ". . . observations upon the relationship of the Japanese flora to that of North America . . ." based on the study of plants collected by Charles Wright, Botanist of the U. S. North Pacific Exploring Expedition.

The related plant, of course, is *Helonias bullata,* the Swamp Pink, found in certain boggy areas from New Jersey to North Carolina. This discontinuous distribution of closely related or similar species—particularly those involving eastern Asia and eastern North America—has been attributed to glaciation and the resulting Pleistocene shift.

The study of plant relationship makes fascinating reading and the recently reissued *Floristic Relationship between Eastern Asia and Eastern North America* by Hui-Lin Li is worth any plantsman's attention. A broader picture of plant distribution is to be found in a number of texts—particularly *The Geography of the Flowering Plants* by Ronald Good.

Now for an admission. A year or so after I noted the viviparous habit of *Heloniopsis,* Will Ingwerson mentioned in one of his articles in the *Gardeners Chronicle* that *Helonias* also bears plantlets at the tip of leaves which touch the soil. I have not observed this on my plants of *Helonias.* The plantlets on the leaf tips of *Heloniopsis* are borne without soil contact—similar to the complete plantlets borne on the margins or leaf tips of some species of *Bryophyllum.*

One wonders whether the viviparous proclivities manifest in *Helonias* and *Heloniopsis* could have originated in some ancient ancestor which in turn passed the germ plasm carrying this unique characteristic to its progeny.

The culture of this plant is simple. It is easily divided and has no exacting soil requirements. I'm sure that a moderately moist, ordinary rock garden soil mixture would be satisfactory.

This fall, I snipped off about twenty leaf tips with plantlets attached and planted them in a plastic box containing moistened milled sphagnum. They immediately started growing and at present—one month later—on Oct. 24—they have four to six leaves about ½″ to ¾″ long. If they thrive or even survive under my basement fluorescent lights, I'll put them out next spring and possibly have a better way than division to propagate the species.

While on the subject of cultural requirements, I'd like to correct an oft repeated misconception of the requirements of *Helonias*. Almost all references stress its bog origins and its strict requirement of bog-like garden conditions. This is not so. It does well in soil which would satisfy most perennials plus a moderate amount of moisture. One does not need boggy conditions to have this attractive, early spring-flowering native which has been kept out of gardens by misinformed advisors. It blossoms best when it gets a moderate amount of sun.

The other unique plant which makes a fine rock garden subject is *Tripetaleia paniculata*. It is a small, deciduous, ericaceous shrub which is quite hardy and is a long time reaching two feet in height. If placed with this in mind it would not outgrow its location for many years.

One's first impression on seeing it for the first time is that it resembles some members of the Rhododendron subseries Schlippenbachii—particularly a small *R. reticulatum*. The other known species *T. bracteata*, is also of Japanese origin, but less well known.

It's a tidy little shrub and when grown in considerable sun, the leaves take on an attractive reddish-brown cast. Another useful feature is that it bears its white panicles of flowers in early August when the rock garden can use a lift.

The unique feature exhibited by this plant is that it has a three-petalled corolla very unlike the usual ericaceous plant. When finished blooming the three-lobed capsules are also unique. This genus is also of phytogeographical interest in that it is closely related to *Elliottia racemosa* which is a native of South Carolina and Georgia, thus fitting into the theory of Pleistocene disjunction.

Tripetaleia paniculata is easily grown in a medium which satisfies dwarf Rhododendrons and other lovers of moist, well-drained, humusy soil. My luck in growing *Tripetaleia bracteata* has not been as good. After three years my seedlings remain tiny and are not thriving.

I have not seen *Heloniopsis* or *Tripetaleia* in any gardens I have visited, so I feel that a bit of proselytizing is in order. Also, I urge all gardeners to know more about the plants they grow. Unique aspects of culture, origin or morphology can be studied by observation or reading. Even the entrancing adventures experienced by the collectors who supply us with the new and rare make for great reading and broaden us in this exciting avocation.

* * * * *

DORETTA KLABER'S WORKS—There will be an exhibition and sale of Doretta Klaber's flower drawings, life size, in color, at Caravan House Galleries, 132 East 65th Street, New York City from May 9 to May 26 inclusive. It is expected that her new book, *Violets of the United States,* also will be on sale at the Gallery at that time.

THE ELUSIVE SHORTIA– OR HOW NOT TO IDENTIFY A PLANT BY ITS LEAVES

MARTHA PRINCE, *Locust Valley, New York*

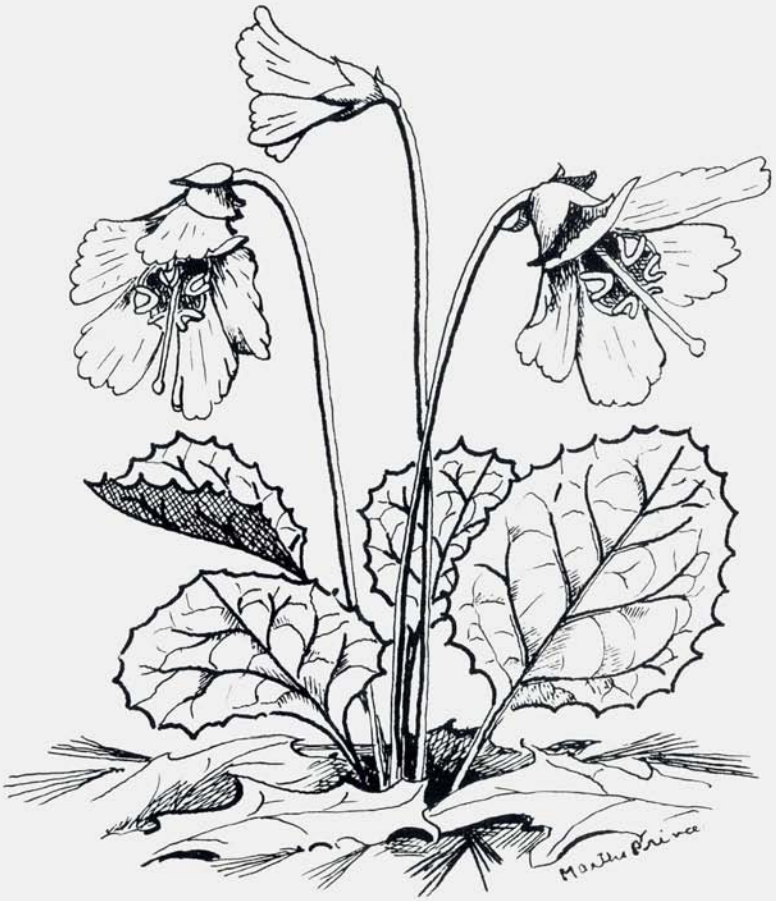
I know of no more beautiful plant than our American native, *Shortia galacifolia.* I am a Georgian, and so have been automatically entranced for many years by our two Southern "mystery - romances," *Shortia galacifolia* and *Franklinia alatamaha.* If you are unfamiliar with Shortia, you must get acquainted; if you do not grow it, you should. This is, of course, if you have an area of acid soil woodland. The single white flowers nod daintily above the forest floor. There are five delicate, scalloped petals (reminding me of the edging on old-fashioned baby collars), five large, heart-shaped yellow anthers, and the strong contrast of a semi-transparent pink stem and a calyx of five pink sepals and some bracts. With the semi-prostrate, evergreen leaves, the result is perfection! And Shortia is on a rock gardener's scale—the plant is perhaps five inches tall (when in bloom) and the flowers are only one inch or a little more in diameter.

This winter, my husband and I were walking in the North Georgia woods. The hillsides were solidly walled in *Rhododendron carolinianum,* and our purpose was to collect seeds from as many plants as possible (we are members of the American Rhododendron Society, as well as of the A.R.G.S.). There is great variation in the species; we found one plant which had borne up to twenty-three florets to the truss!

As we walked along, we came upon patch after patch of our also beloved *Galax rotundifolia* (*G. aphylla*—has the dispute been settled?). I happened to think of the "galacifolia" in *Shortia galacifolia;* it occurred to me that A.R.G.S. people, or any other flower people, having read only the usual description of *Shortia galacifolia,* and not knowing the native flora, well might be excitedly mistaken into thinking they had come across the latter. As a matter of fact, if the name itself was the only description they knew for *Shortia galacifolia,* when not in flower, they would even mistake *Asarum canadense* for Shortia. The "galacifolia" would be more appropriate for the ginger. I felt quite argumentative: "galacifolia" is *totally* misleading. So far as I can remember, no one has written in the *Bulletin* of the *difference* between the two leaves.

First, what the plants have in common. Both are, of course, in the Diapensia family. Both bear basal leaves and are stemless (the botanical use of that word always seems inappropriate and confusing; say it to a layman, and ask what he thinks it means). Both are evergreen, tending to turn bronze in the winter. That is the extent of their visual similarity.

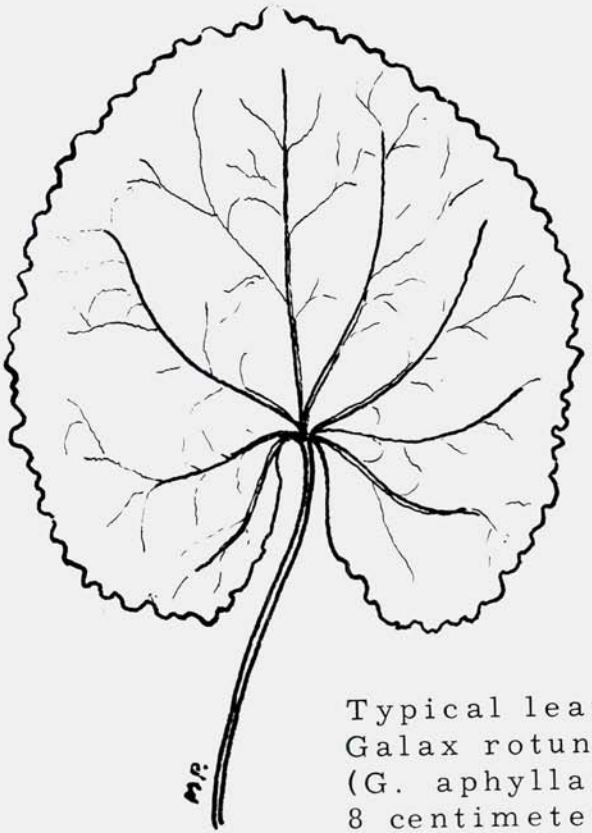
The differences? To start with, the Galax is much the larger of the two, approximately double. Then, basic shape of the leaves: Galax is reniform to cordate, Shortia is orbicular to ovate. As to the base of the leaf; Galax is *deeply* cordate and Shortia may, on occasion, even be cuneate as the leaf joins the leafstalk or petiole. In Shortia I have never seen any leaf with the slightest "sinus" at this juncture. The pattern of venation is completely different. While both have netted veining, Galax is palmately veined and strongly



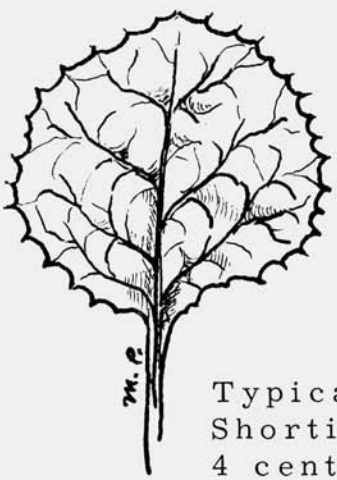
Shortia galacifolia
Actual size Martha Prince

so, these are the only really noticeable veins, unless you look very closely. Shortia has a distinct midrib, and is pinnate. It is strongly reticulated, almost rugose. As to the leaf surface, Galax is the glossier of the two. The leaf edges are dissimilar, Galax leaf margins are wavy (very small); Shortia margins are dentate, emphatically so. I am bringing indoor a leaf of each from my garden to draw. I think you will agree that there is no possibility of mistaking one for the other.

I find my observations at odds with a few other things that have been written about Shortia. Propagation is difficult by seeds, but the plants propagate themselves vegetatively. They (or at least the plants I know) are stoloniferous, and the plants can be separated and dug with no difficulty. I am puzzled by Roy Davidson (the *Bulletin* of April '71) when he says he divided his by simple division, and adds that he has had one plant sent him from the "the original Michaux station" which *"may* differ in being more



Typical leaf
Galax rotundifolia
(G. aphylla)
8 centimeters wide



Typical leaf
Shortia galacifolia
4 centimeters wide

Martha Prince

stoloniferous, *if at all.*" The italics are mine. Perhaps his other Shortias are unhappy at being on the West Coast, so far from home! I have one plant set out two years ago which is now a very distinct six. I do say the stolons are short (but above ground and sturdy), but there would be no reason to pull apart a mass of root stock to divide them.

Also, I don't think the original Michaux station is known, not with any pin-point accuracy. Dr. Sargeant found the first blooming plant near Sapphire, North Carolina, just within the tri-state (North Carolina-Georgia-South Carolina) corner. It was quickly discovered on the other sides of that border, and then at several other locations. Michaux wrote "in the high mountains of Carolina," and the words misled the searchers for years. They misinterpreted "in" for "on," and Michaux evidently meant "among." If you have read Michaux, you know his words are more cryptic than descriptive. As to which state he was actually in, there was no boundary marker in the eighteenth century! As a child I knew Shortia in the wild, about three miles inside the Georgia border, on the lower elevations of Rabun Bald (a mountain in Rabun County, Georgia). I would like to think that Michaux just could have found his first Shortia there! Does that make me a botanical chauvinist?

* * * * *

CRITICAL DELAYS IN BULLETIN DELIVERY—Widespread reports of seriously tardy deliveries of the *Bulletin* made it increasingly apparent that where Society announcements appearing in the *Bulletin* carry *deadlines,* those concerned with the deadlines should send their announcements to the Editor SIX MONTHS prior to their deadline date.

The whole question of delivery promptitude vs. delivery costs must be studied and recommendations formulated to compensate for the present postal delays. Meanwhile to further this survey, your Secretary would welcome *specific* information (date and place of delivery) in instances where deliveries are delayed beyond what has been your individual normal experience. One illustration points up the situation: The October issue was mailed on Oct. 3, in Waterbury, Conn.; one member living within about 50 crow-flight miles reported not getting his copy until Nov. 6. This could hardly help him meet the deadline of Nov. 1 stipulated in that issue for the Seed Exchange . . . irritating and a bit thick, I'm sure you'll agree. If your future experience should parallel this unfortunate instance, please advise your Secretary. (Address inside front cover). Please note: The above is addressed only to U. S. members. Deliveries to those living abroad will become the subject of a later study; meanwhile their continued patient forebearance is solicited.

Milton S. Mulloy, Waterbury, Conn.

* * * * *

Editor's Note—Elsewhere in this issue you will find discussions by members of the nomenclatural changes affecting the Creeping snowberry. In the July issue a longer discussion will appear. It is written by Rupert Barneby, an expert taxonomist of the New York Botanical Garden. You will perhaps find his conclusions most surprising.

LIGHT BOXES

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

This is partly a form of winter therapy for the impatient rock gardener, but it seems to be also a slick way to get a big jump on "hard-to" propagations.

It began a little over a year ago by coincidence when I received as a thrilling Christmas present a candy box full of immaculately wrapped and touchingly labeled Kabschia saxifrage cuttings, sixty different named sorts for which I had been angling.

In my basement I have a light box that I have used for some years for starting rhododendron seeds. Normally I don't begin until about February 1 because, otherwise, the seedlings get too crowded before they can be moved on into outdoor situations when the weather is favorable. (That's a separate story). This box is like a coffin with one side open, set upside-down on a platform. (My platform happens to be an old ping-pong table on saw-horses). To the inside of the roof of this box is fastened a 4-tube, 4-foot fluorescent light fixture. The inside of the box is painted white for reflection. The front (open side) has a curtain of plastic attached at the top. A 1x2 fastened along the bottom of this plastic flap holds it flush to the table top when closed and perches on top of the box when the flap needs to be raised for working and watering.

The lights go on and off automatically by a timer. The consumption of electricity is minimal and the results to date are fabulous, plus the added pleasure of frequent visits to the basement to pour over the rows of cuttings, to smell the growing damp atmosphere and to catch a very faint sun tan glow.

Because last year I had almost 100% success with saxifrage cuttings and many of them are about to bloom in the alpine house just a little over a year after a long overseas voyage, and because I was impatient to propagate some of my own new saxifrage hybrids, I began a new cycle between Christmas and New Year, this year.

I snipped off a few cuttings from the various cultivars of saxifrage, some well-known named forms like *S. 'Faldonside,'* 'Iris Prichard', 'Cranbourne,' et al for passing along to meet the growing interest, and some promising looking seedlings: 6714, 6838, 6920, 7001. Each set of cuttings (only about 20 takes at a time) was put in a plastic bag with label listing name or number.

Then came the fascinating work of preparing and inserting the cuttings. Some baggies contained up to 10 usable cuttings, others only a single rosette daringly clipped off at the base of a tiny plant of last year's rooting or a two year old seedling.

Some sorts have a fairly long, bare base to the rosette and are easily stripped of any dead leaves, ready for insertion. Others are very tiny and may spare only 2 or 3 green leaves, pinched off by a sharp fingernail, to expose a bit of base stem for insertion. (But rest assured, the smaller the cutting, the more vigorous the rooting).

In preparation for each batch of cuttings I filled a small standard plastic tray with drainage holes in the bottom. First a bit of peat to cover the bottom, then a standard soil mix of 1 inch depth, then a layer of sharp sand. All press-

ed down firmly and watered by soak from below. Each cutting after basal preparation was dipped in a rooting hormone powder (this I don't think is necessary but it permitted seeing the base of the cutting more clearly when inserting). Using a finishing nail of firm proportions, I stuck a hole in the sand deep enough to take the base of the cutting. Then the cutting, with excess powder shaken off, was pressed into the hole with the left hand (and when really small this meant pressing on top of a tiny rosette with the index finger) while sand was packed close around the base with the blunt top of the finishing nail.

Cuttings were lined up very close together with a label at the head of each row. Some rows had as many as three different labels. Into a flat 8x5 inches, 3 inches deep, one can get 9 rows with up to 6 cuttings in each row. That makes an impressive 54 possible saxifrage plants. And you had better think about that a little in advance.

I ended up with 174 different cultivars in 14 flats and there was still plenty of room in the light box. For the first week the lights were on for 12 hours daily. Then I increased this to 14 hours. Rooting was very rapid and all were ready for transplanting within six weeks. When transplanted, they, of course, are more widely spaced in similar flats; hence more room was needed. A second light box of similar construction was brought into service, because in the meantime the free space in the first had been filled with other things.

Among these were, for instance, seed of Dionysias from the Gray-Wilson 1971 expedition sowed in early December and given some freezing exposure in a cold frame before they were put under the light during the first week in January. Germination occurred in ten days, at least for three of the species. There is always a question of whether there is any seed at all among the packets of chaff and flug that are swept from Dionysia cushions, apparently the accepted method of collecting seed from these plants.

The big advantage, at least for the saxifrage cuttings, is that you can give them a long day and at a time, when after dormancy, they are full of vigor. Also you can control the moisture, can work on them in comfort, can give them proper attention during an otherwise slack time in the gardening year, and can get them growing on well before the trying summer months.

Another year I'll try this method on such things as Androsaces and those difficult to root Acantholimons.

* * * * *

MULTIPLE MEMBERSHIP IN ROCK GARDEN AND ALPINE PLANT SOCIETIES – Many ARGS members do not confine their membership to the ARGS exclusively. Many belong to several, or even more, such organizations. This is a wonderful way to promote international good will, to foster the rapid and accurate interchange of gardening knowledge and alpine lore, to stimulate among many people a greater degree of love for and a closer association with plant life, both in the garden and in nature. It is also one of the best means known to increase one's circle of friends. To join several such organizations is not costly and the returns are many times fantastic, but always rewarding.

OMNIUM-GATHERUM

THE 1972-73 SEED EXCHANGE—Congratulations again to Roxie Gevjan and her cohorts! The number of donors at an all time high as is the number and diversity of the seed offered. One wonders if it is possible to continue, year after year, this upward trend. In the past it has been our pleasure and privilege to glory in the work of such stalwarts as Arthur Kruckeberg, Bernard Harkness, Lawrence Crocker, Henry Fuller and Roxie Gevjan. Now it is to be Dr. Earle E. Ewert who will carry on the work of the Seed Exchange, perhaps to new records. Let us not forget the army of dedicated volunteers who, over the years, and under their respective Directors, have made the success of the Seed Exchange possible. Such work carries its own reward. I know. I was there!

So many times the editor has been tempted to report the interesting activities of the Northwestern Chapter of the ARGS of which he is a member. Our meetings are so interesting, so well attended, so informal, with Mr. Robert's *Rules of Order* thrown out the window. After the formal program is over the members mill about for better than an hour. It is a kaleidoscope of vocal humanity, chattering away mostly on gardening subjects; stimulating and sometimes hectic (like the better class of cocktail parties, except that coffee, punch and home-inspired cookies take the place of cocktails and canapes) where friends meet friends and new members lose their feeling of not belonging. Our field trips, each different, are always happy occasions even when the weather is unkind.

But, the editor knows that if he did report these activities in the *Bulletin,* he would feel honor bound to report the same type of activities that occur in other chapters. However, should the current activities of all the chapters, or of those that take the trouble to report them to the editor, be incorporated in the issues of the *Bulletin,* it is feared that soon there would be no space left for the type of material that has hitherto been found there.

Why is this being brought up at this particular time? Because the editor received from H. Lincoln Foster and M. L. Stevenson, Chairman and Secretary respectively of the Connecticut Chapter (a newly formed chapter, full of energetic, enthusiastic and highly gifted rock gardeners, most of them old time members of the ARGS) a copy of their activity report concerning the coming February meeting and detailing in full the January meeting. It is to be noted that their meetings are day-long, starting at 10 a.m. and, I suppose, go on for a great number of hours, whereas here in the Northwest we meet from 7:30 p.m. until the last member leaves. No wonder in Connecticut they can crowd so much into one meeting! Their report of the January meeting reads as though they were reporting a three-ring circus. This new chapter could well become the model of other chapters. The editor thanks Mrs. Stevenson for sending this fine report and perhaps it may spur him to make an attempt to stimulate more of the same type of activity in the Northwestern Chapter, though with the near pandemonium of our meetings here in Seattle, to add the Connecticut touch might possibly throw our meeting into the throes of hysteria. Time is the real factor, however. Our short meet-

ings here in the N. W. are somewhat compensated for by our many field trips which are mostly one-day rambles into flowerland, yet are often of two or three day's duration. Anyway, congratulations to the Connecticut Chapter.

* * * * *

Cyclamen neapolitanum in a rock crevice

James R. Baggett

CYCLAMEN NEAPOLITANUM—There is nothing rare or unusual about this hardy cyclamen, which is well known to most of us, but it is usually grown in the shade or woodland garden. The photo here shows how *C. neapolitanum* looks when grown in a cavity in the rocks, where it has thrived for about four years. Notice that the flower stalks are in a tight clump, the result of the restricted space and shallow cover of the corm. When the corms are deep under soil or mulch the flower and leaf stalks grow out underground for considerable distances, forming a broad clump.

Cyclamen neapolitanum is very adaptable, surviving a variety of conditions. Seedlings soon appear in odd places, like gravel paths, in rock crevices, and even in lawns, usually becoming permanently established, flowering plants. Plant it around Trilliums, Erythroniums, and other plants which are out of sight during the fall and winter, and you will be getting more use of your space and will have a pleasing ground cover on otherwise bare areas.

James R. Baggett, Corvallis, Ore.

THE JEWELS OF THE PLAINS—Augustus M. Kelley, Antiquarian Books, P. O. Box 458, Little Compton, R. I. 02837 has circulated a list of books available from him, books that will gladden the hearts of most gardeners. It is a long list. Perhaps it has been mailed to you. His news letter starts out with the following review of the present status of Claude Barr's eagerly awaited book, *The Jewels of the Plains.* Mr. Kelley says in part:

"Claude Barr has all but finished his manuscript. The plant descriptions are complete, all that remains is to put the final touches on the introductory materials. It has fallen to my very happy lot to be the publisher of this long-awaited book, and I have been feeding copy to the typesetter for the last few weeks. Just when the book can be published is hard to say at this time. I have given my pledge to Claude Barr to produce his masterpiece to the best possible specifications and at the same time hold the price to a figure that will enable ordinary gardeners to possess it. . . . On the basis of rough calculations. . . it seems that the price will be at a minimum of $12.50, or even $15.00. The color work is what makes the costs go up. . . But for all those who respond to this announcement and indicate an intention to buy the book upon publication, the price will be $10.00, no matter what the final price may turn out to be. . . . I therefore urge most strongly that all those who think they will want to own a copy of this book to express their intentions as soon as possible. A substantial response will serve to cheer Mr. Barr and myself to get through the laborious details of proofreading, etc., with the greatest dispatch."

Mr. Kelley ends his news letter, as far as it concerns Claude Barr with the following words, ". . . . I do want to make this statement. This book is just a little something more than just another book about plants. Claude Barr is a living legend in his own time. The book is an authentic bit of Americana. Mr. Barr is one of the last of the pioneers; he has been ranging over his part of South Dakota and the surrounding plains since 1913, well before many of us were born. He knows the terrain and its plant life with an intimacy that has scarcely ever been equalled for any area."

* * * * *

IS IT *CHIOGENES* OR *GAULTHERIA HISPIDULA?*—Here are the comments of Dr. Edgar T. Wherry under the heading, "The Changing Nomenclature of the Pearlberry." In 1753 Linnaeus proposed for this pretty little bog creeper the name *Vaccinium hispidula.* Fifty-odd years later the Pennsylvania botanist, Henry Muhlenberg noted that the incomplete union of the ovary and calyx would place it in another Linnaean genus, so changed its name to *Gaultheria hispidula.* In their study, *Flora of North America,* John Torrey and Asa Gray doubted the correctness of this assignment, so took up for it a genus name which had been proposed in 1817 by R. A. Salisbury, resulting in the combination *Chiogenes hispidula.* Present day taxonomists hold, however, that Muhlenberg was right. If one feels that in view of the widespread familiarity of the Torrey-Gray name it should not be completely ignored, the correct arrangement should be something like *Gaultheria (Chiogenes) hispidula.*

BACK VOLUMES 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 numbers 2 & 6
VOLUME 7 Individual number 4
VOLUME 8 Individual numbers 3, 4 & 5
VOLUME 9 Individual numbers 1, 3, 5 & 6
VOLUME 10 Individual numbers 2, 3 & 4
VOLUME 11 Individual numbers 1, 2 & 4
VOLUME 12 Individual numbers 1, 2, 3 & 4
VOLUME 13 Individual numbers 3 & 4
VOLUME 14 Individual numbers 2, 3 & 4
VOLUME 15 Individual numbers 3 & 4
VOLUME 16 Individual number 3
VOLUME 18 Individual numbers 2, 3 & 4
VOLUME 19 Individual numbers 1 & 4
VOLUME 20 Individual number 2
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, 3 & 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 & 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**