Bulletin of the
American Rock Garden Society

VOL.45 WINTER 87 NO.1

CALENDAR OF COMING EVENTS

Eastern Winter Study Weekend (Hudson Valley Chapter)
Stouffers Westchester Hotel ..... January 23–25, 1987
Harrison, NY
Western Winter Study Weekend (Northwestern Chapter)
Red Lion Inn ..... February 27–March 1, 1987
Bellevue, WA
Annual Meeting (Connecticut Chapter)
Sheraton-Hartford Hotel ..... May 22–25, 1987
Hartford, CT
Western Winter Study Weekend (Western Chapter) 1988
Annual Meeting (Columbia-Willamette) 1988

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(See p. 21 for related article)

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Life with a Rock Garden

Laura Louise Foster
Falls Village, Connecticut

Living with a rock garden rather quickly leads to the question of whether you own the rock garden or it owns you, though perhaps the relationship is more of a symbiosis than a question of ownership. Certainly the rock garden is dependent on the gardener for its existence, but the rock gardener very soon discovers he is almost equally dependent on rock gardening.

Let me point out, however, that though a person can rather easily become infected with rock garden fever, this does not necessarily mean he will come down with its most virulent form, plantsmanship, and despite continual exposure for over 30 years, I am among these.

The chances of my becoming even a rock gardener where highly unlikely. I was brought up on a sand dune on the southeastern tip of Long Island, New York, within spitting distance of the Atlantic Ocean. My personal

experience with rock gardens was not only practically nil, it was decidedly negative. Those few I have seen in the front yards of the houses on that end of Long Island were of two kinds. The most common was a moderately steep, short bank alongside the road or driveway, pocked with rounded stones (frequently painted) and planted with thin weedy grass, glowing magenta moss pink, a few half-dead bearded iris, cerise portulaca, and occasionally some clumps of marigolds and a sprinkling of spindly snapdragons. In the other more ambitious type of rock garden the stones were piled in the center of the lawn. The plantings were similar to those in the bank type, but were usually enlivened by a pedestaled, cast concrete bird bath and sometimes a gnome or two or a squatting painted plaster boy holding a fishpole.

It was with this background in rock gardening that I heard my newly acquired fiancé enthusiastically announce that the property onto which we were about to move would make an ideal site for a rock garden. I was appalled to say the least, but as a bride-to-be, I tried to conceal my dismay by saying I had rather hoped to plant ferns and wildflowers under the trees. Linc undoubtedly sensed my feelings for he quickly told me that wildflowers were perfectly suitable in a rock garden. When I suggested in a small voice that I had heard rock gardens were a great deal of work, he pooh-poohed the idea, and waving away the tangle of brush, grapevine, nettles, and scouring rush that occupied the prospective rock garden, said, "You'll see. Once we get rid of this stuff and get it planted, it will practically take care of itself." Limited as my experience with gardening was, I was a bit doubtful; no garden I knew of took care of itself, but I felt it was hardly the moment to say so.

Little did I know what I was getting into. I soon discovered that in marrying Linc I was not only marrying a rock garden, but the American Rock Garden Society. Shortly before our wedding Linc off-handedly mentioned that he had recently taken over the job of handling the society's seed exchange and he hoped I wouldn't mind helping him.

It may seem to you that I was extremely dumb not to realize I was marrying a confirmed rock gardener prior to taking the fateful step. I knew, of course, of his interest in plants. He talked of very little else, but in those days it was mostly of rhododendrons and azaleas. He was at that time working for Great Mountain Forest in Norfolk, where among other things, he was growing tree seedlings for the experimental plantations. His main enthusiasm, however, was for the work he was doing hybridizing rhododendrons. This was the primary topic of conversation on our first date. As my side of Canaan Mountain, in an extension of the valley of the Housatonic River, was underlain by limestone, I expressed surprise that he could grow these plants in limy soil. I was rather pleased to be able to come up with this remark so glibly. It happened that it was about the extent of my knowledge on the subject.

Linc explained, "Only the valleys are limy. Canaan Mountain is schist

and Norfolk has acid soil. The problem is that most rhododendrons, except a few iron-clads, aren't hardy in this climate and most of these are magenta in color. What I'm trying to do is hybridize tender ones with the hardy ones so as to create hardy strains with greater variation in growth habit and flower color." He was off and running, and as the unfamiliar terms rained upon my head, all I could do was nod and try to look intelligent and occasionally interject "Uh-hunh" and "How exciting!" at what I hoped were appropriate moments.

I guess I passed muster, as Linc continued to date me and in the spring he invited me over to see his plants. I was enthralled by the azaleas and rhododendrons. Some were deliciously scented and of charming pastel shades. Rather as an afterthought he showed me two small rock gardens he had built for his employer, Mr. Childs. These were a vast improvement over those I had seen on Long Island: no painted plaster dwarfs and some of the flowers were truly lovely, small of stature and brilliant with blossoms. But the gardens had been neglected and were fairly full of the weedy grasses that I associated with rock gardens. I was not overly impressed.

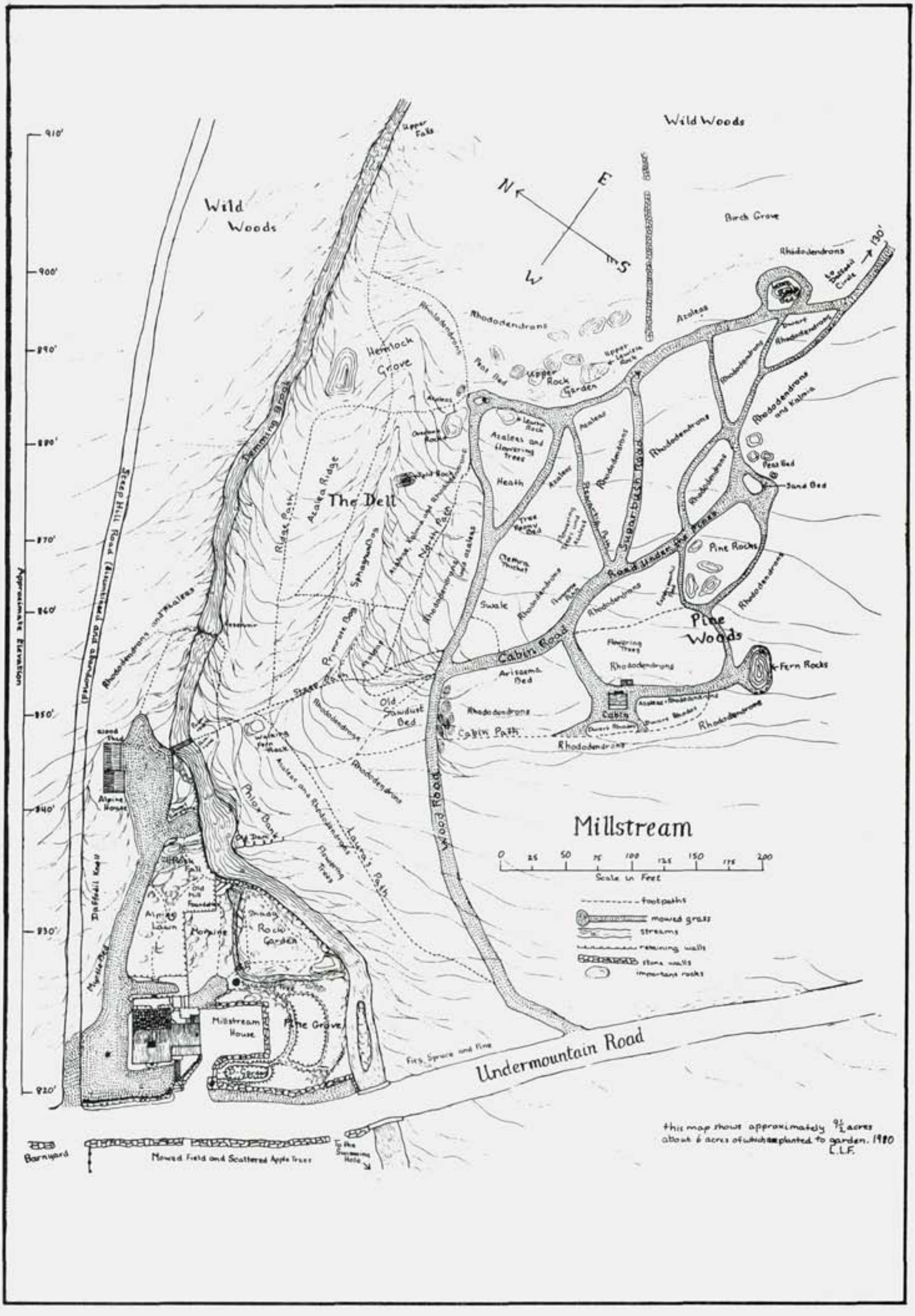
Linc courted me that spring and summer with plants for the tiny garden I had started behind my house and won over my two boys by taking them, along with his own two children Becky and Ben, on excursions and picnics during which we collected frogs, snakes, and salamanders as well as wildflowers. It took me several months to decide I wanted to embark on matrimony again, but I finally succumbed and announced to my family that I was planning to marry Linc.

Aunt Do, my only local relative, who had been partially responsible for introducing me to Linc, was delighted, perhaps because she was only too glad to foist on someone else the responsibility of keeping an eye on a headstrong niece with two small sons. She did have a cautionary comment, however, "Are you sure you want to spend the rest of your life with a dour New Englander?"

"Linc was born in New Jersey," I countered, "and I don't think he's all that dour."

Her next question was more to the point, "And where are you going to live?"

She already knew that Linc was leaving his job with Great Mountain Forest and was planning to go back into teaching and that the house he was living in in Norfolk went with his job and would therefore not be available to us. She also knew that the little house I was renting from her would be much too small for a family of six. This had presented us with a quandary at first, as rental houses in the area were about as common as igloos in Hawaii, but I was glad to be able to tell her that Linc's boss had offered to rent us an old vacant farm house he owned on top of Canaan Mountain.


Wild Woods
Wild Woods
Birch Grove
Rhododendrons
Hemlock Grove
Upper Rock Garden
Azalea Ridge
The Dell
Ridge Path
North Path
Sphagnum Bog
Primrose Bog
Steep Path
Old Sawdust Bed
Demming Brook
Steep Hill Road
Approximate Elevation
910'
900'
890'
880'
870'
860'
850'
840'
830'
820'
Alpine House
Alpine Lawn
Shady Rock Garden
Millstream House
Pine Grove
Phlox Bank
Laura's Path
Wood Road
Cabin Road
Cabin Path
Cabin
Road Under the Pines
Sugarbush Road
Pine Rocks
Pine Woods
Fern Rocks
Sand Bed
Peat Bed
Swale
Heath
Arisaema Bed
Millstream
Scale in Feet
0 25 50 75 100 125 150 175 200
footpaths
mowed grass
streams
retaining walls
stone walls
important rocks
Undermountain Road
Firs, Spruce and Pine
Barnyard
Mowed Field and Scattered Apple Trees
this map shows approximately 9½ acres about 6 acres of which are planted to garden. 1980 L.L.F.

Aunt Do was horrified. "You're a city child. You can't possibly live up there on that dirt road with no one around but rattlesnakes. How'll you get down in winter and spring to get the children to school and do the marketing? The school bus won't go up there. Neither can the snow plow half the time. And in spring that road turns into a pig wallow. You'd better live here on a hardtop road and I'll move into the Saltbox. It will suit me much better than rattling around in this big house and I'd like a change of scenery." My protests were feeble. It was like being handed the keys of Heaven. And so it was decided. We were to live at Millstream.

That fall there was a piecemeal shuttling of goods and chattels from one house to another. Aunt Do's Jeep did yeoman's service transferring sofas, chairs, bureaus, bookcases, even the refrigerator, the box spring of my four-poster bed, and the grandmother clock.

Aunt Do's barnyard, pastures, and enormous vegetable garden across the road from the house were immaculate, but she couldn't be bothered with landscaping and posies. There was a small lawn around the front of the house that was kept mowed but on the slope behind the house the soil was so thin that it couldn't support anything but a sparse cover of weedy grass. To prevent tree seedlings from getting a hold, the grass was scythed once or twice a year by Aunt Do's hired man, George Opley, a gaunt taciturn New Englander. The foundation planting consisted of privet, lilac, and native barberry. The lilacs were planted on the north side of the house where in deep shade and overhung by maple trees they struggled to survive but never succeeded in blooming. The privet, on the other hand, throve only too well against the south-facing front wall and reached halfway up the front window despite being cut back periodically by Mr. Opley. Another privet hedge ran along the top of the stone retaining wall that raised the narrow strip of front lawn above the road. The barberries Aunt Do had had dug from the pasture and planted at the corners of the house had succeeded in climbing high enough to look in the second story windows.

In addition to the four big maples that overhung the northwestern end of the house and a crumbling apple tree off the north corner, two huge elms, planted when the kitchen wing had been added in the mid-1850s, flanked the path leading up to the kitchen door. They were healthy specimens when we moved in. Their fluted boles towered above the roof and their arching limbs were haunted by flying squirrels who sailed down to do gymnastics on the porch clothes line. A few years later the elms succumbed to Dutch elm disease and had to be taken down, first one and then, 10 years later, the other. We counted the growth rings: 100 in the stump in the first to be cut, 110 in the second.

Though the remains of the sawmill, which had stood behind the house beside the brook, had long since been carted away, its square stone founda-

tion jutting out into the brook still stood firm as did the wings of the dam that had held back the water of the millpond. Also in good repair was the massive 8–foot–high retaining wall that supported the weedy slope of land extending from the mill to the back of the house. Aunt Do had crowned this wall also with a row of privet, a shrub to which she seemed overly attached.

When I asked her why privet, she retorted that she didn't particularly like it, but when you stuck it in the ground it grew without fuss into something you could see without waiting 50 years.

You could certainly see the privet hedge on top of the wall. It had grown to mammoth proportions. Its roots threatened the stability of the wall and its unkempt top leaned out in every direction in a broken tangle of heavy branches. With Aunt Do's permission, even before she moved out of the house and we moved in, one of our very first efforts at landscaping was to cut this hedge down to stubs. The following year we grubbed it out.

The main brook did not run at the foot of this retaining wall as the stream's otherwise rather straight course down into the valley had been deflected rather sharply to the southeast by the dam foundation and by an outcropping of fairly high limestone ledges that thrust out into the stream just below it. These ledges had over the years caught enough debris, huge chunks of rock torn from the bed of the stream, tree limbs, soil, and generations of leaves washed down from the mountain during periods of high water, to form an island sizable enough to support a grove of six or seven mature trees and considerable bushy undergrowth. The upstream tip of this half–moon shaped island lay about 10 feet out from below the mill foundation, its curved side toward the retaining wall, its straight side scoured by the brook. Its upper end had been joined to the mill foundation by a short, rough drystone wall that fairly effectively prevented the stream from running down the slot between the island and the high retaining wall. It did allow water to seep between the rocks of this dam and, when the stream was in spate, slop over the top. At one time the tail–of–the–race (the spent water that turned the overshot mill wheel) must have run down through this slot to rejoin the brook just below the house.

The tail–of–the–race was a dank spot shaded by a gigantic double sycamore that had rooted itself on the floor of this miniature ravine. This slot was also cluttered by a dozen or so grossly overgrown *Taxus cuspidata* that Aunt Do had planted at the foot of the retaining wall and around the periphery of the gravelled parking area that she had had put in front of the underground wagon shed (now garage) under the kitchen wing. It was in the tail–of–the–race and on the island that Linc planned to build a rock garden.

The tail–of–the–race could be reached by mounting two narrow stone steps leading up from the parking area. The main access was down a wide flight of beautifully proportioned steps descending through the high retaining

wall from the end of the brick patio just behind the house. The patio and steps had been built by a young sculptor and his wife who had owned the house briefly for a year or two prior to its purchase by my aunt.

Unfortunately both these entrances to the tail–of–the–race were completely blocked by the stout reaching branches of the enormous yews planted many years before as innocent youngsters. Aunt Do had purchased these from an itinerant salesman who had stopped by the house one day with a truckload of them. She was very proud of their subsequent flourishing growth; however, she did give us permission to trim them back so as to make it possible to get into the tail–of–the–race.

This "trimming" had to be done with a saw and powerful loppers as most of the limbs of the taxus were 2 to 3 inches through and yew is very hard wood. I was horrified by the appearance of the gaunt stubs that were left and dreaded Aunt Do's reaction when she saw the result of our trimming, but she took it in stride and Linc assured us both that in no time adventitious buds would sprout along the naked branches and cover them completely with new growth. I was doubtful, but he was quite right and for the next 20 years I had to prune them yearly to keep them within their allotted bounds. It was not until a few years after Aunt Do's death that we finally removed most of them entirely.

In the fall prior to our marriage, Linc, who was still living in his old house, commuted to Hartford. He was finishing out his term as representative from Norfolk in the State House and had also enrolled at Trinity College. Despite having taught in private schools for 18 years, the last several as co–headmaster, he had to take courses in education in order to be qualified to teach in Connecticut's public school system. While he was about it he decided to take courses that interested him and get his Master of Arts degree.

There was, as you can imagine, a great deal of shuttling back and forth over the Canaan Mountain Road between Norfolk and Falls Village until Linc and I were married 2 days before Christmas. During the interim we did quite a bit of clearing up. We grubbed up the privet hedge that shrouded the front of the house. The following spring it was replaced by myrtle. The prickly snarls of barberry were also removed bodily from around the house and the tail–of–the–race. Linc chopped down the maple trees and the ash on the island.

Having been brought up in an area where any tree was considered a treasure, I fought the removal of every one, but down they came. He patiently explained that very little would be able to grow under their dense shade and their surface feeding roots robbed the soil of nutrients and moisture. I protested that, if anything, too much grew under them, but to show me what he meant he dug a hole on the island's crest. Sure enough, every inch of soil was so thickly matted with tree rootlets that the clods were almost impossible to tear apart. I did prevail on him to save one maple near the lower

tip of the island, nevertheless, so I could string my clothes line to it from the end of the porch across the front of the kitchen wing.

The scrubby bushes that had managed to grow under these trees were also cut down and where necessary dug out. Armload after armload of brush was dragged down to the fields across the road for future burning. The trunks and heaviest limbs and branches were sawn into fireplace lengths, split, carried to the Jeep and driven up to the woodshed. The children helped, but spent most of their time roaming around exploring the surroundings of their new home and getting to know one another.

Even after the onset of winter with its snows we were able to do some work such as trimming up the tangled whiskers of dead branches on the pines Aunt Do had transplanted from the woods into the narrow slot between the parking area wall and the brook. Linc planned to bring some of his young rhododendron hybrids over from Norfolk the following spring and plant them in this small grove. He hoped they might be able to survive there despite the limy subsoil because of the thick layers of pine duff that had accumulated. They never throve, however, and eventually they were moved up across the brook into the woods where the soil was acid.

In the evenings and on inclement weekends, when Linc was not reading books or writing papers for his courses at Trinity College or preparing the speeches he gave in the House of Representatives in Hartford, we would clean, package, file, and list the seeds contributed to the ARGS Seed Exchange and send them out to those requesting them. Though the number of species contributed back in 1950 was paltry (348) compared to the riches available today, it seemed a tremendous number to me. We kept them all in two large, mouse-proof bureau drawers in the unheated study-guest room in the attic. I cannot now remember how many members wrote in for seeds at 3 cents per packet, but fifty-seven donors sent in seed. It was the first time that they had been requested to send in all their seed by a specific deadline so that a single complete list could be published and sent out shortly thereafter. Previously, members had sent in seed as they collected it and every issue of the *Bulletin* listed what seed had been received since the last issue under the name of the donor. With the advent of the single list, Linc instituted the system of numbering each donor and placing the donor number after each species listed. This may be appreciated by our members, but it has been an infernal nuisance to subsequent seed exchanges.

In those days the generic and specific name on each package of seed sent out by the exchange chairman was handwritten on the packet and as I wrote each name over and over and over again, Linc would tell me how to pronounce it and describe the plant. When he didn't know, and sometimes when he did, we would look it up in Farrer's *English Rock Garden* and he would read aloud the glowing or condemnatory description in Farrer's

rotund and vivid prose. It was a great way to learn about rock garden plants and certainly relieved the tedium of writing *Anthoxanthum odoratus* or *Penstemon confertus* var. *caeruleo-purpureus* on packet after packet.

As soon as the snow had melted and the ground was more or less thawed, we started digging the thick carpet of weeds and remaining brush from the tail–of–the–race and the island. While Linc was in Hartford and the children were in school during the week, I pecked away at the icy, muddy soil in the bottom of the ravine. This was mostly hands and knees work with a hand implement that resembled Captain Hook's claw. I wore a pair of old–fashioned, heavy wool ski pants, similar to children's snow pants, baggy from waist to ankle where they were secured by ribbed knit cuffs that fitted inside my buckled galoshes. These kept my nether regions reasonably warm and dry, but, as I cannot wear gloves when I garden, my hands were congealed and resembled nothing so much as raw hamburger by the end of the day. But my, I was proud of the few square feet of muddy earth I had cleared. I would whisk Linc out when he came home and make him admire my progress, by flashlight if necessary, before I would cook him supper.

On weekends we made real progress. Linc tackled the island garden and dug up yards to my inches. When we cleared the accumulation of years of wet, half–rotted leaves from the deep slot around the periphery of the island we discovered quite a presentable trickle of water seeping from the main brook under and through the stone dam that blocked the upper end of the tail–of–the–race.

As soon as the grounds thawed sufficiently we started bringing over divisions and plants from Norfolk and from a steep, rocky, wooded hillside that Linc owned in South Norfolk. The latter were all native wildflowers: *Claytonia virginica* and *C. caroliniana,* plus Dutchman's breeches, squirrel corn, hepaticas, foam flower and such. We planted these along with the few divisions from the Norfolk rock garden and a very young azalea, *Rhododendron* 'Arnoldiana,' along with a foot–high Alberta spruce on the crest of the island. A small *Pieris floribunda* and a young Mugho pine were sited on the west–facing slope. Two rooted layers of *Daphne cneorum* and a few Christmas ferns joined them. It was a pretty meager display, but we planned to fill in with more wildflowers and seedlings grown from exchange seed.

In the tail–of–the–race we planted a 3–year–old seedling of *Rhododendron schlippenbachii,* a couple of divisions of epimedium, a couple of Korean box seedlings, lots of native red trillium, and more ferns. These were joined later in the summer by swaths of primrose seedlings, mostly *Primula japonica, P. veris,* and *P. vulgaris* but with one patch of *P. seiboldii.*

At first there were great expanses of bare ground between and around our rather pathetic plantings, but these were soon filmed over with green — millions of weed seedlings germinating happily in the newly cleared and

freshly turned soil. These were punctuated by the sharp points of scouring rush (*Equisetum hyamale*) sprouting from deep underground roots we had been unable to dig out.

Nearly every day I scrabbled the soil with my claw to discourage the weed seedlings and dug and pulled up the scouring rush as soon as the tips of the new growth appeared above ground. After the first year I resorted entirely to hand weeding so as not to bring more weed seeds to the surface where they could sprout, or disturb the self-sown seeds of wanted plants and the young seedlings we were planting. It was a daily chore and a slow one, working foot by foot from one end of the island to the other and the length of the tail-of-the-race. As soon as I had reached the far end I would start over at the beginning.

It was worth it, however. By the end of the third growing season very few weed seeds were left in the top few inches of soil. Some blew in, of course, and we have to pull baby maples to this day. Even the *E. hyamale* disappeared after 5 years, the roots starved out of existence by persistently pulling off the sprouts as soon as they appeared. Parenthetically, we have tried the same gambit with the more fragile, fluffy horsetail (*E. arvense*) without the same success. Though we have kept it within manageable bounds, we have never been able to kill it off completely. This may be because it was a late-comer to the garden, which by then had expanded, and we could no longer afford to spend so much continuous time on any one spot as we had spent when only the island garden and the tail-of-the-race demanded our attention.

In addition to careful, thorough and persistent weeding of any new area for its first few years, we tend to plant very closely whenever possible and we encourage the self sowing of desirable plants. Thus very soon there is little open ground in which baby weeds can get started — the competition is too heavy. Not everyone approves of this method of gardening and it does have its drawbacks. Individual plants, particularly if there are only one or two specimens, tend to be easily overlooked in the shuffle unless they are very showy indeed. It also means, of course, that the strongest plants tend to smother out the more delicate ones and we have lost a number of species in consequence. We find we have to grow the more refined and frailer sorts in beds of their own where they will not be overrun by more aggressive neighbors. These special beds are usually fairly small and set apart from the rough and tumble hoi-polloi in the rest of the garden. Here our small treasures can be more individually coddled and policed. When a plant shows signs of becoming too robust for the neighborhood, it is either cut back or removed to other quarters. Self sown seedlings, in all but a few exceptional cases, are likewise firmly dealt with in these beds.

While I was weeding the island and the tail-of-the-race, Linc was laboring up in the woods. He had discovered to his great joy that the soils up there were acid as they were underlain by Canaan Mountain schist rather than

the Stockbridge marble around the house. Our house, in fact, was right on the contact line between the mountain's acidic schistose soils and the limy ledges and deep sweet soils of the valley. There were even a few native laurels and a wild pink azalea on the slopes just across the brook.

He had also discovered a large, ancient pile of rotted sawdust in a small overgrown clearing among the trees on that slope. We later discovered that the sawdust dated back 50 years to when Carroll Miles had bought the house and property for $200, the amount owed by his cousin Lemuel Demming for debts and taxes. Lemuel had been the last of the Demmings, the family that had originally bought the farm when the land was auctioned off by the state in the early 18th century. They had built the house and the mill, and the brook was named after them. The original sawmill on the brook (Lemuel had turned it into a cider mill) had fallen into disrepair by the time Carroll Miles took over the place as a young bridegroom. He therefore set up a small sawmill on the slope above the millpond to supplement the income from the dairy farm.

Linc thought that this site, enriched with well–rotted sawdust, would eventually make a perfect nursery for his young rhododendrons once it was cleared of sprout growth, sumac, grapevines, and brambles, but in the meantime he needed a larger area for some of his more mature hybrids. He therefore started clearing a small ravine that ran parallel to the brook, but was separated from the stream by a high knoll covered with pine and hemlock. The bottom of the ravine was quite wet and Linc thought that once, perhaps in pre–glacial times, it might have been either the original bed of the stream or a loop in its course. The well–drained sandy loam of the slopes of this ravine would, he thought, make an attractive setting for the rhododendrons and azaleas and it might be possible to excavate the bottom to create a small pond. But first it had to be cleared of the dense thicket of second growth trees through which it was difficult even to walk. To this end he set to work chopping down most of the sapplings including a few of the older trees, some with boles nearly a foot or two in diameter at breast height.

It was heavy work. Not only did the trees have to be felled, but delimbed and cut into manageable pieces so we could drag them down to the swampy bottom for burning. The children helped some with this endeavor. They particularly enjoyed jumping on the springy branches to pack them down. I too, when I wanted respite from my endless round of weeding, went up to drag brush and tend the fire. By the end of our second summer we could see from one end of the ravine to the other. A neighboring farmer who cut hay and grew silage corn on our lower fields came over with his tractor and blade when he had finished harvesting and scooped out two shallow depressions, with earth berms at their lower ends, in the bottom of the ravine. The upper hollow held water and turned into a very small, but permanent pool. The lower excavation leaked and except during spring thaw was an unsightly muddy

sump. We eventually refilled it by shoveling the lower berm back on top of the remains of our brushpiles after which we planted it to primroses and other moisture–loving plants.

About a dozen years later, Linc decided he wanted a bog so we filled in the upper pond also, this time with bale after bale of peat. These Linc and I carried down the steep slopes one at a time from above. It was laborious, but by then the sides of the ravine (now called the Dell) were planted and there was no way to get in with machinery. Fortunately, we could drive the still–faithful Jeep loaded with bales of peat to the top of the slope above the far side of the ravine via the tote road that went up to the sugar bush. It would have been a long, hard climb to carry them up from the house and I'm not sure we could have managed it.

For a couple of years Linc was satisfied with the Dell, the island garden, and the tail–of–the–race for planting, but soon he was yearning for more space and a sunnier site. We therefore dug up the weedy slope behind the house. It faced south and received full sun nearly all day. The soil was terrible, a kind of hardpan of clay and sand glued together by lime. Once we got up the thin sod and shook what little humus was caught in its roots, we used a mattock to break up the subsoil. Even this layer was rather thin, grading into crumbly limestone ledges that broke into grains like sugar; no wonder the lawn had been so scruffy! We hauled up all the composted leaves and weeds we had accumulated in the past 4 years and spread these on the surface along with a thin layer of cow manure garnered from the old manure pile behind the barn and dug these in. Because the limestone ledges just under the surface were so friable and ugly, we left them covered and instead cannibalized the stone walls that outlined the pastures below the house. Here we found rocks with which to build a few low outcrops to garnish the flat expanse. At first we left curving paths of grass through this alpine meadow, but we soon discovered that edging grass to prevent its spread into the beds on either side added immeasurably to the upkeep and that the lawn mower spewed weed seeds as well as grass clippings into the plantings. We therefore eventually replaced the grass with flat stones, also gathered from the pasture walls. While we were about it we paved the surface of the old mill foundation and planted the crevices between them with creeping thyme.

That summer was exceptionally dry. The stream became a series of pools that shrank daily and grew progressively more scummy. Even the small dammed–up pool in the brook above the house from which we got our house water was so low that the intake end of the pipe that carried the water down to the house was barely under the surface. As there was still a steady trickle of water running into the reservoir from further upstream we guessed that the low water in the pool was to a large extent the result of leakage through

the bottom.

There was no question of watering newly transplanted seedlings or divisions, however, so the planting of our alpine lawn would have to wait until the rains came, if they ever did.

With gardening activities having pretty well come to a halt (even the weeds ceased growing) and the water in the stream so low, we decided this would be a good moment to clean out the reservoir and cement any cracks in the bottom. First we opened the outlet gate in the dam so as to drain out what little water found its way into the reservoir. Then, by running an old rain gutter from the bed of the stream just above the reservoir to the top of the dam, we managed to bypass most of the very little water that was trickling down from upstream over the reservoir. Once we had the inflow under control, we could fairly easily dig out the gravel that had accumulated in the pool over past years, heaving it and any large rocks that had washed in over the dam. As we dug further and further down, the dam rose higher and higher above our heads and the heaving wasn't so easy. Besides, we were getting rather tired and we had to keep stopping to readjust the rain gutter, which our efforts frequently knocked out of position. Toward the end we sluiced the sides and bottom with water from the gutter to wash down the remaining bits of sand and gravel, but we soon found a whisk broom was the most effective implement for corraling the last of the few grains of sand that remained.

It took us most of 2 days, but when we finished, the limestone ledge that formed the sides and bottom of the reservoir gleamed as white and clean as a porcelain bathtub. Sure enough, there were several wide cracks, particularly where the foot of the dam rested on the ledge. Linc soon sealed these with waterproof mortar and after a few days, when we were sure our beautifully clean pool was as tight as we could make it, we closed the outlet valve and allowed the water to slowly rise over the end of the water pipe to the house. The water crept up the sides, but oh so slowly, and we prayed for rain.

Our son Ben and a visiting friend of his who was a Greek student, suggested that a rain dance or a sacrifice to Jupiter Pluvius might help. Ben's friend, Mike, after much cogitation, produced a suitable prayer to Zeus in Greek and we all repaired to the reservoir with a glass of brandy (a great sacrifice on Linc's part). Here we sat on the rocks at the edge of the slowly filling pool with our feet in the shallow puddle at the bottom. While Mike solemnly intoned his prayer to Zeus, we each took a sip of brandy, pouring the remainder in the pool.

Then, and this I am willing to swear to, out of the burning clear blue sky, a few drops of water spattered down from above. Nothing more. No clouds appeared. No lightning flashed. No thunder rolled. Only those few splashes of moisture on the dry rocks, but I, for one, was sure that Zeus had heard

our plea and would do something about it.

Two days later we woke to gray skies and by noon there was a light drizzle which soon thickened to a gentle intermittent rain. But at least it rained and toward evening it became a downpour. The reservoir filled to the brim and the water sliding over the dam soon became a curdled mass of foam shouting down the stream.

And still it rained. The waterfall over the dam stretched bankwide, then wider. It was no longer white now, but tawny with soil and debris washing down in the welter of water. The rocks and ledges along the brook vanished one by one as the water rose. It was soon slopping over the bridge that led up into the woods and suddenly the bridge splintered into kindling and was carried away. The water level had now reached the top of the dam that protected the tail–of–the–race and was lapping over. And still it rained.

All night it rained and the house shook as the earth trembled under the pounding of the great boulders grinding and crashing down the bed of the stream. The sight of that torrent, gleaming like phosphorus in the dark, was even more terrifying at night than by daylight. It seemed dozens of yards wide and headed directly for the house. But the wings of the old dam still held firm and the freshly dug earth on the slope behind the house still stretched reassuringly dark and serene between us and the wall of water. And still it rained.

It was a restless night, loud with the bombardment of tumbling boulders and raging water. Our bed quaked with the vibration. We could hear the rain drumming on the walls of the house in furious gusts. Except for the broad white river of water plunging down the mountain toward us, it was black as doom outside. At some point during the night the stream overlept the mill foundation and burst through the dam across the head of the tail–of–the–race. Freed now, the torrent poured through the tail–of–the–race, swirled around the base of the island, through the parking area and out under the grove of pines carrying its burden of mud, sand, gravel, rocks, and trees with it.

The rain stopped at dawn. The thunder of boulders and rushing water diminished and the house still stood. But the lower garden was a shambles. By noon the brook had subsided into its bed though water still trickled through the broken dam across the tail–of–the–race to wind a sluggish course through the mud and boulders in the tail–of–the–race and the parking area.

The flood water had missed the lower corner of the house foundation by one foot. The very crest of the island garden was untouched, but its lower slopes and the tail–of–the–race were gone, swept to bare ledge and flayed tree roots. Their cover of soil and plants was now in the valley or, caught by the walls of the parking area, inextricably mixed with the mud and debris carried down the mountain. Linc found some of the rhododendrons he had

planted in the pine grove hanging 4 feet up in the trees along the stream below the house. To add insult to injury, the newly cleaned reservoir was filled with rocks and gravel to the top of the dam and the wheel that opened the outlet gate had been broken off and carried away so it would no longer be possible to empty and clean the reservoir.

But we were lucky. The center of the city of Naugatuck was destroyed as well as the main street of Winsted. Hundreds of yards of highways and roads had been torn away, along with bridges, factories, and homes when small streams suddenly became raging torrents during the flood of 1955 when Hurricane Dianne dropped an unprecedented 14 inches of rain in 12 hours on the northwest corner of Connecticut.

Linc replanted the rhododendrons he had rescued out of the trees into a newly cleared area up in the woods. Surprisingly they survived despite being thoroughly scrubbed and hung up to dry prior to transplanting. We rebuilt the dam across the top of the tail–of–the–race, higher and this time cemented, with a heavy ceramic pipe through the base to allow a proper flow of water around the foot of the island. We extended this dam into a 5–foot–high retaining wall along the brook side of the island to protect it from future high water and filled behind the wall with rocks and well–packed soil. We spent the rest of the summer digging the garden out of the parking area and returning it wheelbarrow load by wheelbarrow load to where it belonged, improving the contours while we were at it. Much of the soil had vanished down into the valley and had to be replaced with whatever we could cart in from elsewhere. The bared roots of the pines were covered with piles of leaves raked up the following fall.

Of course some of the plants buried in the debris were irretrievably lost, but surprisingly, many of the mangled, disinterred corpses came to life when replanted and some reappeared the next spring from bulbs and roots in the replaced soil. The reservoir had to remain full of gravel until low water the following summer (in fact it was never completely cleaned out), but as the water filtered down through the gravel and continued to run out of the faucets in the house, we ceased to worry about it.

As everyone who lives with a rock garden knows, there are months of backbreaking labor and days of heartbreaking catastrophes, but also hours of unmitigated bliss when the weather is perfect and the garden is at its loveliest and everything seems right in one's little world. And even those hours of hard labor when muscles scream in protest and joints crack with strain as you dig up more beds and prepare more sites for more plants are not unmixed with that certain blissful feeling of accomplishment that accompanies any act of creation. For surely building a rock garden is as much an act of creation as painting a picture, writing a book, or carving a sculpture. For a brief while, as the garden takes shape, one feels a very god creating a small

world to one's own specifications.

There is a deep glow of satisfaction that comes to those who create their own landscape, the child of their own imagination, molded by their own labor and nurtured by the care of their own hands. Linc and I have often wondered, when we planned, built, and planted gardens for others whether we were not somehow cheating our clients of that special feeling of making their own thing. Perhaps so. I know in some cases, and I suspect in most, that the moment our backs were turned the owners hastened to place their own imprint on the new landscape, perhaps by adding a rosebush to that corner and a clump of daffodils over there, or by moving or removing a shrub, which to their eye was planted in the wrong place. And who is to say them nay? The garden is ours while we construct it, but once we are gone it becomes the property of those who live and work in it.

No landscaper can expect a garden to remain exactly as he saw it in his mind's eye. Whether or not the present or future owners change it, a garden will change itself. Gardens, unlike most artifacts, are not immutable. Rocks, no matter how carefully placed and firmly set, will shift and tilt as the frost levers them from below. They may sink to half their height or disappear completely into tunnels delved beneath them by moles and mice, or they may be left stranded like beached whales on the surface as the soil is washed from around them by rain and snowmelt. Trees, shrubs, and herbaceous plants are living, growing entities with wills of their own, developing new shapes and textures as well as new proportions. They can be battered and broken and occasionally uprooted by icestorms and wind. They can sicken and die or burgeon so mightily as to swallow huge rocks and obliterate paths, walls, fences, and vistas. They cannibalize their neighbors and will, indeed, engulf the garden itself unless restrained, pruned, trimmed, or removed. Gardens, therefore, invite, indeed demand, tinkering if they are to remain gardens and who has a better right to tinker than the gardener who lives with the garden.

It is hard now to remember the exact sequence of how our garden spread from its initial beginnings. It seemed to take on a life of its own. Like quack grass it spread by seed and stolon. New colonies formed in distant areas and plantings followed paths between these new bits of garden, filling the intervening space only to leap forward into new territory beyond the periphery set as the garden's boundary. Seedlings sprouted in pots and flats that jostled each other on the top of the parking area wall. They sprouted in vacant spaces between the plants in the beds, they burgeoned in paths and threatened to block them. Tiny, delicate cotyledons grew into yard-wide specimens crying for space and yet more space.

"No more seedlings," promised Linc as he tried to jam one more potful into the frames. But the seed lists flowed into the mail box and who could

resist those lists of unknown plants pregnant with possibilities. We built more frames.

"Please, no more beds," I cried. "I can't keep up with the weeding." But seedlings outgrew their pots. We made nursery beds. The plants in the nursery grew into mats of tangled verdure. We dug them up and separated them and divided them and made new beds to house the overflow. We gave them to seedling sales and plant sales. We gave them to friends who came to visit. We gave them as house presents when we went visiting. It didn't help. Our friends brought us twice as many to replace them.

We enlarged the beds we had. We brought up rocks from the valley and built more retaining walls along the brook so we could plant right to the edge of the stream. We brought up more rocks, made more soil, and tore down the old dam to make a ledge and talus slope. We filled in the former mill-pond. An end of the high retaining wall that bordered one side of the tail-of-the-race collapsed and we rebuilt that into a planted wall with a moraine at its base.

We spent every winter cutting down trees in the woods, at first with a great long two-man saw, later with a power saw. Most of the logs and limbs were split and hauled down to the woodshed next to the sugar house, some for the fireplaces, but most of them to fuel the sap boiler. Some were given to our farmer friend who heated his house with a wood-burning furnace. But there was still the brush and the smaller branches to dispose of and these were dragged and piled in heaps, huge enough to cremate a Viking chief and set afire. In those days no one was worried about clean air and as long as the snow lay on the ground the fires burned day and night and our clothes and hair reeked of woodsmoke. Nowadays we haul the brush off to make long piles that go snaking along the boundaries of the garden into the woods.

In the new openings in the woods more beds were dug in which to line out baby rhododendrons and azaleas. Linc was once more dabbing pollen and a potful of seedlings soon required a quarter of an acre. He was hybridizing herbaceous plants as well: primroses, phlox, and saxifrages mostly. When our children were all grown and had moved away, we sold the sap works, tore the roof off the sugar house, enclosed it with plastic, installed fans in either end and turned it into an alpine house. Here Linc could stand upright and work in relative comfort during the cold days of late winter and very early spring without the competition of bees and flies. His hybrid progeny soon overflowed the benches and suitable quarters had to be found for their comfort, so more beds had to be made. And of course there were more seed exchange seedlings. Like the sorcerer's apprentice, we had started something we could not stop; plants kept multiplying by geometric progression like fruit flies.

Something had to be done to siphon off this overflow. I resigned my part

time job as reporter and assistant editor at the local paper, Linc resigned from school teaching, and we went into landscaping work, building gardens for others in order to house the superfluous plants crowding the nursery beds. It did help, but building and planting gardens for others and simultaneously trying to care for our own, presented us with a new set of problems. It was just too much of a muchness. Our backs gave out, we developed housemaid's knees and tennis elbows, and our own plants and garden suffered from neglect. After 12 years we finally called it quits and once again concentrated our energies on Millstream.

It was wonderful at first being able to work full time in our own garden, but it meant, inevitably, that we were tempted into future expansions. Though Linc had vowed to cut down on his seed sowing and he did, there were always unknown plants listed in the seed exchanges to tempt us. And friends and friends of friends sent us seed collected in far off places. We discovered new areas in the garden that were much too attractive to leave in trees and weeds, and special beds had to be made for special plants. Linc's hybrid rhododendrons and azaleas were growing apace and needed more room, and all these areas had to be weeded.

Linc has always mowed all the grass, sowed the seed, and cared for all the pots of seedlings. He decided where to put them. He has also done most of the clearing up in the woods and the policing of established shrub plantings, pulling up or lopping off the tree seedlings and sprouts and pulling off the tops of heavy weeds. He also does most of the weeding in the nursery beds of small rhododendron transplants, though I have helped with these chores when they threatened to get ahead of him. For many years we worked together in planting, laying out, and constructing new sections of the garden, but as the plantings expanded up in the woods, Linc took over this job almost entirely while I concentrated on the upkeep of the herbaceous plantings.

This had always been my responsibility and I found that by weeding the established beds very thoroughly once a year and new beds every week or so, I could do all the herbaceous areas and their peripheries during one growing season. But as the garden gradually became more extensive, I realized I was falling further and further behind schedule until finally I was still weeding an area for the first time in late October when I should have been helping to rake leaves. Eventually time completely caught up with me and several of the older sections of the garden were still untouched by the end of the season.

I truly enjoy weeding. I am at my happiest hunkered down over a bed with my fingers deep in the soil sorting out weed root from plant root, immersed in the sight and scent of foliage and flowers. But there is an obverse to this enjoyment. A bed choked with weeds makes me feel guilty and physically uncomfortable, so much so that I will avoid the area unless I can

do something about it. Linc calls me a compulsive weeder. He can walk past a bed full of gigantic weeds and apparently never see them, whereas if I see a weed I have to bend over and dig it out. This drives Linc crazy on the few occasions when we walk through the garden for a sightseeing tour together. If I am walking in front of him he is always tripping over me as I bend down to snatch up a weed. On the other hand, if I walk to the rear and stop to remove a weed, I almost invariably see others that need immediate attention, with the result that Linc walks on without me. Left to my own devices, hours will go by before I come up for air and Linc, having finished our walk, picks me up on his way back down to the house.

Linc has found that being married to a compulsive weeder has other drawbacks. He likes his meals on time and I am usually deep in the bushes up in the woods when he wants to eat. I never used to wear a watch, but finally, in desperation Linc gave me an old one of his. It doesn't help as I forget to look at it or if I do and I discover I still have half an hour until lunch, instead of hurrying down to the house to fix it, I try to finish the last few square feet of unweeded bed — and lunch is late again.

As more and more weeds appeared in the more mature areas of the garden I became more and more desperate. It became increasingly obvious that I was unable to weed the new beds as often and as meticulously as necessary and also keep up with what needed doing in the older sections. At last Linc noticed that the herbaceous plantings were getting out of hand and, though weeding is not his favorite occupation, he has recently taken on quite a bit of the upkeep in many herbaceous beds in the woods garden. This has a double benefit as it means he no longer has quite as much time to make new beds and the garden is therefore not expanding quite so quickly. Even so, as we become older and work more slowly, the garden is not quite so well kept up as in former years and this despite the expert help once a week these past few summers by Tamson Goggin. It would be far worse without her presence. The garden has just grown too big.

As we depend rather heavily on self sowing, our rock garden, perhaps more than most, tends to do its own thing. Though it is Linc, in the main, who decides which plants to introduce and where they should go, it is the garden itself with its climates, macro and micro, and its various soils and degrees of moisture, shade, and sun that makes the final determination. Some species simply will not do for us. They sicken and die or vanish without warning perhaps down the gullet of one of our resident critters. We mourn such plants, but if after several years of trying to please them in a variety of sites, they still declare their discontent by disappearing, we give them up. Why should we continue to murder them? Others of Linc's introductions thrive and in most cases, though not all, I rejoice when their seeds have found a place to their liking where they can sprout and grow and make seedlings

of their own. It is only then that I think they truly feel at home and have become a permanent feature of our landscape. Other advantages of the self sown method of plant propagation are the particularly good forms and occasional hybrids that sometimes occur.

Perhaps Linc's greatest pleasure is a leisurely tour of the garden, admiring what he has wrought, checking up on his plants, and planning future plantings. He doesn't understand why I, too, do not spend several hours each day just wandering and looking. He has accused me of not appreciating the garden; even, upon occasion, of disliking it because he believes all it represents to me is work and yet more work. He claims all I see are the weeds.

This is not strictly true. There are many areas, particularly in the woods, where weeds such as wood aster and ragwort are a major and most attractive constituent of the ground cover; it is only when these invade the beds of more choice plants that I object to them. In such places they make my fingers itch and I long to get at them. Housework and kitchen work are a frustrating waste of time from my point of view, but when I spend a day working in the garden I feel that I have accomplished something and I am refreshed and feel relaxed and at ease with myself. Working in the garden is to me a major part of my absorption and pleasure in it and means far more to me than a brief admiring stroll along its paths.

As I move from one work area to another I can be as transfixed by the way a vista opens up to reveal a familiar view suddenly transformed to a scene of exquisite beauty by a change of light as I could if I had purposely sought it out, even more so. When I bend to weed I am close enough to really enjoy the intricate patterns of leaf and flower and the feeling of the various textures of the soil. And all the while I am working I am deeply immersed in the evanescent fragrances that drift around me and the blend of brook sounds and leaf sounds and bird song. As I work, unlike a visitor to the garden, I become an integral part of it.

Though my role in the garden is the rather subsidiary one of helping with its upkeep, this gives me the privilege of nurturing the plants within it and to some extent the opportunity to guide their growth. As I free them from encroaching weeds I choose what plants to encourage and which to restrain, which need freedom from competition and which prefer close company. In so doing I too have a hand in the creation of our garden and I become an essential part of its organity and it, in turn, has become a part of mine. Without the garden and the work I do in it, I would be sadly diminished.

Rock Garden Daisies

Panayoti Kelaidis
Denver, Colorado

It may be possible to disdain composites in the spring when everything else in the rock garden is blooming, but dull instead is the summer garden without a daisy. No family of plants dominates the autumn more than the Asteraceae.

In the West, it is a daisy that ushers in the spring. For several years running, *Townsendia exscapa* was the first native flower to be found in bloom by members of the Colorado Native Plant Society. It starts to bloom as early as January even on Colorado's cold, windswept plains. Here, it usually makes a huddle mound of silvery foliage with stemless white– or pink–rayed flowers. Clumps often have a dozen or more composite heads. In good years, these Easter daisies can resemble a white lacework on the plains.

For several decades now, a plant has made the circle of rock gardens under the name of *T. wilcoxiana*. This, unfortunately, is a synonym of *T. exscapa*, while the plant grown under the former name is altogether distinctive. *Townsendia exscapa* forms tiny mounds of bright green, almost succulent foliage that produces many heads of lavender–rayed flowers in late February and March. This plant grows more willingly in gardens than any other *Townsendia*, living for several years and producing abundant self–sown progeny. All it needs is fast–draining scree or a sunny trough.

Soon after the Easter daisy finishes blooming, the pageant of fleabanes begins in the West. Erigeron occurs throughout Eurasia, but in western North America there seems to be a special wealth of tiny, cushion–forming daisies that are starting to find their way into gardens. One name to watch out for is *Erigeron compositus:* this covers a multitude of plants that range from the robust, 10–inch tall E. compositus var. *trifidus* with glistening white–rayed flowers like a miniature shasta daisy, to pink– or blue–rayed forms that can be quite invasive. George Schenk once introduced a condensed form of this species from the Olympic Mountains which actually grows as a tiny cushion. The flowers are a good white on very short stems. This same form is still grown and sold by Grand Ridge Nursery in Issaquah, Washington. It is usually designated as *E. compositus* Olympic Mountain form. It deserves to be in every rock garden collection.

This same nursery is responsible for one of the most dramatic introductions in recent years: *E. chrysopsidis* var. *brevifolius*. This plant is narrowly restricted to just a few mountains north of the Great Basin. Long before this taxon was proposed for an endangered species status, Steve Doonan and Phil Pearson collected cuttings of various plants of this species from its alpine

home. From the start, one individual proved especially floriferous, producing tremendous flushes of bloom throughout the spring and then again in the fall, with random flowers appearing at almost all other times as well. They decided that this clone should be singled out and they named it for their nursery, 'Grand Ridge.'

Most rock gardeners believe that *E. aureus* is the finest yellow fleabane. Of course, a vigorous plant of *E. aureus* is delightfully showy; however, the leaves are considerably larger than in *E. chrysopsidis.* Additionally, *E. aureus* is much fussier in cultivation. It requires an acid scree that is neither too hot nor too wet. 'Grand Ridge' is a gloriously adaptable plant with no fads about acidity. It thrives in warm scree or even loamy soils in Colorado. It comes readily from cuttings and has one of the most protracted blooming seasons of any alpine plant.

Two other composites brighten the late months of the year on the southern Great Plains. The native zinnia, *Z. grandiflora*, starts to bloom in late June, producing more and more orange-centered yellow flowers in the summer months, and peaking in late fall. This peculiar plant produces its seed on the ray flowers, which frustrates uninitiated seed collectors. In dry climates it thrives in any hot soil, provided that it isn't crowded. In wet climates it will probably need a fast-draining scree, a sand bed, or overhead protection in the winter. Note that it is very late in emerging from dormancy, but there is no question that it is perennial in the wild. Each plant produces rhizomes that can eventually extend in many feet in all directions.

Melampodium cinereum superficially resembles a pure white zinnia and likewise blooms throughout the summer months. This plant does not spread from rhizomes, however, but is just as sensitive to excess moisture. It is commonly known by the name of Blackfoot daisy in the northern Chihuahuan Desert where it often grows intermingled with its cousin the zinnia. They end the gardening season on a glorious note.

Transplantation and Propagation of *Zygadenus glaucus*

James L. Hodgins
Toronto, Ontario, Canada

The white camass, *Zygadenus glaucus,* is a member of the lily family and a native wildflower of Ontario. It is commonly found on beaches of the Great Lakes. Occasionally it is found inland in calcareous swamps on limestone rock. Its 30– to 100–cm stem bears a panicle of thirty to fifty white to greenish–white waxy flowers. The long, narrow leaves are grayish green. The presence of steroid alkaloids in the tissues of *Z. glaucus* makes all parts of this plant toxic to humans if ingested.

In August, 1979 I transplanted three mature specimens with clods of soil from a beach near Providence Bay, Manitoulin Island to my garden in Toronto. The new site was open, flat, and south facing. The soil was rich, fine textured, and well drained, with a pH of 7.1.

The specimens were planted approximately 1 m apart near several large limestone rocks and among established companion plants of *Hypericum kalmianum, Juniperus horizontalis, Iris versicolor,* and *Satureja vulgaris,* all of which grow on the Lake Huron site from which the transplants came. Subsequently the white camass bloomed profusely each year and multiplied abundantly by bulb offsets.

In July of 1983, I found it necessary to divide and transplant one of the three zygadenus clumps for the first time since their original transplanting 4 years previously. Normally division of bulbous plants is done in the fall, but removal of an adjacent shrub necessitated premature removal of the clump. Examination revealed twenty–two robust onion–like offsets from the original single bulb. Each new bulb was approximately 1.5 cm in basal diameter.

One third of these bulbs were successfully transplanted to gardens in Etobicoke and Willowdale, Ontario. The remaining two thirds were replanted in my garden. None of the plants exhibited any disease, damage, or lack of vitality.

Though propagation information for *Z. glaucus* was not found, some information was listed for *Z. elegans,* a western species not found in Ontario, which recommended seed germination and root division. Several authors consider *Z. glaucus* to be a variety of *Z. elegans.*

Alpines '86 Review – 1

The Pre-Conference Tour

Nicholas Klise
Baltimore, Maryland

We arrived in Phoenix to over 100° F. heat from the four corners of the world. The participants in the Pre–Conference tour had traveled from Sweden, Australia, Japan, and every region of the United States. We assembled in what must be the largest Ramada Inn in the world. It was planted with palms, citrus, rosemary, and opuntia, all thriving in the heat and brilliant sun. Many of us took the opportunity while in Phoenix to visit the Desert Botanical Gardens and admire their impressive collection of desert plants grown to perfection. The evening before embarking on our journey northward, Loraine Yeatts, a naturalist and photographer and one of our guides, whetted our appetites with a show of her beautiful slides as an introduction to the places we would see. Allan Taylor, professor of linguistics and avid gardener from Boulder and our tour leader, introduced the other guides: Elizabeth Neese, a taxonomist whose specialty is the native plants of Utah; and Rod Haenni, a geologist with an absorbing interest in cacti. Karen Trout, a botanist with the Denver Botanic Gardens, would join us later.

We traveled in two comfortable tour buses through the forbidding lower Sonoran desert landscape north to Oak Creek, a cool, shady refuge that lures hundreds of day trippers from Phoenix on weekends. Since this was a Sunday afternoon, the guides feared the area would be saturated with visitors, but Allan Taylor had staked out a secret place that no one else knew about. There we found *Mimulus guttatus* and *Epipactis gigantea* growing in the canyon walls, and invisible fissures on the rock faces provided a home for the exquisite *M. cardinalis*.

Our next step was Walnut Creek Canyon and it, like all of the stops on the tour, was unique in its rock formations, color, and flora and not at all like Oak Creek. Walnut Creek Canyon is fascinating because its rock walls were home to an ancient tribe of people who fashioned dwellings and whole communities out of the shadowed recesses under the overhanging rock strata. The smudge from their smoky fires still stains the rock that was the roof of their primitive dwellings. The paths that thread their way along the canyon are the same that were used by these cliff dwellers and gave us access to close inspection of beautiful native plants, some of which were *Cryptantha jamesii* and *Penstemon linarioides.* Here since time forgotten, *Petrophytum caespitosum* has been inching its way across the rocks to form mats 6 feet wide.

The Grand Canyon, our next stop, defies comparison to any place and is almost indescribable because of its magnitude. Our too brief visit to the south rim was the high point of the tour. We watched the sunset after dinner at the El Tovar Hotel as a reward for an exasperating yet exhilarating day that not only included sightseeing, but the fastest collective quick costume change in history.

Because of a housekeeping disaster at the lodging that was reserved for us, we could not get into our rooms until a few minutes before we were scheduled for dinner. The jeans and hiking boots were torn off and in a matter of moments the entire entourage was dressed for the occasion, supping in the most dramatic rustic room ever devised, perched on the most spectacular precipice imaginable.

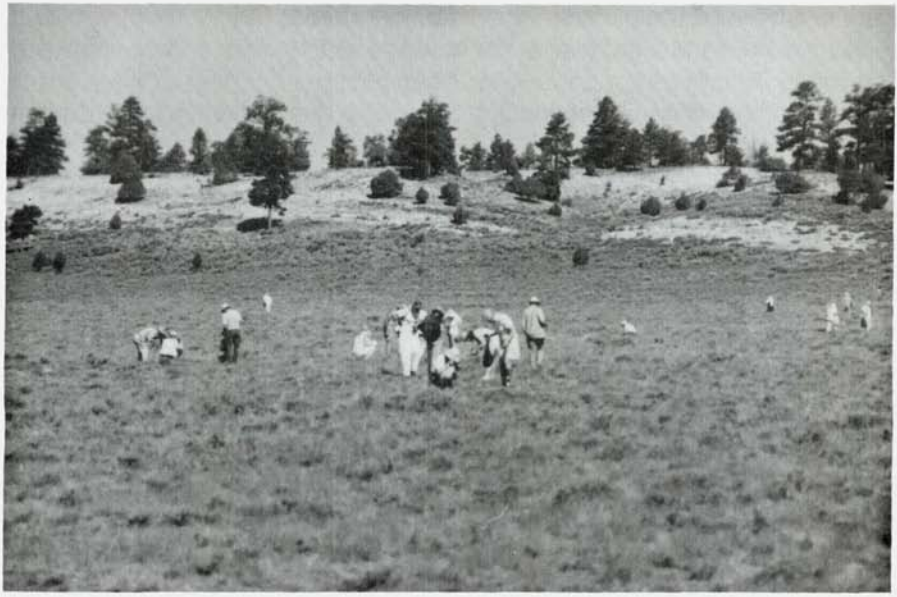
Many of us awoke early so that we could experience sunrise in the canyon as prelude to a full day of exploring and botanizing. We saw *Paronychia jamesii*, *Erigeron oreophilus*, *E. utahensis*, *Festuca ovina*, and *Cheilanthes eatonii* on the trails along the rim. We gasped at *Agave utahensis* growing on rock shelves a few inches wide, throwing 15-foot spires into the void of the chasm. I photographed *Penstemon utahensis* in full bloom at the very brink of the canyon, the red trumpets poised over a drop of a thousand feet.

The next day we botanized on the Kaibab Plateau near the north rim of the canyon after traveling a great distance to circumvent the gorge. On the way we stopped at an Indian trading post. The open meadow where we stopped was a paradise of small-scale plants. There were acres of lumpy mats and buns: pussytoes, phlox, daisies, paintbrushes, geraniums, loco-weeds, flax, buckwheats, and beardstongues. The guides told us that we should list everything we saw and could identify and the longest list would win a prize. That list of thirty-six species was submitted by Faith Magoun of Manchester, Massachusetts.

Whereas the Grand Canyon's magnitude is its width, Zion Canyon's drama is its narrowness. Skyscrapers of rock line a tiny shaded watercourse. If a heavy rain hits some of those skyscrapers, you can't walk in the canyon; you more than likely will be swimming. Here, in the desert, tapestries of fern drape the toes of the skyscraper rocks and *Cheilanthes feei, Pellaea glabella,* and *P. truncata* make their home.

Climbing out of this crack of rock into the blinding heat of the Utah June day was an experience like an insect shooed from a comfortable shadow. Up on the rock (slick rock as the natives call it) we saw an array of beautiful shrubs. *Fallugia paradoxa* (Apache plume), *Cercocarpus ledifolius* (mountain mahogany), *Arctostaphylos pungens* (manzanita), *Juniperus osteosperma* (Utah juniper) grew where they could in fissures of the rock, softening the austerity of the moonscape.

That evening we arrived at Ruby's Inn, and I will never forget Ruby's Inn. It is the only accommodation on the Paunsaugunt Plateau near Bryce Canyon



Liesel Rombouts confronts Slick Rock

and is alone, for hundreds of miles, the only dot on the map. It is so large that it easily swallowed and digested our tour buses. Out back behind the two-story blocks of rooms, is where the hundreds of recreational vehicles hook up and Boy Scout troops camp in tents.

Under the tires of the vehicles and scout's sleeping bags are the most magnificent displays of small-scale plants ever dreamed of by a rock gardener. Those of us who were photographing plants were going crazy trying to photograph them all in the evening light. Others of our group were slowly walking around looking down at the wonders at our feet. *Arenaria fendleri*, *Erigeron eatonii*, and *Phlox muscoides* were lumped here and there. *Astragalus tenellus*, *Arenaria eastwoodiae*, and *Penstemon caespitosus* var, *desertipicta* dotted the campgrounds. *Rosa utahensis* were in full bloom. We found a strange little thicket of gray thorns, out of flower, that turned out to be a daisy or aster, *Stephanomeria spinosa*. Occasionally we would kneel and bend close to the earth. Groups of us were on hands and knees. Eventually the occupants of the recreational vehicles became aware of us. "What did ya lose?" one of them called. The reply, that we were looking at the plants, only confirmed what they already knew: We were strange indeed. Wouldn't this be just the thing to show the folks back home! The recreational people got out their video tape cameras and captured dozens of us bending and exclaiming, genuflecting and sighing. Bob Werra, a per-

fectionist photographer of rock plants from Ukiah, California, especially delighted the recreational people by getting into amusing knots on the ground while focusing on a *Sphaeralcea coccinea* or a *Calylophus lavandulifolius*. I directed some of the RV people up over a berm to a bog twinkling with *Iris missouriensis* because they asked, suspiciously, if there were any wildflowers that weren't so puny and looked like weeds.

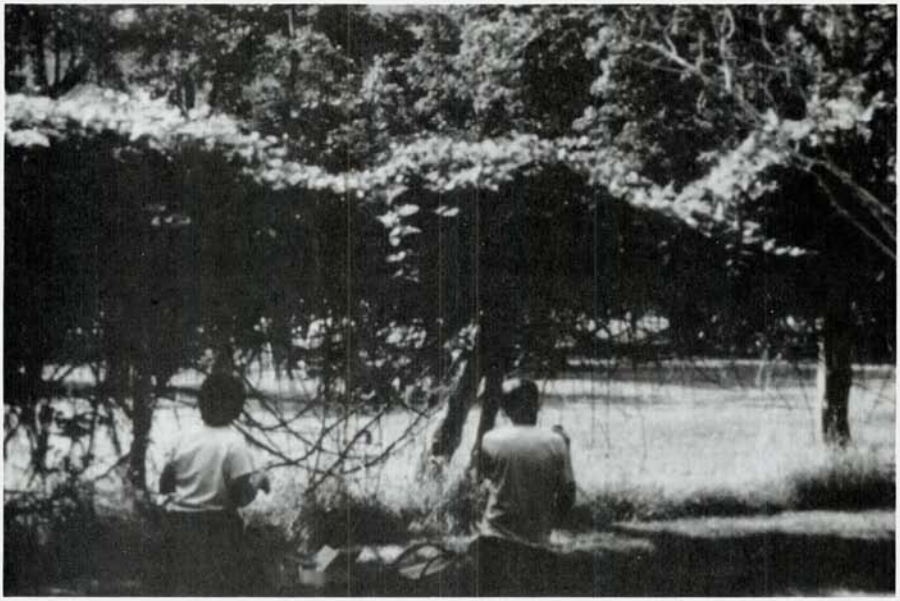
Allan found another great place for us to botanize away from the motel and we went there in the morning. I think we saw more variety of rare plants there, at Ruby's Inn and environs, than we saw at any other place on the tour.

After a quick look–see at the rose and vermilion cathedrals of Bryce Canyon, we traversed the Aquarius Plateau. In the dramatic landscape of southern Utah, the beautiful silvery shrub, *Shepherdia rotundifolia*, is a fitting embellishment of the slick rock. We stopped to see *Stanleya pinnata* and the biggest bun of *Eriogonum shockleyi* in the world.

At a higher elevation we stopped at a beautiful sub–alpine meadow carpeted with *Penstemon watsonii* and *P. stricta* of an unusually intense blue, *Geranium richardsonii*, several species of *Castilleja*, and *Ipomopsis aggregata*. We found the pincushion cactus, *Coryphantha vivipara*, in bloom with this entourage.

After traveling east through dramatic and many times desolate canyonlands, we had a memorable picnic meal in the shade of fruit–laden trees

Botanizing near Ruby's Inn Photos by author



Elke and Rudolf Weiss picnicking at Capitol Reef

planted by the first Mormon settlers at Capitol Reef. Vermilion slabs of stone towered over the sweet cherry, apricot, and plum trees, which were beautifully maintained by the National Park Service. We were free to pick whatever fruit we wanted and many volunteers climbed the trees and filled their hats with fruit for the group to share.

After spending the night in Green River, Utah, we crossed into the state of Colorado and stopped at the Powderhorn Ski Resort. On this fine June day there was not a skier in sight and the winter white ski slopes now were alive with the color of hundreds of wildflowers. Joann Young, the authority on western Colorado wildflowers, joined the group to show us around. Stately *Veratrum tenuipetalum* and *Delphinium nelsonii*, pale pink *Rosa woodsii*, yellow *Pseudocymopterus montanus*, blue *Mertensia franciscana*, and white *Galium septentrionale* and *Symphoricarpos oreophilus* were in abundance.

By this time the buses were huffing and puffing their way east to Denver, up and down Colorado mountains. On the Grand Mesa at about 10,000 feet, we stopped and saw our first snow on the trip. I was so excited about seeing snow on the horizon within walking distance that I rushed the quarter mile with camera to photograph it and, while slushing around the boggy rim of a melt basin, stirred up a cloud of mosquitoes that hungered for the rare human blood. The mosquitoes feasted on the two tour buses of human bodies. Nevertheless, the flora was beautiful and *Mertensia viridis* and *Caltha*

leptosepala flourished in the icy snow melt.

Unlike the westward bound pioneers, we were deprived of beholding the majesty of the Front Range of the Rockies seen from the plains until we traveled from Denver out to Boulder. We came in the back door and traversed the convoluted back yard of the Rockies. We tried to look out the back of the bus at the Continental Divide before dropping into Denver. Traversing the rocky flats and seeing Boulder, our destination, snuggled against what must be the most beautiful backdrop any city has ever had, Allan stopped the buses so we could admire his home town at the base of the Front Range of the Rocky Mountains. Our collective anticipation of the conference was intense and our enthusiasm for the wonders of the Rocky Mountains was primed by the unforgettable sights we had seen.

On Garden Conferences

Ellen Wilde
Santa Fe, New Mexico

Alpines '86 was the first garden conference I had ever attended and what a wonderful introduction it was! I saw an incredible variety of flowers in gardens and in their native habitats in that one week that could not be duplicated in years of visiting nurseries. Even better, I met many wonderful people who are willing to share their experience, knowledge, and skills with a beginner.

I was so inspired that I decided to invite the American Penstemon Society to hold their 1987 Annual Meeting in Santa Fe. (I would like to have invited the ARGS but thought I had better start with a smaller group!)

New Mexico does not have a long flower-gardening tradition, partly because of its aridity and partly because it is a young, poor, and sparsely populated state, but it does have many beautiful wildflowers, especially penstemons, and interest in growing them is increasing.

Santa Fe is a small city, population about 50,000, located at the southern tip of the Rocky Mountains at 7000 feet elevation. It is renowned for its beauty, architecture, history, museums, art, and cultural diversity, but it should be equally noted for the great variety of plant communities surrounding it. The city is in the pygmy forest or pinon-juniper zone, but it is only a half-hour drive down to grasslands in one direction or up through the pines and aspens to the spruce-fir zone the other way. On one side are the granitic Rocky

Mountains and on the other, the volcanic Jemez Mountains. Variations in elevation and soil and the microclimates resulting from different exposures make it possible to find orchids and ladyslippers within a few miles of many species of cacti.

The 3 day meeting of the American Penstemon Society will be held on the campus of St. John's College, June 20 to 23. Anyone interested in penstemons is invited to attend. A full schedule of activities will include garden visits, hikes, roadside tours, a plant show, nursery visits, a plant sale, a trip to Albuquerque gardens, slide shows and talks, a tram ride to Sandia Crest, a jitney tour of Santa Fe, and museum visits. Registration is limited to sixty–five people.

For information or to register, contact Ellen Wilde, 110 Calle Piñonero, Santa Fe, NM 87505. (505) 982-1406.

In addition, the Native Plant Society of New Mexico is sponsoring a Symposium on southwestern native plants at the University of New Mexico in Albuquerque, June 18 and 19. Topics to be covered include landscape uses, propagation, traditional and medicinal uses, highway and civic beautification, and conservation issues. Write to NPS–NM, P.O. Box 934, Los Lunas, NM 87031 for more information and make your stay in New Mexico longer and richer.

Some Thoughts from the Conference

I was completely taken in by the Rocky Mountains. Having grown up in Austria, most of my mountain experience comes from the Alps with a few trips to the White Mountains of New England. I had no idea of the beauty and floral richness that awaited us! I was also completely taken by the Denver Botanic Garden, especially the rock garden. Having experimented myself with growing herbs in my rock garden, it was a real thrill to see so many used in Denver and I am full of questions about hardiness, drainage requirements, etc. in order to grow some of them here in the East. It has opened up a whole new plant world to experiment with. Is *Origanum rotundifolium* really hardy in Denver??? Is *O. libanoticum*? And last, but not least, the Conference was so well organized and all of our hosts so pleasant, helpful, and knowledgeable that one can only be in awe and extremely grateful for having had the experience.

Sieglinde Anderson
Hope, New Jersey

Is It Evergreen?

Roy Davidson
Seattle, Washington

What we may mean really in asking, "Is it evergreen?" is whether there is an all–season appeal or value. The reply might otherwise be **no,** but it **is** ever–blue, or ever–gray, or ever–gold, or even ever–brown. There is no end to the subtle coloring of winter foliages, all the more effective and easily noted when the sun is low and the light intensity much reduced. Even the shadows have delicate nuances one finds at no other season.

There is almost no end to the variety; the conifers are now much too heavy unless the greenness is heightened by some variation, tips of gold or white or a moderation of shadings, and this is likewise true of broadleaf shrubs and trees except that they are not so oppressively massive in their greenness. But among all these are all manner of attractive forms lightened by soft leaf–green tints or by glaucous blue–greens, even light purplish tints.

But what of those smaller, lower, more intimate plants of our landscapes, our rock gardens? Here there are multitudes of the multi–hued things to imprint their personalities upon us. Indeed it would be quite possible to plan and grow a garden of great beauty without a single flower all year long and at no sacrifice of interest. Bark and twigs and buds become as important as are leaves in such a scheme. We all adore the colors of autumn, but we might feel a sense of relief, when that excitement lets go, in the simpler pigmentations of winter.

Among those I find more than ordinarily useful for this time of year are some things that, although they have quite given up life functions, remain durable until really beaten down by rain, wind, or freezing. The great round shield of darmera (peltaphyllum) on the streambank stand on 2–foot stalks in burnished beauty even in the early freezes. Rather than cutting all this to the ground in the autumn tidying–up, they are allowed to stay as long as they can before being hauled off to the compost. The various rich colorings of the epimediums are perennial favorites here. Great sweeps of them go right on all winter to be snipped off just as the new foliage is emerging in earliest spring. The one known generally as *Epimedium* 'Sulphureum' is a magnificent warm tan and realistically lifelike unless frozen very hard, when it will shrivel. Tobacco–brown is the color of others. *Epimedium* 'Rubrum' turns a ruddy vinous hue, and the little *E.* 'Cantabrigense' which I grow in full sun is inclined to develop on its knees rather than erect and then about 6 inches high and of a delicate shrimp–pink tint all winter through.

The ever-gray *Anaphalis triplinervis* is especially good and one of the few silver-grays I have found totally satisfactory in this garden. The form I have as *A.* 'Summer Snow' is a tidy mound of 10 to 12 inches in total height. The especially nice gray felted and pleated leaf is most attractive and in midsummer the plant is covered rather tidily with the little everlastings of bone white and lemon tint. These stay right through the winter colored an intriguing taupe combination and giving a good effect until they are sheared off in early spring. Another silver-gray that endures dank winter wet better than most is the flowerless form of stachys called *S.* 'Silver Carpet,' feathery and decumbent, good to hide bare ground for whatever reason.

I leave the foliage on *Iris sibirica* 'Nana Alba' as tan accents in a bitter-green border of thyme; the blades stand rigidly to 10 inches or less, good spiky accent seen against the pond. The feathery yellow-green of *Parthenium* (*Chrysanthemum* or *Matricaria*) 'Aureum,' really an acid-green, is the highlight of this winter scheme. *Heuchera* 'Palace Purple' and *Ajuga* 'Burgundy Glow' with the shining crimson purple of that perennial favorite, galax, need a good bit of light in order to not appear somber. And if there is a well-raised stony or gritty bank, many of the sempervivums will bring a richness of leafage. Among the close groundcover plants good here are the silvery-gray of *Cerastium columnae*, NOT a weedy one, and the lovely softness of *Potentilla nevadensis* in beige and gray lace contouring the bank where early bulbs will appear.

Dryas here and there has sometimes shown a chocolate-brown color, and the various clones of the smaller *Bergenia stracheyi* have turned variously to rust, claret, and maroon with all the richness of fine Moroccan bindings in winter sun. In the heather garden are some fine tones, none bettering the exquisite *Calluna* 'Sir John Charrington,' brightest cerise red in winter. Though it is not so neat as the best of them, it responds well to being shorn. Not quite so brilliant is the Himalayan *Polygonum vaccinifolium* and others of similar habit, though a bit brighter in hue. These old leaves turn black by end of winter with the fresh new green poked through intriguingly.

This is the time too to pay attention to stems, especially on plants whose leaves hide the bark in other seasons. Many of the smaller salix are gray or felty, some with the contrast of golden-yellow bud scales. There are the beet-root barks of viburnums and the coral-red of *Acer palmatum* 'Senkaki' (known too as 'Sangokaku') the scarlet-maroon of *Cornus* 'Westonbirt.' There is almost no end to what we can see for winter gardens if we look.

The Fires of Winter

Vaughn Aiello
Chicago, Illinois

The garden is small and I hope choice. If there were more room, I would definitely have more small trees and shrubs. But every inch of space is taken. Tucking plants in is my real hobby in the growing season. I have tried to maintain a good rock garden. That means good looking and healthy plants. Easy enough, but what to do with all the excess growth and bloom, and of course the plants that did not make it?

My rock garden has a gravel mulch, but the woodland areas, the north side, and the parkway in front of the house could use some plant material mulch. However, I do not have space for mulch creation. There is one area where I do manage to throw discarded plant material, but that is soon to disappear forever. With it will go the memories of what it took to create the garden. In remodeling the house, I put in a fireplace and in the winter I have brought in the clippings and burned them into pure ash to be sprinkled over the garden. It is the only fertilizer I use. And so the fires of winter consume.

The fires of winter take and give. I wish I could conjure up all the thoughts and images as I place plant material in the fires: holding the *Rhododendron* 'Scintillation' that did not survive, remembering how beautiful it was when I purchased it and now the flames consume it with stems and leaves hissing and crinkling. Then there are the literally thousands of removed dianthus flower stems smoldering and igniting. All the different tulip and narcissus blossoms: when they were in bloom, oh, how the garden sparkled in the late winter sunlight. Then there are the flower stems of *Armeria juniperifolia* (in a few varieties) that caused such wonderful visions when in bloom, but the memories persist in the way each stem had to be handled and cut separately. Maybe if they did not bloom so vigorously.... Oh, well, the fires of winter will consume.

The fires of winter also take the extremely easy–to–remove flower bracts of *Campanula portenschlagiana* and all the collected seed heads of *Scilla siberica* by the hundreds. What visions invade my mind on those wintery days by the fireplace. Spring, summer, fall just seem like minutes of passing bloom in front of the fires of winter. Sometimes in the flames I see images of what I had hoped the garden would look like. The failures — they are the hard ones to accept. Why didn't they work?

The first tree I bought for the garden, a *Fagus sylvatica purpurea tricolor,* with 12 years of good growth (maybe I do now believe that I put it in not exactly the right spot) was devastated by the church janitor with his can of herbicide.

When questioned as to why he doused the area next to my garden, all he said was, "This stuff costs $18.00 a gallon," and walked away. Now the fires of winter take the branches of the dead fagus. Oh, how I envision the janitor in the flames.

The two 10– to 12–inch Franklinias then are placed in the flames and the knowledge that I now have a 6–inch one occurs. Memories of conversations recur telling me that Franklinias and Stewartias would not live in the Chicago area. Catalog enticements extolling bark detail and blooms dance in front of the flames. But I just carried that dead material past the 12–inch *Stewartia pseudocamellia* which I found in a Chicago nursery along with four others that had been brought in and planted at least 6 years before. Two to clients, one to myself, then the nursery cut the other two down to make room for liner stock of *Acer palmatum* cultivars. As the flames burn I see that a much larger girth of trunk does make a lot of difference in hardiness in some of the choicer small trees and shrubs.

With the fires of winter burning, it is a good time to prune the *Crataegus crus-galli.* The 4–inch thorns do not endear me to the garbage men nor to the dog walkers that pass the parkway. But the fires insure a quick disposal of pruned material. A few quick cuts and then even quicker moves into the fires. With moving so fast to dispose of crataegus clippings there are very few memories stirred, but then the hundred or so flower stems of *Allium pulchellum* soon ignite summer memories. Flowers grow and burn. With gazing eyes and pensive thoughts of plants that might never see the flames, only one comes to mind: any of the three species of *Fothergilla.* I personally know of no shrub that better deserves the title "Shrub of Shrubs." After 12 years, not one leaf, twig, or branch has been placed in the fires of winter. It is a true joy in the garden. Spent platycodon flowers, liatris, and hybrid lilium flower stalks soon feed the flames and redirect the thoughts to visions of summer growth and color. Oh, how I hope I never lose the fires of winter.

A Puzzle–Perhaps?

Brian Bixley
Toronto, Ontario

Most of us grow the winter aconite, literally the "springflower," in our gardens. It is not (from most accounts) easy to establish and naturalize, though once a good colony has been established (to him who hath . . .) expansion may be reasonably rapid. There is a wonderful photograph in *The Englishwoman's Garden* of aconites in long grass under trees; the garden in this instance is Rosemary Verey's own.

As with many spring bulbs, the best time for transplanting aconites is at flowering time or shortly after. What we must do, we are told, is to ask our friends for a few flower–studded turves. Most of us are in the position of needing to buy bulbs in the fall, and the initial success rate is then quite low. But the beauty of the plants, the ruff of finely dissected bright green leaves, the golden globes held above, and the earliness of flowering make all our efforts worth while. There are six or seven species, but only two are seen frequently in our gardens, *Eranthis hyemalis* and *E. cilicica.* I planted both of them, but have long since lost track of which were planted where. In any case, they look much alike to a casual gardener, which I am, but almost all my gardening books list them as separate species, and I always believe what I read.[1]

There is lots of authority for believing that they are separate species. To begin with there is general agreement that *E. hyemalis* originates in Europe, *E. cilicica* in "Asia Minor, Greece, Syria, Symrna" (*Hortus* 3, *The Standard Cyclopaedia of Horticulture, New York Botanical Garden Illustrated Encyclopaedia of Horticulture*). There is widespread agreement that *E. cilicica* is more robust: "similar but stouter" (NYBG); "more robust, thicker foliage" (Doeflinger, *The Bulb Book*); "has a bit taller stem" (Miles, *Bulbs*). An opposing note is sounded: "*cilicica,* like *hyemalis,* but less robust" (*Hortus* 3).

There is consensus that *E. cilicica* is later: "season a few weeks later" (SCH); "blooms slightly later" (Miles); "is worth having as it comes after the older species has gone out of flower" (Bowles, *My Garden in Spring*); "*hyemalis* . . . the earliest to flower" (Doeflinger); "*hyemalis* . . . mid–January, *cilicica* . . . February, March, April" (Hay, *Bulbs*).

Eranthis cilicica has the "involucre more deeply and narrowly segmented" (*Hortus* 3); "involucre of deeper and more numerous lobes" (SCH); "stem leaves of equal–sized, usually more numerous segments than those of *hyemalis,* with the segments cut almost to the base" (NYBG).

We are informed that the sepals are broader in *E. cilicica* (SCH); this is

echoed, with fine nuance, *"hyemalis* . . . sepals ¼" wide or very slightly wider . . . *cilicica* . . . sepals are almost ½" wide" (NYBG).

Bowles mentions the "red stems" of *E. cilicica* but not of *E. hyemalis,* and Hay says that *E. cilicica* has "foliage tinted with bronze," and that in *E. hyemalis* "blooms come before the leaves" which presumably doesn't happen with *E. cilicica.* Only SCH indicates that in *E. hyemalis* the anthers are oblong, while in *E. cilicica* they are ovate.

I raise all of this because Brian Mathew in *Dwarf Bulbs* (1973) says, without commentary, that "*cilicica* is now considered to be a synonym" for *E. hyemalis.*[2] Given Mathew's stature, this could well be decisive, but one would like to know just a little more. Obviously one would like to know by whom *E. cilicica* is now considered to be a synonym and why.[3] Are *E. cilicica* and *E. hyemalis* different forms? Is the species polymorphic? To the non-botanist that must raise as many questions as it answers. Are we witnessing an example of botanical lumping? And what are we now to think of *E.* x *tubergenii*?

E. x *tubergenii* (or *E. tubergeneana* as Mathew labels it) has long been believed to be a cross between E. hyemalis and *E. cilicica* made by the "brothers Hoog in Holland" (Wilder, *Hardy Bulbs*) in 1922. *The Classified List and International Register of Hyacinths and Other Bulbous and Tuberous-rooted Plants* (1963) gives the following listings:

Eranthis cilicica Schn. and Kotschy; Asia Minor 1892; Fl. deep yellow, leaves bronze green.

E. hyemalis (L) Salisb.; *hiemalis;* Europe 1570; Fl. aureolin (3)

E. tubergenii Tubergen; 1922; a hybrid of *cilicica* x *hyemalis;* lemon yellow (4)

(Numbers in parenthesis refer to the RHS Horticultural Colour Chart)

The perceived differences between *E. tubergenii* and hyemalis-cilicica are the larger flowers in the former, and their greater durability. This latter characteristic has been attributed to *E. tubergenii* being "a hybrid . . . usually sterile" (Synge, *Collins Guide to Bulbs*), though *E.* 'Guinea Gold,' described earlier by Rix as intermediate between *E. hyemalis* and *E. cilicica,* is described by Mathew as a selection of *E. tubergeneana,* presumably from seed!

Where does this leave us? There appear to be at least three possibilities:

1) *E. tubergenii* is a species, perhaps "discovered" in 1922, distinct from hyemalis–cilicica;
2) both *E. cilicica* and *E. tubergenii* are forms of *E. hyemalis,* in which case their specific names should be dropped. Perhaps this is why Rix does not mention *E. tubergenii,* though as we have seen Mathew gives it specific status. Pizzetti and Cocker, *Flowers, A Guide for Your Garden,* actually give *E. hyemalis* var. *cilicica,* as does Kolaga, *All About Rock Gardens and Plants.* Kolaga is alone, in my reading, to suggest that *E. tubergenii* might be a sport.

3) *E. tubergenii* is an inter-specific hybrid, perhaps between *E. hyemalis* and *E. cilicica,* thus accounting for the usual sterility of *E. tubergenii.* (What did the Hoog brothers do? Where are the records to be found?

These possibilities are mutually exclusive, though the gardening literature contains examples of each. Perhaps someone more botanically knowledgeable than I can unravel this apparent tangle.

[1] "In those days I was not much of a lily grower but had . . . one bulb of the lovely sweet-scented *L. parryi* growing on a sloping dry gravelly bank. . . . It did not produce many flowers at a time but it did flower regularly. . . . Then somewhere I read that it needed more moisture, and having great faith in the written word I moved it to a damper spot where it promptly died." E. B. Anderson, *Seven Gardens.*

[2] The news has only partially spread. Ingwersen (*Alpine and Rock Plants,* 1983) says "I have never been able to distinguish any pronounced difference between *E. hyemalis* and *E. cilicica* and I am delighted to learn that they are synonymous." But the *Hamlyn Colour Guide to Rock Garden Plants* (1984) says of *E. cilicica* that "its flowers are larger than in *hyemalis.* . . . It blooms about a forenight later . . . it is shorter and slightly less vigorous." (!)

[3] Martyn Rix, in the *Bulb Book,* hardly helps matters. *E. cilicicus* (sic) is "very similar to *E. hyemalis,* and now considered synonymous with it, but leaf segments usually narrower and flowers larger." How different must the plants be before they cease to be synonymous? If they are identifiably (even casually) separable, can they be synonymous? Unfortunately, *E.* x *tubergenii* is not mentioned at all, though *E.* 'Guinea Gold,' frequently described as a form of the usually sterile *E.* x *tubergenii* is here described as intermediate between *E. hyemalis* and *E. cilicica.*

Victor Reiter, Jr.

Victor Reiter, Jr. died August 16, 1986, the day he was to receive the local horticulture award of the American Horticultural Society. At Carla Reiter's request, their three children attended the Annual Awards Banquet and accepted the plaque for Victor.

I asked Elizabeth McClintock, who had just been awarded the Liberty Hyde Bailey Award at the dinner death kept Victor from attending, what contribution Victor made to rock gardening. She pointed out that he named his nursery "La Rochette," French for "pretty little rock." She recalled his

remarking, "I'm not interested in anything over 12 inches high." Of course, he said that with characteristic wry humor, a smile and a twinkle in his eye.

Ted Kipping told me he learned about succulents, textures, the value of good drainage, and much else from Victor, who also proved that a vast collection of plants can be arranged artistically...."The hallmark of Victor Reiter was his generosity of time, knowledge and plants to people, organizations and nurseries," Ted concluded.

My first awareness of Victor Reiter was my first visit to the California Horticultural Society, where I saw his name on a card in front of a fabulous primula with deep pink petals, a color I had not seen in local nurseries. While I never did acquire Victor's deep pink primula, he gave me all sorts of other lovely things. I look out at my garden as I write this and see the dwarf scabiosa with cream yellow flowers and the yellow verbascum, both the result of seed pods I took from his garden. In my greenhouse window are cuttings of a francoa cultivar and a clianthus he pressed on me the last time I saw him.

That was August 5, 1986. After talking with Victor and Carla about Hypericum species, Clianthus, the stock market...impressionist art...and all sorts of other subjects, Victor insisted on giving me cuttings of some plants I had admired in his garden. To Carla's horror, he hopped up into a raised bed, shears in hand, and searched around for a rooted piece of the Francoa. Still agile and spry, he was able to tend his garden on a daily basis until a few years ago, when ill health made "dirt gardening" too difficult.

I remember the ovation Victor received when he spoke on Mediterranean plants at the ARGS Western Study Weekend in San Mateo in 1982. He began his talk by saying, "I'm just a dirt gardener." The audience roared with laughter. Victor was not "just" anything he undertook. Excellence marked his endeavors, whether in the nursery business, hybridizing echeverias, his own garden, his writings, or his success in the stock market.

We rock garden enthusiasts have been influenced, knowingly or unknowingly, by Victor Reiter. If, for example, you have Lithodora diffusa 'Grace Ward' in your garden, you can thank Victor for introducing it to the local nursery trade. Or you may have acquired Harland Hand's favorite thyme, named after Victor.... For me, the self–seeding verbascum, tall and regal in deep soil, will stay in my garden, as it does in La Rochette, and remind me of Victor.

Marjory Harris
San Francisco, California

(Reprinted with permission from the Western Chapter Quarterly)

Tips of Growing Primula

Herbert Dickson
Chehalis, Washington

Starting with seed, most species of *Primula* like cool, moist spring weather with a temperature range between 40 and 50° F. to germinate. Freezing is not necessary but will not hurt the seed or young seedlings.

If you have a method that gets results for you do not change except on a small experimental basis. If you are having difficulty with some species, here is my successful method developed from many years of trial and error. I use 4–inch–deep square plastic pots because the deep pot serves as a reservoir for water and for the psychological factor that I will tackle a 4–inch pot at transplanting time but hesitate to start on a whole flat of seedlings.

To my regular sterile potting soil (heavy on sand and pumice) I add an equal volume of peatlite growing mix to open it up for drainage and moisture retention. I fill each pot ¾ full of this mixture, then add about 1 level teaspoonful of fertilizer (Osmocote 9 mo. type and Agro Nursery Supplement No. 3 with trace elements) and stir lightly. I then fill the pot to the brim with a commercial peatlite mixture. (There are many brands available in varying sized packages and all are good; I use Redi–Earth.) Next I press the peatlite down ¼ inch or so from the top, smooth the surface, scatter the seeds as evenly as possible, cover with a thin layer of vermiculite, and place a cotton cloth cut to fit the pot on top of the vermiculite. The vermiculite keeps the seed hair roots from growing into the cloth so that after germination the cloth can be removed without taking most of the seedlings with it. The cloth serves four purposes for me: 1) it keeps the birds from eating the seed; 2) it helps keep the seed moist after the cloth has dried; 3) it keeps the rain from washing the seed out; 4) and it makes the pots easy to water from overhead when it doesn't rain.

To prevent damp–off of the seedlings, have the pot full about level with the brim, set the pots outside on tables or benches with full exposure to sun, wind, and rain or snow. As an added precaution I give an initial watering with a fungicide (Truban). Add a few grains of coarse grit or pea gravel on top of the cloth to keep it from blowing off when dry.

I start planting right after Christmas in my nice warm basement where I can work in the evenings. Thirty to one hundred pots are planted in an evening and set out in the weather, sixteen pots to a flat. I plant 500 to 1000 pots each year. With very few exceptions I stop planting seed after April 1. When the weather gets right, the seed comes up. I then take the cloth off and move the pots to the shade. The same method is generally successful for other alpines.

There are two times when transplanting is usually successful: the first, when two or four true leaves have developed (some species are much too small to handle at this stage) and, second, much later after some heavy tractile roots have developed. In between these two times the mortality is greater because the seedling hair roots get very tender or brittle and come off easily when disturbed. They naturally slough off when the tractile roots are formed. With some of the small or slow growing species that go dormant in the winter you will probably have better success by leaving them in the seed pots over the first winter and transplanting them as they start growing the next spring.

There are some species, in particular those in the Petiolaris section, in which the seed needs to be planted as soon as ripe even before the seeds get dry. This is in the summertime. They will germinate quickly under a mist system, but after they come up, remove them from the mist to well–ventilated shade or they will damp off.

I have found that with some primula that are very difficult to keep alive in the hot summer, it is not the heat primarily, but the root rot fungus growing in warm moist soil that causes the problem. Some of the new systemic fungicides work wonders. I have used a combination of Benlate and Subdue in a heavy spray, almost a drench, on the petiolaris primulas and have them growing like weeds all summer, of course with ample water overhead after blooming. It would probably work for other alpines that wither and die in our warm humid summers.

Dividing crowded primula plants can offer problems. In the Vernales and Auricula section there are three times a year when division is easy: 1) when they first start new growth in spring; 2) right after flowering; 3) in early fall (late August or early September as they need 3 to 4 weeks of growing weather to get roots established before a freeze). With Candelabras and many of those that go dormant in the winter, early spring as they start new growth is really the only reliable time to divide them. Do not divide after flowering.

Primulas in general like an ample and constant supply of moisture during their growing season; however, some not only survive but require a hot, dry summer dormant period. Some of the Vernales species and *Primula sieboldii* will grow all summer with ample moisture or will go dormant when they get hot and dry. Do not try to revive them after they go dormant until the next spring when they naturally revive. If *Primula denticulata* wilts on a hot day, let it alone until after sundown, then water. Cold water on a hot, wilted *P. denticulata* will kill it for certain.

With auriculas, if the flower stems get limber and flop from heat or water stress, they will never straighten up again but will stiffen in the position they are in when watered and cooled. For that reason I doubt they will ever become supermarket plants.

The Propagation of Herbaceous Plant Material at Low Temperatures in Midwinter

Herbert Fischer
Surrey, British Columbia

When we peruse the literature we often come across the information that alpines and rockery plants are being readily and successfully propagated by cuttings throughout the growing season, with June and July being the best time for this undertakng.

I made many visits to Mr. Lohbrunner at the Lakeview Nursery in Victoria before his death. I noticed the renowned grower and propagator of alpines propagated his rare plants in September. This activity was carried out in his greenhouses. Usually a small number of cuttings were inserted in a clay pot of the appropriate size, syringed occasionally and so on. However, at Alpenflora Gardens we are usually very busy growing our crop of perennials or marketing them at that time. We are not prepared yet to start a propagation of cuttings although we are well aware of the benefits being derived from such a production.

When November arrives, the outdoor activities have largely ceased, and with the free time available, we started the propagation of herbaceous plants at this time of the year several years ago. Considering our location here on the west coast, and the herbaceous material being used, it is highly unusual that this type of propagation can take place at this time of the year. When fall comes, plant growth slows down, and herbaceous plants prepare to die down for winter and retreat into a state of dormancy in our area. Naturally, a fair number of plants die down entirely for the winter and cannot be used for midwinter production of cuttings. But there are a good number of others, such as those with a superstructure that does not die down, or those belonging to the sub–shrubs, that can be used successfully.

Yet in essence the success hinges solely on the temperatures not only prior to taking cuttings, but during that period of time and after the cuttings have been taken. Over the years I have observed that sub–shrubs and others maintain their healthy appearance as long as the temperature does not drop below 5° C. Even short hours of temperatures below 0° C. do not affect these plants adversely as long as this temperature drop does not happen too often in a short period of time. Should the temperature however drop as low as –5° C., it becomes almost futile to propagate from the plants that were exposed. Nevertheless, if the same plants are exposed to weeks of warmer weather again afterwards, the plants can be used for propagation.

Cuttngs were taken and successfully rooted from November 1 to February 28 from the following plants:

Antennaria dioica
Anthemis
Armeria caespitosa 'Bevans'
A. caespitosa 'Alba'
A. caespitosa 'Sundermannii'
Cheiranthus liniarifolia
Chrysanthemum haradjanii
Convolvulus mauritanicus
Crassula species
Creeping phlox
Dianthus, many kinds
Dimorphotheca barbata nana
Draba
Erigeron aureus
E. aureus leiomerus
Erodium chamaedryoides
Erysimum pumilum
E. 'Golden Jubilee'
Europs evansii
Fuchsias
Geraniums – miniature
Gypsophila tenuifolia
Hebe 'Autumn Glory'
Helianthemum varieties
Helichrysum milfordiae
H. selago
Hemerocallis
Hypericum
Iberis saxatile
I. sempevirens
Iris species
Lilies
Lithospermum
Moriesia hypergea
Penstemon kunthii
Primula auricula
P. pubescens
P. various other species
Ranunculus graminea (roots decimated by mice)
Santolina chamaecyparissus
S. 'Weston'
Saponaria pumila
Scleranthus biflora
Sedum varieties
Sempervivums, rosettes of
Thymus
Verbascum dumulosum

In some cases we took only relatively few cuttings, while in other instances hundreds were taken every year for a period of 5 to 6 years. In total, we have taken approximately 10,000 cuttings every winter in recent years.

Besides the herbaceous cuttings we have also taken a large number of woody cuttings, hardwood and softwood alike. Here, too, we had about the same success. Like the propagation of cuttings at other times under other circumstances, we experienced some losses. In some cases we had total losses of some of the kinds that were taken. But persistence paid off. We recognized the factors contributing to the demise of the cuttings and found ways to overcome the problems.

As the season slipped more and more into the abyss of winter and the plants got themselves into an even deeper coma, we recognized that the success was greater when we kept the stock plants at a steady minimum temperature of 5° C. This necessitated bringing the stock plants into the greenhouses in time and to keep them frost free. But it is not advisable to increase the temperature much above the 5° C. Temperatures above 10°

C. can be highly detrimental to perennials at that time of the year in this area. Plants and cuttings can collapse under those circumstances. We must realize that the plants are supposed to be in a state of dormancy and not be flourishing as if it were July.

In growing the cuttings in the winter we usually "go with the wind" so to speak. Since we have lots of dull, overcast and rainy days, we keep temperatures low, also when it freezes outdoors. But when there is some sunshine, we let the greenhouses warm up a little during the daytime, but even then, it is not wise to have temperatures above 10° C.

When cuttings are taken, they should be in the best of condition. We usually remove all older leaves as well as a good number of newer ones, leaving just three to five of the youngest leaves at the tips of the cuttings. If more leaves are left on, they usually drop off and cause bortrytis to set in, rotting everything in no time at all. It is very difficult and time consuming to remove any dropped off leaves from the flats containing the cuttings, but it is essential to maintain sanitary checking every day throughout the propagation period. Helianthemums are notorious for dropping most of their leaves. Others such as europs, *Chrysanthemum haradjanii*, and santolina are very prone to moldiness. The cuttings have to be inserted an ample distance apart in the flats. Each should have plenty of space for proper air circulation and should not touch one another. Some nurserymen place 200 to 300 cuttings in a flat: we limit our flats to 100 or even fewer. In some cases placing only fifty to sixty cuttings per flat is essential.

At the beginning of our endeavor we hand misted the cuttings at least three times a day. When the heat was on during cold spells, we syringed again at midnight to offset the drying of the warm air blasts. In recent times we have done away in part with this routine. Syringing the cuttings once or twice a day is more than plenty under our circumstances. On rainy or dull days hardly any misting is being done.

Syringing *Europs evansii,* helianthemum, *Chrysanthemum haradjanii,* and *Santolina chamaecyparissus* is like playing with dynamite. Instead, after the initial watering–in, we check the flats daily for need of watering. Usually one good watering a week is sufficient, but some flats have to be patched up from time to time. There are also periods when watering has to be postponed because the medium is still moist.

As the cuttings obtain a minimum of watering and syringing at this time of the year, starkly contrasting with other types of maintenance during the growing season, it may happen too readily that the medium dries out, or that the cuttings wilt if not checked periodically when there is a change in the weather or temperature. During sunny and warmer days or spells, syringing and checking has to be increased. Even during cold spells when the heat is on more often, drying out can take place more easily, and watering may

have to be done more than once a week.

As bottom heat is supplied by placing the flats on heat cables, the areas where the heat cables are placed dry out more quickly. This drying out is not always noticeable at the top of the medium. By the time it is noticed, the inserted portion of the cutting may have dehydrated or at least suffered from moisture loss, causing the demise of the cutting. Under these conditions of supplying bottom heat, it is essential to poke into the flats with a spatula from time to time to check the areas where the radiation from the heat cables may dry out the medium. When this has happened, we have to be aware of the fact that a dry medium is water repellent and sometimes it will not absorb water readily to moisten it. But it helps if this dried out medium is stirred up a little, taking care that the cuttings are not being disturbed.

As water is applied to a flat when some of the medium is dry while the other portion is moist, the water will penetrate into the moist area more readily making it supermoist or even wet which in turn can be highly detrimental to the cuttings.

As a medium we use a mix of equal parts sand and peat. More recently we have used equal parts peat and perlite. The latter is considerably lighter and flats are easier to handle. We add about 2 pounds of Osmocote 14–14–14 to a cubic yard of mix. Occasionally we fertilize some flats with liquid fertilizer as required after the cuttings have rooted well. All flats we use are brand new in order to minimize the spread of pathogens. Sometimes we use a fungicide such as Captan to maintain healthy foliage. With Orthene we kill aphids that may try to get established.

For better rooting of the cuttings we use Seradix #2 or Stim–Root #2. Yet care has to be taken not to leave too much of the powder on the stem of the cuttings as may occur readily when the cuttings are moist. This excess powder absorbs moisture, keeping the stem of the cutting super moist. In turn, this can further stem rot. Another important point here is not to insert the cuttings too deeply into the medium. Deep insertion itself can increase the incidence of rot.

Besides the utilization of our time during the winter months, another important reason for winter propagation is to defray the cost of operating the greenhouses. Since they are being kept at low temperatures, we can carry out this type of propagation without increasing the heating cost.

Just as we are using the mid–winter propagation at low temperatures, this method can also be used by amateur gardeners to utilize their greenhouses in the wintertime. Now you can go on your summer vacations and not worry about the propagation of your plants. Do it during the off season.

During summertime heat spells, propagation can cause problems which are difficult to master. Now this can be overcome by shifting some or all propagation to the quiet time of the year. However, it might take some time

to work out a program for yourself. It is a challenge with a good rate of success.

In conclusion I wish to summarize. Midwinter propagation of herbaceous plant material can be carried out successfully when we observe the following:

1) plants and cuttings have to be maintained at 5° C, but the temperature should not exceed 10° C;
2) under these low temperatures and light conditions, watering and syringing should be done sparingly;
3) cuttings have to be checked daily and proper maintenance has to be carried out;
4) adjustments have to be made as conditions make them necessary.

Aguilegia bertolonii 'Blue Berry'—I'm glad to see this plant is getting around, as I note references to it in several publications. I suppose the name should be clarified, if not defended. Since I still have one of the five plants into which my original crown was divided well over 15 years ago, I can state it to be a columbine of long duration.

At the time I could not put a name to this little gem, even using the Munz monograph, and so concluded that it might be hybrid. In the course of trying to identify it, I gathered quite a few others, all with certain appeal, though none so persistent. Furthermore it does not seem to be so given to out-crossing; I now have it in a lot of odd places as the seed falls and gets washed about, even to a plant that found its crevice in the paved terrace beneath trough gardens. The fine blue foliage is an asset the year round, though the short flower season in May is soon—too soon—past.

This is now known to be a diminutive form, perhaps the true form, of the Appenine *Aquilegia bertolonii.* The seminodding flowers are but one per stem, only about 4 inches high, just above the foliage. A short golden tuft of stamens lightens the effect. The follicles are plump with seed promise. I wonder if perhaps this might be one of those that persists through the formation of a sexual seed which of course duplicates the maternal plant which bore it. Though this would be difficult to prove, columbines CAN do that.

– Roy Davidson

(See Scottish Rock Garden Club *Bulletin,* Vol. XV, No. 1, or American Rock Garden Society *Bulletin,* Vol. 38, No. 3, page 112 for fuller description.)

Omnium-Gatherum

Focus — Alpines '86 was a major horticultural event which will have significant and lasting importance for rock gardening. The invitation to share your Conference experiences is still open. (See Omnium–Gatherum, winter issue).

As we featured articles last year on the Rocky Mountains, so this year with our Annual Meeting in Connecticut we will focus on Northeast plants and gardens. Next year for our meeting in the Columbia–Willamette area the Pacific Northwest will be featured. We encourage and welcome articles on these areas. Articles on other subjects are certainly also appropriate and needed.

Editor's address — P.O. Box 1371, Port Townsend, WA 98368. Please use this address. There has been some difficulty with mail being returned to the sender when the street address is included. The Directorate page has been changed to show only the post office box number.

Deadlines — Material for publication should reach the editor 10 weeks before the *Bulletin* is mailed. That means November 1 for the winter issue, February 1 for spring, May 1 for summer, and August 1 for fall. Articles may be accepted in emergencies as much as 2 weeks after these deadlines depending on the nature of the work load for each individual issue. If material arrives all in a cluster at the very end of deadline time, it cannot all be processed.

Arrival by deadline time does not insure inclusion in the next issue. It is essential to have a good backlog of material in order to maintain balance and variety in each issue. That means some articles will be used immediately and others will not appear for some time. This is not at all a reflection of the quality of the article but rather its appropriateness in terms of such factors as how well it fits with other proposed articles, how much space is available, whether or not it is illustrated and by how many pictures, its timeliness, and how frequently and recently its subject has been dealt with.

Illustrations — We have begun to make progress. Ted Kipping, an extraordinary photographer, is our new picture editor. We are beginning to build a collection of photographs and drawings as well as a willing bank of photographers and illustrators. Lists of pictures are being compiled so that it won't be necessary to leave your pictures with us for long periods. Contact Ted at 257 Joost Avenue, San Francisco, CA 94131 if you would like to help.

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by G.K. Fenderson

This book is intended to serve as a basic reference to the genus *Primula*. Approximately 1375 species, synonyms, and hybrids are included, each with complete reference to author, initial publication, and current status; for nonhybrid taxa, details of typification are also given. Distribution, habitat, altitude, section, a cultural code, stature, and color are indicated for all currently accepted species. The several dozen species described since 1949 are included within this conspectus.

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Pages i to iv, 1-186 (plus indexes to subjects and to scientific names and authorities) 8" x 10", hardbound on archival quality paper: 56 line drawings, 1 black and white photograph; $40.00. Available from March 1986 from major distributors of horticultural and botanical books (outside the U.S.A. ... from Wheldon & Wesley, Ltd. Codicote, Hitchin.

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