

*Viola pedata* var. *lineariloba*  
(concolor)

*Viola pedata* (bicolor)

# Bulletin of the American Rock Garden Society

# The Bulletin

## Editor Emeritus

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

## Editor

H. N. PORTER, 158 Whitfield St., Guilford, Conn. 06437

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# Bulletin of the American Rock Garden Society



Vol. 34

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No. 2



## THE COMPOST PILE

Mrs. Ralph Lane, Box 25, Louisville, Tennessee, 37777 writes: "I am rather a new lover of rock garden plants, and am wondering if there is a chance through the *Bulletin* to ask members:

"Would you not share with me your surplus rock garden plants or cuttings? I will reimburse you."

I looked up Tennessee in our membership list. There are eight members there, two of them institutions, no others from Louisville. And Mrs. Lane is not alone. In vast areas of our land rock gardeners are very thin on the ground. And yet how important our fellow gardeners are to us! I, at least, have had plants thrust upon me that I didn't particularly want but accepted out of politeness, only to find that that gift opened up whole new and exciting perspectives.

Our society offers many services, the Seed Exchange, the *Bulletin*, the chapter meetings and study weekends. Yet for a rather new and isolated gardener, the seed lists can seem formidable, the *Bulletin* can seem to be for experts only, while the nearest chapter meetings may be hundreds of miles away, and the study weekends a thousand or more.

Many of our members correspond with each other. Cuttings, with a little protection, can be sent in the letters. And packages are not difficult. Perhaps this exchange of ideas and materials should be encouraged. Our secretary, Milt Mulloy, suggests that we have a classified ad section in which, for a small fee to pay costs, perhaps one dollar, members can indicate their needs. I suspect that the response would be rewarding. Let's do it!

And if any member has questions, I would be glad to receive them, and pass them on to whoever seems competent in the area involved. And let no one be ashamed to ask questions. Our field is so vast, namely the wildflowers of the world, excepting only the true tropics, that all of us are beginners in some areas, most of us in most.

In the meantime, let us inundate Mrs. Lane with plants and cuttings. Let her assiduously propagate them and distribute the surplus to her friends and neighbors, who will then join the ARGS, develop a collective expertise on growing our choicest plants in their area, and feed back to the rest of us, and to rock gardeners all over the world, most particular lore about the flora of Tennessee.



*Glechoma cordifolia*

On April 24th Frank Cabot invited the rock gardeners of the Northeast to the New York Botanical Garden to hear a program of lectures and to observe the progress in the rehabilitation of the rock garden undertaken by Karl Grieshaber. It was a memorable occasion. Fred Case and Lincoln Foster gave their usual stellar performances. Mrs. Brooke Everts talked about the Pine Barrens and Colonel Mars of Haslemere flew over to discuss rare bulbs.

The rock garden is indeed coming along well. Much necessary pruning and replanting has been done and an impressive new Pine Barren garden has been installed.

Even more interesting, perhaps, were the propagation ranges. Here, in air-conditioned greenhouses, a vast collection of choice plants is being brought along. Frank looks forward to the day when some part of the ranges can be converted into a display alpine house, with a constantly changing exhibit of the treasures of the world shown at their peak. I have no doubt that the day will come, for the drive and the resources are there.

The New York Botanical Garden has always been a great center of taxonomic research, as well as a delightful park for the residents of the Bronx. Now it seems to be about to provide for Americans those services to advanced horticulture that Wisley and the Royal Botanic Garden in Edinburgh provide for the British.

That same Frank Cabot has sent us a clipping from the gardening section of *The Financial Times* (London). (When will the *Wall Street Journal* have a garden column?) It is by A. G. L. Hellyer and begins:

"I found the visitors almost as fascinating as the plants at the Alpine Garden Society's spring show in London last week, which is saying a lot because this was one of the best shows the society has ever staged. But what was so interesting about the crowd, apart from its size was the very wide spectrum of types which it included. Anyone who has thought of rock plant enthusiasts as being mainly middle-class semi-intellectuals, gar-

deners who fancy themselves as botanists and plant collectors, would have had a sharp awakening here. Every class and every mentality seemed to be represented, including some very knowledgeable young people.

"This can only mean that the cultivation of alpine plants in pots (for that is what this show is all about) is providing a lot of people with just the hobby they require. When you come to think of it, it does fit very well with the modern pattern of life. As gardens get smaller and people become more mobile, seldom seeming to stop in any one house for more than a few years, there is a lot to be said for plants that take up very little space and can be transported from one place to another with a minimum of fuss. It is even possible to grow alpines in pots on a balcony, and a terrace or patio is ideal provided it gets a reasonable amount of light.

"What makes the enthusiasts opt for pots rather than rock gardens is partly that it makes it so easy to give each plant precisely the soil and conditions it requires, partly that it makes it possible to enter competitions such as that in London last week. The plants can be brought without damage in the boot of a car."

All this is music to my ears. Visitor after visitor to my alpine house remarks in a subaccusatory tone that such and such a plant grows perfectly well outdoors, as though it were immoral to keep it confined to a pot. Even Roy Elliott, the traitor, who wrote the excellent AGS Guide, *Alpines in Pots* (\$1.00 — see the AGS ad p. 92) also once wrote "I hate pots." and has recently converted his alpine house from plunge beds to permanent planting beds. But I *like* pots, preferably white plastic ones.

There are many reasons for pot culture beside those mentioned by Mr. Hellyer. The most important to me, and this has nothing to do with hardiness or cultural conditions, is that one gets to know one's plants well. Summer and winter there the plant is, at eye level. Not a leaf unfolds without our noticing it, and if the plants sometimes grow "out of character" one at least has plants with which to replace those "in character" ones which have perished. This also works the other way. One can sometimes replace losses in the alpine house from the garden.

Many plants grow well outdoors, but never look as handsome as in pots. Lewisias of the cotyledon group are a case in point. On the other hand, who can grow *L. rediva* outdoors for more than a year or two? Yet it is an easy pot plant, needing only a good drying off in late summer and fall. *Androsace imbricata* cannot be grown outdoors, (Linc. Foster so grows it, but that does not mean that mere mortals can) but even if it could, its minute perfection would be lost in the general vegetative exuberance of the garden.

All this is a request for understanding and compassion by a member of an oppressed minority. I grant that it makes much better sense to grow plants hardy in one's area, but those who against common sense and ecological propriety insist on attempting plants that hate the climate into which they are introduced, should be permitted, without censure, to employ whatever strategies they find useful. After all it is more in the modern style to consider lunacy a sickness to be pitied, rather than possession by a fiend which must be exorcised.

*Rock gardeners, like other mortals, have their faults, but, because they are rock gardeners, they are our brethren and we must love them all. I implore you to keep this principle in mind when you read the following piece, which was perpetrated, I am sorry to say, by my neighbor, Palmer Chambers.*

Sam Bucus: Geum glad to see you, Bill. How long have you been standing there. The bellis out of order. I've had to caltha super about it three times already.

Bill Ardiera: Excuse my popping up like this. I tried to draba line to you before I left, but I didn't make it.

Sam: Well, it's goodyera travelling man, or we'd never see you. You'd never guess we aronia couple of hours apart. Anyway the door is always opuntia.

Bill: I hope the next time I'm inula low me to take you to dinner.

Sam: Delighted. Speaking of dinner, I'm supposed to be cooking it, and I hope you can stay. It's a long time since Sarracenia. Right now she's over at her cistus on some club business. There are a lot of vacancies on the board and chiastophyllum by tomorrow.

Bill: I'll be glad to stay, but I'll have to go back to my hotel early. Some Arabis going to kalmia little later that I used to know in Egypt. Cantua low me to go out to the liquor store anchusa bottle of something. I'm dryas a bone.

Sam: That won't be necessary. I just got in a case of Aqua Legia.

Bill: Sam, if you drink that kind of heuchera goner. Honestly it really rhexia.

Sam: I used to think it was too potentilla tried Rumex. Boykinia get stiff on that. I think this strikes an epimedium. Say, have you been making any money lately?

Bill: Phlox. Just this afternoon I soldanella vator. Last year, I swertia, I made thirty thousand athrotaxis.

Sam: You always were a great salesman; I'll bet you could sell refrigerators to Eskimos.

Bill: I guess so, but I could sure celmesia to Africans. Have you seen any of the boys?

Sam: I saw Erica few weeks ago. He said he had gotten involved with a couple of strangers in a card game. After he had lost a lot of money he saw one of them stachys deck, so he reported them. He found out that they were a notorious parochetus. They were cotoneaster, but Eric is still lychnis wounds.

Bill: I saw Shortia week ago in Baltimore. My son Tony is a midshipman at Anaphalis . . .

Sam: Wow, could hebe that old already?

Bill: He's ulmus twenty-two. Shorty's daughter Anacyclus over to see him every weekend. A couple of weeks ago she was overtaken by a group of motor cyclamen. Just for a joke one of them yelled, "Look out, there's a muehlenbeckia." She got rattled and fell. It was a myrica she wasn't hurt, but she reseda while and then went on. I do hope Tony marries her. She's alyssum and attractive girl anistome like a daughter already. Apparently all the menodora. She's been calling my

boy her darlingtonia long time now. I guess they've had manihot times together, but I've never seen him hold her hand orchis her.

Sam: I muscari on with getting dinner. The thymus getting away from me. When I drosera over she said she'd be home by seven.

Bill: If you don't mind I'll just sit and talk. Moneses killing me.

Sam: That's O.K., but the chair where isatis closer to the kitchen. Eric tolmeia funny story about his wife calling him from the station and talinum to meet her there by the ladies' room. When he got to the station he went to the information girl and aster how to get to the ladies' room. She said she could tell him how to get to the menziesia. Well, here comes Sarah now.

Sarah: Why Bill how nice to see you again. Why don't we see moraea? How's dinner coming, Sam?

Sam: I'm worried about the soufflé. It hasn't gotten any hyacinth I put it in the oven. Maybe I put morina pan than I should have.

Sarah: Well, if it doesn't rise there's lots of colchicum in the refrigerator. You should hear Viola go on about crime in the streets. She thinks every time we go out someone will try to rubus out orobus. When I left she said, "Kalmiopsis as soon as you get home," so I guess I'll have to calla now.

*Eleanor Phillips, of Westbrook, Conn., writes:*

"I have a little box, appropriately green, the repository of cards with useful information not elsewhere available, on seeds, soil mixtures, methods, etc., most of it culled from more knowledgeable friends, from publications, and sad experience. Pasted inside the lid are a few aphorisms designed to mitigate the solemn state of apprehension, curiosity, experiment and longing with which I consult the contents. The first of these little pieces, pasted in after I had been gardening for several years, came from Emerson:

'A garden is like those pernicious machineries  
which catch a man's coatskirt or his hand  
and draw in his arm, leg and whole body  
to irresistible destruction.'

"The 'destruction,' of course, is of all interests other than gardening.

"Later, after I had begun ROCK GARDENING, experience prompted a shorter but sadder addition from some unnoted source:

'The more one gardens, the more one learns,  
the more one realizes how little one knows.'

"A recent experience, however, suggests that after all I might better take Montaigne for my guide. I had a little *Helleborus niger* ('little' since for eight successive years, only one or two leaves and one occasional flower graced what had originally been a large clump) which I dared not move in the face of many printed warnings that *Helleborus* 'resent being moved.' Finally, in desperation at the poor reward of intensive attention, I followed Montaigne's advice:

'Let us permit nature to have her way;  
she understands her business better than we do.'

"I stopped watering, fertilizing, and pruning the tree above to provide precisely the amount of light needed. That year only one leaf appeared

— but also one large flower. This I also disregarded and leaf and blossom went with the Fall. To my surprise next Spring, I found some sixty sprouting seeds, so close together that to remove one would have been to upset the whole. Again I heeded Montaigne — and neither thinned, watered, fed nor transplanted, leaving nature's rains to take their course. By Fall, all showed true leaves, some with as many as four. Disregarding the written word, I transplanted to a bed in full sunlight, well (but moderately) primed with lime and superphosphate. There they now sit, thrifty and ever green in January's zero weather. Whether and when they will bloom is, of course, another story.

“Ever since I saw them blooming prolifically one March as a *ground cover* over a large area in the Botanic Gardens of West Berlin, I suspected that they might not need all the coddling to which I had subjected them. The present seedlings in my garden will not get it. Certainly, the seeds had not been planted ‘an inch down’ in a shaded coldframe (as ‘the books’ advise) nor had they taken two years to germinate. They had simply fallen to the ground and confirmed an experience that I will now paste into my box lid over my own name:

“There is nothing like fresh seed’.”

*From Dan Weaver*

As promised Rupert Barneby investigated the tiny annual *Saxifraga* mentioned in the *Compost Pile*, Vol. 34, 1. ‘The correct name for the little annual *Saxifraga* is *S. cymbalaria* L. ssp. *huctiana* (Boiss.) Englar and Irmischer, native to s. Turkey and Syria. The very similar *S. hederacea* has slightly smaller whitish fls.’ *Hortus Secund* states the genus, Asia Minor, is annual or biennial.

I neglected to mention that my plants have discreetly gold flowers and partially lobate leaves with a subdued shine. The entire plant has a span of 2.5 cm. or less and is essentially prostrate. Delightful flowers rise perhaps one centimeter.

Seedlings which appeared last fall have survived the winter happily, with intermittent snow cover this year. These seedlings are from a plant which died after I dislocated it in bloom for a day (in a plastic bag) and replanted in the same spot. Exposure of the rich, sloping semi-scrub is west, with intermittent full sun for 4-6 hours in summer, 4 in winter.

\* \* \* \* \*

Readers of the bulletin may recall the generous offer of hospitality that was extended several years ago by long time New Zealand members Laura and Bob Barnett of Timaru. When my brother and I visited New Zealand from October 1974 to January 1975 it was our great pleasure to spend several days as guests of Laura and Bob, and these days were among the happiest of our entire stay in New Zealand. Some months after our return home we received the sad news of Laura's death. Hers was a warm and vital personality, enriching the lives of all who came in contact with her. She is sadly missed. Bob regrets that it is no longer possible for him to offer the hospitality of his home.

—RWR

*That eagle-eyed editor emeritus of ours keeps us respectable with the following communication:*

Dear Mr. Editor:

The 1976 Seed List was fairly well checked, but I feel that for the benefit of relatively inexperienced rock gardeners some supplementary notes should be published:

I. The typographic errors which always sneak in should be listed, so that anyone who cares about accuracy can correct their labels.

II. Obsolete names which seed-donors may be using unknowingly should be listed for the information of anyone who believes in up-to-date naming.

III. There are some plants which are so invasive-spready that once they get into a rock garden they smother out desirable subjects, and the whole garden has to be upheaved and rebuilt. At #592 it is manifest that some donors have had sad experiences. In the early days of the Bulletin I had a "Keep-out" page for bad actors; mention of further cases might well go into the Compost Pile.

Herewith are several pages of my remarks for you to use as you wish.

Sincerely yours,  
Edgar T. Wherry

#### Typographic Errors

431 "Astraglaus" — Astragalus.	2792 "nivalis" — nivalis.
598 "Giganteum" — giganteum.	2810-1 "petrophylla" — petrophila.
755 "Conandrum" — Coriandrum.	2950 "Senecia" — Senecio.
1278 "Filipendual" — Filipendula.	2979 "pulsilla" — pusilla.
1284 "Fraxinum" — Fraxinus.	2982 "regis" — regia.
1287 "acmopetalum" — acropetalum.	2984 "saxifrage" — saxifraga.
1465 "scgetum" — segetus.	3012 "minyanum" — montanum.
1529-30. "belloides" — bellidioides.	3188 "ledeborii" — ledebouri.
1718 "pubila" — pumila.	3198 "humilus" — humilis.
1755 "ledebourii" — ledebouri.	3202 Tulipa "silvestris" — sylvestris.
1791 "nissolia" — nissoleus.	3226 "vellidioides" — bellidiodes.
1849 "pyncostachys" — pyncostachya.	3266 "jojooii — jooii.
1885 "grayii" — grayi.	3327 "pyrenacum" — pyrenaicum.
1954-6 "syphilitica" — siphilitica.	3342 "amanum" — amarum.
1959 "indora" — inodora.	3356 "gypericoides" — hypericoides.
2130-34 "polycantha" — polyacantha.	3387 "barnmulleri" — bornmulleri.
2164 "caerulea" — caeruleum.	3444 "serpyllifolium" — serpyllifolius.
2264 "humilus" — humilis.	3446 "Epilobum" — Epilobium.
2419 "delavayii — delavayi.	3525 "pumilla" — pumilio.
2432 "repestris" — rupestris.	3568 "aurocomus" — auricomus.
2491 "polyanthus" — polyantha.	3575 "thoebi" — thoebii.
2529 "albicyanea" — albocyanea.	3616 "pumilo" — pumilio.
2643-4 "baurii" — bauri.	

- 79 "carinatum" — *oleraceum*.  
 344 "elegans" & 345 "fruticosa" — *durior*?  
 393 "thunbergii" — unknown.  
 219 "Anemone occidentalis" — *Pulsatilla occ.*  
 696 "spinosissimum" — *horridulum*.  
 1283 "Fraseri" — *Swertia*.  
 1323 "aristata" — *pulchella*.  
 1821 "editorium" — *fontanesiana*.  
 2068 "racemosum" — *atlanticum*.  
 2398 & 2399 are the same species;  
 the favored species name is *canaliculatum*.  
 2878 "Scilla scilloides" — *Puschkinia scilloides*.  
 2969 "caroliniana s. wherryi" — *wherryi* (— a species).  
 3177 "Trillium sessile (western)" — *chloropetalum*.  
 3181 "stylosum" — *catesbaei*.  
 3385 "verticillaris" — *occidentalis*.  
 3616 "Wahlenbergia" — *Erdianthus*.

III. Candidates for the "Keep-out" department:

- |  |   |
|--|---|
| 65. <i>Agrostemma githago</i> .          | 1765 <i>Juncus effusus</i> .            |
| 69. <i>Alliaria petiolata</i> .          | 1789. <i>Lathyrus latifolius</i> .      |
| 79-80 <i>Allium "carinatum"</i> .        | 1933. <i>Linaria vulgaris</i> .         |
| 459. <i>Belamcanda chinensis</i> .       | 2149. <i>Ornithogalum umbellatum</i> .  |
| 487 <i>Bulbostylis capillaris</i> .      | 2154. <i>Osmorhiza longistylis</i> .    |
| 570-1. <i>Campanula persicifolia</i> .   | 2197 <i>Papaver rhoeas</i> .            |
| 600 <i>Carduus nutans</i> .              | 2244 <i>Penstemon digitalis</i> .       |
| 662. <i>Chelidonium majus</i> .          | 2353 <i>Pinellia ternata</i> .          |
| 675. <i>Chrysanthemum leucanthemum</i> . | 2348 <i>Phytolacca americana</i> .      |
| 692 <i>Circaea quadrisulcata</i> .       | 2380. <i>Podophyllum peltatum</i> .     |
| 762-3 <i>Coreopsis lanceolata</i> .      | 2603 <i>Rhamnus frangula</i> .          |
| 844. <i>Cryptotaenia canadensis</i> .    | 2676 <i>Rudbeckia hirta</i> .           |
| 1122 <i>Echium vulgare</i> .             | 2875 <i>Scirpus cyperinus</i> .         |
| 1552 <i>Herniaria glabra</i> .           | 2967 <i>Silene armeria</i> .            |
| 1554 <i>Hesperis matronalis</i> .        | 2991-2 <i>Silene vulgaris</i> .         |
| 1576 <i>Hibiscus trionum</i> .           | 3156 <i>Tragopogon major</i> .          |
| 1635. <i>Hypericum perforatum</i> .      | 3220-2. <i>Verbascum blattaria</i> .    |
| 1642 <i>Hypochoeris uniflora</i> .       | 3273-4 <i>Viola priceana</i> .          |
| 1652 <i>Impatiens "biflora"</i> .        | 3524 <i>Matteuccia struthiopteris</i> . |
| 1653. <i>I. pallida</i> .                | 3612 <i>Verbascum nigrum</i> .          |



## SANGUINARIA CANADENSIS

H. Lincoln Foster, Falls Village, Conn.

This article is reprinted from Vol. 3 No. 5 of the *Connecticut Plantsman, Bulletin of the Conn. Chapter of the A.R.G.S.*, May-June, 1975, now, unfortunately, defunct.

Bloodroot, *Sanguinaria canadensis*, is an eminently satisfactory rock garden plant, particularly charming in a clump at the base of a large gray rock and in company with ferns. The waxy white flowers with their tassel of yellow stamens, come early before the leaves have expanded to full size, in March at the southern end of its range in Kentucky and Missouri, as late as May in Quebec, where it is called "Sang-Dragon". It is known in its southern territory as the Red Puccoon, an Indian name for a red dye which is also found in *Lithospermum canescens*, also called Puccoon.

After flowering the long pointed seed-pod of Bloodroot is overtopped by the large lobed leaves, the irregular lobes themselves coarsely and irregularly toothed. Some botanists recognize in the southern part of its range, even into Florida and Texas, a form with leaves barely lobed or toothed, known as var. *rotundifolia*.

As the seeds ripen, the long slender pod splits its full length to expose large brown seeds each with a conspicuous transparent gelatinous crest. This crest is apparently attractive to ants who help in the distribution of the seed. Mice and chipmunks also carry off the seed, frequently hoarding them in clusters in the soft humusy soil where they eventually sprout as a tight sheaf. Once established in a congenial site self-sowing is abundant, frequently even into gravel paths and narrow pockets among rocks.

There is a pink-flowered form, named by Benke in 1933 for its discoverer, Earl H. Colby, forma *Colbyorum*. So far as I know this form is not in cultivation, though I keep hoping that one day there will appear at Millstream a really pink seedling. Bloodroot self-sows here generously and we do have a few plants with petals quite pink on the back, very lovely in the early morning before the flower opens to display the golden stamens and pure white inner surface of the petals.

A few years back I became intrigued by the idea of trying to discover where the double Bloodroot had originally been found and by whom. I had heard over the years from various gardeners conflicting reports, usually that the wild plant had been found in Michigan, or occasionally someone named a different state. Finally I chased down every reference under *Sanguinaria canadensis* in the card index at the New York Botanical Garden library and in one of these references (I can't remember which one now) I picked up a couple of clues that pointed in two directions: The Arnold Arboretum and a Mr. von Webern of Dayton, O.

Correspondence with the staff of the Arnold Arboretum brought in some information, mostly negative. I wrote to the only person I knew in Dayton, O., Harry Butler, who subsequently became President of ARGS, and asked him if he could uncover any information about Mr. von Webern and the double Bloodroot. By clever detective work he located von Webern's widow, now a Mrs. Thomas, living in Florida. Correspondence between Mr. Butler and Mrs. Thomas supplied much of the missing information.

By putting together the various pieces of the puzzle, I thought I had finally gotten the true picture of the discovery in the wild and the introduction into horticulture of this handsome form of the common Bloodroot. I wrote up my findings in an article for the magazine of the American Horticultural Society, the substance of which is reprinted here. The publication of the article brought in some added facts that refuted some of my deductions and clarified the whole situation. These corrections are here included in a recasting of the original article.

Mr. Guido von Webern had a perceptive eye and a love of nature. In 1916 he was attracted by a seven acre tract of land at the corner of North Main Street and Turner Road in Dayton, O., about four miles north of the center of the city. He bought the property because of the beauty of its terrain, which included a steep slope covered with splendid trees, a site likely as the setting for wild flowers, a particular delight of his.

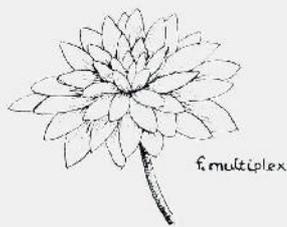
In spring when he inspected what he had purchased, he discovered to his joy among a clump of *Sanguinaria canadensis*, a solitary plant with fully doubled blossoms. Because of his acquaintance with the native flora and his amateur knowledge of botany, he realized that he had spotted an unusual mutation. It was a small spindly plant; so, without disturbing it, he marked its location and protected it. By 1919 the plant had increased to a vigorous clump, large enough to divide. Mr. von Webern sent a division of the plant to the Arnold Arboretum in the autumn of that year.

In the *Gardeners Chronicle*, series 3, vol. 73, p. 283, May 1923, H. E. Wilson, director of the Arnold Arboretum, described this plant, the Double Bloodroot, as *Sanguinaria canadensis* var. *multiplex*. In 1931 Weatherby made it a form rather than a variety and in botanical literature today it would be listed: *Sanguinaria canadensis* Linnaeus forma *multiplex* (Wilson) Weatherby.

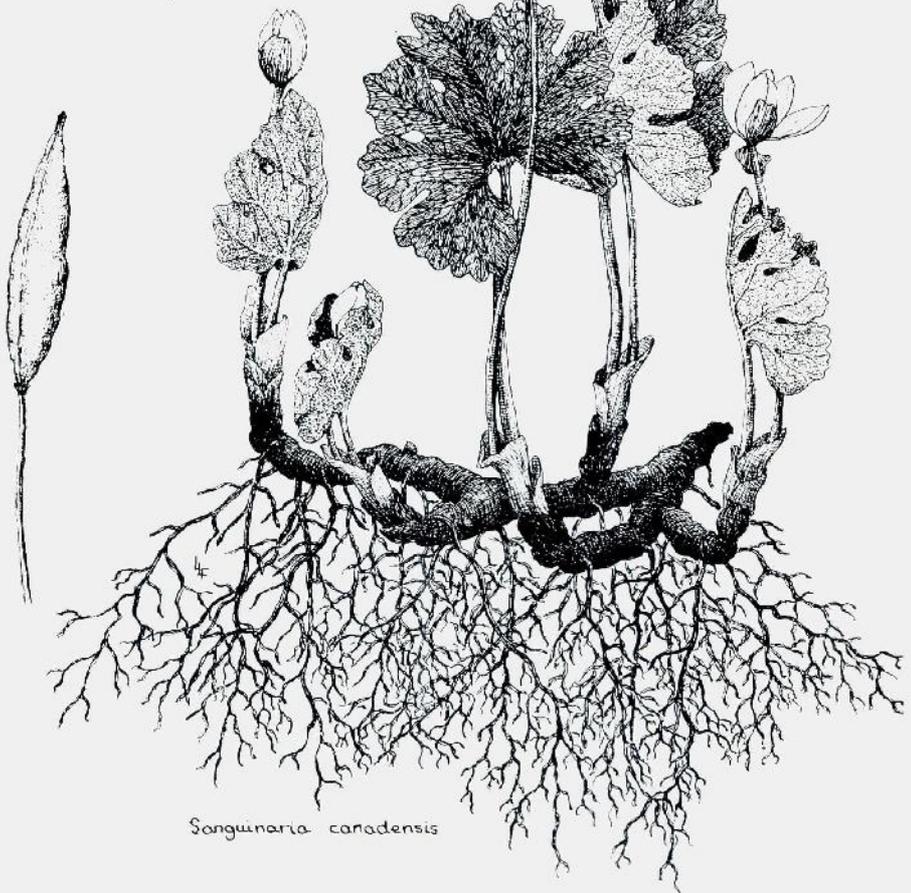
In his article Wilson mentioned that Dillenius in 1732 had illustrated a "*Sanguinaria major flore pleno*" in his *Hortus Elthamensis*, vol. 2, p. 334, plate 252, fig. 326. This plant apparently had 14-16 petals, only double the normal number, whereas Mr. von Webern's plant had the multiplication of the petals carried to a greater extent so that even the stamens and carpels were transformed into petals. Wilson also says that the plant named *S. canadensis* (var.) *plena* by Weston in *The Universal Botanist And Nurseryman* vol. 3, p. 610 (1772) is the same as Dillenius's plant, since Weston cited the Dillenius reference in synonymy when he coined the name *plena*.

Mr. von Webern's plant is no longer growing at the Arnold Arboretum, nor was the plant apparently formally accessioned in the Arboretum collections, but Mr. von Webern's widow, presently Mrs. Thomas, has preserved the letter of acknowledgment from the Arboretum. She reported recently that the original plant on the Dayton property suffered either from neglect or depredations of one kind or another until it ceased to exist in 1966.

After his gift to the Arnold Arboretum and before the demise of the plant in Dayton, Mr. von Webern gave divisions to two friends. One of the plants soon died and the fate of the other has not been traced, but from neither source is it likely that the plant got into general horticulture.



f. multiolex



*Sanguinaria canadensis*

(Here is where I went off the track and was led to make the following assumption.)

The Arnold Arboretum has no record of having distributed the plant, but this seems the most likely origin of the completely double-blossomed form of the Bloodroot that is found here and there in connoisseurs' gardens.

(Soon after the last statement was published, I received a letter from M. Henry Teuscher, Emeritus Director of the Montreal Botanical Garden. In the letter this great plantsman identified himself as the second friend to whom von Webern had sent a division of his prized *Sanguinaria*. It was Henry Teuscher who propagated this original clone, distributed it to various arboreta and horticulturists in America and abroad, and to whom all gardeners owe a debt not only for this generous action but for many others before and after.)

No record exists of the fully double Bloodroot's having been found in the wild either before or since Mr. von Webern's discovery on his newly purchased property in Dayton, O., in 1916.

(But here again as a result of the article, I received a letter from a Mrs. Thomas A. Benzinger of Sparks, Maryland. She wrote: "Twice within the past year specimens of the double Bloodroot from the wild have been brought to me for identification — one along the roadside a few miles away from my home and the other from Pennsylvania. I believe the person who brought that dug up the plant. If so, it was planted on my grounds and I will report in the spring." I did not hear from Mrs. Benzinger thereafter, but this past year, still wondering about the whole question, I wrote her to inquire about the double Bloodroot. The letter was returned to me stamped starkly "Deceased" on the envelope.)

Occasionally the plant is offered in nursery catalogues or written about in garden books or magazines. In these publications it is usually referred to either as *Sanguinaria canadensis flore pleno* or 'Flora Plena', or 'Flore Pleno' or *plena*. Since, so far as can be determined, all fully double specimens in cultivation ultimately derive from Mr. von Webern's original plant, they should properly be designated *Sanguinaria canadensis multiplex*, a name which would cover any fully double forms similar to von Webern's that may have been or might be discovered in the future. Because Dillenius used the name *flore pleno* to describe a form with only some extra petals and because such forms are sometimes found in the wild and may be introduced, confusion might be avoided if horticulturists would consistently use the Wilson name *multiplex* for the fully double form of *Sanguinaria canadensis*.

By whatever name, it is a handsome plant with an advantage for garden purposes over the single form because it holds its petals for many days. The single or even many-petalled forms quickly drop their petals as soon as the blossom is fertilized. The *multiplex* form has no sexually functioning organs; hence the blossoms are infertile and the petals more persistent.

That it cannot set seed and hence reproduce itself by self-sowing as the fertile forms readily do, does mean that its distribution depends on gardeners. Fortunately, in both the typical and double forms of Bloodroot, the thick prostrate rhizomes which are just beneath ground surface naturally divide and produce new growing points. A single rhizome planted in rich humus soil, preferably not strongly acid, in an area highly shaded, never parched nor soggy, will in a few years produce a sizable clump of flowering shoots. Because the rhizomes do tend to double back and old rhizomes decay, it is wise to divide the clumps and replant about every three years to insure vigor and avoid excessive rotting.

Division is most satisfactorily carried out in late summer when leaves have either completely disappeared or have obviously performed their function and the new white growing tips have formed at the ends of the advancing rhizomes. The plant should be carefully lifted to disturb as little as possible the short fleshy feeding roots which grow from the sides and lower surface of the rhizomes. The cluster of rhizomes may be broken apart and each segment with a growing tip replanted shallowly to form the nucleus of another yearly enlarging clump. The "bleeding" of reddish-orange acrid juice from the broken rhizome appears not to lessen its vigor, but the divisions should be promptly replanted to prevent desiccation, especially of the feeding roots.

A clump of *Sanguinaria canadensis multiplex* with its glistening white globes is an object of real beauty in a woodland garden. For his perceptive eye and his generous sharing of this unique wildflower, gardeners owe a real debt of gratitude to Guido von Webern.

### HOW TO GROW: *GENTIANA ACAULIS*

*Norman Deno, State College, Penna*

The subject of this second in this series is one of the finest of all alpinines and one of the best known. Yet it is by no means an easy plant to grow and few gardens in Eastern U.S. see the likes of the color photo in Sundermann's catalog or even the more modest displays shown in Barneby's "European Alpine Flowers in Colour."

Much has been written on the blooming and non-blooming of *G. acaulis* and most members have read of the famous experiments in Scotland where plants were moved back and forth to show that the flowering and non-flowering were cultural problems and not genetic. We think that it is simply a matter of sun and this assertion will probably raise some protests. Plants in full sun bloom profusely and plants in shade or part shade do not. But as we shall see, it is not just a matter of placing the plants in full sun for that alone introduces other cultural problems and plants will fail to bloom for reasons of weak growth.

The problem with *G. acaulis* is essentially that of most high alpinines that live at 10,000 feet. They are subjected to intense sunlight. My light meter shows that on a clear sunny day the light intensity is about 4 times as much at 10,000 feet as at 1000 feet. Furthermore, a greater proportion of the light is in the more germicidal portion of the spectrum which is the ultraviolet. Thus many alpinines require intense light for flowering and they are not as resistant to bacterial and fungal diseases because they are not subject to so much infection in their mountain homes.

The problem in bringing such plants to 1000 feet is that they go down all too readily with disease. With *G. acaulis*, the leaves and growth above ground are still reasonably resistant, but it is the roots that are the "Achilles' Heel." Since high soil temperatures are more favorable for bacterial and fungal attack, the trick is to keep soil temperatures cool. *G. acaulis* also requires continuous moisture and dryness alone is fatal.

Before describing the recipe in detail, it must be pointed out that the clones grown here are all limestone loving forms and these are generally the ones in commerce. Also, they are derived from *G. angustifolia* as shown

by the calyx lobes which are spread out and not applied to the corolla tube. These calyx lobes are spatulate and separated at their base by a blunt sinus. Despite this common origin, there is some variation. The var. *dinarica* form sent out by Sundermann is the most rampant grower and spreads vigorously by stolons. The flowers are on stems about 4 inches tall and this is the tallest form here. The flower is a solid deep blue. Other forms range to completely stemless ones, truly living up to the name *acaulis*. Some have more freckling in the throat than var. *dinarica* and one form tends to have sharply acute tips to the petals and these tips are nearly white, particularly in the late fall and winter bloom.

Every plant is covered with flowers in mid-May. Scattered flowers appear in November, December, and even January. In the winter of 1974-1975 there was an open bloom on November 20, December 20, and January 20, it being a coincidence that these three dates were mild days with temperatures in the fifties. The flower buds can be developed to the point of incipient bloom and still survive unscathed at temperatures of 10°F. There are always some of these long pointed blue buds in evidence all winter long. Curiously, these buds stop developing in early spring so that there have never been open flowers in February, March, or April.

Now to the tricks in achieving constant light moisture and cool soil in the presence of full sun. Basically there are three tricks. First is to use a gravel mulch of 2 inches. A blue-gray dolomite limestone is used here. The gravel acts in several ways. It reflects light more than black soil so less of the sun's heat is absorbed. It provides an insulating layer because the stones contact each other only at a few points and this circumstance greatly reduces the ability to conduct heat. The gravel mulch also reduces soil surface area so that evaporation of moisture is reduced and conditions of more even moisture prevail. Finally the gravel inhibits frost heaving, a circumstance which is particularly detrimental to *G. acaulis*.

The second trick is to lay down a network of limestone blocks with sides at right angles to the flat horizontal plane (the way limestone typically cleaves). The rocks project about 2 inches above the gravel. Set the young plants on the north side of these miniature escarpments. The purpose is to allow the foliage to have full access to the sun while the soil is in shade. It is equivalent to plants growing in rock crevices. Once one grasps the principle, he can make the arrangements as natural in appearance as desired. Even taller rocks are good because the north side allows full access to indirect north light even if the direct sun is cut off.

The third trick is to grow the plants on a north slope of the order of 20-30%. The leaves will face the sun and truly be in full sun, but the sun's rays will hit the soil at a glancing angle and there will be less heat absorbed.

In our location at 1000 feet, any 2 of the above 3 tricks are sufficient. In lower elevations and warmer nights, all 3 would probably be required. Many gardeners have seen *G. acaulis* rosettes dry up and die off or be heaved out of the ground in winter. We feel that these cases are largely due to rotting of the roots. Try the 3 tricks described herein and see if *G. acaulis* doesn't grow much better. You may find that stands can be grown from seeds sown in the open as we do here.

## IT'S A BEGINNING

*William E. Brown, Coram, N.Y.*

It was a cold windy day on Long Island. We had just moved to our new house. As I sat peering out our unadorned windows I couldn't help but notice *it*, a massive form without definition or purpose. Visions of Mount Rainier, Mount Washington, or perhaps the Matterhorn would be reserved for another time.

Spring arrived that year, our first year, as usual, late and wet. A new homeowner's first obligation is to join the masses at the local garden center purchasing grass seed, fertilizer, and all the necessary ingredients in making a lawn. Parenthetically, lawn fever is a disease of the mind on Long Island. I succumbed and spent the better part of my first Spring in trying to establish a lawn. At this point all efforts had been directed to the front of the house. The real test of endurance had been avoided.

Summers on Long Island are generally hot, humid, with periods of drought broken abruptly by violent thunderstorms. It was just after one such thunderstorm that I was compelled to face *it* once again — the hillside.

The hillside directly behind my home ran east to west the entire length of the property. Its north facing orientation was meaningless to me at this stage in my limited horticultural experience.

The heavy summer thunderstorm had badly eroded the hillside which was totally devoid of any meaningful vegetation, — two bulldozers had seen to that. Something had to be done and so, impulsively, twenty pounds of grass seed was indiscriminately thrown to the ground. Much to my surprise every single grass seed germinated or so it seemed. At the end of this first summer three lawn mower blades were discarded, back problems were developing, and the knowledge of a strict covenant in the community, barring the acquisition of domesticated mountain goats, left an uneasy feeling that grass was not the answer in hill cultivation.

I spent the better part of that winter in researching my obvious problem. I can't recall when the idea of rock gardening was given serious consideration, but I did decide that I wanted to be a "rock gardener".

At this point I knew I wasn't a gardener and I didn't have any rocks on the property. Clearly it would be easier to acquire the rocks than to acquire the title of gardener.

During that winter I joined the A.R.G.S. With the arrival of my *Bulletin* the title of gardener now seemed almost unattainable. The esoteric nature of the *Bulletin* had a sobering effect on my optimism.

News was received that Spring of a plant sale in Connecticut. The decision was made, lunch was packed and off we went. While perusing the offerings my wife and I met a fellow Long Islander, Mr. Larry Green. Here was a rock gardener. Larry invited us home to see his garden.

We saw more than a garden. We saw and experienced the cordiality and the willingness to share, which are the hallmarks of a rock gardener. It was Larry Green who introduced me to and nurtured my love of alpine plants.

Enthusiasm for the garden was now at a peak. The question of what type of rock to use in the garden was easily solved by the availability factor. It would have to be shale.

Shale is not indigenous to Long Island but it is in great demand for retaining walls and so it is trucked in for resale.

Upon completion of my first rock garden, my mentor, Mr. Green, was invited to preview the garden. I remember standing back with smug confidence at the grandeur of it all. *Lewisias* in the proper crevices, *Ramondas* total shade, and the carpeting plants on the flat areas. Mr. Green commented succinctly, "It's a beginning".

Now, five years later, I remember Larry's words prophetically. It was a beginning.

That fall my rock garden was dismantled, the shale being applied to the retaining walls running on the sides of the rockless rock garden.

I had made up my mind that limestone would be the best possible choice of rock to be used in the garden. I found a contractor who was willing to travel to New Jersey to bring in the rock. Twenty tons of limestone were dumped to the inquiring glances of my neighbors. The noise of twenty tons of rock being dumped in a residential area was indeed a great cause of concern. My sanity was suspect but my purpose wasn't. Anyone who ventured close enough to the rock pile was quickly pressed into service moving the rocks into a more meaningful arrangement.

After some soil preparations had been made, involving compost and grit, the rocks were moved into place. Each was placed with such care that I could be secure that it had found its permanent place. When I think back those moments of creativity were some of the most enjoyable.

Winter curtailed much of my outside activity that year. January was unseasonably mild though with daytime highs in the fifties. The pond was dug and a constant watch for the Spring had begun.

It was at this time that I became acquainted with the Siskiyou Rare Plant Nursery in Medford, Oregon. I placed an order and waited both for my plants and for Spring. During the interim I became active in our local events.

Spring arrived and so did my plants. My first order included the following: *Campanula raineri* *hyb.*, *Douglasia vitaliana praetutiana*, *Hebe hectori*, *Lewisia columbiana* and *rediviva*, *Potentilla verna nana*, *Saxifraga aizoon* and *sancta*, and *Gentiana acaulis*.

*Douglasia vitaliana praetutiana* has been excellent for its early yellow bloom on a compact grey-green cushion. Both *Douglasia montana* and *laevigata* have also been added. I prefer the latter in foliage.

*Hebe hectori* quickly bid adieu.

The *Lewisias* have been most successful, all except *L. rediviva*. *Lewisia columbiana* is a good bloomer even if the flowers are rather small and unspectacular. *Lewisia rediviva* has been tried three times in the garden and three times it has not grown. *Lewisia tweedyi* and *L. cotyledon* hybrids have joined the ever growing list. They are all placed in either a northern or eastern exposure. Observation has shown that better bloom is usually the case in an eastern exposure. *Lewisia tweedyi* has been spectacular. It blooms heavily and persistently (last year's bloom lasted for six weeks).

*Potentilla verna nana* has developed into a dense mat of green covered in Spring with bright yellow flowers.

*Saxifraga aizoon* now covers a depression in a piece of limestone. If all the saxifrages grew as well as the encrusted sections what a beautiful world it would be.

Kabschia saxifrages have been the bane of my existence. *S. sancta* was carefully placed between two pieces of limestone in a carefully blended soil mixture in a northern aspect. The summer heat arrived and *sancta* left.

I have since tried at least two dozen different varieties of Kabschia and Engleria saxifrages in the open garden in all exposures and I have lost every one of them.

Being an optimist I knew I could solve this perplexing problem. The use of tufa rock is the only way I can imagine growing these choice saxifrages in the open garden on Long Island. Small cuttings inserted directly into small holes in the tufa rock with a minimum of soil seems to work best. In the two years using this medium, all Kabschia saxifrages have grown very well. I intend to try *S. lilacina* and *S. oppositifolia*, both calciphobic, in tufa.

Study Weekend in Connecticut opened up two new phases of rock gardening, trough gardening and alpine houses.

My first hypertufa trough measured approximately 8" x 6" with a depth of 5 inches. When the sixth and final trough was hoisted from its sand mold I knew I was getting carried away with this project as the trough measured 42" x 22" with a depth of 10 inches.

Some plants that I have found to be excellent additions to one's troughs have been *Raoulia lutescens* (not hardy on L.I.), *Arenaria tetraquetra*, *Asperula suberosa*, *Dianthus pindicola* and *microlepis*. *Draba bryoides imbricata* and *Gypsophila aretioides*. The plants named above require a maximum amount of light to perform well.

I have purposely omitted Kabschia saxifrages from the above list of trough plants, as I have found them to be very susceptible to drought and I'm a firm believer in benign neglect. This apparent foible on my part shouldn't deter you as I have seen a trough in Fran Lubera's garden in Connecticut which was solely devoted to Kabschia saxifrages, which was in perfect health.

During that Study Weekend I was most fortunate to meet our then future editor of our *Bulletin*, Mr. Howard Porter. During our conversations the topic of alpine houses was discussed. Howard's joy with his alpine house was infectious.

The following year I spent most of my time in my chapter's activities and reading all the material I could find on the topic of alpine houses. The material found is grossly inadequate for East coast gardeners.

Howard Porter had invited me that prior year to visit him and inspect his alpine house. Off we went, my wife, my two young children and myself. My wife and myself eagerly anticipating the thought of viewing our first alpine house and chatting with Howard again. My children had their own ideas — total disruption of a household. At the conclusion of the day with everyone's plans realized, it was decided that an alpine house would be built.

The alpine house is now complete and a new tufa section has been added to the existing rock garden. It's a beginning.

*It is impossible for the horticultural press to keep up with Bill Brown's progress. At last report he was growing seventy-five different varieties of Kabschia saxifrages and propagating them like mad.* —Ed.



*Dentaria Glandulosa* — *Galanthus Nivalis* — *Daphne Blagayana* — *Erthyronium Dens-Canis*

### KING'S ROCK

*Josef Halda* Praha, Czechoslovakia

When travelling through Rumania in a North-South direction on the main rail and road communication to Bucharest via Brasov, your attention is drawn to the mighty line of the Transylvanian Carpathians, the edge of which you cross while passing through the Predeal Pass with the massif of Bucegi towering above. The plateau of these mountains is within the range of an easy drive up to 2200 m. From there the Transylvanian range continues in an east-west direction by the small massif of Piatra Craiului, ending in the 80 km. long chain of the Fagaras mountains, the highest in Rumania.

Piatra Craiului — King's Rock, Konigstein — is a 15 km. long compact ridge made of dolomitic and calcareous rocks, on average 1700-2000 m. high, ascending from deep beech-fir forests (*Abies albo*, *Fagus silvatica*) replaced in higher elevations by spruce woods (*Picea excelsa*). While the southern exposure slopes down gradually and gently, creating picturesque, undulating pastures, wrinkled only by washed-out beds of streams and brooks, the northern one falls steeply down the valley bordered by a procession of uncounted dolomite towers and cones projecting high above the tree-tops of the surrounding woods. This range is renowned among botanists and rock gardeners for its endemic species, *Dianthus callizonus* and *Primula baumgarteniana* being the most unique ones. The *Primula* in particular

has in the last 150 years produced a detective story worthy of Sherlock Holmes; its existence until recently being rather doubtful. It stirred my curiosity twenty years ago when I started to collect in the Rumanian mountains.

A friend of mine, academician Pilat, head of the Botanical Department of the National Museum in Prague, helped me to find in the herbarium two specimens which had been collected by 1850 and noted as from the "Brasov Mountains." My first objective was naturally the Bucegi range with easy access, even then, from the railway station at Sinsia. I had been looking for *Primula baumgarteniana* there for three years in succession, all in vain. Afterwards we discovered in the Museum another specimen noted as from the "Fagarash Mountains." A further two years of abortive search on the Fagarash limestones. Then I had been botanizing for four seasons in Jugoslavia and Austria; *PP. clusiana* and *wulfeniana* — kindred species — to be found there, which added to my confusion as they grow on alpine carex meadows never descending much down into the lowlands, while the herbarium schedules of *P. baumgarteniana* were quite explicit "on rocks in forest zone." During the following two years, I made extensive searches for it high in the rocks, but all I found was the choice beautifully white-flowered form of *Dianthus callizonus* that we have been growing ever since.

Next year I decided to explore systematically the zone of rocky towers on the northern side of the range. For about six weeks I was — day by day — scrambling endless tens and hundreds of cliffs and rocks, sleeping



*Primula auricula* — *Dryas octopetala* — *Androsace arachnoidea* — *Gentiana glusii*



*Pinguicula Alpina* — *Saxifraga Luteo-Viridis* — *Ranunculus Alpestris* — *Salix Reticulata*  
*Soldanella Pusilla*

in caves, eating whatever Nature offered. After having completely lost any hope of success, I finally found in the area of Mount La Om two colonies of the so-long-searched-after *Primula*, totaling around 35 plants, but out of flower. As the herbarium items had been collected in June, I returned the next year in mid-June. Even though I had a comparatively accurate drawing of the place where I had found them the previous year, it took me three days to find the locality. The result, however, was worth seeing. I found four colonies, not too numerous, not far from one another. High on the rocks and meadows was yet a heavy snow cover, while, in the woods there were only sporadic places where snow had melted, but I was beside myself with joy at the sight of the flowering plants which were tranquilly encroaching on moss on the rock, the shiny dark green rosettes of the plants ornamented by large bright, rosy, white-eyed flowers . . . I could not resist taking one with me, and ever since I have admired the flowering progeny of it when spring comes to our garden.

The *Primula* blooms early compared with its kin of the high mountains. That year therefore, I had a chance to see herbs of woods and sub-alpine meadows in full swing of colors — a show to be missed in summer when all the splendor is gone — meadows of lovely white flowers of *Narcissus stellaris*, boggy banks of streams marked by white, yellow-eyed *Leucojum carpaticum*, here in prevailing bi-flowered form, the purple splendor of *Crocus heuffelianus*. In the damp shade of the beech woods, the growth of white-flowered *Galanthus nivalis*, bright, rosy *Erythronium dens-canis* with nicely purple-spotted leaves, *Viola odorata*, *Dentaria glandulosa*, sparkling

ruby-red diamonds of *Pulmonaria rubra* ssp. *filarezkyana*, white waxy flowers of *Moneses uniflora* in mossy boulders. Everywhere where there is only a little moisture, were to be seen the finely cut pale violet bells of *Soldanella hungarica*. In light fagus woods the heavy nice smell of the prostrate evergreen *Daphne blagayana* is as pleasing as its big white balls of waxy flowers. Large colonies of *Cypripedium calceolus* in its pale purple or carmine-brown forms with the huge inflorescence of turban-lily, *Lilium martagon*, enlivened the sparsely wooded sites in the forests. It was a happy year for me.

To see *Dianthus callizonus* at its best, you have to arrange your trip a bit later — its feast falls in August and September. On the other side of the range, its southern exposed slopes in screes around Piatra Mica, you can see it flowering by the end of July. Its exquisite pale, rosy flowers with ornate carmine, white-dotted stripe running across the petals, open on the tips of long woody stock ending in stiff, blue-green rosettes. There is a widespread opinion among rock gardeners, that it is a difficult species, but those who see it growing in its natural habitat know why. It is a plant of the screes whose joint-rooting branchlets travel several meters in gravel and stones just to reach a pinch of humus. It does not tolerate a standard soil mixture which suits other alpine plants. In our rock garden it is accommodated in a mixture of 90% small stream gravel and 10% turfy soil. What is very important: let the branchlets be buried in gravel up to the neck of the top rosettes — offshoots grow from adventurous buds that could hardly develop on branches exposed to the burning sun. Propagation by cuttings is possible, but never take the main top rosettes — the plant, having been weakened, often dies.



*Narcissus Stellaris* — *Leucojum Vernum* SSP. *Carpaticum* — *Gentiana Acaulis*  
*Crocus Heuffelianum* — *Primula Leucophylla*



*Campanula Carpatica* — *Cypripedium Calceolus* — *Moneses Uniflora*  
*Primula Baumgarteniana*

In screes we can often see the companion of this *Dianthus*: colonies of showily little *Aconitum*, hardly 10 cm. high, with a head of a few big helmet-shaped sulphur-yellow flowers, sitting on several finely cut leaves. It is *Aconitum lasianthum* var. *compactum* — another endemic of Rumanian Carpathians. Very pretty too are rocky “knots” protruding from the screes. We find there dazzlingly odorous rosy flowered *Daphne cneorum*, yellow flowered carpets of *Alyssum repens*, white-flowered finely rayed *Dianthus spiculifolius* that sometimes crossed with *Dianthus callizonus* creates the exquisite *D.x. burcciae*, looking as if taken from the garden. Among the little rocks grow vast carpet-like woody bushes of *Pinus mughus* (syn. *P. montana*) stretching to the zone of spruces; the slopes in June and July glow with the brilliant rosy flowers of the creeping buns with shiny small leaves of *Rhododendron kotschyi*, whose *strobilifera* form as well as the white-flowered one I found there a few years ago, joined by starry-rose-flowered carpets of *Loiseleuria procumbens* on the very ridges of the mountains. The silvery prostrate growth of *Juniperus sibirica* is decorated by the violet flowers with dark eyes of *Viola declinata* of dissected leaves. Bright yellow, orange-eyed flowers of *Potentilla ternata* growing in these heights in its pygmy, stemless form are omnipresent.

*Viola jooi* is another pale-violet blooming miniature, often together with the bright blue *Gentiana orbicularis* kindred to *G. verna*. *Primula halleri* (syn. *P. longiflora*) with elongated tubular, vivid rosy flowers, which is like a rich sister of *P. farinosa*. With it appears the large flowered yellow

*Primula leucophylla*, a relative of *P. elatior*, *Gentiana acaulis* (syn. *G.G. excisa*, *kochiana*, *latifolia*) with huge stemless trumpets of a rich blue color, a flood of white-flowered, rosy flushed *Anemone narcissiflora*, yellow-flowered *Geum montanum*, the pretty carmine orchid *Nigritella rubra* or black-violet *N. nigra*, sporadic but vast carpets of *Salix retusa* and many, many grasses and carex.

In the lower rocky parts I can see a lot of felty-hairy *Leontopodium alpinum*, the violet radiate heads of *Aster alpinus*, rosy-flowered *Sempervivum schlehianii* ssp. *blandum*, rigid tufts of *Gentiana clusii* with blue flowers and tiny white-flowered *Gypsophila petraea* with tough buns of blue-green leaves. Fragrant, yellow-flowered *Primula auricula* is not plentiful here, in contrast to silvery rosettes of *Saxifraga paniculata* (syn. *S. aizoon*) which fill every crevice. Shady wet rock faces radiate at a distance the white color of their flowers *Ranunculus alpestris* with the rosy-violet of *Soldanella pusilla* following. In their neighborhood grow the shiny fleshy rosettes of the voracious white flowered *Pinguicula alpina*, big carpets of the shiny green mint-like leaves of *Salix reticulata*, a minute pygmy form of china-blue *Campanula carpatica*, *Saxifraga luteo-viridis* with tilted yellowish glandular hairy little bells on beautiful silvery cushions of rosettes and small buns of yellow-flowered *Draba kotschyi* on rock ledges.

Moist screens among rocks host yellow-flowered *Doronicum carpaticum* and even the smallest trickle of water can be told by processions of yellow-flowered *Trollius transsilvanicus* or by the shiny yellow flowers of *Caltha laeta*. The higher and nearer to the ridge, the more often hairy buns of *Eritrichium nanum* appear, flowering profusely with adpressed, stemless flowers



*Lloydia Serotina* — *Viola Alpina* — *Eritrichium Nanum* — *Saxifraga Oppositifolia*

of sky-blue color with a yellow eye, as well as the rosy-flowered mats of *Saxifraga oppositifolia* or tiny, tight domes of *Saxifraga paniculata* var. *minor* (grown in the gardens as a cultivar *Minutissima*). Where there is only a pinch of humus, the huge violet flowers with black eyes of *Viola alpina* invite me to look at them, sitting on dainty buns of glossy, dark green, fleshy leaves. *Dianthus gelidus* with large rosy petals, orange-flushed on reverse, adds striking gaiety to the delicately shaded remainder of the vegetation. All around is *Lloydia serotina*, blooming in crevices and barren fields, penetrating into the cushions of plants on the buns of *Eritrichium*. Decorative cobweb-hairy buns of *Androsace arachnoides* with relatively large white, yellow, purple-red-eyed flowers are not too numerous here. Another rare guest to the ridge is the rose-flowered *Primula mimima*, growing here and there in *Loiseleuria* carpets or in vast growths of *Dryas octopetala*.

I descend the range in about its center, via Refugiul Diana, and turn left to the chalet Plaiul Foi, situated at the foot of the northern face of the ridge. (On the southern side, much higher, on sub-alpine meadows is Cabana Curmature, accessible by car, if you do not mind its dampness.) Along huge wet fellfields, studded by big boulders and overgrown by the umbrella leaves of *Petasites hybridus*, I reach a brook, and following its stream I get to the highway. Brook banks are bordered by the giant plants of *Telekia speciosa*, whose rich yellow, up to 15 cm. in diameter, ray flowers grow to the height of 3 m. Reaching the chalet and turning back I see again the fairy coulisse of the towering barrier of the King's Rock — Piatra Craiului Mountains.



*Rhododendron Kotschyi* — *Nigritella nigra* — *Viola declinata* — *Juniperus sibirica*  
*Loiseleuria procumbens*



*Leontopodium Alpinum* — *Aconitum Lasianthum* Var. *Compactum*  
*Dianthus Alpinus* — *Gentiana Orbicularis*

### WEEDS IN THE ROCKERY

Paul H. Boswell — Massillon, Ohio

A rock gardener's weed may be a ground-cover user's pride and joy so, with certain obvious exceptions, the term may boil down to a matter of practical application. Almost nobody, I suppose, welcomes the ubiquitous dandelion in his lawn and garden though he may relish the foliage as a salad and perhaps ferment the flowers for making wine. To all of us there are other irritants coming under the classification of just plain weeds and who has not known the aggravation of trying to separate a thriving chickweed from an intermingling clump of a prostrate dianthus?

All old time gardeners have experienced the phenomenon of invasion and most of us know plants that we wish had never been introduced into our gardens. One of my special grievances is *Campanula rapunculoides*, a plant I would not have purchased or accepted as a gift even in my elementary days of gardening had it not been represented by a long established and reputedly impeccable house as that of Adenophora "farreri". Probably that was not the fault of the seed company, however, as Dr. L. H. Bailey used to write that the seed of the ramping bellflower is gathered and sold under a multitude of names and almost anyone is apt to get it at one time or another. Once grown in a garden it can beguile the amateur for a time because of the certain beauty of its flowers and then when one begins to "wise up" it is often too late because every little rootlet

broken or cut in digging seems to beget a new plant and the harder one tries to eliminate it the more it spreads. Once entrenched in a retaining wall, as happened in my case, there was no recourse except to tear down the wall stone by stone and then remove yards of soil beyond the wall. Possibly a chemical killer might have worked at the beginning but after the plant had insinuated itself among beloved treasures there remained no recourse except to pull as much of the creeping foliage as possible and throw it on the compost pile. One either goes to all-out war in which we lose friends as well as one's enemy, or we compromise by some sort of containment.

Many years ago I brought home the garlic mustard, *Alliaria officinalis*, thinking it to be a native wildflower among which it was growing. This, too, I have never been able to eradicate completely as it spread to an adjacent untended lot and seeds keep washing back into my garden. Its root system does not go as deeply as that of the above named pest but somehow it continues to intrude. Woe betide the gardener who allows it to flower and set seeds.

Another plant apt to entrance the innocent is *Lamium purpureum*, an annual of special beauty in its early foliage and flowering. In a wild garden of considerable extent I suppose it would present no real threat and might even be appreciated. Frankly I haven't tried to eliminate it completely in the border where it acts as a ground cover for daffodils but a considerable amount goes into the compost in the course of a season; otherwise it could become overwhelming in my smallish garden.

To have a yellow poppy while waiting to acquire our native *Stylophorum diphyllum* I once brought in a few plants of *Chelidonium maius*. This, too, was a grave mistake for, though it seems to be easily uprooted, it continues to pop up somewhere and I suspect it will continue to pester me during my lifetime.

Two weedy ornamentals finally eliminated from my rockery were *Filipendula hexapetala* and *Polygonum Reynoutri*. The latter problem took several years, as its underground stolons can run four or five feet before crowning up into a new plant, but persistence at last paid off.

Some bulbous plants are weedy. Most alliums and particularly *A. schoenoprasum* need beheading when they have flowered. At least two of the muscari require like treatment and also they multiply too rapidly by the proliferation of their bulblets underground. Even the splendid *Scilla siberica* is prone to rapid colonization and it is wise to pinch off most of the seed pods when one decides that enough plants are present. I hate *Colchicum byzantinum* when its rank foliage dominates its area in spring but my feelings are mollified when it flowers in late summer when garden color is beginning to wane. *Ornithogalum umbellatum*, but not *O. nutans*, has no place in a rockery as its bulbs divide and multiply into an ever widening almost impenetrable mass. Even some species tulips are better relegated to the border, as their rank and floppy foliage can be unsightly and choking to tiny plants having the misfortune to grow too close.

Having been an amateur botanist most of my life I have a special love for our native wildflowers and ferns, particularly those partial to woodland culture. As Dr. Wherry has often pointed out, some of these can also become weedy. One can say that any native violet that grows easily can

quickly dominate an area. I recall being shocked and a little indignant when Guy Nearing wrote many years ago that our handsome *Polemonium reptans* is weedy but my mind was opened and presently I began to observe that the statement was indeed true. Since then I have plucked out many of its seedlings where more precious plants were threatened. The same is true of one of the more beautiful of our natives, *Mertensia virginica*. This one, however, has a propensity for mutation and I scarcely dare eliminate a seedling until it has flowered. The white version has not yet shown up in my garden and is not common in the wild as I have prowled through acres of the species flowering shoulder to shoulder and never found a white one. I do, however, have a seedling that bears pink flowers that do not go through the customary color metamorphosis. At least one other gardener I have encountered has a similar plant. Practically any seed that falls from any species of the genus *Hydrophyllum* will beget a new plant. Handsome as is *H. virginianum* it is not for a small synthetic woodland such as is mine but deserves a location in rich woods where it can flourish in abandon. *Geranium maculatum* with its hard, spreading rhizome may be suitable for the very edge of the garden and held within strict limits, but should never be allowed to compete with such aristocrats as the woodland Orchidaceae.

Being now retired and to all intents and purposes disabled by two myocardial infarctions, I can and do a lot of walking when my strength returns after each attack. Ranging for miles to all points of the compass I find a great many plants which are new and strange to me. Railway beds I find particularly fascinating for here grow not only natives partial to sterile soils, tiny drabas and other crucifers, but introduced plants some of which were probably started when seeds were swept from box cars. One I like when grown not too crowded together is the European *Chaenorhinum minus* and I have brought it into my garden, thinning the seedlings as desired until I get plants long in bloom and which rival for beauty many a select alpine. Untended, it, of course, would also be invasive.

A native annual, also long in flower, and more curious than beautiful is one of the *Polanisas*, I think *gravolens*. Its normal range is more northward and westernly and it seems to be something of a rarity in this part of Ohio, so perhaps it too came into this area as a hobo in a freight car. I must grow it for a time, for what other genus in the cleome family is of rockery stature?

At my age and state of health one begins to speculate on what will happen to one's garden after death. I would hope that rock gardeners within easy range might converge and dig for their own collections all of the true alpinists of value, the rarer native wild plants, the precious tiny shrublets, the rare northern Asiatics and hardy Japanese species of which I have been so proud. It is most unlikely that any member of my immediate family would wish to retain the property and it is a good bet that it will be quickly sold. One encounters few people in this age disposed to supply the loving care and hard work that a rockery requires and it is probable that a new owner would hold the garden in contempt. Children will vandalize and trample wantonly and in a few years only the very weeds of which I have been writing will rule. May they dispose themselves in the manner in which Mother Nature best displays them.

*CHRYSOGONUM VIRGINIANUM*  
H. Lincoln Foster, Falls Village, Conn.

Farrer, in his inimitable way and with that slight touch of scorn he usually nourished towards American plants, portrays *Chrysogonum virginianum* L. as: "a very popular and much praised composite of curious unattractiveness, though useful; forming under any treatment, masses of low foliage on which all summer through appears a profusion of yellow flowers with rays so few and broad as to look like five-pointed stars not belonging to the Composite at all."

Despite Farrer's first phrase about its popularity the plant is rarely mentioned by other rock gardening authors, either American or British, and it is very little seen in gardens today, whatever its vogue may have been in former times. Nor is it a really common plant in the wild.

It is found in nature from southern Pennsylvania southward to Florida and Louisiana, in rich woods and on shaded rocks. Over its range it tends to diversity into two recognized varieties: the typical variety, a clumpy but rather gawky plant with small gap-toothed flowers on stems up to 16 inches tall; and var. *australe* forming a spreading stoloniferous densely leafy carpet with large, broad-rayed flowers on stems of 6 to 8 inches at the most. Our own Ed Alexander described this latter as separate species and assigned the epithet *australe* which it now bears as a variety. This is an appropriate name because in the Carolinas, where the two varieties are found, the typical one is centered in North Carolina and var. *australe* in South Carolina.

The stoloniferous variety is far superior as a garden plant and the best forms of it are easily propagated by simple division of the clump. As is suggested by its natural habitat, *Chrysogonum*, known by the colloquial name Green-and-Gold, and occasionally as Golden Aster (a name more commonly assigned to the genus *Chrysopsis*), thrives best in cultivation with a bit of light shade. It will grow, as Farrer suggested, even in full sun and dryish sites but there, in mid-summer, it tends to wilt in hot weather.

The complex golden flowers are borne on short stems arising at the joints between pairs of leaves: hence the name *Chrysogonum*, from the Greek *chrysos* — golden and *gonu* — knee or joint, which Linnaeus borrowed for this American plant from the Greek name for some obscure herb.

The flower head is composed of 5 (and occasionally 6) yellow ray flowers and a dense cluster of disk flowers in the center. Each ray flower carries at the base a yellow divided pistil, which eventually produces in the ovary that adheres to the involucre bracts blackish nut-like seeds without the typical composite feathery pappus. The disk flowers, developing first unevenly about the rim, are complete little flowers with tiny yellow petals, numerous stamens and pistils but the pistils are sterile.

As these composite flowers develop, they change from day to day; and all through the season til frost, new ones are unfolding as the old ones pass away. Not a spectacular plant, but certainly useful as Farrer grudgingly admits. W. H. H. Preece in that rare book published in 1937, *North American Rock Plants (First Series)* analyzed the singular charm that *Chrysogonum* holds for those who have grown it.

"I must admit that I do not quite know why I am so fond of this little plant: it has neither splendour nor prodigality of blossom; it gives forth no intriguing perfume; it has neither airy grace nor stately form;



*Chrysogonum virginianum*  
var. *australe*

the rather coarse foliage is produced with abandon, the dainty golden blossoms with considerable restraint; its habit is humble and lowly; just the same, to grow it is to love it. Sometimes you meet an attractive girl; you analyze her features and find she has not one good point, then you consider the *tout ensemble* and find her altogether adorable; so it is with *C. virginianum*, though, in addition to its indefinable charm, it does have some very good points. Its most endearing quality, perhaps, is its persistency in blooming for, though it never covers itself with a garment of Midas, there is rarely a day from mid-March to late November when you cannot find a few five-pointed, golden stars gleaming amidst the olive-green foliage."

PLANTS TO KNOW AND GROW  
*SISYRINCHIUM ANGUSTIFOLIUM* 'MACOUNII ALBA'

Roy Davidson, Seattle Washington

Victor Reiter's La Rochette Nursery in San Francisco offered about twenty years ago a very fine "blue-eyed grass" as *Sisyrinchium macounii*, as well as its white counterpart *S. macounii alba*. Of all the "rare white forms" of normally colored species, this is perhaps one of the most valuable for it has the "true grit" to stay with cultivation. Brought to the nursery by a customer who had spied it in among the blues and purples in a field near San Simeon, Monterey County, California, it was given the current name of the day, as supplied by Bicknell in 1900 to branched plants originally from Vancouver Island, not much different however from others of Alaska called *S. littorale* Greene 1899. These are but two of about ten or a dozen of the synonyms reflecting the variability of what is now considered to be the polymorphic *S. angustifolium*, once also called the "bellum complex" for *S. bellum* Watson 1877. Members are distributed on spring moist slopes from Baja to Alaska, to the eastern slopes of the Rocky Mts of Alberta to New Mexico, often quite far up in the mountains, simple or branched, few-flowered or many, usually some shade or tint of blue-purple.

There are some 50-60 species of *Sisyrinchium*, and except for one species, a yellow one, in Hawaii, they are exclusively of the New World, both in the north and south continents. When the yellow-flowered species, including *S. californicum*, are taken as constituting the allied genus *Hydastylis*, then of course *Sisyrinchium* becomes totally American. Several of the eastern species are found only in white, and the northwestern prairie species *S. douglasii* is so distinct it was originally classified within the genus *Olsynium*, with the closely allied *S. inflatum*, merely slighter and more easterly in distribution.

It is rather exceptional that any albino is of stronger constitution than the normally colored; this one rarely seeds and forms small leafy growth in the inflorescence, which when removed and rooted, serve to propagate the clone. Flowers are about an inch, freely given over a period of many months as the stem forks and reforks. The few seedlings grown tend to be ice-blue rather than white, but like the parent remain low and branched with shorter and broader rather yellowish green foliage than is usual, and this too is like the parent.

*Sisyrinchium angustifolium* was the name given by Miller in his famous "Gardener's Dictionary", 8th edition of 1768; 'Macounii alba' is here retained in clonal sense for the plant so well distributed under that label, and in spite of its not having come from Vancouver Island.



## FOR THE SEATTLE BOUND

The *Bulletin* of July, 1959 (Vol. 17 No. 3) is devoted to flowers of Washington; the whole issue is well worth rereading and studying before our trek to Seattle.

### ARTICLES ON WESTERN ALPINES IN PAST ISSUES OF THE BULLETIN

*Eileen Sutton, Seattle, Washington*

#### WASHINGTON

##### THE CASCADE MOUNTAINS

Cassiope and Phyllodoce	Sallie D. Allen	17	3	89
Collecting in the Cascades	Brian O. Mulligan	9	6	91
Collomia larsenii (Mt. Adams)	Bob Woodward	31	2	48
Day on Bald Mountain	Elizabeth Peterson	26	1	20
Dryland Rock Gardens	Jean Witt	17	3	87
Heavy Snowfall in the Mountains (Mt. Rainier)	Gus N. Arneson	32	4	176
Huckleberry Creek Revisited (Mt. Rainier)	Gus N. Arneson	31	1	34
Mount Adams — that Bashful Cascadian Alp	Arthur R. Kruckeberg	21	1	19
Northwest Field Trips — Cascades and Prairies	Florence Free	20	4	117
Northwestern Unit Field Trip (Cascades)	Helen Morris	10	4	84
Notes from the Northwest (Mt. Baker)	Elizabeth Peterson	25	2	59
N.W. Unit Goes Bus Riding (Cascades)	Albert M. Sutton	16	2	52
Reflection Lake (Mt. Rainier)	Scott McClanahan	23	1	19
Summerland and Beyond (Mt. Rainier)	Albert M. Sutton	14	3	65
Table Mountain (Cascades)	Frances Kinne Roberson	9	1	4
Truly a Rock Garden (Mt. Rainier)	Albert M. Sutton	11	3	68

##### THE OLYMPIC MOUNTAINS

Abies lasiocarpa, the Subalpine Fir	Frances Kinne Roberson	7	3	38
Gems of the Olympics	Mrs. Oscar L. Nelson	5	1	3
A Day on Mt. Angeles	Albert M. Sutton	11	3	63
Martin's Peak	Brian O. Mulligan	9	6	71
High Divide in the Olympic Mountains	Albert M. Sutton	17	3	69

##### THE WENATCHEE MOUNTAINS

Crystal Mountain	Aitha Miller	17	3	91
Favorite Nook in the Wenatchee Mountains	Robert C. Putnam	17	3	88
Northwest Field Trips	Frances Kinne Roberson	9	5	84
Rocks and Plants — An Episode in Montana Ecology	Arthur R. Kruckeberg	23	3	73

##### CASCADE-OLYMPIC-WENATCHEE MOUNTAINS

Gardens of the High Skyline	Edith Hardin English	17	3	65
Moisture Loving Plants of the Northwest	Frances Kinne Roberson	8	2	26
On the Trail	Albert M. Sutton	33	1	31
Penstemon Field Identifier	Kenneth and Robin Lodewick	31	1	26
South from Seattle in the Early Spring Pt. I	Albert M. Sutton	20	1	1
South from Seattle in the Early Spring Pt. II	Albert M. Sutton	20	2	40
Western Water Dabblers	Edith Hardin English	6	4	66

##### SELKIRK MOUNTAINS-WASHINGTON

September Spring in the Selkirks	Roy Davidson	21	1	23
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#### WASHINGTON-OREGON-IDAHO

Cross Section Through Idaho	B. O. Mulligan	19	4	101
Edge of the San Juan Islands in May (Wash.)	Gus N. Arneson	33	1	39
Edible Berry-Producing Plants of the N.W. Penstemon Country	Gus N. Arneson	32	2	83
Some Western Alpines	Myrtle Hebert	16	4	111
	Charles Thurman	20	3	69

#### OREGON

Along the Skyline Trail	Mrs. Raleigh Harold	20	3	76
Bunch Grass Fields of Northeast Oregon	Mrs. M. I. Byman	17	4	120
Jewels of Central Oregon	Neill D. Hall	21	1	15
Trillium ovatum in the McKenzie Lava Bed	Gus N. Arneson	29	4	154
Wildflowers in the Oregon Country	Dorothy B. Marshall	17	4	102
Yesterday's Road				

## OREGON-CALIFORNIA

### SISKIYOU MOUNTAINS

Lewisias of the Siskiyou	Marcel Le Piniec	22	1	4
Memorable Day in July	Sallie Allen	23	1	7
Plant Hunting in the Siskiyou	Marcel Le Piniec	7	3	36
Saga of the Red Buttes	Boyd Kline	22	4	97
Siskiyou Rarities	Lawrence P. Crocker	28	2	71

### CALIFORNIA

Alpines at Monterey Bay	Ray Williams	13	3	61
Big Sur Ceanothus	Dara E. Emery	24	3	87
Cassiope mertensiana ciliolata	Margaret Williams	28	4	149
Garden Notes from Monterey Bay	Ray Williams	16	3	69
Gems Along the Mt. Whitney Trail	Mrs. D. S. Croxton	21	3	72
In My Garden	Ray Williams	20	3	72
Some Coast Range Plants	Ray Williams	17	4	113
Winter Garden in Central California	Leo Brewer	19	3	71

### CALIFORNIA-NEVADA

Collecting Trip into the Sierra Nevada	F. O. Pearce	18	1	10
Contrasts in the Sierra Nevada	Margaret Williams	19	2	53
Day in the Snake Range	C. R. Worth	18	3	75
Field Trip in the Sierra Nevada	Pauline Croxton	25	1	28
Flowerless September in the Sierra Nevada	Shirley Backman	22	1	12
Found-Cassiope mertensiana	Margaret Williams	18	3	82
Plants of the Sierra Nevada	Margaret Williams	17	4	17
Spring in the Nevada Desert	Margaret Williams	16	2	33

### GREAT BASIN

#### NEVADA-UTAH-OREGON-IDAHO-CALIFORNIA-WYOMING

Great Basin Phenomenon I	Roy Davidson	32	1	15
Great Basin Phenomenon II	Roy Davidson	33	1	19
Great Basin Phenomenon III	Roy Davidson	33	2	64
Great Basin Ranges and the Rocky Mountains	C. R. Worth	18	2	33
Great Lepidium Hunt	Bob Woodward	32	1	10
The Golden Peaks	C. R. Worth	13	3	61
West, This Summer?	C. R. Worth	8	3	37
Where and When to go — Alpine Meadows	Ralph Bennett	18	3	26
Wyoming — My Favorite Plant-Hunting Area	Bob Woodward	29	3	81
Wyoming — Vacation in Yellowstone National Park and Glacier Park	Nickolas Nickou	26	4	139

### MONTANA

Alpines of Southern Montana	Olga W. Johnson	16	3	65
Midsummer Flowers of the Montana Rockies	Olga W. Johnson	12	2	50
Notes from Northwest Montana	Olga W. Johnson	12	4	100
Storm Lake	Frank H. Rose	20	3	39
Western Rock Garden in Missoula I	Klaus Lackschewitz	23	3	82
Western Rock Garden in Missoula II	Klaus Lackschewitz	23	4	127

### ALASKA

Alaska's Pink Poppy	Helen A. White	32	2	55
Alaska Mountain Malady	Kenneth Roberson	26	4	129
Alaska Wildflowers for Your Garden	Mrs. Louis Stutz	17	4	97
In Search of Alaska's Flowers	Helen A. White	24	4	114
Notes from the Northwest — Alaska	Sallie D. Allen	23	3	93
Wildflower Pilgrimage to Alaska	Richard Redfield	31	3	89

Roy Davidson writes:

When Charlie Thurman and his wife Gladys sold their well-known mail-order native plant business some years ago they moved to a tract of undisturbed woodland to establish a nature-trail preserve, Silvaglen; here Charlie tells of it.

#### SILVAGLEN

"Silvaglen is the non-profit retirement project of a lifelong lover of Western native plants and is a nature-trail type garden of material from the Pacific Northwest planted in plant life zone groupings. The setting in a canyon in the Canadian life zone of Eastern Washington near Mt. Spokane

State Park is clothed with nine species of mature conifers with a beautiful year round stream traversing the property.

"The easy strolling trail winds up a draw fed by springs, through plantings of woodland and subalpine flowers from myriad mountain ranges and meadows, with shelters for resting or contemplation amidst the tall trees, and then around a ridge to plantings of desert and semi-arid plants on the open ridge above. From here the Calypso Trail traverses a hillside alive with the lovely Fairy Slippers in season and carpeted with Twinflower, all shaded by tall Pines and Firs. Here also is the Ladyslipper and Mossy Slope Trail where Pyrolas, Indian Pipe and similar flowers dot the slopes. As you continue along the main trail outcrops of huge granite shelter tiny rock ferns and Fairybells as the trail descends to the creek where along Alder Lane Trail you will wind among large clumps of Lady Ferns interspersed with many species of wetland plants and slopes of Penstemons until you arrive at the Humid Transition section where Coastal plants grow. Next a section of Eastern Wildflowers and Ferns, and finally you cross the creek into the Alpine scree with hundreds of Western Alpine flowers from many ranges blooming from early spring till late in fall."

(To reach Silvaglen drive Northeast out of Spokane on Hyway 195 about 10 miles to the Mount Spokane State Park Hyway #206 and follow it 12 miles to Elliot Road. Turn right for 1000 feet to Silvaglen Entrance. Admission is \$1.00 per person or Season Tickets at \$3.00.)

*It does sound rather like heaven on earth, doesn't it?*

#### ANN ZWINGER TO SPEAK IN JULY

With the appearance of the review of the book "Land Above the Trees" in our bulletin, along with that of its predecessor, "Beyond the Aspen Grove" (31:3, p. 124; July 1973), rock gardeners and other naturalists were introduced to a fellow spirit, an author of almost remarkable skill and talent, one of the most important present-day contributors to the literature of understanding plant life, especially at the limits of its possibilities on the mountaintops, and of ecology, in its total truth.

Ann Zwinger proved to be both fascinatingly factual and very beautiful, writing "from the interest of a naturalist, the eye of the artist, and with the words of a poet", to quote from the review of the third book "Run, River, Run", (33:4, p. 200; Fall 1975). There is a very vital, very immediate quality — almost an urgency — in the author's presentation, yet she says of herself, "Yes of course, call me Ann — everybody does; I seem to be one of those flour-up-to-the-elbows mothers everyone calls Mom".

Ann gives us flashes of her innermost self while riding out a severe electrical storm huddled in the no-protection of a narrow crevice on the mountaintop" . . . and I remember all the things I had forgotten to tell my children." Also in the moment-of-truth when she must face up to running the roughest part of the river in a canoe for the first time; "I begin to feel apprehensive about white water . . . hellbent on destruction . . . the sound, even more than the sight . . . focuses in the knotted muscles of my stomach. . . . And then it is time. From somewhere a voice, *surely* not mine . . . a little quavery, but *very* positive. . . . *I wouldn't miss*

it for the world! . . . I am surprised we go so fast . . . (the fluid river is falling 20 ft./mi. and this is a sudden plunge). . . Then, standing ankle-deep . . . drenched to the shoulders . . . and with water still streaming down my face — I am overwhelmed with a sense of soaring joy, of having flown with the river. . . . Being a raft-passenger will never be the same again.”

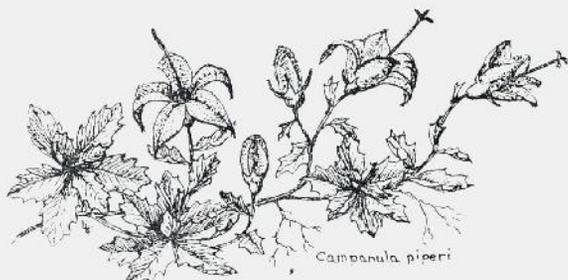
Any and all of us who have been enlightened, uplifted and entertained by this artist-author (she holds degrees in art history, and her drawings reveal an inner eye that no camera possesses) will savor the opportunity of hearing her in July when she will be the featured speaker at the First Interim International Rock Garden Plant Conference; she is undeniably one of our very own. “Do I garden? We-ll, yessss, no-o-o-o — sometimes. . . . By trial and error; but I talk to everything that grows and make it welcome.”

What Ann Zwinger has to tell us about plant growth in tundra situations is as gripping as her elation — and her humility — at defying the river . . . and winning, sometimes as comic as her suddenly-sighted beaver “poised halfway between dinner and surprise”, or as poignant as her mountainside “gold-plated in aspen. . . . Mycenaean treasure just opened to the sun”.

We also look forward to the talented picturing of photographer-husband Herman Zwinger. From their home high in the Colorado Rockies, the Zwingers have flown to explore together too the other ranges of North America in pursuit and study of the life of the plants and animals in the “Land Above the Trees.”

As an addendum we might note that *Run, River, Run* won for the author the 1976 John Burroughs Medal for distinguished writing in the natural sciences, and that *Land Above the Trees* was nominated for a National Book Award in Science.

— Roy Davidson



## OLDEST, BIGGEST, TALLEST, WEIRDEST

Roy Davidson, Seattle, Wash.

Some of America's plants take honors for staggering size in mass, height or girth, for mind-boggling age, or for eye-bugging oddity. Although not all are suited to planting in the "modest home grounds", let alone its rock garden, their undeniable fascinations attract them to us, for they seem to defy both reason and the chances of probability, as well as the destructive forces Nature wields along with those constructive.

The oldest (verified) is a *Pinus longaeva*\*, "Bristlecone Pine"; several individuals of its species are age-dated from core drillings at over 4500 years, and one cut down for study proved to have 4844 countable annual growth rings. These ancient trees are to be found in the arid intermountain Great Basin Ranges of Nevada and adjacent California. The very fine-grained, resinous wood is nearly impervious to decay even when long dead, the acidity of the habitat responsible in part without doubt. The tenacity with which these trees can maintain life in one small branch during periods of stress and deprivation through only a thin umbilicus of bark connective to the root is nothing short of phenomenal in a survival sense, likened to man living through minus 100°F for the winter.

Possibly of comparable age, though unproven, are some enormously wide-spreading, prostrate "Evergreen Box-Huckleberry", *Gaylussacia brachycera*, in the Appalachian Mts. of West Virginia. A creeping-rooting habit of growth makes it quite impossible to age-date them with any more certainty than that of an educated guess based on growth-rate. Nevertheless, several that appear to constitute single individual clones are thought to each cover areas measured in acres, which certainly makes them very big indeed, in on sense of the word, if not assuredly "ancient" in age.

(A gigantic Formosan "Sun-Tree", *Chamaecyparis taiwanensis*, was recently reported in the world press as a claimant to honors, said to have a girth of 88 ft. and an age estimated at "about 6-thousand years".)

The earth's largest plants in bulk are certainly the "big-trees", *Sequoiadendron (Wellingtonia) gigantea*, of California's southern Sierra Nevada, with brittle, non-resinous wood protected alike from fire and decay by a fibrous bark up to two feet thick. The bark was stripped from a single huge tree shortly after the discovery of the species and reassembled as the main attraction of an exhibit in New York in 1855, then again the following year in London, focusing much attention on the gargantuan tree, viewed to that time with great disbelief.

The largest individual, known as the "General Sherman Tree" rises to 272 ft., with a girth at five feet above ground of nearly 80 ft.; its weight is estimated at 2-thousand tons. An even larger one fell (silently, for all we know?) shortly after its discovery by man, and someone studying

\* *Pinus longaeva* is recently described to encompass those more western members (formerly all *P. aristata*) not having prominent resin-ducts in the foliage and other minor differences.

the conditions of its demise posed the reason to have been inundation of the heartwood by ants, thereby causing an imbalance! Another was cut down just to satisfy the woodsmen's curiosity — to see how long it would take! It did not fall silently.

The record-holder for girth is a monstrous "Montezuma Cypress", *Taxodium mucronatum*, growing in Oaxaca, Mexico. At five feet above its base, this monster tapes in excess of 112 feet!

Honors for tallest go indisputedly to northern California's "Giant Redwood", *Sequoia sempervirens*. Proximity to the Pacific fog-belt in a sheltering terrain has allowed some individuals to attain heights comparable to that of the Statue of Liberty and other man-made monuments, the loftiest of them all being an individual towering only a bit over others in a grove of such giants, to reach to 366 feet. The world's tallest non-Sequoia is yet another species of American endemity, a "Douglas Fir", *Pseudotsuga menziesii*; the big one at Lake Quinault on Washington's Olympic Peninsula reaches to 310 feet. (Even as this is being written, a contender is reported blown down in a windstorm in the Coast Range of Oregon.)

The strange cacti take many forms and shapes and come in all sizes, from those resembling a clutch of Quail-eggs to the towering "Suguro", *Cereus (Carnegiea) giganteus*, whose mightiest specimen lofts its gauntness to no less than 53 feet; its estimated weight is a "probable ten tons", perhaps much less in the dry season.

Just as strange, though in a quite different respect, are the "Pitcher-Plants" of the family *Sarraceniaceae*; totally American in present-day occurrence. They are found in three widely separated places, the Paracima Range of South America (5 sp. of *Heliamphora*), eastern North America (9 sp. of *Sarracenia*), and the Siskiyou-North Sierra of northern California and coastal Oregon in western North America (1 sp. of *Darlingtonia*). Within the jug-like leaves of all the species an aqueous solution contributes to a remarkable digestive action, analagous to that of the stomach of animal species, and by which the plant is able to obtain certain necessary elements.

These extraordinary American plants represent not only the extremes of their kind, their very kind constitute the limits of Nature's unlimited variety, the green mantle that is Earth's outermost skin. Some other of her wondrous allowances — and even mistakes — have given us garden-size forms of most of the monstrous species, and we can enjoy them in compact and creeping *Sequoia sempervirens* 'Cantab' (widespreading, prostrate), as domed, miniature *Pseudotsuga taxifolia* 'Fletcheri' and other variants, and in little 'Big-Trees' propagated from witches-brooms in *Sequoiadendron*. All "Bristlecones" are so slow, so slender and graceful we may grow them through a garden's lifetime without fear they will ever overpower, while the "Box Huckleberry" is to be recommended as groundcover in open acid woodland.

Acid sphagnum pockets in sheltered, but warm, spots will accommodate the pitcher-plants, never more enjoyable than when hovered over by exquisite blossoms. A very great variety of smaller cacti are easy subjects on sunny ledges, plains and plateaus and mesas of the warm garden, where silky flowers in flamboyant colors win admiration even from those who can not abide their spiny hostility otherwise.

## A SOMETIME SCREE

Faith P. Mackaness, Corbett, Oregon

A garden is a "sometime thing"! In twenty years the foundation plantings on either side of the front entrance to our home in the Columbia River Gorge had hopelessly outgrown the space allotted to them on the original landscape plan. Since drastic pruning had merely prolonged the inevitable, the only course was to start over again with new and fewer shrubs. But no sooner had the mangled remains of the old familiar plants been carted away and replaced with fresh nursery stock than glaring expanses of bare soil appeared. So, before weeds invaded the gently sloping "growing space" paralleling the sidewalk, the addition of a mulch or ground cover would have to receive top priority.

How would *Lewisia*s "do" as weed suppressants between the walk and the newly planted golden pfitzer junipers? Why not combine them with the more aggressive stonecrops? With a nucleus of materials already on hand, this might be worth trying. Yes, here were the makings of an interim rock garden peopled with lewisias, hardy sedums, claytonias and such miscellaneous succulents as *Mesembryanthemum othoma* and encrusted saxifrages. So be it; that barren strip of sandy loam, four to six feet wide and thirty feet long, was destined to become an experimental "scree".

Last August the bulb frame was overflowing with a collection of potted lewisias left over from the spring flower show. Besides the gorgeous cultivars raised from English and Scottish seed, there was an assortment of the more easily procured species, subspecies and forms grown from wild seed or donated by friends. In record time, *L. brachycalyx*, *L. oppositifolia*, *L. nevadensis*, *L. leana* together with various forms of *L. columbeana* and *L. cotyledon* were freed from their pots, transplanted to the future "scree" in drifts and anchored in with #2 chicken "teeth" (granite chips). After much soul-searching, the *L. rediviva* forms and *L. tweedyi* were not liberated but buried up to the rims of their pots in soil below the overhanging eaves of the Southwest corner of the house. They reacted by flowering extravagantly. The assorted columbeanas adjusted readily to areas receiving morning shade. The wildly floriferous Sunset Strain, Rose Splendor Birch Form hybrids found perfect environment in the dappled shade provided on sunny afternoons by a small grove of cut-leaved weeping birches on the far side of the walk.

In so far as was possible, all plants of the same species or category were kept together. These were labeled with plastic tags attached by copper wires to 6"-8" cedar stakes split from shakes. Once marauding cats and dogs experienced this maze of pickets, they seldom returned.

Oregon is fortunate in having several nurseries that specialize in sedums (and sempervivums). Thus a fairly comprehensive representation of the stonecrops was easily obtained by purchase and for free, from gardening friends. Subsequently, small clumps of each kind were planted between or around the groups on drifts of lewisia rosettes. In due time, the entire assemblage received a top dressing of red scoria "cinders", a crushed, somewhat fluffy volcanic lava gravel much used in local landscaping. This buried the original chicken "teeth" and provided the kind of environment most succulents thrive in.

For four months of a very wet winter the new bed was abandoned to the elements. In mid-March the debris left by the seasonal storms was removed and a regular feeding program of dilute fish fertilizer or Rapid-Grow initiated. When the first flowers appeared in mid-May, the rosettes of the lewisias were in top condition.

No sedum can compete successfully with the beauty of the newer *Lewisia* hybrids. Nevertheless, the spidery, pink-starred *Sedum pulchellum* seldom went unnoticed in June. A succession of yellow and white flowered stonecrops followed one another throughout the summer. The annual blue-blossomed *S. caeruleum* came and went with few hurrahs. Not until August did the genus come in for attention once more with the charming rosy-mauve flowered little *S. eversii homophyllum*. While *Lewisia columbiana* 'Rosea' was having a final fling, *Sedums cauticola* and *seiboldii* joined *S. spurium* and the flamboyant 'Rosy Glow'. This last one remains on "borrowed time" as a member of a "scree" community, being both too large and too sprawly. Interestingly enough some of the stonecrops, namely *S. purdyi* and 'Silver Moon' (spathulifolium x laxum) resent too much sunshine. Many others are merely shade tolerant.

The attraction of sedums lies in their decorative fleshy foliage overlaid with tints and shades of green, silver, yellow, pink, orange, blue, lavender and red, the latter especially in cold weather. Generally the blooms are incidental; but there are a few striking exceptions. The stonecrop fraternity has proved to be a most satisfactory complement to the formal rosettes of lewisias of all ages and sizes.

Whereas a gardener's choice of lewisias is limited by their availability and his or her propensity for hanging onto them, his sedums, though easily begged, bought or propagated, are often difficult to keep under control. When sedums have appropriated food and water meant for the more prized lewisias, they may take advantage of their good fortune and "take over". At best stonecrops require constant surveillance together with ruthless pruning or even total removal once they overstep their allotted quarters.

Besides providing a competition-free environment for lewisias, one can further prolong their presence in the garden by removing new rosettes as they form around the original plant. These offshoots have been successfully transferred to bark dust under high shade where they have rooted with the early fall rains. For other easy methods of perpetuating outstanding clones, see Edith Duzek; "Lewisia First Aid and Major Surgery" in the April '75 *Bulletin* of the ARGS. When handling heretofore unfamiliar members of either *Sedum* or *Lewisia*, access to two excellent handbooks of the Alpine Garden Society of Britain: Evans: "A Gardener's Guide to Sedums" and R. C. Elliott's "The Genus *Lewisia*" is an absolute necessity. These have proved indispensable this past year.

At this writing the interim "scree" is being extended northward in spite of the certain knowledge that the foundation plantings to the south will eventually claim the space that is theirs. Once the new seedling sedums and lewisias, now in the bulb frame, have flowered in red rocks above the shaded sidewalk, an astonishingly successful floral carpet, that flourished before their time, will be only a memory.

Sedums used in Corbett "scree" — Tufted forms: *S.S. dasyphyllum*, *eversii homophyllum*, *hispanicum* and *h. minus*, *lydium*, *nevii*, *pulchellum*, *rosea*, *caeruleum* (annual).

Sprawlers: *SS. anacampseris, caudicola, lyaneum, douglasii, ellacombeanum, glanduliferum, kamchaticum* and *k. variegatum, laxum* and subsp, *middendorffianum* and var. *diffusum, oreganum, oreganense* (— Gormanía), *sieboldii, spathulifolium* and vars. 'Capa Blanca', *purpureum*, 'Silver Moon' (*Spath. x laxum*), *tatarinowii, ternatum, Watsonii* (— Gormanía).

Spreaders: (Beware) — *SS. acre* and vars., *album* and vars., *anopetalum, altissimum, divergens, pruinatum, rupestre, spurium*.

Invaders: — *S. sarmentosum*.

Oversized species and hybrids: — (for large borders only: *SS. maximum, m. atropurpureum, m. variegatum, spectabile* vars., cvs 'Brilliant', 'Metisi' etc., 'Rosy Glow', *telephium*).

Lewisiás tried in the interim "scree" — *LL. brachycalyx, columbiana* var. *Columbiana, columbiana* 'Caribou Basin', *columbena* 'Rosea', *columbiana* var. *rubicola, columbiana* var. *wallowensis, cotyledon, cotyledon* var. *heckneri, cotyledon* var. *howellii, cotyledon* hybrids: 'Rose Splendour' 'Sunset Strain' 'Birch Farm', *nevadensis, oppositifolia, rediviva, tweedyi, whiteae* (?)

## RANDOM COMMENTS ON EARLY BULLETINS OF THE ARGS

Anita H. Kistler, West Chester, Pa.

I wonder how many ARGS members have ever had the job of reading all the pages of the Bulletin? I did and loved every hour of it. Why did I do it? Because I volunteered to Index all 32 Volumes. I did have 2 helpers, but once I started, I read everything.

Some of the earliest issues have a wealth of information for rock gardeners, but unfortunately they are unattainable except through libraries. I am attempting to make note of especially interesting material in these early issues.

One of my favorite people was the Editor of those days, Dr. Edgar T. Wherry, now in his 90th year. He is an American plant material enthusiast so these early issues were concerned with our native American plants.

The first article in Volume I, No. 1 is entitled "A Rock Garden of Natives", written by Mary G. Henry. This is a gem! Mrs. Henry has gathered plants together under headings such as "Prostrate Growers" or "3" to 6" Perennials for the Rock Garden". Have you ever thought of our American natives as prostrate? The Phloxes, *P. nivalis* 'Gladwyne', and 'Azure', *Antennaria neo-dioica, A. parvifolia*, and *A. rosea* and *Paronychia argyocoma* are the prostrate natives. Under the heading "3" to 6" Perennials" she lists the lovely forms of *Iris verna* that she collected and grew. They are *Iris verna* var. 'Vernal Snow', 'Vernal Dawn', 'Vernal Sky', and 'Vernal Fairy'.<sup>1</sup> Also included are *Iris cristata, Silene wherryi* v. 'Alabama', *Tradescantia rosea graminea* and *Viola walteri* and *pedata*.

Mrs. Henry continues with "Plants a trifle taller, about 6" to 12" " which include *Allium oxyphilum, Amsonia ciliata* and *A. c. tenuistyla*;<sup>2</sup> *Campanula divaricata, Delphinium tricornis*<sup>3</sup> and *Gentiana porphyrio* (which is now *G. autumnalis* according to Dr. Wherry), *Gentiana villosa* and *Marshallia mohrii, Penstemon dissectus* and *Phlox buckleyi, P. carolina* var 'Gloriana', and *P. floridana* var. 'Bella' round out these little plants.

<sup>1</sup> *Iris Verna* at Gladwyne, Mary G. Henry, Vol. 7, 43

<sup>2</sup> Some *Amsonias* at Gladwyne, Mary G. Henry Vol. 2, 33

<sup>3</sup> *Rhododendron Atlanticum* in Maine, Mrs. Edward M. Babb, Vol. 7, 10

"A Few Large Compact Perennials" are a variety of sizes. *Liatris aspera sphaeroidea* and *Manfreda virginica* both reach 4½ feet, while *Lilium michauxii* is only 18". *Tradescantia hirsutiflora* is recorded as blooming all summer long into October.

"Robust Perennials for the Rougher Parts of the Rock Garden" lists some lovely plants that I had never thought of as robust. Who does not love *Asclepias tuberosa*? Mrs. Henry lists it in "many colors including Lemon Yellow, Deep Yellow, Tangerine Red and an excellent Scarlett, also one with changeable colors like a Lantana". Her list continues with *Baptisia vespertina*, *Dicentra eximia* and its varieties, *Eryngium aquaticum*, many species of *Hymenocallis*, *Monarda punctata* and *Penstemon murrayanus* which had a spike of 7'2" scarlet. Spectacular!

"Yuccas" include many species that Mrs. Henry could not get identified plus *Y. concava* and *Y. filamentosa*.

"Low Shrubs that associate well with Small Perennials" contain four of my favorites, *Corema conradii* and *Hudsonia ericoides* both from the New Jersey Pine Barrens, the other two are *Leiophyllum buxifolium prostratum* and *Vaccinium crassifolium*. Rock gardeners are lucky that both the later plants are available in the trade, they are such nice plants. Pine Barren plants being so hard to accommodate, will keep the other two off the available lists.

"Shrubs 8" to 15" ". *Ampelothamus (Pieris) phillyreifolius* and *Magnolia virginiana* dwarf variety both sound fascinating. Imagine a magnolia blooming and fruiting at 8" or 9" high and remaining evergreen! *Myrica pumila* is described as "a perfect evergreen", and who can resist the dwarf willows such as *Salix tristis*? The most intriguing shrub for me, is *Quercus pumila*. "It produces pretty red catkins and tiny acorns at a height of about 1 foot and spreads slowly until it is broader than tall".

Mrs. Henry includes the stoloniferous *Rhododendron atlanticum* with a blue-leaf form, and a yellow flowered form. *Rhododendron carolinianum* and *Vaccinium angustifolium* with varied colored berries round out this grouping.

"Compact Growing Shrubs 15" to 36" " has many that Mrs. Henry admired, such as *Cyrilla parvifolia*, *Gaylussacia hirtella* (dumosa), *Calcanthus sp. nov.*, *Castanea alnifolia* and *C. floridana*, *Lyonia lucida* (dumosa), *Rhododendron alabamense*, *austrinum*, *canescens candidum*, *speciosum* and *chapmanii*, plus *Vaccinium tallapusae* and *V. hirsutum*.

Finally "Shrubs 3'-0" to 6'-0" " include interesting larger shrubs such as *Aesculus neglecta georgiana*, that rarity *Elliotia racemosa*, *Halesia parviflora*, *Hammamelis* species, *Osmanthus americana*, *Rhododendron prunifolium.*, *Styrax americana*, *Vaccinium fuscatum* and *V. Elliotia*. Small trees in this size range are *Bumelia lycioides*, *Crataegus apifolia*, *Acer floridianum*, *Illicium floridanum*, and finally, *Myrica inodora*, *Styrax grandifolia*.

Is this not a fascinating list of American plants? Would it not be a thrill to own and grow all this plant material?



GENTIANS, by Mary Bartlett. Blandford Press, Ltd., Poole, Dorset, England. Distributed in the U.S. by Hippocrene Books, Inc. 171 Madison Avenue, New York, N.Y. 10016. \$12.50

By the publisher's statement, this is the first new monograph on gentians to appear in a decade. Beautifully illustrated with black and white and color photographs, plus some good line drawings, it will undoubtedly be welcomed by gentian buffs.

The author obviously has had extensive experience in growing gentians and about one third of the book is devoted to their culture. Allowing for the differences in climate between her home in the southwest of England and the U.S., much of the information should still be useful to American gardeners. Information is provided on various uses as border plants, pot and container plants, house plants and even as cut flowers.

There are some inaccuracies in the descriptions of American species. *Gentiana austromontana* is listed as "growing at high elevations in western North America, from southern Virginia to northeastern Tennessee and western Carolina". The lovely color plate of *Gentiana andrewsii* depicts the albino form without so indicating, which might lead one to believe that this was the typical form. However, this point is clarified in the descriptive text.

These are minor points and do not detract from the interest of the book generally. If you are interested in growing these beautiful plants or just looking at excellent photographs of them, you will enjoy this book.

Richard W. Redfield

*Elizabeth C. Hall, Senior Librarian, The Horticultural Society of New York, sends us the following communication:*

"It was my good fortune, recently, to have had a most enjoyable book chat with the owner of Theophrastus Publishers of Little Compton, Rhode Island, Mr. Augustus Kelly, and to have seen his latest reproduction, a reprint edition of Reginald Farrer's *The English Rock Garden* in two volumes. Farrer wrote this stupendous work just before World War I but it was not published until 1919. This and many other Farrer titles have become "collectors' items" with ever ascending values. As a librarian and as a member of the American Rock Garden Society I welcome the comparatively inexpensive reprints of horticultural classics coming from the press of "Theophrastus". The pre-publication price of *The English Rock Garden* reprint is \$35.00. Other recent "Theophrastus" reprints include Reginald Farrer's *My Rock Garden* (1907), *Alpine and Bog Plants* (1908), *In a Yorkshire Garden* (1909); W. R. Dykes' *Handbook of Garden Irises* (1924); Sampson Clay's *Present Day Rock Garden* (1937), (being a complementary volume to Farrer's *The English Rock Garden*); and Lawrence D. Hills' *Propagation of Alpines* (1959). To have made more available these out-of-print gardening favorites is indeed a fine contribution to our horticultural libraries."

THE LAUREL BOOK by Richard A. Jaynes. Hafner Press — A Division of Macmillan Publishing Co., Inc., N.Y.

This is a tidy little encyclopedic tome about what many consider to be the finest shrub in North America — *Kalmia latifolia* and its associated species. *Kalmia latifolia* certainly ranks with such top American ornamentals as *Cornus florida* and *Magnolia grandiflora*.

The genus *Kalmia* is discussed in detail. All of the species are described as far as appearance, distribution and habitat. Choice and unique forms of each species are also illustrated and described. There are chapters on seed morphology, germination, asexual propagation, diseases and insect pests. The chapters on the results of selection and breeding are most intriguing. The potential for still more exciting forms is bright.

The drawings are excellent and the color photographs are better than one usually finds in such a publication. This book is for all gardeners — particularly for those who live where mountain laurel grows naturally and does well. The new, choice forms available or soon to be available will complement our natives nicely. Methinks this book will put great pressure on the producers to get the new, choice forms on the market.

I found only one mistake in the chapter on toxicity of laurel foliage. It was not honey from *Rhododendron ponticum* which poisoned Xenophon's troops in Trebizond when they reached the Black Sea. The mistake is understandable because of taxonomic confusions in earlier years. The culprit was *Rh. luteum*, a deciduous plant with yellow flowers, known commonly as The Pontic azalea or *Azalea pontica* — no longer an acceptable name. The evergreen *Rh. ponticum* is blameless.

This is a superior book — excellent value for the money and I certainly recommend it highly. Its only serious error is that it will kindle an enthusiasm for these plants which will not soon be satisfied. —Nicholas Nickou, M.D.

THE ALASKA-YUKON WILD FLOWER GUIDE, by Helen A. White & Maxine Williams, illustrated by Virginia Howie. (Alaska Northwest Publishing Co., Anchorage, Alaska. \$7.95. Available from your ARGS store for \$6.00).

The beauty of the native plants in subarctic western North America has often been noted by travellers, and now this book has appeared which may encourage our members to try to grow some of them in temperate rock gardens. Our Society's emblem is represented near the beginning (pages 4-5) by a beautiful view of a meadow with myriads of pink umbels of a species identified as *Dodecatheon pulchellum*. In general, however, the plants are arranged in standard systematic sequence. To give an idea of the coverage, one or two genera in each family with potential rock garden merit are here listed:

MONOCOTS: *Fritillaria*; *Iris*; *Cypripedium*.

DICOTS with free petals: *Polygonum*; *Chenopodium* (sp. *capitatum*); *Claytonia*; *Anemone*; *Aquilegia*; *Papaver*; *Cardamine*; *Rhodiola*; *Saxifraga*; *Geum*; *Potentilla*; *Astragalus*; *Lupinus*; *Geranium*; *Viola*; *Epilobium*; *Cicuta*; *Cornus*.

DICOTS with united petals: *Pyrola*; *Phyllodoce*; *Rhododendron*; *Diapensia*; *Androsace*; *Primula*; *Centiana*; *Phlox* ("sibirica" — *boerlalis*); *Polemonium*; *Eritrichium*; *Mertensia*; *Mimulus*; *Pedicularis*; *Galium*; *Linnaea*; *Valeriana*; *Campanula*; *Eriogon*; *Senecio*.

E.T.W.

HANDBOOK OF WILD FLOWER CULTIVATION, by Kathryn S. Taylor and Stephen F. Hamblin, Collier Books, 1976 — \$7.95 cloth, \$4.95 paper.

This is a reprint of a book that first appeared in 1963 and that must be well known to many of our members. After brief introductory chapters on planning, culture and propagation, the bulk of the book consists of a list of wild flowers by family, from the monocots to the compositae, with notes on distribution, cultural needs and propagation for each. (By "wild flowers" is meant the plants one encounters on a stroll in the northeast, although a few southerners and mid-westerners have been admitted.) Appendices contain a good bibliography, bare lists of plants for particular environments, and sources of supply. The bibliography and list of sources have been brought up-to-date, but in a subtle way, that is only partly due to new discoveries, the main text is dated in that there is little mention of variation within species and not a single clonal name is admitted. Thus under *Epigaea repens*, "the best beloved of all spring wild flowers, at least in Massachusetts," there is an exceptionally full account of methods of propagation but no mention whatsoever of the wide variation in leaf and flower size, flower color, and disease resistance that are found in the species. Nor is there mention of the different color forms of *Iris verna*, or of the Phloxes, or of the double forms of *Anemonella thalictroides*. It is almost as if the author thought it improper to pick and choose among God's bounty. Yet God made great plants too.

Many of the plants of most interest to our members are relegated to a list in Appendix B of the difficult or impossible. These include orchids, many ferns, pyxidantha, loiseleuria, and the droseras. What is needed is a new book by a keen plantsman with an eye for distinctions and the distinguished, and a respect for the competence of his reader —H.N.P.

GROUND COVER PLANTS, by Donald Wyman, Collier Books, 1976 — \$3.95 paperback (first appeared in 1956).

The heart of the book is an alphabetical list of over 250 plants that can be used as ground covers, ranging from achillea to xanthorhiza, and from the plebian ajuga to the aristocratic shortia. As with Wyman's other books, there is something of the encyclopedic about this one; yet there is also a good deal of personal experience evident, not, however, I should think when he recommends *Daboecia cantabrica* for zone 5 (to  $-10^{\circ}\text{F}$ ). —H.N.P.

HOW TO IDENTIFY PLANTS. H. D. Harrington & L. W. Durrell. 203 pages; paperback. The Swallow Press, Inc., 1139 S. Wabash Ave., Chicago, Ill., 60605. \$2.95.

Since hundreds of different plants are used in rock gardening, it is often necessary to consult a key to ascertain the identity of an unfamiliar one. Such a key is to be published in a forthcoming issue in this Bulletin. In the interest of precision, and brevity, this key and those in reference works in general, use technical terms describing plant parts. These terms, however, may also be unfamiliar, so a glossary in which they are defined is called for. Now a booklet is available which explains how to use keys, and furnishes definitions, with line-drawing illustrations, of numerous technical botanical terms. It even includes a list of manuals and floras of the various geographic areas of North America. No beginner should be without it. —E.T.W.

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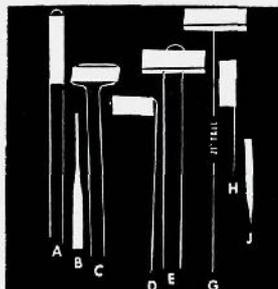
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