Bulletin of the American Rock Garden Society

VOL. 40 FALL 1982 NO. 4

THE BULLETIN

CONTENTS VOL. 40 NO. 4 FALL 1982

Cover Picture — *Iris tenuis* — Jean Witt, Seattle, Washington

Published quarterly by the AMERICAN ROCK GARDEN SOCIETY, incorporated under the laws of the State of New Jersey. You are invited to join. Annual dues *(Bulletin included)* are: Ordinary Membership, $9.00; Family Membership (two per family), $10.00; Overseas Membership, $8.00 each to be submitted in U.S. funds or International Postal Money Order; Patron's Membership, $25; Life Membership, $250.

Membership inquiries and dues should be sent to Norman Singer, Secretary, Norfolk Rd., South Sandisfield, Mass. 01255. The office of publication is located at Norfolk Rd., S. Sandisfield, Mass. 01255. Address editorial matters pertaining to the *Bulletin* to the Editor, Laura Louise Foster, Falls Village, Conn. 06031. Address advertising matters to Anita Kistler, 1421 Ship Rd., West Chester, Pa. 19380. Second class postage paid in S. Sandisfield, Mass. and additional offices. Bulletin of the American Rock Garden Society (ISSN 0003-0863).

Printed by the Deer Spring Press, Norfolk, CT

VOL. 40 FALL 1982 NO. 4

Bulletin of the American Rock Garden Society

Dr. Edgar T. Wherry
1885 – 1982

This issue of the Bulletin, the last one in which his name appears at the top of the masthead as Editor Emeritus, is dedicated to Dr. Edgar T. Wherry, who died May 19 at the age of 97. A charter member of the American Rock Garden Society, Dr. Wherry served the Society devotedly in many capacities ever since it started and made countless warm friends throughout the horticultural and botanical world.

Born and raised in Philadelphia, Edgar Wherry attended Friends Central School where he became acquainted with the natural world. As a boy he also attended lectures in various fields at the Wagner Free Institute of Science near his home. Here he became fascinated by the experimental demonstrations in chemistry and decided to make this his career. Standing near the head of his class young Edgar was awarded a four year college scholarship and entered the University of Pennsylvania in 1902, taking all available courses in chemistry and geology.

In May of that year a notice on the University Bulletin Board announced a trip by the Mineralogical and Geological section of the Academy of Natural Sciences of Philadelphia to "Pink Hill" in the Taylor Arboretum. Taking a trolly to Lime he debarked at the foot of a pink-carpeted rise; it was clothed in a copious growth of *Phlox subulata*. The leaders of the group pointed out that this plant grows here only on serpentine rock, never spreading to other formations. No one knew why and then and there young Wherry resolved to make a chemical study of the problem if he ever had a chance.

Meanwhile he continued his studies at the University of Pennsylvania receiving his BS in Chemistry in 1906 and his PhD. in 1909. He was then invited to teach mineralogy at Lehigh University and carry out geological mapping as field assistant to Professor Florence Bascom of Bryn Mawr College. He also lectured on chemistry and geology at the Wagner Free Institute of Sciences where he had received his early inspiration. In the summer of 1910 he studied crystallography with the eminent Victor Goldschmidt of Heidelberg, Germany.

His combined interest in the field of mineralogy and chemistry led him to originate a simple method of detecting the presence of the non-metallic chemical boron in silicates, a valuable contribution, as this element is used extensively as a constituent of boric acid, soaps, water softeners, enamels, glass and pottery. While on his field trips he discovered and published notes on a number of rare minerals in Pennsylvania, among them the first discovery of Triassic basalt in this state. His PhD dissertation concerned the geology, mineralogy and chemistry of igneous rocks of Triassic age, including the basalt, southeast of Reading, Pa. As is often true of such discoveries, his finding of carnotite, a uranium-vanadium mineral, occurred as a happy accident combined with acute curiosity and considerable knowledge. A rock with a brilliant yellow coating had fallen off the cliff above onto the trolly tracks along which young Wherry was walking. He immediately recognized its similarity to the carnotite first discovered in Colorado shortly before. He picked it up and checked it out. "A thrill that comes once in a lifetime," was his comment. This was a phrase he would repeat many times during his long life.

In 1913 he moved to Washington, D.C., where he had been offered a position as Assistant Curator of Mineralogy at the United States National Museum. The following year he married E. Gertrude Smith and moved to Chevy Chase, Maryland, where he built a small house for himself and his bride on a wooded hill. It was here that he developed his first wildflower garden and was able to pursue his interest in soil chemistry as related to plants, a problem first suggested by the phlox on "Pink Hill" so many years before. He divided his garden into soils of two reaction types, acid and circum-neutral and tested various plants in the two soils. In this connection he invented the simple soil "test kit" which determines the pH of soil by color reaction, a method still used extensively today by horticulturists.

Dr. Wherry had become so proficient while at the National Museum in identifying minerals by their crystallographic properties that he was asked to transfer to the Bureau of Chemistry of the U.S. Dept. of Agriculture to become the country's first official Crystallographer. In this capacity he applied his methods of identification to chemical compounds in the food and drug field, work which gave him an increasing interest in plants. On one occasion he was called to Perry County, Pa., to investigate the complaint of a beekeeper whose honey was being spoiled by unusual summer crystallization. Dr. Wherry found that the cause was not the work of foreign spies as the beekeeper thought but the fact that the insects were collecting honey-dew secreted by aphids on the local pine trees. While in the area Dr. Wherry consulted a booklet on plants native to the area. This led him to search for and find a stand of the rare *Gaylussacia brachycera* growing in intensely acid soil. Dr. Wherry dug up a small piece to take home to his garden for experimental purposes.

When Dr. Frederich V. Coville, Chief Botanist of the U.S. Dept. of Agriculture,

heard of his find, he called Dr. Wherry into his office where he related that he himself had been unsuccessfully searching for years for gaylussacia as he wished to use this species in connection with his project of developing the commercial culture of blueberries. He indicated to Dr. Wherry that he wondered how a mere chemist-crystallographer had managed to find this elusive plant and asked the young crystallographer if he would be willing to search for a "lost" colony in Delaware. This search ended successfully and Dr. Wherry, by cross-pollinating the Delaware clone with that he had found in Perry County, obtained the first viable seed and seedling of the species known to science. Gaylussacia is not self-fertile and as each enormous colony, some several acres in extent and in some cases thought to be over 13,000 years old, consists of a single stoloniferous clone, no berries containing viable seed had ever been found on wild plants. The Perry County clone was declared a National Landmark in 1967.

Because of his success with gaylussacia, Dr. Wherry was appointed a "horticultural explorer" and from then on, during his wide travels, spent much time gathering data on the habitats of rare species. His soil testing kit came in very handy for this work.

It was while on one of these exploring trips in 1935 that he rediscovered another "lost" plant, *Elliottia racemosa* and collected the first seed ever found. Native only in a small area in South Carolina and Georgia, this lovely rare endemic is now in limited cultivation thanks to Dr. Wherry.

Dr. Wherry was next assigned to do research on the flora of Mt. Desert Island, Maine, which was being considered as a National Park. Here he spent several seasons exploring for wild plants and photographing the more notable ones, a labor which culminated in a book *Wild Flowers of Mt. Desert Island.* Thus Acadia National Park was another result of Dr. Wherry's explorations.

In 1930 he was offered a position as Associate Professor of Botany-Ecology at the University of Pennsylvania. As this post would give him the advantage of long summer vacations during which he would be able to do field studies of western American flora he willingly agreed and, selling his house in Chevy Chase, he bought one in Swarthmore, Pa. Like the true gardener he was, Dr. Wherry moved as many species as possible from his old garden to his new one. His teaching career at the U. of Penn. lasted until his retirement from this career in 1955.

In 1932 when the University of Pennsylvania assumed administration of the property of John and Lydia Morris, Dr. Wherry was appointed Ecologist. His first objective was to analyze the soil of the Morris Arboretum's 175 acres, finding three distinct soil types: circum-neutral, acid, and alkaline, thus making the arboretum suitable for a wide variety of plant species. Here he gave summer courses, which were very popular among his students, fostering in many of them a permanent fascination and enthusiasm for plant ecology. Here he gave particular attention to the ferns, an interest that culminated in *The Fern Guide, Northeastern and Midland States* for Doubleday and Company's field guide series. This was published in 1941 and was followed in 1964 by the *Southern Fern Guide.* Dr. Wherry had joined the American Fern Society in 1918 and was President from 1934-1938 at which time, with the help of several other members, he reorganized its affairs and brought the Society back to prosperity. He turned over all the royalties of his two fern guides to this Society. He was also a guiding spirit in the National Wildflower Preservation Society while he was in Washington and in 1948 when Double-

day and Company published his *Wildflower Guide; Northeastern and Midland United States,* he turned over the royalties of this book to the Wildflower Preservation Society.

In 1934 he became one of the Charter Members of the American Rock Garden Society acting as its botanical consultant both officially and unofficially for many, many years. In 1943 when the Society started its own Bulletin he became its first editor and served in that capacity for five years.

The field work and botanical explorations Dr. Wherry undertook in preparation for his writings about wildflowers led him to become well versed in the details of plant classification and identification and his early trip to "Pink Hill" in his youth came to mind and he decided to fulfill his youthful vow and become an authority on the Phlox Family. Travelling in a custom-made car with sleeping arrangements in the back seat, he proceeded to travel 14,000 miles in eleven weeks from one end of the country to the other seeking out phlox in their native habitats, rediscovering many "lost" species in the process. His well-known monograph *The Genus Phlox*, published in 1955 by the Morris Arboretum with some financial assistance from the Henry Foundation for Botanical Research in Gladwyne, Pa., resulted from this extensive research. It was truly a labor of love and is to this day the authoritative study of this North American genus.

Dr. Wherry's interest in our native wildflowers went far beyond his work with Phlox, however, and during his widespread travels he collected hundreds of herbarium specimens and took hundreds of photographs of the native flora he saw. Many of these latter were made into glass transparencies meticulously hand-colored by Dr. Wherry himself. These he used to illustrate his many lectures to his students and other interested groups. He also discovered and brought into cultivation two new species later named in his honor: *Silene wherryi* in Kentucky and *Tiarella wherryi* from Polk County, Tennessee.

One of Dr. Wherry's crusades was the perpetuation of our vanishing plant species and whenever possible bringing these into cultivation. To this end he wrote article after article on particularly gardenworthy wildflowers for the ARGS Bulletin, collecting and distributing seed and propagules of these to interested growers along with careful instructions on how to grow and propagate them. He also encouraged the planting of wildflower gardens both public and private, giving sound advice on their construction and frequently donating plants suitable for the location. He was one of the Founders of the Bowmen's Hill State Wildflower Preserve in Bucks County, Pa., where the Edgar T. Wherry Fern Trail is one of the finest collections of native ferns in the country. He took an active part in the development of the Natural Area at Penllyn in Montgomery County, Pa., and the Schuylkill Valley Nature Center in the northwest corner of Philadelphia. In the 1950's Dr. Wherry served as a member of the faculty of the Arboretum at the Barnes Foundation where he checked the identification and labeled the ferns in the Laura L. Barnes Fern Dell. His infectious enthusiasm and everready willingness to help amateur as well as professional gardeners and botanists won him a host of devoted friends and inspired many to join him in his work of saving our native flora both in the wild and in cultivation.

In 1965 Dr. Wherry was among the first five recipients of the newly established American Rock Garden Society Award of Merit and in 1973 the Society's most prestigious honor, the Edgar T. Wherry Award, was established in his

name. In 1972, the Edgar T. Wherry Memorial Garden, featuring three varieties of soil, was created in his honor at the Barnes Arboretum with the help of the Delaware Chapter of ARGS. John and Anita Kistler, members of that chapter, under the close supervision of Dr. Wherry himself, were responsible for the design of the garden, which is planted solely with new species and cultivars of the beautiful "neglected natives" that Dr. Wherry has discovered or introduced into horticulture. The Kistlers and other members of the Chapter, especially Morris Berd, have taken it upon themselves to see that the garden is properly cared for and that the plants in it are propagated for distribution. In order to safeguard against the loss of any of the plants, divisions of them have been established in other gardens including the rock garden planted by Albert Vick at the Overbrook campus of Dr. Wherry's alma-mater, The Friends Central School.

What greater memorial could any plantsmen ask for than the living plants he has brought into cultivation and the warm memories he has left with his many devoted friends.

A few fond recollections of Dr. Wherry by some of his students and friends follow this brief biography taken from Dr. Wherry's own autobiographical sketch written about five years ago and from a biographical essay written by Elizabeth B. Derbyshire of Green Lane, Pennsylvania.

• • •

I have known Dr. Wherry as teacher and friend for many years. And I still see him now as I did forty years ago: a gentle, and selfless person, willingly sharing his knowledge and experience with all who sought his help. I should always regard Dr. Wherry as one of our great natural biologists—a keeper of the tradition of Muir and Burroughs.

— a former student, Dr. John S. Penny,
Professor of Botany, LaSalle College,
Philadelphia.

• • •

What a joy to travel with Dr. Wherry in the field where he could quickly describe with great detail and accuracy not only the plants growing in the area, but also the geological formations and relationship one to the other.

— Morris Berd, Media,
Pennsylvania.

• • •

We will never forget his weekend visit to Millstream. We had asked him if he would be willing to help us identify the species and hybrids of phlox we were growing in our garden and whether we might send him samples, but though he no longer could drive himself as he was already suffering from tunnel vision, he persuaded some friends to drop him off at our house on their way to northern New England and pick him up on their way home.

I was weeding the lower nursery beds when the station wagon came down the road and before it could come to a complete stop the back door flew open and out popped Dr. Wherry. Somewhat unsteady on his legs he staggered down to clasp my muddy paw in both hands. "I knew this must be the place," he exclaimed with shining eyes. "Look at all those phlox. My, I'm going to have fun here." And without further ado, city clothes and all, he cast himself full length on the grass beside the nursery bed, pulled out his magnifying lens and started examining the phlox plants there.

And fun he did have, galloping up and

down the steep hill on which our garden is constructed, exclaiming, identifying, offering advice, praise and tactful criticism all in one breath. And fun we had too, caught up by his boyish enthusiasm. A more perfect houseguest would be hard for any gardener to imagine.

— L.L.F., Falls Village, Connecticut.

• • •

Driving west on the Pennsylvania Turnpike, bordered with six foot high chain link fences, Dr. Wherry would point right and left, explaining what interesting plant material would be found among the rocks or under specific trees.

We were going to collect cutting material of *Gaylussacia brachycera*, the Box Huckleberry, one of Dr. Wherry's particular interest plants. One locale is near Amity Hall, Pennsylvania, while the other site is the National Preserve at New Bloomfield, Pennsylvania.

Our first stop is the Preserve. I had expected a solid carpet of Box Huckleberry. Not so—there were wisps scattered over the forest floor, plus some shoots emerging from the newly bulldozed road that forms the boundary of the area. Here, Dr. Wherry instructed me to collect some cutting material.

Then on to Amity Hall, Dr. Wherry sat in the front seat of my car with his topographical map of this area open on his lap. I was given instructions such as — "around this left bend in the road, take the small dirt lane on the left, after the second curve." When the road widened a bit, Dr. Wherry suggested we pull over and park. As I was still turning off the motor, Dr. Wherry had hopped out to inspect the plant material on the road bank: *Saxifraga virginiensis, Silene pennsylvanica* (a plant I had coveted for years) and *Aster linearifolius* .I hurry to dig one of each, write labels and follow Dr. Wherry up the very shaly slope.

At 80 plus, he is much smarter than I; he is on his hands and knees, crawling up over the slippery shale. I hasten to catch up, only to slip backwards and cut and scratch my arms and legs. As the slope levels out a bit, we find this station of gaylussacia, hard to collect because of the pieces of shale. A successful expedition!

A few years later, in 1972, the Edgar T. Wherry Memorial Garden in the Arboretum of the Barnes Foundation is begun. Dr. Wherry would arrive each week, to check the plants already planted, or come prepared to plant a new addition from one of his many correspondents or friends. Down on his knees he went, to plant these in the proper soil — subacid (sandstone) or circum-neutral (limestone chips) separated by a shale flake strip. These areas demonstrate the connection between plant species and soil types that he had pointed out on the turnpike years earlier.

In going through early issues of the ARGS Bulletin, it is interesting to note how often Dr. Wherry would add informative notes in subsequent bulletins, relative to past articles written about native Eastern plant material or eastern U.S. areas. These were never derogatory — just adding some of his wide knowledge.

— Anita Kistler, West Chester, Pennsylvania. §

Western American Iris

Roy Davidson
Seattle, Washington
Drawings by Jean Witt, Seattle, Washington

More than half of the thirty-odd species of North American irises are from the Rocky Mountains and west, sun-lovers all of them and tolerant of drought when all else is balanced to their liking. All are beardless and rhizomatous representatives of this widespread genus of graceful flowers named for the rainbow, with pleasant grassy foliage from a few inches to a few feet.

Non-acid prairie soils of the intermountain regions of all western states and two Canadian provinces have *Iris missouriensis*, the "prairie blue flag" of the Oregon trail, but also an interloper into the Pacific slope from southernmost California to Puget Sound. It forms broad clumps of foliage — carefully grazed about by animals — from which foot-high stalks produce profusions of usually lilac-blue and white classical iris flowers, but not infrequently alabaster albinos and richly deep purples. Kittitas Valley forms are veined with an especially "zing-electric" blue. The aberrant maritime climate about San Francisco Bay — dry but fog-cooled summers and frost-free winters — has brought about the summer-dormant and winter-green *Iris longipetala*, really only a larger *I. missouriensis*. The cross of the two known as 'Tollong' is the epitome of grace, having received the Royal Horticultural Society's Award of Merit (seed or division give equally fine flowers). Because these have been observed flowering while half submerged in water from melting snows high above, they have been erroneously reported as "water plants", but unless they can dry out until the leaves are pallid straw yellow in late summer, they will not be long for this world. By winter the leaves are gone, and the stiff stalks and pods stand as sentinels through at least one subsequent season.

The entirely different *Iris tenuis* is found in a narrow corridor west of Oregon's Mt. Hood, as if trapped by a time machine's malfunction between the somewhat similar *I. cristata* of eastern America and the Japanese *I. gracilipes*. Like those it is a subject of humus soils of mixed open woodland. From short-leaved, stoloniferous clumps the forked stems of 8 to 9 inches give a sequence of white butterfly flowers etched with the usual yellow plus lines of bronzy purple. In winter the leaves go off to leave strange little button-like dormant buds to mark their place, quite unlike the resting aspect of any other deciduous iris. (See cover picture.)

On the Pacific Slope from southwest Washington to southern California is a natural alliance, a group of a dozen or so species, their subspecies, variant forms and intergrades — for they are all interfertile and do cross wherever they grow together. It is interesting too that they readily interbreed with a group of Himalayan irises, which tells the geographer something of ancient history, since soft plants like iris leave so little fossil evidence for paleobotany. These irises

are constant with the coniferous forest and enjoy the same acid humus. They will survive long periods of heavy shading in their native state though unable to produce flower buds in the absence of good sunshine, and often, when the trees are removed, they give the surprise of "suddenly" appearing and flowering. Half a day of sun seems quite necessary for bud-set. Their coloring is their great beauty, even in a genus noted for color effect; they span from white to pansy-black with all the blue, lilac and violet between, and in ivory to gold and yolk-orange plus all the blends mixing these pigments, and an unimaginable array of patterns of emblazoned contrasts.

Iris innominata

For horticultural convenience we might lump these into a "large" and a "small" class, the former consisting of the two species, *Iris douglasiana* and *I. munzii*, with the remainder small in scale by comparison, thus more suitable for the rock garden. Of the larger, *I. munzii* from a climatic citrus-grove association, is not tolerant of freezing cold, but *I. douglasiana* from a maritime strip extending northward between Point Concepcion on the California coast and the mouth of Oregon's Umpqua River proves quite resistant to freezing. It has been brought to total success — flowering and seeding — in Colorado with no trouble once acclimated. A bit coarse for most rock gardens, it is of splendid landscape use for foliage texture and proves more tolerant of summer moisture than most.

Northwest Oregon and southwest Washington share the northernmost of this group, *Iris tenax*, and as might be expected it reacts to its colder environment by a strong proclivity toward being quite deciduous. Along with fresh green spears in spring, it gives stems of surprisingly big, airy flowers mainly in orchid to lilac and purple but also in white, cream, primrose and arty pastel blends, often with striking contrasting patterns. *I. tenax* crosses the coast range to sandy beachheads above the Pacific where it replaces maritime Douglas iris north of the Umpqua dunes, although it is essentially an inland species.

Iris innominata is probably best regarded and certainly the best known of all our native westerners. Most prized are the yellows, pure gold to cadmium and yolk oranges. It comes up into Oregon's

Siskiyou country inland from the coastal fogs, and in its purple color form extends south into northernmost California. Flower color and pattern of this species in the wild is probably the most varied of this alliance of irises, including gold and red-brown bicolors unknown in others.

Further inland still and nearly confined to Josephine County, Oregon, is the larger yellow *Iris bracteata*, not so easy but perhaps even more of the "ideal" or classical persuasion than even *I. innominata*. It makes haphazard looking clumps that are no garden asset, however.

Somewhat similar, though with a long-tubed and flat flower, is *Iris purdyi* from sunny openings associated with the redwood belt further south in Humboldt and Mendocino Counties of California. It also is found in an orchid color form (which may show introgression from an associated species, which is moving in as the lumbering operations alter the habitat). Further south still, the cream-colored, tall, erect *Iris fernaldii* may be found occasionally, though it too is subject to much the same influence from the same neighbor, *Iris macrosiphon*. *Iris macrosiphon* is a variable species with short stems and long tubes, usually some shade of lilac-purple but sometimes an amber color. The finest forms, however, are the intense deep blue and violet forms of Sonoma County.

Back up in Oregon all the mountain passes have the little white or pale yellow *Iris chrysophylla*, usually occurring at elevations above *I. tenax* but meeting and intercrossing with it in numerous places to give hybrids that often tend to rosy pink. A very old hybrid swarm of the two, northwest of Eugene in Lane County, is relatively well stabilized. It produces its orchid-colored, stemless flowers earlier than any known, and then purple seedpods at ground level; this horticulturally is the "Noti Iris". South of

Iris chrysophylla

the Siskiyou barrier (approximately the Klamath Gap and state line), the taller *Iris tenuissima* replaces *I. chrysophylla*. Still further south, but only in the Sierra foothills, the pristine creamy-ivory *Iris hartwegii* occurs, looking like bleached-blonde forms of *I. tenax*, but with several forms varying to golden and yolk-orange. This, the southernmost of all the group, is found exclusively in San Bernardino County.

Almost as far south is the narrow endemic species aforementioned as suited to the citrus grove conditions of Tulare County, *Iris munzii*, famous in cultivation as having yielded unbelievable blue colors. It is, however, subject to cold. It is the sole member of this California alliance so isolated that no introgression with any others can be noted.

An acid humus soil full of grit and small stones, a warm situation in good light and shelter from drying winds are the essentials to satisfactorily flowering this group of western irises in gardens. When suitably sited they succeed best on their

Iris setosa (I. hookeri) ssp. *canadensis*

own, with no water given them in summer. In fact, irrigation during this aestivation period may be their downfall, encouraging bacterial decay. The upland Californian species are less satisfactory than others away from their customary heavy soils and baking summers. When any of these species are grown in proximity, the bees will certainly mix them up and the end result will be an unbelievable array of hybrids from generations of such bedfellowing.

To the north, in Alaska and adjacent Yukon, the tall, soft-leaved purple *Iris setosa* is frequent in wet places that dry in the summer. One is unlikely to mistake it for any other in that the flower has three normally large falls and three standards so small they may seem absent altogether. This is of interest in that it is the sole iris found in both the Old and New Worlds, from Japan, Kamtchatka, Siberia's Pacific coast, Alaska, and then — after a big gap — in easternmost Canada. The color of *I. setosa* is purple, very occasionally white or pastel. Although from subarctic regions, it is quite suited to most temperate gardens if the soil does not bake. The smaller forms of the Laurentian variety *I. s. canadensis* that have been selected are particularly appealing, floriferous rock garden subjects. §

— Reprinted with permission from the Program Booklet of West Coast Study Weekend Six: 1981.

Some Small Eastern American Iris

Iris lacustris and *Iris cristata*

Roy Davidson
Seattle, Washington
Drawings by the author

The two small crested irises of eastern North America are frequently confused in gardens for the very good reason that — except for size — they appear much alike; yet when we come to learn the small details by which they may be distinguished they begin to seem much less so.

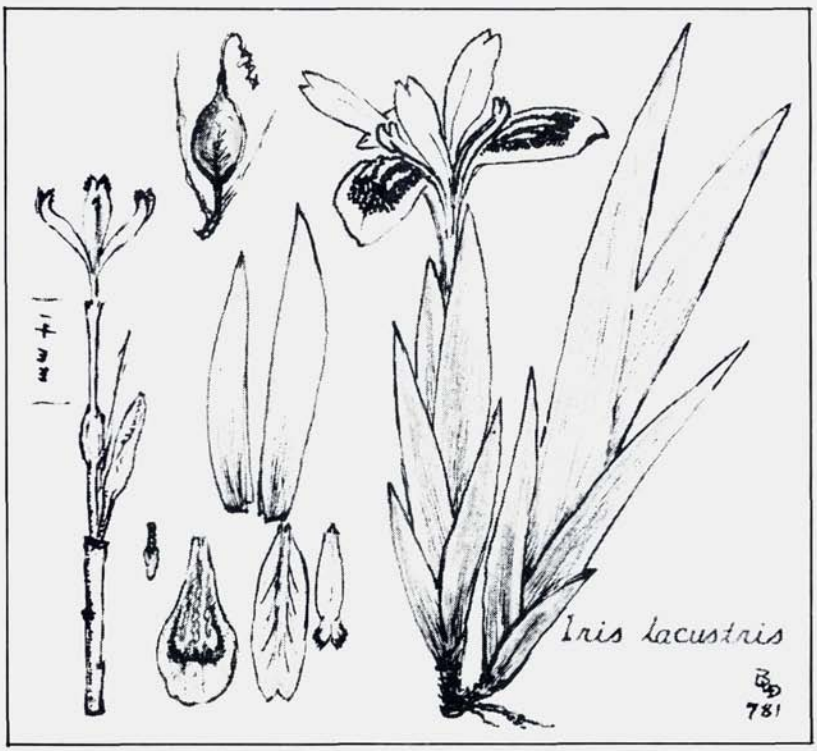
Having come to respect *I. lacustris* as a good species in its own right for a distinct

chromosome structure, we still need to learn to recognize it on sight. Distinction between *I. lacustris* and *I. cristata* on the basis of the shape of the flower segments has proven to be misleading, and it is highly likely that a good part of the material grown and labeled under the misapprehension that it is the true "blue iris of the lakes" is in reality only a poorer, smaller, and paler *cristata*.

Iris cristata is not only larger in all its parts, averaging about twice the size of *lacustris*, it is also the more variable of the two. There are two centers of its distribution, the Appalachians and the Ozarks, and flower color may run from white and near-white through the pastel tints of orchid, lilac, lavender and blue to fuller expressions of purple and violet. Except in the white, there is always a characteristic pattern to the falls: a "squared-off" border of pigment surrounding a little, white apron-like patch with its one to three little squiggly, raised coxcomb-like crests and a certain gold penciling. Those of the Ozarks are not markedly different beyond a tendency to be smaller and paler on average.

Iris lacustris is to be found on the limestone rocks and gravels in association with the northern coniferous forest about the upper Great Lakes. It is almost non-variable, a pretty azure color, occasionally white, and — except in the white ones — bearing a pattern similar to that of *cristata* on the falls, with comparable crests and golden markings.

The unmistakable botanical distinction between the two is based on the length of the perianth tube, quite a reli-




5 cm
Iris cristata
592

able criterion in this pair of related irises. In *I. cristata* the distance between the top of the rhizome and the ovary is far less than the length of this perianth tube separating the ovary from the floral lobes above. In *I. lacustris* the opposite pertains and its seed capsule will be found atop a short stalk and on a true stem, whereas that of *cristata* sits almost on the rhizome at ground level. These proportions are not infrequently misinterpreted, due likely to the overall size differences in the two species.

Seeds of both are very much alike, having a peculiar development of the raphe, which appears as a sort of gelatinous little spring, which seems to assist in the dehiscence of the capsule and dispersal of the seeds therefrom. On exposure to the atmosphere it dries and shrivels.

It is often said that these two irises will not easily be grown in the same garden, probably a reference stemming from the record that the native soils supporting *I. cristata* are miniacid (pH 6 – 6.9) while those on which *lacustris* is found are circumneutral (pH 7.1 – 8.). It has been demonstrated, however, that both species are about equally tolerant of a variety of soils as long as they are cool and loose with humus, well-drained but ever moist and never boggy. (*I. cristata can survive well even in rather droughty conditions as long as it is planted in a shady position. – Ed.)* Their soft leaves are favored by slugs and snails, which must be controlled. In dapple-shaded positions away from the parching afternoon sun they will romp away on short, slender stolons, which root down to form broad-spreading colonies.

As to the report of a hybrid between the two made in British Columbia and shown in England in 1955, this is not an impossibility, although we now know that they should not be interfertile. There is also the record of a cross of *I. lacustris* with the related Japanese species, *I. gracilipes*, shown in England in 1965. Some years ago a plant sent out as 'Oliver Twist' was purported to have been raised from the mating of the Roof Iris, *I. tectorum* with *I. cristata.* To some observers it seemed only an inferior example of Roof Iris, and in view of the fact that seedlings were grown from a backcross to *I. tectorum alba,* at least some of the plants sent out under the name 'Oliver Twist' were probably only a poor form of *tectorum.*

Both the blue and the white *I. lacustris* are occasionally found in cultivation, while of the variable *I. cristata* there are a number of selected clones, most of them found as wild plants. There is at least one excellent vigorous *I. cristata alba* among a number that have been recorded, and 'White Pearl' was one of those, although it may have been tinted, a semi-albino. 'Crested Ivory' is self- described. Of the pallid ones, 'McDonald' (which originated as a nursery seedling in Oregon) has the faint typical pattern and 'Millard' sounds to have been similar, as does 'Whisper' (a lovely name for a pale lilac), while 'Skylands' was apparently a shade darker. 'Crested Fairy' was said to be bicolored and 'Gold Crest' was a mid-lavender with a greater number of yellow lines. Of them all 'Abbeys Violet' seems to be darkest and of a true violet hue. Many another good form is likely grown without having a name given to it, as for example a good "pink" and a clear azure, both found in eastern Tennessee and possibly still in some gardens.

These little woodland iris belong to that very long list of plants shared between eastern Asia and eastern North America, as well as to a far shorter list of western American representation. As such they are members of the Evansia group of irises, so named for the man who first brought the Asiatics to western horticulture. The western American *I.*

tenuis is narrowly endemic in western Oregon. §

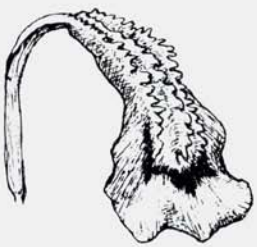
Co-published by *Signs*, the species section of the American Iris Society.

Iris cristata and *Iris verna*

Drawings by the author

It is surprising how frequently, when one has ordered *Iris verna*, particularly from a wildflower nursery, one receives *Iris cristata* instead. Though both are low growing iris native to southeastern United States, of approximately the same height and general coloration, ranging from deep violet blue through lavenders to albino forms, they are very different plants.

Iris cristata is, to begin with, a crested iris as its name implies, carrying on its falls one to three parallel rows of fleshy, yellow to white lobes rather like crumpled ribbons or long, narrow cockscombs. *Iris verna*, on the other hand, has smooth falls, though the central orange-yellow blotch is likely to be more pronounced than in *Iris cristata*.



Fall of Iris cristata

Though both species are rhizomatous, the rhizomes of *Iris verna* are chunky throughout their length, fairly deep-lying in the soil and with very short branches so the plant remains quite compact. *Iris cristata*, on the other hand, has long, very slender rhizomes, slightly thickened at the nodes. These sprawl widely on or very close to the surface; each plant, therefore, will quite rapidly make a fairly large mat. Where competition is not too heavy and the soil light and humusy, a single plant may eventually fill a circle six feet across or more.

The leaves of *Iris cristata*, though upright when they first emerge from the soil in spring, soon lose their youthful arrogance and bow over so that the flowering stems rise above them. As the season advances and they elongate slightly, these flexed leaves in a pure stand will form a dense, rippling, light green carpet of foliage. In fall this carpet turns pale creamy tan and shrivels away into a threadbare covering for the tangled web of rhizomes below. The foliage of *Iris verna*, on the other hand, is evergreen and will last through several seasons though the leaves become progressively more discolored and tattered as they age. They are more slender for their height than those of *Iris cristata* and more upright, usually slightly taller than the flowering stems at anthesis, but tend to arch gracefully away from the blossoms as if to frame rather than conceal them.

Both species seem to prefer a site on the edge of thin woods where they receive plenty of light but can be somewhat shaded during the hottest part of

Iris verna

the day. Both do well in light, humusy soil. *Iris cristata* will accept a somewhat heavier soil and appears indifferent to the pH, whereas *Iris verna* requires acid soil and seems to need slightly sharper drainage. Both species can withstand considerable drought. Division of the rhizomes is the easiest method of increase and either species may be grown from seed unless a particular color form is desired.

Their effect in the garden is quite different and not only because of their dissimilar growth habit. *Iris verna* has a restrained elegance; its slender leaves have a more graceful carriage and its flowers not only tend to be richer in coloration but have a certain aristocratic bearing and refined clarity of outline that is not as manifest in *Iris cristata.* It is the difference between a court beauty and a bevy of pretty milkmaids. § — L.L.F.

Two Crested Iris From Japan

Iris tectorum

Edward Leimseider
Westport, Connecticut
Photograph by the author

Iris tectorum alba, as seen growing on the thatched roof-tops in Japan, is a complete pleasure. Roy Elliott wrote, ". . . never . . . had I seen so exquisite a flower as that of the white form of *Iris tectorum* . . ."

The Roof Iris is not a fussy plant to grow and does perfectly well at ground level if given reasonable drainage. From stout rhizomes come twelve to sixteen inch high, ribbed leaves, from one to two inches wide. These come to a sharp point. They are of somewhat thinner texture than many iris leaves. The blossoms last for two to three weeks in May and have a golden crest on the falls, particularly prominent in the white-flowered form.

Iris tectorum alba

Even the type species, its pale lavender petals delicately penciled with darker blue-purple lines, is a lovely thing. Besides its legendary ability to ward off lightning, it is reported that the flowers of *I. tectorum* are made into wreaths to be worn during a May festival in Yokohama, but it is not specifically stated whether these are the white form or maybe the more common lavender blossoms of the type.

Another English writer thought that *Iris tectorum* required "an alkaline soil with plenty of humus," but in Connecticut, the somewhat acid, heavy soil in my garden does not seem to deter pro-

fuse annual flowering and vegetative increase. It is, perhaps, advantageous to redo the soil and enrich it every two years or so when the clumps are divided. There may be some root rot that should be cut away at this time with a fungicide applied to the cut portions of the rhizome.

Iris tectorum is content with sun or light shade and, in our area, seems never to need extra watering. Seeds are plentiful and germinate readily. Neither slugs nor insects seem to bother this rugged plant, so the leaves remain in good condition throughout the summer and, as an added bonus, they dry into attractive, papery, cream-colored curls in the fall.

This species is probably of Chinese origin, but has been adopted by the avid Japanese gardeners. It belongs to the Evansia group (the crested iris), along with the Japanese *Iris gracilipes* and *Iris japonica*, and our own native *I. cristata, I. lacustris* and *I. tenuis*. There are other relatively obscure iris in this group: *I. formosana, I. milesii, I.pseudorossii* and others suitable for greenhouses. While hybrids of *Iris tectorum* have been made, none seem to be well known in the United States, with the possible exception of 'Poltec', which is *Iris tectorum* x 'Edina'. §

Iris gracilipes

Sara Faust
Hopewell Junction, New York
Drawing by Mary R. Bell

One of the major groups which comprise the genus *Iris* is the Evansia or "Crested" Iris group. Woodland and rock gardeners are (or should be) familiar with our native Crested Iris, *I. cristata* and the various forms thereof.

Iris gracilipes, a Japanese plant of wide distribution in its native land, is less renowned. For perfection of flower form and neatness of growth habit, *Iris gracilipes* tends to put our own Crested Iris "in the shade". Found in wooded mountainous areas of Japan, it first reached the West (Royal Botanical Gardens at Kew, of course) in the mid 1850's.

Sara Faust is the manager at Stonecrop Nursery in Cold Spring, N.Y. Here she manages the nursery business and expanding gardens, is responsible for the propagation of alpines and other plants and is involved with the garden and landscape design. She also does landscaping on a free-lance basis.

The plant is rhizomatous, but forms dense circular clumps of foliage, rather than a wide spreading mat as with *Iris cristata*. The graceful, narrow, grass-green foliage remains in good condition throughout the growing season, and serves as a good contrast to other leaf forms in the half-shady garden. In May, wiry branched flower stems appear, carrying two to three flower buds per eight inch stem. These buds, slim, tightly furled, even more perfect than rosebuds, expand suddenly into flowers one and a half to two inches across, whose form is flat and reminiscent of the vastly larger hybrid Japanese Iris. The color is lilac, with a white area on the falls surrounding the orange crest — a prominent ridge of petal tissue, rather than a hairy beard. The flower stems are so delicate that the blossoms seem to float above the fans of light-green leaves.

Rich soil with abundant organic mat-

ter, moist but not water-logged, is essential for success with this iris, and it is a perfect candidate for *half* shady areas. Flower production will suffer if the plant is grown with too little light. Acid soil is recommended by many authors. It would appear, however, that a low pH is not as critical for this plant as for ericaceae; in growing *Iris gracilipes* for sale in containers, it does not seem to be adversely affected by water with a high lime content over a year's growing time, though excessively limy soil is not recommended.

After three to four years of growth, the clump seems to benefit from division, providing an easy means of increase for this very desirable plant. This should be done soon after flowering, while the plant is making strong new root growth. Seed is another means of increase, but is sparsely produced, in my experience.

I have had only a short-term experience with *I. gracilipes alba*. A division was acquired in the summer of 1980, survived the severe 1980-81 winter (temperatures in our area went to 25 degrees below zero Fahrenheit), but produced no flowers in 1981. It was planted very near an area where the species has flourished for several years, in the same soil and light conditions, and it is just surviving right now. I certainly feel it deserves its reputation as a less robust plant, and must make more of an effort to please it.

A number of plants have proved to be successful companions for *Iris gracilipes*. *Phlox stolonifera alba* blooms at about the same time and its large clusters of white flowers combine well with the lavender flowers of the iris. *Tiarella wherryi* and *T. cordifolia* with their spikes of tiny white flowers work well, too. An appealing contrast of foliage can be obtained by using *Saxifraga trifurcata* nearby — the rosettes of divided leaves of this dependable mossy sax form large

Iris gracilipes

hummocks in time. One more interesting combination happened at Stonecrop purely by chance: a seedling of *Semiaquilegia ecalcarata* established itself near a clump of *I. gracilipes*. The dusty old-rose color flowers and purple-tinged foliage of the semiaquilegia made a very subtle and slightly bizarre foil for the iris. I'm sure many other plants require the same rich humusy soil and light shade, and could be used to advantage with the delicate beauty of *Iris gracilipes*. §

Gardens In Ithaca

William J. Hamilton, Jr.
Ithaca, New York

The 1983 Annual Meeting will be held at Cornell University, Ithaca, N.Y., hosted by the Adirondack Chapter. According to Dr. Nina Lambert, the area around Ithaca is better known for its beautiful waterfalls of all sizes and shapes, and for its spectacular gorges replete with rocks, ferns and native flora, many within a few minutes walk of the Cornell campus, than for its rock gardens. And of course there is the renowned Cornell Plantations, a large and varied arboretum and botanical garden, which boasts several gorges of its own as well as ponds and numerous woodland trails, and a number of test gardens and collections.

In addition to this surfeit of floral riches, the members of ARGS who attend the meeting will have the opportunity of visiting several rock gardens, both public and private. When Dr. William J. Hamilton, Jr., whose articles on various bulbous and cormous plants have appeared from time to time in the Bulletin, was asked to write a few notes on the rock gardens that would be open to ARGS members that weekend, he attacked the assignment in rather typical fashion. Well known among his friends for his somewhat zany sense of humor, his facetious descriptions of three of the private gardens give very few clues as to what visitors will really see there, but it is sure to be interesting. – *Ed.*

Public Gardens

The Heasley Rock Garden on the Cornell Plantations is intended as a teaching garden to demonstrate specific ecological and botanical concepts that relate to the life of alpine and rockery plants. A tour guide identifies certain plants and explains how the plant has adapted to live in the cold, the wind and the intense sunlight.

Still in construction, the four major habitats of an alpine ecosystem — crevice, moraine, scree, and alpine meadow — will be represented. The first area, of shale, typifies local rock outcroppings and will be planted to true alpines; adjoining will be a sandstone area. The third area, a rockery faced by a dry-stone retaining wall, will contain popular plants that might be found native to the high altitudes of the Northeast. Only the first

area (1982) has been completed.

Much research was done on rock garden design and construction techniques before building this garden. Most rock garden builders are forced to make concessions regarding proper design and techniques because of equipment, time and financial constraints. This was not true here; the Heasley Rock Garden is a "textbook" rock garden and will be a valuable teaching tool.

The Willard Straight Rock Garden on the Cornell campus has a long and varied history, ranging from intensive care and nationwide recognition to relative neglect and very low maintenance. Work scheduled for 1982 includes continued soil improvement, rock placement and new plantings, which should bring the garden into excellent condition in 1983. We feel that this rock garden has great potential to be a special public garden of interest to students and visitors to Cornell.

Private Gardens.

The Dilger rock garden is about 100 feet long and varies from 12 to 30 feet wide. It faces largely to the south. This garden features deer and rabbits. They top-dress the whole area with attractive gravel-like droppings, which double as fertilizer. They also keep various alpine treasures in compact character by rigorous grazing. The plants indeed become so compact that visitors often have great difficulty in finding them at all. Perfect drainage, so dear to us all, is achieved by the extensive tunnelling of hairy-tailed moles. Another advantage of the local wildlife is that they continuously remove all bloom, thus enabling the plants to put their energies into good growth.

Dilger, like most of us, has his troubles with this garden. *Androsace imbricata* has a tendency to seed into the adjacent lawn, littering it with untidy white domes, while species of *Douglasia* crowd out choice specimens of *Arabis*.

There is a small south-facing scree and a larger west-facing one. These screes feature species of *Allium* (chiefly Golden Globe), *Iris*, and various other bulbous plants. Some shade is provided by a large black walnut, which prevents the growing of dwarf alpine tomatoes. There is a lovely woodland garden (a path mowed through some brush and saplings) and magnificent landscaping (two blue spruces and a rose bush). Visitors are really due for a treat. Wine will be provided, made from the sap of oaks, locusts and ginseng juice.

The Nina and Jack Lambert property is heavily shaded by large silver maples, apples and locusts. The front is kept in low maintenance, mostly lawn and ground cover of *Skimmia* and low rhododendrons. In the back, the sunny areas are given over to two rock gardens. Mrs. Lambert comments that — "Continued residence for twenty years has led us to concentrate on the plants which will survive Zone 4 temperatures. Hardy alpines and evergreens include large and small leafed rhododendrons, holly and other more tolerant ericaceous plants. The climatic problem is such that we plant both gentians and penstemons: if the summer is dry we enjoy bloom on the penstemons; if it is wet the gentians will be at their best." Many of the more unusual woodland forms flourish in the gardens. The Lamberts' delightful little pool, nestled in azaleas, is bordered with *Drosera*, but some rascal started snitching these little sundews. Jack and Nina introduced a dozen piranhas, those little, ghoulish and voracious meat eaters so common to Amazonia. A few mornings later, Jack found a bucket, trowel, zipper, dentures, and a few coins next the pool; the little fish had even eaten the clothes of the neighbor.

Another rock gardener, who shall be unnamed, but is known as a generous

contributor of rarities to the seed exchange, including black walnuts and horse chestnuts, orders a couple of barrels of scotch from Glasgow to arrive about Thanksgiving every year. When they have been emptied, shortly after the holidays, the barrels are sawn in two. These do for more pretentious sinks, and are planted to dwarf trees, choice semps and other delightful little treasures. The whiskey dregs favor the growth of plants and repel bugs and molluscs. This gardener is plagued with *Pyxidanthera* and he wishes he had left them in the Jersey Pine Barrens. This obnoxious weed has taken over his lawn and is only partially controlled by herbicides.

Other attractions.

Other attractions are close at hand. Our gorges are a national attraction. At Fall Creek, below Beebe Lake and a hundred yards from your billet, one may see on the sheer dripping rock walls the lovely *Primula mistassinica* and *Pinguicula vulgaris*, or below in the gorge, nesting water thrushes and pileated woodpeckers. Half a mile from headquarters, the Cornell Plantations' fabulous Robison York State Herb Garden, a reference garden of useful and ornamental herbs, grouped for study and beauty, can be visited. The Plantations also features a five acre, well labelled wildflower garden. The Clement Bowers Rhododendron Garden is planted to all species that do well in our northern climate. Superb ground covers, unusual conifers and a famous peony collection add charm to the Plantations.

The many large greenhouses on the campus will be open to our members. Of especial interest will be the Liberty Hyde Bailey Hortorium, where large collections of insectivorous plants, cacti and other strange plants from the far corners of the world are to be seen. If you are looking for a rare reference, seek it in the Mann Library. §

Seed Banks.

One interesting talk at the International Conference dealt with seed storage and germination. Dr. Peter Thompson advanced the concept of a "Seed Bank." I found this idea fascinating. We sometimes receive a bumper seed crop from a rare plant or, perhaps, we want some "seed insurance" from a currently thriving plant that we would not relish losing. Dr. Thompson states that you can establish and maintain a permanent seed bank with little expense or work.

Here is what you do: After picking, let seeds dry for a few days. Put seed in seed envelope, describing on it species and source. Place silica gel in a glass jar. (Silica gel is the granular stuff you get in little packets with some pills and optical instruments. It is usually available from garden centers and hobby supply centers as it is used for drying flowers for arrangements.) Put a piece of wool cloth over the gel. Put envelopes of seed in the jar and seal. Store envelopes in airtight jar in refrigerator for four to six months. Remove seed packets from jar and place in plastic bag. Place bag in freezer. Most seeds will keep thus indefinitely. As seeds are needed remove packets from freezer and plant.

— Waid R. Vanderpoel
Barrington, Illinois.

Cyclamen Data

Carol Sienko
Ithaca, New York

During a cold snap in the middle of last January the heating system for our attached eight by thirteen foot greenhouse failed. Before the breakdown was discovered and repaired, the temperature in the center of the greenhouse went down to 20°F; it may have been even colder in the area closest to the glass. The grapefruit that we stored in the greenhouse were frozen solid. It took about ten hours for the temperature to rise up to the usual minimum (40°F), and several months for the lessons of this learning experience to be appreciated.

Many marginal plants died — romulea, *Narcissus bulbocodium ssp. romieuxii* and another small narcissus (Arch. 833, *N. cantabricus ssp. monophyllus)* plus the less hardy cyclamen such as *C. africanum, C. persicum,* and *C. rolfsianum.* Surprisingly, *C. graecum, C. cilicium* and *C. pseudibericum* all survived. *C. repandum* did not appear this spring, whether because

SPECIES	ORIGIN	TUBERS	ROOTS	LEAVES	
				Season	Shape & Color
Africanum	Algeria	corky grayish brown flaky skin much flattened	from entire surface	F	large, variable; ascending petioles horny teeth
Alpinum	Turkey				
Balearicum	France Balearic Islands	somewhat flattened	from center of base	W	narrowly ovate; silvered; red reverse
Cilicium	Turkey	thin grayish brown skin much flattened	from center of base	F	variable in size, markings but always spoon shape
Coum ssp coum	Eastern Mediterranean	thin brown skin covered with brown hair	from base	W	round or kidney shape; whitish knobs at vein tips
Coum ssp caucasicum	Eastern Mediterranean	thin brown skin covered with brown hair	from base	W	heart shaped
Creticum	Crete	thin grayish brown skin extremely flat	from lower surface	F	cordate, pointed; red reverse
Cyprium	Cyprus	rough gray skin; round, somewhat flat top & bottom	in bunches from base, often acentrally	F	ovate, lanceolate; red reverse; yellow spots on tips

of the freeze or for some other reason is an open question. With all this firsthand information, it was possible to add a few more pieces of information concerning the hardiness of some of the species to the cyclamen chart that was put together seven years ago for a talk.

The bulk of the material in this chart was assembled from the AGS guide *The Genus Cyclamen* by D.E.Saunders, revised and amended by R.D.Meikel and C. Grey-Wilson in 1973. Since there were no numbers to indicate differences in hardiness, the system used by the Arnold Arboretum for the compilation of hardiness zones in the U.S. was added to the basic information. The blooming season given is of necessity very general (*F*all, *W*inter, *Sp*ring or *Su*mmer) as it varies so with location (i.e., in the native country or elsewhere, indoors or outside). For more precise information one should consult *The Genus Cyclamen* mentioned above.

ZONE	FLOWERS							OTHER
	Season	Twist	Fold	Refl	Auricles	Scent	Color Petals	
10	F	+	–	+	+	violets	pink red	wide crimson blotch bifid at tip
		+	–	½	–	heather	pink red	propeller like petals; semi-circular blotch base has straight edge
10	Sp	+	–	+	–	lily of valley	white	no blotch on corolla
9	F	–	+	+	–	heather	white pink	dome shaped blotch; 3 prongs; possible aggregate with *C. mirabile*
4	W	–	+	+	–	none	white pink red	"dumpy flowers" have white eye; basal blotch has 3 tiny legs
5	W	–	+	+	–	none	pink red	"dumpy flowers" with pink or lt. purple eye; basal blotch has 3 legs
10	Sp	–	–	+	–	lily of valley	white	no blotch on corolla
10	F	+	+	+	+	spicy	white	V-shaped pinkish-purplish blotch

SPECIES	ORIGIN	TUBERS	ROOTS	LEAVES	
				Season	Shape & Color
Graecum	Greece Turkey	corky; split longitudinally	long & fleshy in bunches from base	F	obcordate; lt. green reverse; red-brown horny teeth
Hederifolium	Switz. Fr. Italy, Aus. Yugoslavia	Corky dark skin	from top and sides	F	variable shape; long creeping petioles
Libanoticum	Lebanon	thin hairy skin ages to thick corky skin	from center of lower surface	W	obcordate; wavy margin; red reverse creeping petioles
Mirabile	Turkey	corky; fissured	from center of under-surface	F	sub-orbicular some leaves pink-zoned
Parviflorum	Turkey	small, rounded			sub-orbiculate dull green
Persicum	Eastern Mediterranean	globular, corky; striated longi-tudinally	from sides & center of undersurface	F	heart shaped; closely set horny teeth
Pseudibericum	Turkey	globular; grayish brown scaly skin	from base	Sp	obcordate; short points; red reverse sharply toothed
Purpurascens	Central Europe	irregularly rounded; corky; chestnut brown	from entire surface	ever-green	circular; reverse is red or green
Repandum	Italy France Greece	globular; hairy; chestnut brown very flat	from lower surface	F	cordate tapering to sharp point; sharply toothed
Rolfsianum	Libya	irregular; globu-lar; corky; light brown	from sides & base; occ. from top	F	looks like maple leaf

Non-hardy Cyclamen in a Cold Climate

Maryann Collins
Apple Valley, Minnesota

Although most rock gardeners can grow some of the hardier species of cyclamen outdoors, there are many interesting species that are not hardy in the colder parts of the country.

I have loved the species cyclamen for many years and have grown those species hardy to the climate in the various places where I have lived; for the past several years, however, I have lived where *no* species are hardy. At first I bought the florist's hybrids, but they seemed blowsy and lacking in grace. Then I began to play with seeds and seedlings of the species. I went through a phase during which I thought I might be able to outsmart the cold weather by various devices such as extra-thick mulches or mini-coldframes. No success. Then I raised a batch of seedlings of *C.*

ZONE	FLOWERS							OTHER
	Season	Twist	Fold	Refl	Auricles	Scent	Color Petals	
9	F	–	–	+	+		pink red	blotch in 3 pieces; fruiting peduncle coils from ground up
4	F	–	–	+	+	faint or strong	white pink red	dark crimson blotch; 2 prongs; *album* known horticulturally only
9	Sp	–	–	+	–	unpleasant scent	white pink	light crimson blotch "bird in flight" on corolla
9	F	–	–	+			pink	small purple basal blotch (see *C. cilicium*)
9				+			pink	dark purple blotch but no pale or white eye; dwarf plant
10	Sp	+	–	+		lily of valley	white pink red	dark rectangular blotch; fruiting pedicel never coils
9	Sp	–	–	+		violets	pink red	broad band of white at mouth; dark "ace of spades" blotch
4	Su			+	+ & –	very sweet	white* pink red	**album* very rare; basal crimson blotch is broadly oval
9	Sp	+		+	–	violets	white pink red	long exserted style; mouth dark red
10	F	+	+	+	+	lily of valley	pink	flowers have exserted stamens and style in cone

hederifolium. They fattened and went dormant in my screen-covered cold frame during their first summer. When fall arrived, I knew they had to be dealt with, but I didn't know what to do. Finally I decided they were doomed to die if I left them out so it didn't matter if I killed them by bringing them indoors.

I brought the tubers, in their pots, into my cold basement. Immediately I discovered that field mice had also moved into the basement and that cyclamen tubers are akin to caviar to these beasties. (I now have a cat who dispatches all the critters, but does his own share of damage if he decides to dig.)

I was only able to save a few tubers intact, plus a few that were partially eaten. I grew the rescued tubers under lights in my basement where the temperature

ranges in winter about 40° to 50° F, but can go close to freezing during a prolonged spell of below zero weather. They grew and prospered and one even bloomed. That spring I put the pots outside again in the cold frame, and the next fall brought them back into the basement. That second year I had begun plants of other species from seed and also knew to protect from mice with hardware cloth, so I increased my number of plants significantly. When plants bloomed during the winter, I brought them upstairs into an east window to enjoy. The house is kept at 68° when the family is home, 55° otherwise. The plants bloomed and grew wonderfully well. I continue to send for seeds, germinate, grow, let go dormant outdoors, and then bring them in under lights and finally upstairs to enjoy during the fall, winter, and spring.

The plants I have had success with are *C. hederifolium, C. hederifolium album, C. cilicium, C. purpurascens*, and especially the wild *C. persicum.* from which the florist's cyclamen have been hybridized. This plant of charm and grace has been, in my mind, corrupted and mutilated to a gaudy disaster that cannot compare with the beauty of the original species. My best plant of *C. persicum* is from ARGS seed collected by donor #189 on the Isle of Rhodes and sent to the 1976 exchange. Number 189, whoever you are, thanks for the pleasure your seed has provided me. The tuber of this plant is now three inches in diameter and provides an excess of fifty blooms a year from September until spring, especially at Christmas. Another special favorite is *C. purpurascens v. fatrense*, a tuber received as a gift from a friend. This plant bursts into bloom in November with sporadic reblooming through winter, and has dark green leaves with a beet-red reverse.

The major unsolved difficulty which I have in growing cyclamen by this regime is that once I have germinated the seed and put the plants out in the cold frame for the summer, a lot of the tiny tubers shrivel and dry up and I am unable to resuscitate them in the fall. These babies are placed in the cold frame on the patio and watered along with the other rock garden plants and seedlings, but my failure rate approaches fifty percent. (The mature tubers are placed in another cold frame for the summer. Here they are at the mercy of natural rainfall and watered artificially only in long periods of drought.) If any reader can suggest where I go wrong with the babies, I would much appreciate hearing from them.

A book which I have found useful in growing cyclamen is *Cyclamen, The Genus in the Wild and in Cultivation* by D.E. Saunders. It is an Alpine Garden Society Guide. Its photographs of exotic species whet my appetite for these beauties and put me into an impatient frenzy of anticipation for all my seed lists to arrive. Who knows what #189 or some other intrepid explorer sent in this year. §

A garden is a place of the spirit: the human spirit that makes the garden and the human spirit that responds to it. Overall there is the natural guardian spirit of the garden itself.

Protection For A National Treasure:
The Columbia River Gorge.

Faith Mackaness
Corbett, Oregon
Photographs by Frank Mackaness

Between the states of Washington and Oregon, the great river of the West has gouged a spectacular gorge roughly a mile wide, just under a mile deep and approximately ninety miles long through the rising Cascade Mountains. This ages-old process of uplift and erosion has created a landscape of incomparable beauty.

The wind tunnel thus formed between the eastern and western portals of the gorge is responsible for the "flag trees" that dominate the scenery from Corbett, twenty miles east of Portland, to the Dalles Dam. In winter, by the time that the cold dry wind from the interior has reached Crown Point, its velocity has accelerated to such an extent that it dries

Eastward trending Douglas Firs trained by chinooks near Hood River, Oregon.

up the buds on the east sides of the Douglas Firs; raging gales and ice storms ("silver thaws") further prune weakened branches that have survived previous blasts. All conifers here appear to lean to the west.

Beyond Bonneville Dam, the spring westerlies or "chinooks" train the young branches of fir and Ponderosa Pine so that these "flag trees" now "fly" in the opposite direction. East of the Dalles, the wide open spaces of sagebrush and sand, with sumac in the draws, stretches on as far as the eye can see.

Despite the one-sided conifers visible from the Scenic Highway and the ribbon of cottonwood, ash and willow that borders Express Route 84 along the Columbia River, the gorge presents an essentially mineral landscape. Everywhere are vertical rock scarps, eroding pinnacles, massive buttes, volcanic dikes, talus slopes and V-shaped canyons from which cascade innumerable indescribably lovely water falls.

Latourelle, 224 feet high. Most westerly of waterfalls along the Scenic Highway.

This environment provides microhabitats suitable both for rock dwellers and woodlanders from nearly sea level (the Columbia is a drowned river) to the volcanic peaks that break the horizon. The Oregon walls of the gorge are shaded much of the year. Added moisture from the myriad mountain streams attracts such gems as *Romanzoffia sitchensis* (Mist Maidens), *Dodecatheon dentatum* (White Shooting Star), *Erigeron howellii* (Howell's Fleabane), *Synthyris stellata, Stenanthium occidentale* and *Saxifraga mertensiana,* to name a few.

In the rain shadow country east of the Cascade Divide is a quite different array of charmers. In early spring its dry hillsides and oak woods are filled with *Sisyrinchium grandiflorum* (Grass Widow), *Fritillaria pudica* (Yellow Bells). *Erythronium grandiflorum* (Yellow Lamb's Tongue), Bird Bills, Desert Parsley and Cluster Lilies.

As far as can be determined, the same wildlings grow on both sides of the gorge, though south radiation does bring on earlier flowering on the Washington rocks: *Lewisia rediviva* (the Bitter Root) rises earlier at Lyle, Washington quarry than it does on outcrops east of Mosier, Oregon. Photographers willing and able to search them out can find *Dicentra cucullaria* (Dutchman's Britches), *Penstemon rupicola* (Rock Beards-tongue) and *Douglasia laevigata laevigata* both on the heights and along the Old Columbia River Highway. The fact that cold air sinks and lingers at the base of the cliffs may have something to do with this strange phenomenon.

Because the normal ecologic succession along the Scenic Highway is regularly being disturbed by highway maintenance practices, there is a continuous

Looking east through Columbia River Gorge. The Vista House on the Oregon side to the right. Beacon Rock on the Washington side can be dimly seen in the center distance.

display of wild flowers along gorge roadsides. Periodic mowing of the verges keeps the tree and shrub seedlings from asserting their dominance. Occasional massive wash-outs and landslides provide the right conditions for breathtaking displays of penstemons and other primary invaders until such time as the woody plants reappear.

This spring, the Portland Plant Society published an ongoing "Survey of Wildflowers and Flowering Shrubs of the Columbia Gorge" compiled by Russ Jolley with the aid of fellow enthusiasts. Already we know that the Columbia Gorge contains around one-fifth of the plant population of Oregon, of which about sixty are on the rare and endangered list. Imagine the richness of a local flora that includes: 89 Compositae, 43 Rosaceae, 40 Scrophulariaceae, 38 Leguminosae, 37 Liliaceae, 33 Saxifragaceae, 29 Ranunculaceae, 16 Boraginaceae, 12 Polemoniaceae, 10 Portulacaceae, 10 Hydrophyllaceae, 8 Violaceae, 6 Campanulaceae, 5 Crassulaceae, 4 Gentianaceae, 4 Fumariaceae, etc., etc.

During the long rainy season, the winter rosettes of some of our best known rock plants are sheltered in cushions and carpets of mosses, liverworts and lichens. These associated lower plants are lovely enough in themselves to enhance any home rockery or trough. The native haunts of wildflowers on the Washington side of the river are now being threatened by haphazard development furthered somewhat by the new bridge across the Columbia being built east of Portland. It was a major tragedy when Bonneville Dam flooded many low-lying habitats and turned a roaring river into a string of lakes. Now, a rash of real-estate speculators are threatening well-zoned Oregon's view to the north. A recently clear-cut tract for twenty-four

homes can be viewed from world famous Multnomah Falls. The new development is five miles from the nearest settlement — another disturbing example of suburban sprawl. Plans for more industrialization within the gorge, given our infamous climate, could be devastating. In the past, law suits directed at effluents from aluminum plants within the gorge suggest that the air drainage might trap gasses that are deleterious to the environment. When adjacent states come to an impasse over the necessity for intelligent zoning and informed management of a joint resource, federal guidelines need to be established. Witness that Lake Tahoe became the victim of unresolved conflicts between California and Nevada several years ago. To prevent this type of disaster in the Northwest, the draft of a bi-partisan bill to make the Columbia Gorge a National Scenic Area has recently been submitted to Oregon's congressional delegation by the Friends of the Columbia Gorge.

For too many years biological management in the gorge has fallen between the cracks while politicians and bureaucrats feuded. The U. S. Engineers have solved too many problems with concrete and asphalt, while the spray crews of the railroads and Bonneville have been broadcasting herbicides. Therefore, the bill submitted to the congressional delegation urges that the U.S. Forest Service, long successfully established in the gorge, be given a five year mandate to correlate the actions of some fifty agencies operating in the area. It also mandates that the designated management team for the proposed National Scenic Area would be required to have local citizen input and that, when critical areas, targeted several years ago by the National Park Service, are acquired for public access and enjoyment, no existing homesites would be condemned.

When the forthcoming bill to create a National Scenic Area of the Columbia River Gorge comes up for consideration in the Congress of the United States, let your representatives and senators know your concern. Time is running out for preserving the extraordinary scenery of the gorge with its attendant rich flora and fauna. Growth is inevitable on the Washington side of the gorge, but it should proceed slowly and carefully lest the environment suffer and we human beings with it. The Columbia River Gorge has had a rich cultural history despite divided management by two political entities — Washington and Oregon. May both sides of the gorge always remain the great national treasures that they are today. §

Bibliography

Donald B. Lawrence: "Some Features of the Vegetation of the Columbia River Gorge with Special Reference to Asymmetry in Forest Trees." Ecological Monographs 9:217-257, April 1939.

Russ Jolley and Lois Kemp: "Survey of Wildflowers and Flowering Shrubs of the Columbia Gorge." The Portland Chapter of the Native Plant Society of Oregon, 1981.

A plant is only a seed's way of making another seed.
— With apologies to Samuel Butler

Award Winners – 1982

Award of Merit

Francis H. Cabot

Despite childhood summers surrounded by gardens, followed by rock climbing summers in the European Alps as a post-WW II college student, Frank Cabot never noticed gardens or mountain flowers until the early 1950's when a friend and long-time member of ARGS, Mrs. Hilton W. Long of Dover, Mass., suggested that Frank and his wife use rock garden plants in the miniscule garden they were making in their back yard in Walpole, Mass. It was then the virus struck and an incurable case of rock gardening fever developed. Since then Frank Cabot's services to rock gardening and the ARGS have been many and varied.

After Frank was transferred back to New York, he and Ann discovered Mayfair Nurseries and proceeded to make two small rock gardens, first at Ann's family's farm in Cold Spring, N.Y. and later, in 1959, at their own home on a corner of the farm property. When Mayfair Nursery moved away from the New York metropolitan area it seemed to Frank logical to fill the gap by starting Stonecrop Nursery on his own premises. Unable to give full time to this venture because of other business commitments, Frank contacted Rex Murfitt who developed and ran Stonecrop as a mail-order nursery for six years before returning to the better gardening climes of British Columbia.

Though unable to keep up the nursery after Murfitt left, Frank did not give up gardening. He also served on the Board of the New York Botanical Gardens for six years and as chairman of that board for three. In this capacity he tried to interest the Gardens in modernising and expanding the horticultural programs and displays for the public. Among his personal crusades was the revitalization of the Thompson Memorial Rock Garden, which after many years of neglect had fallen into disrepair and had become badly overgrown. Toward this end he persuaded Karl Grieshaber, who was in charge of the rock and heather gardens at Longwood Gardens, to come to New York. Though a start was made in refurbishing and replanting the Thompson Memorial Garden and the adjacent wildflower area, Frank Cabot is the first to say that it still does not live up to his hopes for it.

After his retirement from the NYBG Board in 1976, Frank concentrated his efforts closer to home. The nursery collection at Stonecrop was rebuilt and display gardens are gradually being developed. For the past five years the nursery has once again been in operation (though not on a mail-order basis) under the able management of Sara Faust. This spring, on an experimental basis, Stonecrop sent out a list and sold plants once again by mail-order during February and March. In order to make available the best cultivars as well as those that are difficult to acquire in this country, Frank travels extensively both in this country and abroad to obtain plants, bulbs and seeds from both nurseries and far-flung mountain ranges.

In 1977 Frank became Treasurer of the Society, a post he has filled admirably ever since. Through careful management he has kept the Society on a sound financial basis through these years of inflation, so much so that to date ARGS has been able to keep its membership fees as low or lower than most major horticultural societies. For the past several years Frank has been patiently shepherding the Society through the intricacies of obtaining tax-deductable status with the Internal Revenue Service, a process which he hopes will soon reach a satisfactory culmination.

In addition to his signal service as Treasurer, Frank has become an outstanding speaker, much in demand not only at ARGS chapter meetings and Study Weekends but before other horticultural organizations. He is also the author of a number of excellent articles in the ARGS Bulletin. Not content with all this activity, Frank is in the process of building a whole new rock garden at his summer home in Malbaie, Province of Quebec where in the cool maritime climate and elbow-deep woods duff, he can grow such treasures as meconopsis (10 species), petiolarid primulas, omphalogramma and nomocharis.

The only problem with two gardens, according to Frank, is that it doesn't seem possible to be in both places at once. This has led him to paraphrase a popular song that he finds himself constantly humming as he's down on his hands and knees trying to keep ahead of the weeds:

Torn between two gardens
Weeding all I can,
The tyranny of gardens
Is too much for this old man.

It is, then, to "this old man," Francis H. Cabot — dirt gardener, collector, nurseryman, superb plantsman, lecturer, author and acute financial manager, that the American Rock Garden Society presents a well earned Award of Merit.

— L.L.Foster

Panayoti P. Callas.

Colorado owes much to this fine person whose interest in plants cover a les-

ser period of time than many. It is difficult to perceive where the extensive Rock Alpine Garden at Denver Botanic Gardens would be without Panayoti Callas.

He has been growing and hunting plants from an early age and even though his college education, in linguistics, did not portend to horticulture, today one might consider him a walking encyclopedia on rock garden plants. An extensive author, he has published many articles in a host of magazines and journals including our own Bulletin. He has also written extensively for the Green Thumb Magazine of Denver Botanic Gardens, The Alpine Club of British Columbia, The Primrose Society, The Iris Society and Pacific Horticulture. The style of his line drawings shows much character and helps to portray many of the subjects of his articles, to such a degree that these are almost the first thing one looks at.

A member of many societies in the plant world extending from rock gardens to native plants and ferns, Panayoti embraces many friends and contacts from all over the world. As a traveller and plant hunter he has introduced a considerable number of plants and improved forms of others into cultivation. Today the fruits of his knowledge are being shown in an even more significant way by his expertise and display at Denver Botanic Gardens Alpine Rock Garden. When one remembers that today's area clothed with a mass of plants was but an unfinished rock pile just two or so years ago one can realize what Panayoti has done.

A prime mover behind the Rocky Mountain Chapter and its chairman for two years, Panayoti illustrates the value of friendship, constantly sharing with others his superior knowledge of plants. He is a very worthy recipient of an Award of Merit.

— Andrew Pierce.

George M. Schenk.

George Schenk's contributions to rock gardening are manifold and diverse, embracing the collecting and propagation, testing and introduction of plant material, the design and construction of gardens of all sorts and sizes, and his sharing of experiences through his writing.

We know him primarily, of course, by his nursery business commenced some thirty years ago, through which we have been enabled, or better, permitted to see through his eyes and to grow and enjoy many of the plants he considered superior, not merely the most excitingly beautiful but, more importantly, those possessed of some certain qualities that contribute to the overall effect of the garden — be it a broad meadow or a bonkei tray.

The numerous plants introduced into cultivation from his own personal explorations in such far-flung places as the Texas Rio Grande Canyons, both the

California and Spanish Sierra Nevada, the Japanese and European alps and the tundra-like ranges of New Zealand (to say nothing of the Cascades and Rockies near to home), and too those acquired from like-minded explorers all over the globe, all of them scathingly tested, studied and increased in his own garden conditions before being entered into the horticultural encyclopedia, his Wild Garden catalogue listings — those inimitable collectors'-item gems of prose he sent to us. Schenk's often unorthodox propagation procedures proved themselves by their uncanny successes, as evidenced by the tantalizing treasures in those lists, and his way with words contributed to our pleasure as we read through them, time and time again, and with joy.

His other writing is not of a voluminous amount, though it will forever be regarded as important, most of it contributions to a certain few horticultural journals and culminating to this time in the book explaining *How to Plan, Build and Maintain a Rock Garden* in which plants must not only appear at home, but would grow as at home. The book is a history, social commentary and all-around evaluation of the art of rock gardening and its materials. The "How-to" aspect afforded explanation of ecosystems, without which no garden can long endure. It also defined for us the American approach to the art as opposed to both the European and Oriental predecessor styles, each of which has contributed to and been assimilated into our own contemporary concept, almost without our knowing it.

Since no true art can remain static, and as the living art of rock gardening can never be so simple nor so obvious as it absolutely *must* appear — the placing of some stones and some plants in a manner imitative of nature — we see there is no middle road; the art of it is an animate way, not a finite thing. This was the essence of Schenk's last contribution to our own periodical, with its seemingly cryptic title "Never Use a Rock If You Can Help It". Not only in his own unique gardens, but in those he made for others, the impact of this principle is immediately evident; Schenk's gardens are plant gardens more exactly than rock gardens. A further book now in manuscript preparation, will similarly elucidate the related subject of "Shade Gardening", and its perpetrator has removed himself (tentatively, we might hope) from the commercialization of his art to conclude its treatment.

The American Rock Garden Society's Award of Merit is only a small, but surely a most sincere gesture from us all simply saying "Thank you, George, thank you for sharing."

— Roy Davidson.

Sharon Sutton.

Not far from the exact center of the State of Washington is a very special plant area. It is a haunting place of basalt rock columns that can be lonely in the moonlight or hot and harsh by day. Sagebrush predominates, but in the spring come successive thousands of *Lewisia rediviva*, of *Eriogonum thymoides*, of *Balsamorrhiza* and *Mentzelia*, *Penstemons* and *Pediocactus* and lavender *Erigerons* — the miracle of the spring desert.

A dozen years ago, Sharon Sutton traveled 150 miles from her Seattle home every weekend all spring, with camera and notebook, to make a methodical study of the succession. That spring was prophetic and indicative, the sprouting of a seed of curiosity fostered by two parents who regularly took her into the countryside to observe plants, who instilled both the love of life and the sensitivity that she so well exemplifies.

Sherry studied alone, then began to teach the rest of us, as the leader of Northwest Chapter field trips, particularly to this special place. She led an evening study group on native plants, and edited the chapter newsletter. The members chose her as chapter chairman, and she was on the ARGS board of directors.

She has a special magic with a camera, a flair for capturing a different image. Those who saw her pictures that accompanied Roy Davidson's "Alpine Botany — Just For the Walk" at the 1976 Interim International Conference in Seattle will remember. So will participants at two Western study weekends. Her high standards of excellence surely recall those of her father, Merle Sutton, longtime editor of the ARGS Bulletin and himself an Award of Merit recipient.

Sharon shall most be commemorated by the book "Alpines of the Americas," the Report of the First Interim International Rock Garden Plant Conference. She edited the report. Another editor, Roy Elliott of the Alpine Garden Society, said in reviewing the book, "The preparation of such a Report, as your reviewer knows from personal experience, is a soul-destroying task. This Report...must have been a task of frightening magnitude. In the Preface, a rather sad note from a 'frustrated and utterly weary editor' (Miss Sharon Sutton) suggests a sense of failure: let her take heart. The report may not have fulfilled editorial intentions, but it is still a magnificent effort for which all concerned are to be sincerely congratulated...This is a book which will be eagerly sought after by every alpine gardener, whether they were able to attend the Conference or not."

Sherry didn't write the report; dozens of people did. She only led us there and helped us see more clearly the beauty, like a good artist-photographer. She learned her lonely desert lessons well, and brought out of a complex mass and following a long winter, a choice and special flowering. There is the book, and there is the desert place, which she calls "Basalt Gardens." Those of us who have shared either — or both — say *"Thank you very much."*

— Marvin Black.

Le Piniec Award

T. Paul Maslin.

Few genera are as characteristically North American as the genus *Phlox*. It is thus particularly satisfying that for this year, the North American Rock Garden Society's Le Piniec Award goes to a person noted for his work on Phlox.

Dr. T. Paul Maslin was born at Wuhan, near Hankow, China, in 1909, the son of missionaries. Although Hankow is on the coast and far from the botanical adventures of Farrer, Forrest, Ward, and Wilson, yet it was China and it did offer a wealth of plants and animals to observe. Mount Lushan was nearby and with its 200 inch yearly rainfall, it is of rich botan-

ical interest. An article in the Autumn issue of *Green Thumb* ("China — A Sentimental Journey") and a paper entitled "Snakes of the Kiukiang-Lushan Area, Kiangsi, China" reflect Paul's early years in China and the rich background that it provided for an eager naturalist.

Paul continued his interest in the natural sciences, receiving B.S. and M.S. degrees from the University of California and a Ph.D. degree from Stanford University. For three decades he was Professor at the University of Colorado and Curator of their zoological collections. Over these years he has been a regular contributor to scientific journals such as *Journal of Herpetology, Herpetologica, Journal of Experimental Zoology, Systematic Zoology, American Midland Naturalist, Southwest Naturalist, Copeia,* and *University Bulletins in Biology.* These studies took him on many field trips to southwestern U.S. and Mexico. The ARGS is fortunate that these field trips now include botanical investigations.

The genus Phlox has been a troublesome one from a taxonomic viewpoint. Wherry's monograph was monumental, but the genus is both rapidly evolving and populated with isolated relic colonies. Maslin's particular contribution has been to do extensive field work on the *Phlox nana* complex in Mexico and southwestern U.S. His separation of *Phlox nana* (taproot) and *Phlox mesoleuca* (slender wandering rhizomes) is described in the *Quarterly Bulletin of the Alpine Garden Society,* 1978, pages 162-167.

Of more significance to members of the ARGS are the plant introductions of Paul Maslin. For nearly 100 years Pringle's report of red, purple, and yellow phlox of the nana group had gone unsubstantiated, although Linc Foster and Wherry had made brief reference to these reports. The story of their rediscovery (Bull. ARGS 1979, pages 62-69) is a thrilling botanical adventure comparable to the well-known rediscovery of *Shortia galacifolia.* In a rare departure, colored photographs of two of the color phases were reproduced in the ARGS Bulletin.

Phlox nana and *mesoleuca* and their thrilling purple, yellow, and flaming vermillion color forms are growing well at the Denver Botanical Gardens under the expert hand of Panayoti Callas. They are being propagated at Siskiyou Nurseries, and they promise to be real additions to horticulture. They are hardy to 10° to 20° below zero and should be growable in most parts of the U.S. as well as Europe and Japan, providing attention is given to their needs for extra dryness in summer and a loose sandy or gravel root run. Under such conditions *Phlox mesoleuca* has been successful for over a decade in central Pennsylvania. The introduction and development of strains in this group promise a wide range of color combinations with exceptionally long blooming periods. The credit for these developments goes to Paul Maslin.

It is a great pleasure today for the ARGS to present the Le Piniec Award to Dr. T. Paul Maslin for both taxonomic clarification in *Phlox* and, even more, for starting a new race of phlox which promise to have a bright future in horticulture and rock gardening in particular. It is fitting that this award is given at this annual meeting in Boulder, Colorado, where we have seen these phlox growing in the Denver Botanical Garden and in the garden of Paul Maslin. We have also had the pleasure of hearing about these phlox from Paul Maslin himself and seeing his slides of these phlox in the field.

— Norman Deno.

Edgar T. Wherry Award

Ruth Ashton Nelson.

The story really begins in 1930 when

Ruth Ashton came to Wyoming as graduate assistant in the Rocky Mountain Herbarium at the University in Laramie. The curator there was the renowned botanist of the flora of the Rockies, Aven Nelson. Ruth Ashton became Mrs. Nelson the following year.

For the next twenty years, until Dr. Nelson's death, the couple made extensive botanical excursions together. During this time, Ruth Ashton Nelson's first book was published by the United States Government, *Plants of Rocky Mountain National Park*, originally written as a thesis for her Master's in Botany at Colorado State University, a work still in print through revised editions.

Ruth Nelson continued to lead a full and active life after her husband's death. In 1954 she moved to Colorado Springs, sharing a house with Kathleen Marriage, a long-time member of ARGS. They shared a deep interest in and profound knowledge of the flora of the Colorado Rockies. Continuing field trips and warm personal associations with Bettie Willard and Rhoda Roberts, with whom she worked on publications of botanical import, led finally to Ruth Nelson's master work.

The *Handbook of Rocky Mountain Plants* was first published in 1969. It has been constantly in print and in 1980 was published in a revised edition. It covers the flora of the Rocky Mountain region from Canada to New Mexico. With its chapters on the climate, physiography and ecology of the region it is more, much more than a mere plant check list. Indeed, this book, addressed as it is to the layman, based on a long, scholarly education in and devotion to botany exemplifies perfectly the standards of the Wherry Award. Here is a scientific work written and composed for the enrichment of our knowledge of American plants, a profound source for expert and amateur. This book was followed by another written by request, *Plants of Zion National Park*.

It is with deep appreciation of her devotion and energy in a major contribution to our understanding of an important aspect of the American flora that the American Rock Garden Society presents the Edgar T. Wherry Award to Ruth Ashton Nelson. §

— H. Lincoln Foster.

The Show Bench.

Annual Meeting 1982 Plant Show

Class 1 — Ferns: 1st – *Bommeria hispida*, Ray Radebaugh; 2nd – *Adiantum pedatum* var. *japonicum* 'Hakusan', Ray Radebaugh.

Class 2 — Dwarf Conifers: 1st – *Picea pungens* f. *glauca* 'Saint Mary's', Ray Radebaugh; 2nd – *Picea orientalis* 'Aurea Nana', Ray Radebaugh.

Class 3 — Dwarf Shrubs: 1st – *Hebe buchananii minor*, Andrew Pierce.

Class 4 — Bulbous Plants: 1st – *Iris cristata*, Andrew Pierce; 2nd – *Trollius pumilus*, Andrew Pierce; 3rd – *Allium* sp., Eleanor Saur.

Class 5 — Bun, Cushion or Polster: 1st – *Arenaria tetraquetra* 'Granatensis', Ray Radebaugh; 2nd – *Saxifraga sempervivoides* 'Minutissima', Ray Radebaugh; 3rd – *Saxifraga paniculata*, Andrew Pierce.

Class 6 — Troughs: 1st – Ray Radebaugh.

Class 7 — Crassulaceae: 1st – *Sempervivum arachnoideum*, Andrew Pierce; 2nd – *Sedum lanceolatum*, Andrew Pierce.

Class 8 — Foliage Plants: 1st – *Festuca ovina* v. *glauca nana*, Ray Radebaugh.

Class 9 — Plants Native to U.S.: 1st – *Lewisia cotyledon alba*, Andrew Pierce; 2nd – *Lewisia cotyledon*, Andrew Pierce; 3rd – *Anemone multifida* var. *globosa*, Andrew Pierce.

Class 10 — Rock Garden Plants in Flower: 1st – *Dodecatheon pulchellum macrocarpum*, Andrew Pierce; 2nd – *Aquilegia flabellata*, Ray Radebaugh; 3rd – *Edraianthus tenuifolius*, Andrew Pierce.

Class 11 — Miscellaneous: 1st – *Aquilegia caerulea*, Andrew Pierce; 2nd – *Anthemis biebersteinii*, Andrew Pierce.

Most Aggregate Points: Andrew Pierce.

Best in Show: *Iris cristata*, Andrew Pierce. §

— Evelyn Murrow
Show Chairman

The Iris
by Brian Mathew, 1982. Universe Books, New York, N.Y. Hardcover, 176 pages, $40.00

Brian Mathew's comprehensive work *The Iris* is sure to become the standard reference to the genus. Mr. Mathew, a Principal Scientific Officer at the Royal Botanic Gardens, Kew and a taxonomic botanist for 14 years, has made the genera *Iris* and *Crocus* a focus of study and has travelled extensively, mainly in Turkey, Iran and the Balkans, observing the plants in the wild. Rock gardeners may be familiar with his previous publications *Dwarf Bulbs* and *The Larger Bulbs*, which offer an introduction to species bulbs both well known and rare, with much valuable cultural information.

The Iris has, as a primary objective, the description of the approximately 250 wild species of iris (and four very closely related genera) distributed throughout the northern hemisphere, and their classification within the genus. In general, cultivars and hybrids are excluded, the exception being those stable hybrids which have been given specific names. Geographic varieties and subspecies often are described as they compare to the type species.

Iris is yet another genus in taxonomic confusion, and Brian Mathew's contribution here, while not intended to be definitive, is based on original botanic research in the field and in the herbarium, and on familiarity with the most recent taxonomic information published by other iris authorities. Keys to the Subgenera, Sections and Series are included. Within these classifications, there is first a description of the features which are common to the species within that group. Each species is then described in detail. The morphological characteristics which distinguish one species from another are presented in understandable terms (the glossary is a helpful addition). Geographic distribution is given for all species and, importantly, native habitat (i. e. rocky mountain slope, grassland, shady pine woods) is described for most. Mr Mathew has included the author for each species, and the synonymy, for those who might wish to track down the original description of

a species and the tangled nomenclature it may have acquired during its botanical history.

The book includes 38 color and 32 black and white photographs. These fine reproductions consist mainly of unfamiliar species, shown in the wild, which gives them special interest. Sixteen line drawings present details of rhizome and root structure, flower form and parts, seed capsules and seed, and illustrate several species.

The descriptive material in the text alone should be of great interest to gardeners who grow some of the species iris. Mr. Mathew is himself a gardener, and he "cultivates as many as possible of the plants about which he writes, considering this to be an integral part of understanding the whole 'make-up' of a species." This first-hand knowledge of cultivation is shared with the reader, and makes this book especially valuable. Though he is, of course, most familiar with growing conditions in England, he includes suggestions for North American growers, and the information on the plants' native habitats will assist the gardener to approximate these conditions. His assessment of the garden worthiness of the species will be useful to the gardener who wants to grow species iris, yet avoid those which are of botanic interest only.

A relatively small percentage of iris species are truly suitable visually or culturally for the rock garden. However, many rock gardeners also have other kinds of garden environments — lightly shaded woodland, pond or stream side, meadow, perennial or shrub border — where iris species could add their special grace and distinction. The hard-core species iris enthusiast will find many challenging iris in the book for which construction of a bulb frame, or cultivation in pots in a cold greenhouse will not seem like too much of an undertaking.

Brian Mathew's admirable (and enviable) combination of taxonomic expertise, gardening excellence, and great skill in presenting information in a concise and interesting way has produced a very fine book, of use to the gardener in search of beautiful plants, and to those with botanic interests as well.

It is regrettable that the rather steep price may prevent some interested growers from acquiring this valuable reference, but *The Iris* will surely be available in libraries of botanic and horticultural institutions. — Sara Faust

The Bulb Book
by Martyn Rix and Roger Phillips
Pan Books, Ross Books, Berkeley, Calif.
192 pages, Approx. $12.50.

This new book is a most exciting photographic guide to over 800 bulbs, corms, tubers and rhizomes, many of which are ideal for the rock garden.

It is rare to find the needs of both gardener and naturalist combined in one volume. The photographer and designer, Roger Phillips, of *Tree Book* fame, has found the ideal format to do just that. The photographs are all dated and are arranged in the sequence of flowering. This is a great help when trying to identify some of the more unusual bulbs that may have been given as gifts or raised from seed. Each plant is shown complete with roots, stems, leaves, and flowers and with a scale and date given below the picture or in the text. In addition, where possible, they have also been photographed in their native habitat. A carpet of *Tulipa dasystemon* growing in the Tien Shan mountains, a bluebell wood in England, or a stand of *Eremurus stenophyllus* in the Hindu Kush were enough to reawaken my dormant wanderlust.

In the introduction, Dr. Martyn Rix writes, "Bulbs have a particular fascina-

tion for me. In this book we hope to show something of the beauty and diversity of bulbous plants". This they have done and more. Dr. Rix, until recently botanist to the Royal Horticultural Society, has complemented Roger Phillips' artistry with a masterly text, brief, yet containing all the necessary information.

"Erythronium dens-canis L. (Liliaceae). Dog's-tooth Violet. Native of Europe from Spain and Portugal to Austria, Romania, Bulgaria and Turkey, growing in scrub, in deciduous woods and rocky places and meadows up to 1700 m, on the south side of the Alps, flowering from April to June. The amount of spotting on the leaves is very variable, and some forms from Italy have especially beautiful leaves. Easy to grow in leafy soil or in thin grass in half shade. Photographed (in the wild) near Sarrat, Andorra, by Brinsley Burbidge."

The introductory pages give an insight into general distribution, native habitats, collection, conservation, cultivation and care of bulbous plants. Amateur photographers will also appreciate the hints given on taking wild flower portraits in the field.

Only a dedicated enthusiast could possibly have undertaken to research the wealth of information which is given for each species. This book will have great appeal to all gardeners, but especially to those who enjoy growing the rare, the small and the difficult. It is a book to use from the practical point of view, and also a book to enjoy, for the beauty of its photographs. §

— Brenda Cole, Ottawa, Ontario

Campanula x 'Justiniana'

Vaughn Aiello
Chicago, Illinois

This plant was acquired at the plant sale of the Annual Meeting of ARGS in 1977. It was a pretty little thing and carried its bloom very nicely. It weathered the trip home and was planted in front of a dwarf *Chamaecyparis pisifera* 'Compressa Aurea' where the dainty *C. rotundifolia* type flowers made a good show.

I thought it was just a good form of *C. rotundifolia,* which had been given a cute name by someone who had taken a fancy to it, but it soon exhibited traits that just did not seem reasonable for that species; it spread out slender stems with small scalloped leaves and rooted as it traveled. Soon it was divided for friends and a few of our Wisconsin-Illinois Chapter plant sales and was placed in several locations in the garden. But I still wasn't sure what it was until I acquired a copy of Farrer's *English Rock Garden.*

His description matched my plant perfectly and I discovered it was a natural hybrid of *C. cochlearifolia* and *C. rotundifolia linifolia.* As both of these grow in the garden, I quickly scrutinized them in the light of this new information and *C.* x 'Justiniana' does, indeed, exhibit a beautiful combination of the traits of both parents. From *C. cochlearifolia* it has acquired the ability to travel, but ever so slowly as this proclivity is tempered by the tap-rooted nature of *C. rotundifolia linifolia.* The inflorescence is that of *C. r. linifolia,* but lacks the coarseness of this parent; its blooms are arranged on the stem with the daintiness of *C. cochlearifolia.* It hugs the ground, root-

ing as it spreads, and carries its bells about six to seven inches high.

One division off my original plant has performed quite unusually. Placed in a wall bed, where it has spread through the soil joints between the stones, it was in continual flower from May until late fall and kept opening buds into early winter, despite several days of freezing temperatures (on one day down to 18° F.). It has spread into a *Saponaria* x 'Olivana' and should create quite a show next spring if the two bloom together.

Since Farrer's description was written in 1918 and to quote him, "*C.* x 'Justiniana' will be but rarely met with," and because I feel sure that this plant is worthy of any garden, I am trying to ensure that it becomes more easily acquired. So in addition to making it available to our members in the Wisconsin-Illinois Chapter I have sent divisions to a nursery that is already propagating it for wider dispersal. §

Collector's Notebook: Two Columbia Plateau Albinos

Clarkia pulchella alba
Geranium viscosissimum album

It should surprise nobody to come unexpectedly onto an abnormally colored (or colorless) individual wildflower, but the surprise is always there when you least expect it. That is the delight of it. Last year in eastern Washington I happened onto two albinos. One May day had started out with a search for normally white-flowered *Brodiaea hyacinthina* where I had suspected it might be. It was easily located in fine flower and the site noted for future seed gathering. In getting the car headed in the opposite direction for the return home I pulled off into the entrance to a field on a high basalt-rimmed bank above the river. Recent warm rains after some spring drought had induced a tremendous vigor to the Clarkia growing among the cheat-grass, so much so that acres and acres were glowing "pink" with its "ragged-robin" crosses. Near at hand and very prominent was a mound of something white; I'd never seen an albino *Clarkia pulchella* in my sixty (and more)

years of living and looking. Here it was.

In July I returned for seed, and though I had marked it well I could not find the exact plant; however I took seed from the general area and perhaps a white one will show up where I scattered it among the twigginess of *Artemisia rigida*.

Then right alongside the road I had traveled all my life appeared a low green leafy mound of some substance covered with white stars. I braked, backed up, and parked, expecting to find another escaped garden plant, but it turned out to be a fine albino form of the prairie geranium, *G. viscosissimum*. There are records of such forms taken, one of them in the next county north by none other than Wilhelm Suksdorf in 1916. This species is unfortunately marked by an unpleasant, slightly skunky, glandular development. The normal color is a not-too-pleasant crimson-lake (or dull magenta). This would be easily refound, I reflected as I left, unless a mower were to cut it off.

But at end of August it was still there and every branch bore cranesbills, all of which were cut and stuffed into a grocery bag. Two months later and now thoroughly dry, the mass looked like a small bale of marijuana (judging by news-photos of bales confiscated for burning) with the problem of extracting seed from such a gummy mass. First it was shredded and pushed through a half-inch mesh hardware-cloth soil sieve, and so forth, down to the laborious hand-picking of individual seeds, and after three hours I had all of eighteen fine seed and a pile of stuff for the compost. This is a fine plant, better, I think, than any *G. richardsonii* I have seen, with a texture veining that enhances rather than detracts. I am in hopes of obtaining some divisions from this one, though the huge taproot doesn't divide well. §

– Roy Davidson, Seattle, Washington

Drawing by the author

A Baker's Dozen For Beginners

Dorothea De Vault
Easton, Connecticut

It is with chagrin I look in the garden diary to find many plants listed that we no longer grow: the lewisias, Kabschia saxifrages, dodecatheon . . . and on and on. Too painful to admit. But there are compensations. It occurred to me that beginning rock gardeners might be interested in my baker's dozen of attractive old reliables, which give satisfaction year in year out with a minimum of attention, at least in southern Connecticut.

Alphabetically, not in order of preference, they are as follows:

Asperula odorata, a low carpet, for instance under rhododendrons, a shade lover. I do not grow it for the white flowers, though they are a bonus of Sweet Woodruff.

Ceratostigma plumbaginoides, often called Plumbago, is a spreader with bright blue flowers, which bloom from August on in baking sun or light shade. It is slow to come up in spring.

Chrysogonum virginianum grows in slowly increasing mats and has pert yellow, daisy-like flowers on and off all season. If it dies back in a severe winter it will come up bravely the following spring.

Corydalis lutea is a treasure to us – fernlike, with fine cut leaves and abundant yellow flowers from spring to frost. It seems to grow anywhere, in any soil, in

sun or shade, but it does not like transplanting except when very young. It is a self-sower, but is no problem to remove where not wanted. Best started from *very* fresh seed.

Epimedium — how I like this plant. We have it in rose, white, yellow, lavender, orange-brown, and red. The root system and clump of pretty leaves are thick enough to inhibit weeds. To divide a well grown plant sometimes calls for a butcher knife, even an axe. For us it is not happy in full sun and prefers a woodland soil, but will thrive in ordinary garden soil.

Gentiana scabra, another of our treasures, is a late bloomer, early September to hard frost. It likes sun and has beautiful deep blue flowers. Some forms are upright, some low and trailing. It does not appear to be fussy about soil, but probably a friable, leafmoldy soil would suit it best.

Houstonia caerulea, known as Bluets or Quaker Ladies, is a tiny gem best in clumps, but a pleasure wherever it shows up. It prefers sun, but will do in light shade, though it will disappear if there is heavy competition or a carpet of fallen leaves. Self-sows, thank Heaven.

I rate *Iberis sempervirens* highly. It is a sturdy, small shrub, whose white flowers in May often last three weeks. It has the defect of burning in winter, though a light cover of evergreen boughs takes care of this problem. *Iberis saxatilis* is smaller, but less dependable with us.

Phlox stolonifera — here I must enthusiastically present twins, 'Blue Ridge' and *Phlox stolonifera alba*, sometimes listed as 'Arianne.' Both are backbones for the lightly shaded rock garden. The white form is a husky grower with larger flowers on somewhat taller flowering stems. Both spread fairly rapidly by stollons.

Santolina chamaecyparissus, Lavender Cotton, is grown for the gray foliage not the yellow button flowers. It sheers neatly and is a good edging plant. If it dies back in a severe winter it will usually recover.

Many sophisticated gardeners turn up their noses at *Sempervivums*, Hen and Chicks, but with every passing year I find them more desirable, not for the flower, which I remove, but for the tidy, tight rosettes of mother and children. There are countless forms, but *S. arachnoideum*, the cobwebbed species, is especially attractive. This is a good genus to grow near, even on, rocks if a soil pocket is available to get them started. They are completely drought resistant.

Viola yakusimanum from Japan is the smallest violet known. Its leaf is smaller than my little finger-nail, the minature flower quite perfect. Children as well as grown-ups are charmed by it. I want it to spread and spread and spread.

Now deliberately out of alphabetical order is a plant whose mention will cause raised eyebrows for its inclusion in a list of easy and dependable plants. *Shortia galacifolia* is not difficult if a few rules are followed: deciduous woods and *acid* soil containing nature's own leafmold, watering when needed the first year of transplanting. That is all we have ever done. As our hose does not reach into the woods our plants must get along with whatever bounty or scarcity of rain there is. Our problem is deer, so a chickenwire cover in winter is a necessity.

Beginning gardeners who need more details for planting and caring for most of the plants on this list should consult our "source book." I am referring to the rock gardeners' bible — H. Lincoln Foster's *Rock Gardening*. The book is difficult to buy as it is out-of-print, but is usually available in local libraries. Another informative book is *All About Rock Gardens and Plants* by Walter Kolaga, also, unfortunately out-of-print. §

Notes From Alaska

Helen A. White
Anchorage, Alaska

ALASKAN WILLOWS

More than forty species and subspecies of *Salix* occur in Alaska; of these, twenty are dwarf, prostrate or trailing and qualify for use in rock gardens. Their diverse forms, various shades of foliage, and their curious flowers make them nice plants for contrast in the garden. Most will start easily from cuttings but they are slow growers.

Many of these tiny "trees" are old plants as one can readily see when examining the gnarled "trunks." Some of the plants cling tightly to the soil while others may stand up a bit; they fill in crevices very well. Some of the "pussies" or flowers are remarkably tall, up to four inches, considering the other habits of the plant.

Perhaps one of the best of the *Salix* for home use is *S. reticulata*, the so-called Net Veined Willow, which varies greatly in leaf size and form and has most attractive shiny, green, much veined foliage. It will settle in happily in almost any situation. Perhaps for the rock garden it should be kept a bit on the dry side to inhibit its growth a little although it is not apt to get out of hand. *(It is certainly not likely to outgrow its allotted space in the lower 48 states. – Ed.)*

Salix dodgeana, S. tschuktschorum, S. saxatilis and *S. nummalaria* come quite close to Alaska in their present range. The first is in Canada and the others are Siberian species. Wouldn't it be super if you could find one or more of them in Alaska? Following is a list of Salix species to be found in Alaska suitable for the rock garden:

S. arctica (3 ssp.)
arctolitoralis
arctophila
chamissonis
cyclophylla
fuscescens
glauca ssp. *callicarpaea*
hebecarpa (endemic)
myrtillifolia
ovalifolia
pedicellaris
phlebophylla
polaris
reptans
reticulata (2 ssp.)
rotundifolia
setchelliana (endemic)
sphenophylla
stolonifera §

• • • *of Cabbages and Kings* • • •

It is surprising how infrequently plant shows, either competitive or non-competitive, are mentioned in the newsletters I receive (and most gratefully) from the various chapters of ARGS. This is not to say that these chapters do not hold plant shows; perhaps these are simply not considered newsworthy enough to be reported.

Yet plant shows can be a very impor-

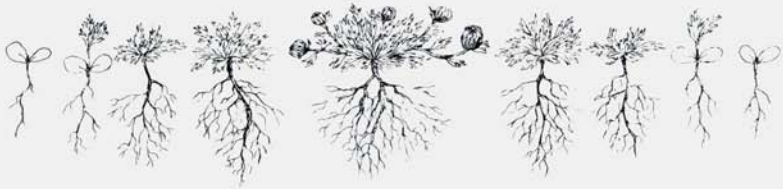
tant adjunct of chapter meetings. Here in Connecticut we have them at nearly all our monthly meetings. Such shows are held in conjunction with our regular programs and are usually competitive as we have found our members are more likely to bring in well presented, interesting plants for a scheduled show than for an informal "show and tell" program. First, second and third prize plants are chosen in each class by vote of the members at the meeting and the points (three for first, two for second, and one for third place, with ties each receiving their allotted place points) are counted by the show committee (usually volunteers at each meeting) and are recorded by the show chairman, who is appointed annually. At the end of the year the person with the highest accumulated number of points receives an award. This need not be elaborate. In our chapter's case it is a medium sized clay pot with "The Connecticut Challenge Trophy" and the year it was won written with a fine-pointed indelible marker on the rim and a few simplified sketches of rock plants drawn on the sides of the pot. The prize could be a small trowel, a pair of hand clippers, a weeding implement, or a book. Some years, when for one reason or another very few competitive shows are held or very few people feel moved to exhibit plants, the trophy is not given.

In addition to these mini-shows, the Connecticut Chapter usually has one big show in the spring, sometimes at a joint meeting with one or two other chapters. In this case the show itself is the main event and no other program is planned for that meeting. Though the points won at such a show are not included in the yearly total of cumulative points, silver cups, donated for this purpose, are presented to the winner of the highest aggregate points in that show and also for the best plant in show. These cups are engraved with the name of that year's winner, who keeps the cup for a year and then returns it so it may be passed on to future winners. At all competitive shows a non-competitive table is available for extra plants that either do not fit into the show schedule or an exhibitor does not want to put into competition.

There are several reasons for having chapter plant shows other than giving its members an opportunity to show off their plants and accumulate stars on their show cards. Indeed, these other reasons could be considered primary. Shows give members an opportunity to see and examine closely in the flesh plants they may otherwise know only from fleeting glimpses on a screen or from illustrations in a book. Shows also encourage them to try to grow some of the less well known rock plants. — "If he or she can grow it, maybe I can, too." It also gives members an opportunity to find out how such plants can be grown in their area and, perhaps, where they can be obtained.

It is, therefore, a valuable adjunct to a plant show to allow enough time for a talk session during which exhibitors can briefly say something about their plants, and answer questions. If the show is a competitive one, this could be done while the plant committee tallies the votes and affixes the stars to the show cards or at some convenient moment afterwards. A moderator, perhaps a member of the show committee, the chapter chairman, or some other vocal, reasonably knowledgeable member is necessary at this point to call on the exhibitors of particularly noteworthy plants (not necessarily place winners) and get the discussion underway, if necessary by asking a few pertinent questions of their own. Time should also be allowed so that all those present can thoroughly examine the plants at their leisure after the discussion. Such discussion and examination not only serves to

instruct the members — it encourages exhibitors to show again. It's one thing to receive the momentary recognition of a blue star for a plant you have raised, perhaps for a number of years, and gone to the trouble of potting up and bringing to the show and another to be able to tell your peers how you did it. §



DIRECTORATE

AMERICAN ROCK GARDEN SOCIETY

President Emeritus
HAROLD EPSTEIN, 5 Forest Court, Larchmont, New York

President ..... ROBERT L. MEANS, 410 Andover St., Georgetown, Mass. 01833
Vice-President ..... KENNETH J. LOVE, 3335 N.W. Luray Terrace, Portland, Ore. 97210
Secretary ..... NORMAN SINGER, Norfolk Rd., S. Sandisfield, Mass. 01255
Treasurer ..... FRANCIS H. CABOT, Cold Spring, N.Y. 10516

Directors

Term Expires 1983
Marvin E. Black — Iza Goroff — Howard W. Pfeifer

Term Expires 1984
Patricia Lou Carson (Mrs. Orel Dale) — Marnie Flook — Dr. Robert McDermott

Term expires 1985
William S. Folkman — Andrew Pierce — Waid R. Vanderpoel

Director of Seed Exchange
Kenneth Vogel
Minnesota Landscape Arboretum
3675 Arboretum Drive, Chanhassen, MN 55317

Director of Slide Collection
Mrs. Lois E. Ecklund
Route #5, River Haven, St. Cloud, Minn. 56301

ARGS-PHS Library Service
Pennsylvania Horticultural Society Library
325 Walnut St., Philadelphia, Pa. 19106

CHAPTER CHAIRMEN

Adirondack ..... ELVA C. LINK, Box 211 RD 2, Corinth, NY 12822
Allegheny ..... MARIE PLAISTED, Box 232, Connoquenessing, PA 16027
Columbia-Willamette ..... VIOLA V. SOBOLIK, 2120 Pioneer Rd., Dallas, OR 97338
Connecticut ..... ESTHER LEGEYT BAILEY, 157 Douglas St., Hartford, CT 06114
Delaware Valley ..... ROXIE E. GEVJAN, 536 Dogwood Place, Newtown Square, PA 19073
Great Lakes ..... JUDY PEARSON, 5421 Whipple Lake Rd., Clarkston, MI 48016
Hudson Valley ..... DR. ROBERT M. COLE, 60 Benedict Ave., Tarrytown, NY 10591
Long Island ..... ISABEL HIBBARD, 4 Nancy Dr., S. Farmingdale, NY 11735
Midwestern ..... AILEEN MCWILLIAM (Acting Chm.), 711 Magnolia St., Mena, AR 71953
Minnesota ..... JULIUS WADEKAMPER, 10078 154th Ave., Elk River, MN 55330
New England ..... MRS. ROBERT ALBERTS, Box 35, Old Milford Rd., Amherst, NH 03031
Northwestern ..... MARVIN E. BLACK, 124 N. 181 St., Seattle, WA 98133
Ohio Valley ..... MICHAEL D. COLE, 730 Carlsbrook Dr., Beaver Creek, OH 45385
Potomac Valley ..... LYNN MAKELA, 5408 Yorkshire St., Springfield, VA 22151
Rocky Mountain ..... ANDREW PIERCE, Denver Botanic Gardens, 909 York St., Denver, CO 80206
Siskiyou ..... RAMONA OSBURN, 1325 Wagon Trail, Jacksonville, OR 97530
Watnong ..... SIEGLINDE ANDERSON, P.O. Box 93, Hope, NJ 07844
Western ..... WILLIAM FOLKMAN, 2640 San Benito Dr., Walnut Creek, CA 94598
Western-No. Carolina ..... SAM CHILDS, 3410 Brevard Rd., Hendersonville, NC 28739
Wisconsin-Illinois ..... IZA GOROFF, 1976 Church St., East Troy, WI 53120

YOUR ARGS BOOKSTORE

* New items in stock

1. ALPINES OF THE AMERICAS — The Report of the First Interim International Conference, 1976 327 pp., 20 pp. of color plus black and white photos $15.95
2. THE ALASKA-YUKON WILDFLOWER GUIDE — 217 pp. Color photos by plant family $9.00
3. THE SEEDLIST HANDBOOK — by Bernard Harkness. 3rd ed., 246 pp. Quick reference to seed listings of ARGS, Alpine Garden Society, Scottish R.G.Club. Gives genus, type plant, height, color or origin and horticultural reference $7.50
4. THE GENUS PHLOX — by Edgar T. Wherry. 174 pp. Monograph with photos, line drawings, distribution maps $6.50
5. * ROCK GARDENS — by Wilhelm Schacht. 192 pp. Edited and with introduction by Jim Archibald. 28 pp. of color photos plus line drawings $17.50
6. THE HANDBOOK OF ROCK GARDENING — 77 pp. Published jointly by the ARGS and Brooklyn Botanic Garden. Well illustrated $2.25
7. WHAT'S IN A NAME — 24 pp. An easy explanation of botanical names $2.50
8. * PLANTS OF THE VIRGIN MOUNTAINS — 51 pp. Line drawings and descriptions of plant material of Arizona's Virgin Mountains $2.00
9. * PLANTS OF ROCKY MOUNTAIN NATIONAL PARK — 168 pp. Color photos $6.95
10. * WILDFLOWERS ACROSS THE PRAIRIES — 214 pp. Color photos $8.50
11. * PLANT HUNTING IN NEPAL — by Roy Lancaster. 194 pp. Text and a few illustrations $19.00
12. * ROCK PLANTS FOR SMALL GARDENS — Royton Heath. 144 pp. 8 pp. color, 16 illustrations. Planting of rock gardens, raised beds, troughs, scree beds and rock pots. Also construction and propagation. Aimed at novice and advanced collector $15.00

Handling and Mailing — $1.00 per 1st book plus 50¢ per additional book

Overseas — $1.50 per 1st book plus 50¢ per additional book

• • • • • • • •

13. * ARGS PRINTS OF LAURA LOUISE FOSTER PEN AND INK DRAWINGS — Set of 12 prints (all different), $21.50; set of 24 prints (all different), $38.00; set of 36 prints (all different), $54.00; set of 36 prints autographed, $108.00. All postpaid.
14. * ARGS NOTE PAPER — 12 cards and envelopes, 4½" × 6½". Each of different rock plant by 7 ARGS members $4.25
15. CUMULATIVE INDEX — Volumes 1 thru 34 ..... 75¢
16. SEEDS — 3 Methods of germinating seeds. Xeroxed from ARGS Bulletins $2.50
17. SEED GERMINATION REPORT — by Dara Emery. Data on selected species $1.50
18. TALLY OF ARGS SEED LIST 1ST CHOICE REQUESTS $4.00
19. TROUGHS — Construction and lists of plant material to use. Xerox $3.50
20. ARGS LAPEL PIN $3.35
21. ARGS SHOULDER PATCH — Washable $2.25

Nos. 13 thru 21 are all postpaid. Overseas add 50¢ to order

• • • • • • • •

22. LIBRARY BINDERS for ARGS Bulletins ..... $4.00 each plus mailing chg

All orders prepaid in U.S. funds. Make checks or money orders payable to "ARGS".

U.S. destinations must show ZIP code. Airmail billed at cost.

23. ARGS BOOKSTORE stocks back issues of our ARGS Bulletin. Inquire about availability and prices.

• • • • • • • •

ARGS BOOKSTORE WILL BUY BACK ISSUES OF ARGS BULLETINS

Contact for offer. Postage for shipping will be refunded.

ARGS BOOKSTORE: Anita Kistler, 1421 Ship Rd., West Chester, PA 19380