Bulletin of the American Rock Garden Society

VOL. 42 FALL 1984 NO. 4

THE BULLETIN

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Cover Picture
Allium carinatum ssp. *pulchellum*,
dwarf mountain form, Mac. & W. 5753 Turkey —
Mark McDonough, Bellevue, Washington

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Allium Notes

Part II

Mark McDonough
Bellevue, Washington

Drawings by the author

Onions to Eat

The following alliums can be found at your local supermarket in the produce department: *A. ascalonicum (shallot), A. cepa (common onion), A. chinense (scallions), A. porrum (leek), A. sativum (garlic), and A. schoenoprasum (chives).* The genus *Allium* offers considerable value as an important food source throughout the world. Less is known regarding the edibility of other alliums, particularly those normally considered for ornamental value. On the whole, all alliums are edible, although some are not palatable. Certain species have medical applications and have been used in such diverse practices as mummification in Egypt.

Allium fistulosum is a curious plant commonly grown as a vegetable and perhaps less frequently as an ornamental. The fat, hollow tube leaves, and the freakish elephantine stems swollen most at midlength, compose a three foot novelty that somehow holds strange attraction for some admirers. The heads are largish symmetrical balls of bleached yellowish or greenish white, blending inconspicuously with surrounding herbage. Originally from E. Asia, *Allium fistulosum*, the Japanese Bunching Onion or Welsh Onion as it is known, has been introduced into most parts of the

world as an important vegetable crop. In Europe the plants are used as a substitute for leeks, and in Japan the leaves constitute a major ingredient of Sukiyaki.

Common chives *(A. schoenoprasum)* is a popular resident of flower and vegetable gardens, the leaves commonly used, either fresh or dried, as a flavoring. This species is discussed elsewhere in this article.

The central Asian Chinese Chives, *Allium tuberosum*, is an attractive plant worth growing as an ornamental on several counts. About sixteen inches tall in poor soil, twice that in better soil, the plants are leafy with flaccid foliage sheathing much of the stem. Late July to October bring upright open clusters of small pure white flowers, the tepals opening perfectly flat in stubby star fashion, each flower centered with a green ovary guarded by white stamens. The air is perfumed with the unpretentious blooms. Underground, the sturdy rhizomatous rootstocks, covered with fibrous bulbcoats spread moderately to form tight clumps. While not a raving beauty, garlic chives offer restrained appeal along with the desirable attributes of late flowering and sweet fragrance, not to mention its usefulness as a vegetable or condiment. *Allium tuberosum* is also known by the common name, Society Garlic, the flavor of this plant reputedly being very mild, and perhaps less offensive to "la haute Societe": hence its name.

Siberian *Allium ramosum* is very similar to the preceeding and sometimes confused with it. However this species blooms earlier, in June, and its stellate flowers do not open flat as in *A. tuberosum*.

All of the onions in this section are perfectly easy to grow in a variety of soils and exposures. Gardening with attractive yet edible plants is a satisfying preoccupation. Besides those species grown specifically as food, many other species have been used by native peoples in areas where alliums grow. I have found references to over one dozen American species that were consumed by various American Indian tribes. Similar references can be found applying to European and Asiatic species, alliums that are normally thought of as ornamental species only. In Iran for example, the highly prized rock garden subject, *Allium akaka*, is sold as food in markets. For adventurers and survivalists, the ubiquitous allium offers sustenance throughout much of the world.

Onions For Landscaping

There are a number of species of sufficient substance and impact to be effectively utilized in the landscape. The most outstanding example frequently seen in gardens is *Allium senescens* var. *glaucum*. Nomenclature becomes a problem here, as *A. senescens* embraces several distinct races ranging throughout Europe, Central Asia, and the Far East. The European variant, *A. senescens* ssp. *montanum* (syn. *A. montanum, A. fallax)* is common in cultivation. This is a strong growing plant with thick clumps of flat green leaves and unexciting heads of pink or mauve in early summer. While a somewhat coarse onion, it is useful for wilder parts of the garden, where its fragrant flowers bring a bit of summer color, and attract swarms of pollinating insects. All forms of *A. senescens* have clustered bulbs attached to strong horizontal rhizomes, and therefore belong to the allium subsection Rhiziridium.

However, it is the Far Eastern race, *A. senescens* var. *glaucum*, that is of interest to landscape gardeners. The dense rosettes of sickle-shaped leaves twist around on the ground in cowlick fashion, all leaves appearing to twist

in the same direction. Eye catching foliage of silvery blue-green enhances perfect little globes of lavender-pink perched atop naked ten inch scapes in September and October. Each lollipop bloom appears fuzzy on account of the protruding lavender stamens, peppered with bright yellow anthers, holding irresistable attraction for bees and me.

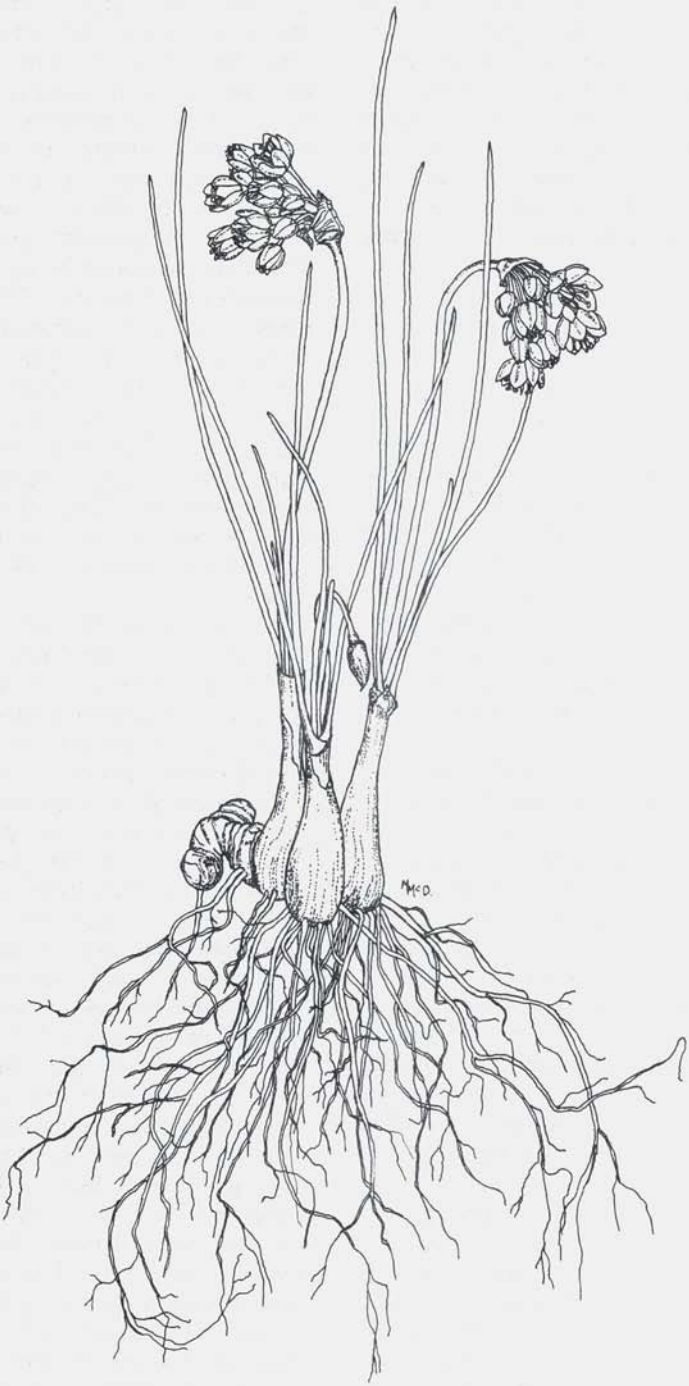
Like many alliums, this species reacts alarmingly to environmental situations. If endulged in fat enriched soils, plants respond with robust rank growth, yet flower rather poorly. In impoverished sandy soil in open well lit but not scorched situations, the habit is refined and well balanced, adding foliage interest during the growing season, and abundant floral effect late in the year when little else is blooming. Self sown seedlings rarely occurred in my Massachusetts garden because the seed capsules had insufficient time to develop before hard frosts.

I find that all forms of *A. senescens* have their place in the garden and not only for the enjoyment of their sweetly fragrant blooms over a long season, but as a sure-fire attraction for butterflies and hummingbirds. I don't know why, but seed of *A. senescens* is passed off as just about every other species available in the seed exchanges. Howard E. Moore Jr. in his article entitled "The Cultivated Alliums" published in Baileya, Vol. 2, No. 3, reports no less than fifty-four differently labelled species that all turned out to be *A. senescens*.

Allium rubens from the Ural Mountains of the Soviet Union, and also found in north and central Asia, is a quietly pleasing little plant, valuable for its continued succession of flowers. This species is closely related to *A. senescens*, but is smaller and more refined in all its parts. Several bulbs are clustered together enveloped by one outer tunic and attached to a short horizontal rhizome, with all of the subterranean growth showing a strong pink coloration. The plant makes small clumps of firm narrow foliage, equaling the six inch stems bearing one-sided, semi-nodding clusters of lavender pink flowers which appear continuously from spring throughout the summer. The unopened flower head is unusually shaped, being wider at its apex, the sheath bulging with the confined buds, looking like a clenched fist poised for a fight (see bud illustrations in Part I). This plant is easy, dependable, and noninvasive, providing interest throughout the season, occupying a modest amount of valuable rock garden territory.

Allium cyathophorum var. *farreri* (syn. *A. farreri*, and also still offered as *A.* sp. Tibet) is a rhizomatous species from mountainous regions of China, mentioned previously with the blue-flowered onions. Similar to the distribution of *A. senescens*, under an amazing assortment of pseudonyms, *A. cyathophorum* var. *farreri* will be the result of seeds listed as many different species tried from the seed exchanges. Because of this the plant is ostensibly very common in gardens, although most often improperly identified. Even if true to name, it is also unlikely that the plants are being grown under the conditions it favors to achieve best form.

In the ideal setting, the plants receive good light, but not blazing sunshine, planted in a friable enriched soil that remains moist, but never becomes soggy. In such a situation the plant is elegant, forming concise densely packed six to ten inch mounds of abundant foliage, the flat green leaves arching gracefully in all directions as if mimicking a Japanese liriope. In late



Allium rubens

May and June, multitudes of little rocket-like buds burst forth from the center of the foliage mass. These quickly elongate to just top the foliage breaking into showers of small semi-nodding flowers of reddish purple to violet purple. Each flower in the one sided clusters is long and narrow, with conspicuously pointed perianth segments. This plant is pure delight when placed high among rocks where its plumose, pendulous habit shows to good advantage. In dry sunny situations the plant will persist and flower reasonably well, but the habit becomes erect and spiky in appearance, with many of the leaves becoming yellow or drying at the tips, yielding an untidy appearance. The mass of fleshy white roots definitely prefers to reach deeply among more luxuriant soils. Many of the Chinese species seem to require similar moist and fertile conditions.

A very useful species is *Allium carinatum* ssp. *pulchellum* (mentioned in Part I), better known under its previous name of *A. pulchellum*. Plants with bulbils in the inflorescence, or with the flowers wholly replaced by bulbils represent *A. carinatum* ssp. *carinatum*, a weedy plant found throughout Europe. The former, however, is an attractive plant of southern Europe, from S.E. France to eastern Russia, and occurs in a number of different forms. The typical plant is slender with a few linear leaves, these being glaucous in some forms, and with a burst of rosy purple flowers held on twelve to twenty-four inch stems. The bell-like flowers are individually small with exserted stamens and the color is subdued by the presence of a "bloom" on the tepals. The long arching pedicels are similarly colored rosy purple, and bear the same "bloom."

At anthesis, the leaves are mostly dried up, leaving the slender stalks to bear their floral burden alone. Because of this, this species is not of prime value for landscape purposes. However a very colorful effect can be had by interplanting with the closely allied *Allium flavum*, as both species are of similar height, character, and blossoming period, producing a harmonious informal splash of yellow and purple, reminiscent of Easter colors. *Allium carinatum* ssp. *pulchellum* is intriguing in the bud stage, with the developing buds enclosed in a whimsical sheath of red with parallel raised green nerves, topped with a long, slender tail-like appendage up to six inches long flopping over the decorated bud package. After flowering the stems quickly dry up and eventually detach from the small bulbs, all the while setting bundles of anxious-to-germinate seed. Cut off the stems after flowering to avoid the abundant seedlings that may otherwise appear. After a short resting period of about six weeks, growth is renewed and will persist throughout the winter months.

For the rock garden delightful mountain forms exist, with the short stemmed heads tending to be rose pink rather than purple as in the taller forms. My plants originate from the MacPhail and Watson expedition to Turkey. In these reduced plants the stems average six inches in height, commonly less, and tend to splay out horizontally before turning upright to bear the proportionately smaller shockheads of glowing pink bells. The pedicels are equally pink, long and slender, arching downwards in drooping fashion (flexuous). Once each flower becomes fertilized the pedicel holding a developing seed capsule becomes rigidly erect, lending an unusual bi-level appearance to the flower head. The drawing on the cover illustrates this process. Other

alliums with flexuous pedicels exhibit this same habit.

Allium paniculatum embraces an incredibly varying polymorphic group ranging throughout Europe and N. Africa, resulting in a proliferation of "species," which have in recent taxonomic revisions been boiled down to four tentative subspecies. Flower color can be pink, white, purple, brown, greenish, or yellow, and stature can vary from only a couple of inches up to three feet. My inclusion of this species here is based on a fine large-flowered clone, grown from seed collected in Albania and Montenegro, which best fits into the provisional name *A. paniculatum* ssp. *paniculatum*.

This form is splendid "en mass" in the garden. The plants form dense clumps of wiry leaves which are distichously arranged (in two vertical ranks) at first, later sheathing much of the stem as it lengthens. The stems start out procumbent but become erect to reach a height of twelve to eighteen inches. Many stems appear, each topped with a large beautifully veined silvery spathe with two long appendages of unequal length. The sheath splits down the side with the pressure of the swelling buds, spilling out long bells of pastel pink accented with deeper pink nerves, held aloft by thin arching pedicels of the same soft pink. The late and prolonged flowering in July and August is particularly welcome.

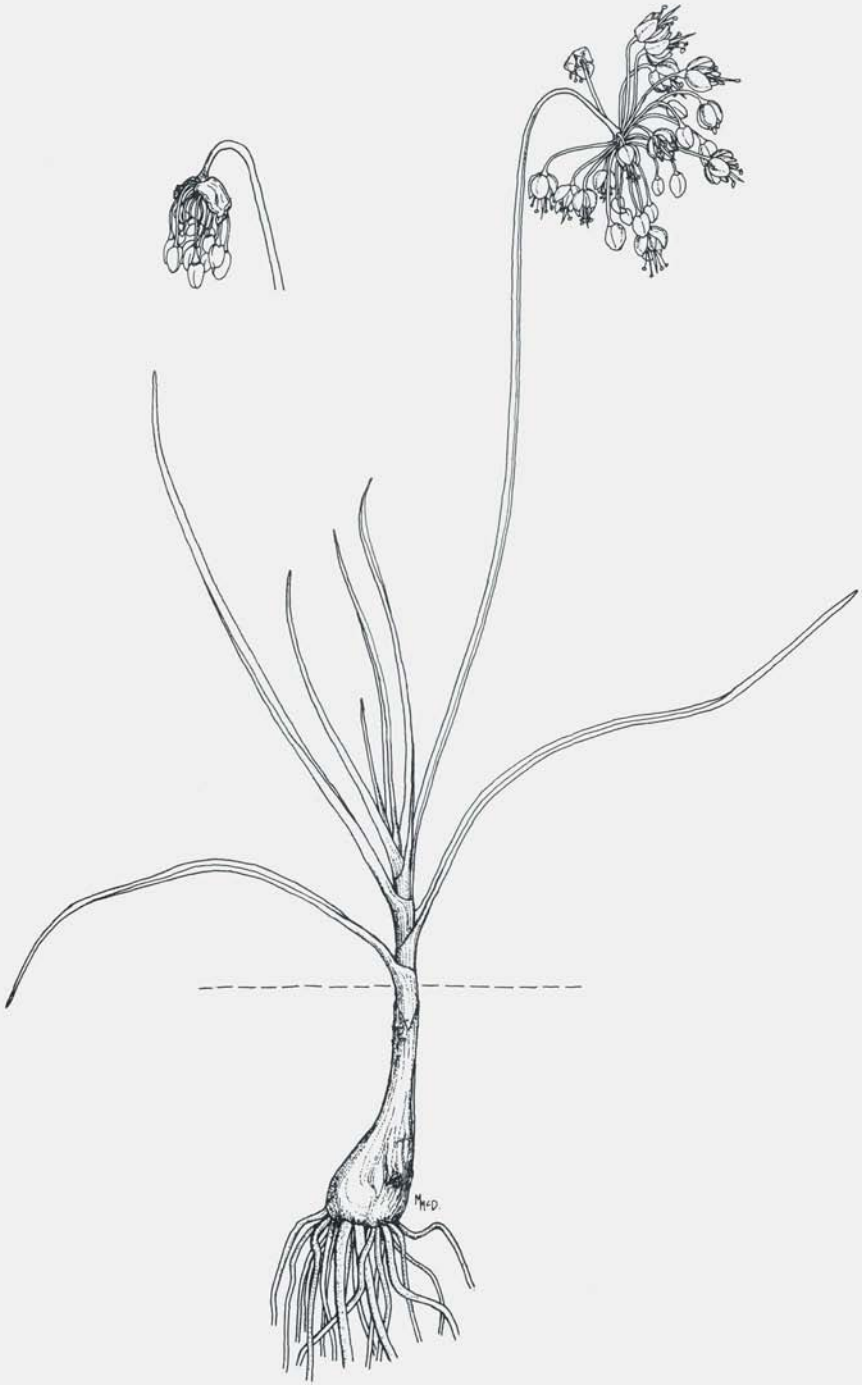
Plants will bloom quickly from seed in the sunny rock garden, with an immature bulb producing modest few flowered umbels. Mature bulbs on the other hand produce large sprays of over one hundred blooms per head. This character applies to many other alliums as well.

Unfortunately, the plants grown from seed collected in Albania have flowers exuding a strange odor akin to the smell associated with a zoo monkey house. This is one of the rare instances in which the allium blooms are unpleasant smelling, as usually they are sweetly fragrant or offer no odor at all. Luckily, however, identical plants raised from seed collected in Montenegro have no detectable odor whatsoever.

The dried tepals persist, becoming papery and investing the seed capsule, the pink color deepening in this stage. As in *A. carinatum* ssp. *pulchellum*, the fertilized flowers stand at attention, while the fresh flowers droop gracefully below. If picked when still in flower, the heads keep thir color indefinitely and are excellent as dried flower material.

Another form from the Atlas Mountains of N. Africa makes a fascinating specimen. A slimmer plant of two feet, the few flowered umbel is mostly replaced by bulbils of an irridescent blend of purple, brown, and reddish green. The flowers are bell shaped, of a yellowish white overlaid with reddish brown, yielding a dull copper tone to the bulbil filled inflorescence. No fragrance can be detected. Bulb enthusiasts attracted to similar muted tones in fritillaria may admire this species. The gardener who prefers the pure blue of *Gentiana acaulis* would throw out this plant in disgust. Needless to say, I like it.

The nodding onion, *Allium cernuum* (syn. *recurvatum)* is familiar to most gardeners, yet there is more to know about this American plant. Having the greatest range of any American species stretching from East to West Coasts, and from Canada southward to northern Mexico, plants assume differing regional traits. Even so, *Allium cernuum* is always recognizable by several unmistakable features, the most obvious being the



Allium cernuum var. *obtusum*

permanently crook-necked umbel giving the plant its name. Other American species may display this nodding habit in bud only, turning upright at anthesis.

In the Rocky Mountains, two geographical variants are recognized: var. *obtusum* and var. *neomexicanum*. *Allium cernuum* var. *obtusum* is distinguished by the red or pinkish bulb coats, short stature, and the narrow yet thicker leaves, which are concave-convex in cross section. The specimen I grow (see illustration) came from an open wooded mountainside in Colorado at about seven thousand feet. This is a more refined plant than typical *A. cernuum*, bearing smaller loose umbels of light pink highlighted with yellow anthers and a fine deep pink edge to the tepals. The ten inch stems are obscurely winged to nearly terete (round in cross section) at the top, unlike the typical species with stocky, broadly "winged" stems. (See bud drawing in Part I for comparison.) This smaller variety is worthy of a respectable position in the garden, flowering in late June to July, two to three weeks earlier than *A. cernuum*. In the mountains, *A. cernuum* and its varieties flower quite late, usually from July to October depending on elevation and exposure.

Allium cernuum var. *neomexicanum* is a geographical variant more southerly in its range, reaching northern Mexico. This is a taller plant of about eighteen inches with broad flat leaves that are keeled on the undersides, and having white inner bulb coats. I question the validity of this taxon as it does not appear to be clearly distinguishable from *A. cernuum* when the two taxa are considered throughout their range. Marion Ownbey, a noted authority on the genus *Allium* and other bulbous plants in North America, admits to the questionable status of this variety.

Often seen in cultivation and in the wild are poor colored forms with small, few flowered heads, being mediocre plants hardly noticeable in the garden. At its best, *A. cernuum* can be magnificent with architectural structure equalled by few other alliums. Dark colored forms of robust habit are associated with *A. cernuum* var. *neomexicanum*, and with forms of *Allium cernuum* found in the Allegheny Mountains of southeastern U.S.A. (syn. *A. alleghenense*).

In these better forms, the flowers are rich pink, deep rose, or purple, and of high saturation and waxen texture, elegantly composed to resemble suspended candelabra of sculptured clarity. The long pedicels are thick and arching in geometric precision, their dark "bloomy" black color setting off the brilliant blooms. Bees love the flowers as much as I do.

Allium cernuum can be found in a variety of habitats, and therefore is not particular as to garden requirements. But most often, this is a plant of cool mountainous areas, often found in open woodlands growing in moist soils. In the garden, plants will succeed under dry, exposed conditions, but for best habit they should be given fertile soil in a semi-shady location. In such a situation, the plants will light up any woodland planting in midsummer when little else is blooming.

Once each flower is fertilized, the stout pedicels reverse the forced nodding configuration and reach skywards with the swelling seed capsules conspicuously crowned with raised crests. Seedlings appear easily although not voraciously, a fact which should be kept in mind when placing in the garden.

Allium oxyphilum is a plant of acid soils endemic to the Appalachian re-

gion of the Virginias. Not always accepted by botanists as a valid taxon, this species is usually considered synonymous with *A. cernuum*, although deserving of further study. Considering the fact that the umbel is upright and not nodding, whereas throughout the remainder of *A. cernuum*'s extensive range the umbels are always nodding, and based on other recorded differences, it is my feeling that *A. oxyphilum* should be regarded as a distinct species, or perhaps as a variety of *A. cernuum*.

The American onions are quite distinct when compared to the genus as a whole. Surprisingly, *Allium cernuum* is remarkably duplicated by the handsome Chinese species, *A. macranthum*, exhibiting the same brightly colored bells held in assertive drooping composure. Only two allium species actually reach beyond our continent to Japan and the Far East, namely *A. victorialis* and *A. schoenoprasum*.

Allium schoenoprasum is better known to us all as chives. This plastic species reaches a considerable portion of allium territory, found in North America, Europe, Russia, and Asia. As shown with previous species having widespread distribution, numerous varieties and "species" have been suggested.

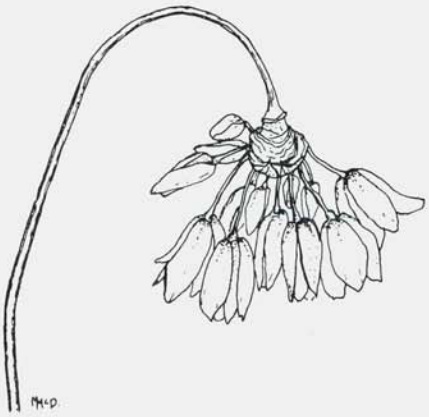
The typical form we have in our herb gardens and perennial borders is as valuable for its handsome flower heads as it is for its tasty leaves. The clustered bulbs on short rhizomes are gregarious, forming dense tufts of flopping hollow leaves topped with quantities of shuttlecock heads of lustrous rose or lilac flowers, nerved with dark purple. The flowers at the top of each head are the first to be fertilized, these aging florets turning a different shade of pink, rendering a novel two-toned effect. Mainly blooming in June to August, flowers sporadically appear all summer. Because of the flopping foliage and exuberant self seeding tendencies, I recommend planting chives in a wilder part of the garden.

A particularly fine circumboreal arctic form thought to be a tetraploid, is *A. schoenoprasum* var. *sibiricum*, sometimes raised to specific rank as *A. sibiricum*. Having stouter foliage and very large heads of bloom, this variant is more valuable to the gardener than common chives. Even Reginald Farrer lent praise for chives and this variant.

For the rock gardener, dwarf chives occur, with stems only reaching six inches or so. Diminutive forms collected in mountainous Mediterranean regions are occasionally in cultivation. In Ohwi's *Flora of Japan*, *A. schoenoprasum* var. *yezomonticola* is described from Hokkaido, a dwarf form with stems of four to eight inches. Several other forms of *A. schoenoprasum* are mentioned in this text, names not always accepted by other authorities.

Allium maximowiczii is very similar to *A. schoenoprasum*, and is found in Russia, China, Korea, and Japan. Plants have much the same value as chives from which it may be distinguished by the length of the stamens and style. With chives, the stamens and style are shorter than the tepals but in *A. maximowiczii* both are slightly exserted. If chives are present in the garden, then it is hardly worth the effort to cultivate the other.

Allium zebdanense, from Lebanon and Israel, is an attractive species that can be used with good effect in a woodland setting. The naked stems, a foot or more in height, balance clusters of half inch bells of pure white, drooping at first but then standing upright to greet the warm spring sun-



Allium zebdanense

shine, wafting a sweet elusive fragrance as the blooms mature. By June the few basal leaves, slender stems, and spent blooms, have all but disappeared with hardly a trace, retreating to small bulbs deep in sandy soil awaiting another spring. While an evanescent beauty, the effect is memorable and harmonious when planted in colonies, adding interest to open ground between shrubs in the wild garden, or planted atop a high-point to best display the ivory bells swaying in the breeze.

Said to be tender and invasive, I have found quite the opposite to be true. For many years in New England, several plantings reliably flowered early each spring and seemed content with their allotted space. Seed production has always been poor and never have I seen a self sown seedling. Underground, the bulbs multiply with ease to thicken the colony, but do so discretely. *Allium zebdanense* bulbs are available inexpensively from at least one Dutch bulb importer in Massachusetts. Seed is infrequently offered in the various seed exchanges.

There are many other onions worthy of inclusion here. In the past alliums have been regarded as accent plants or novelties, rather than plants suitable for mass plantings, capable of creating significant landscape impact. There is little to guide the gardener in such a venture; experimentation with available species is the best rule of thumb.

Misnomers

Alliums seem to suffer more than their share of confusion and misidentification as shown by previous discussion. A few commonly encountered species such as *Allium cyathophorum* var. *farreri* and *A. senescens* are distributed under an amazing array of pseudonyms. But there are a couple of distinct examples of mistaken identity that warrant an attempt at clarification.

Allium narcissiflorum is well known in the horticultural world, but how well do we really know this plant? The true plant may not be in cultivation at all, usually being replaced by an allied species also from the Italian Alps, namely *A. insubricum*. The simplest way to tell the two apart is that *A. narcissiflorum* is nodding in flower only, becoming erect as the seed capsules mature, whereas *A. insubricum* is nodding both in flower and in fruit. If plants are not in flower a look at the bulbs should do the trick. *Allium narcissiflorum* has an outer bulb coat consisting of persistent parallel fibers, while the bulb coat of *A. insubricum* is membranous without fibers or with only a few fibers.

For the gardener, I suppose it doesn't make a lot of difference as both are equally handsome plants. The foliage is neatly fashioned into dense clumps with many drooping clusters of a few very large pink or purple bells. The effect is trim, refined and most elegant.

After the June and July bloom has passed, the plants slowly retreat into dormancy. While found in high moun-

tain screes, a free draining soil in warm sunshine will suffice in cultivation. It is difficult to say which of the two species I have seen when visiting various botanical gardens, but with the opportunity to inspect plants more carefully, *Allium insubricum* has been the resulting identification. The gardener faces a more immediate problem when attempting to obtain either plant.

It is surprising that such a distinctive plant is so often confused with other species wholly unlike the actual plant. Although seed is offered in the seed exchanges yearly, true-to-name seed is a rare commodity not easily obtained. I suspect gardeners unfamiliar with alliums observe nodding buds or expanded blooms of other unrelated species, and therefore believe they have the correct plant. Many alliums share the nodding characteristic (see allium bud drawing in Part I) and this feature should not be the sole determination of whether one has *A. narcissiflorum* or not.

Another puzzle is the widespread distribution of an American onion known as *A. murrayanum*. Modern taxonomy does not recognize this entity, nor is it used in recent synonymy. Evidently the name was described by Regel over a century ago, his material referable to *A. acuminatum*. It is a mystery to me how such a vague and outdated name becomes so firmly established in cultivation with enduring persistence. Experts in England report that plants under the name of *A. murrayanum* are in fact good colored forms of *A. unifolium*, a species native to Californian coastal mountain ranges.

Of similar persistence is *A. cowannii*, synonymous with familiar *A. neapolitanum*. The invalid epithet was first used in England to describe a plant sent from Peru by a man named Cowan. The author of the "new species" (Lindley) was unaware that this was in fact a Mediterranean plant, possibly representing early cultivation of this plant in South America. Several other synonyms surround *A. neapolitanum* similarly described from cultivated specimens rather than wild plants, but only "cowanii" is in common usage today.

Until a comprehensive treatment of the genus is published, I'm afraid that confusion and misconceptions will continue. Information is available to those devoted enthusiasts that are willing to spend unnumberable hours scouring through university libraries and herbaria, but this is admittedly a tiring and tedious task. A popular guide to help the average gardener wade through the sea of allium species is sorely needed.

(To be continued)

Pleasant Companions

Myrtle *(Vinca minor atropupurea)* with maroon-purple blossoms under-planted thickly with *Galanthus nivalis* makes a very attractive combination as a ground cover in the early spring in either sun or shade.

—D.M.D.

Award Winners

Award of Merit

Marvin Black

To many ARGS members Marvin Black in name and person is well known, although to most the scope of his interests and contributions is not well recognized, going beyond alpine plants to hardy border subjects to urban forestry.

Think of any chapter activity and Marvin will have been in the thick of it: field trips, both day trips and excursions, where he has always stressed conservation; enjoy and leave the plant to its own destinies, while carefully taking a cutting or seed. The Black name (or Black and Thompson) is familiar to seed lists of all the rock plant organizations as well as others, and together he and Dennis Thompson have grown plenty of seedlings for chapter plant sales, generously shared so that all might enjoy them. Marvin has also searched out and brought to the Northwest many plants from other quarters, scouting catalogs and little nurseries wherever his travels have taken him.

As the Northwest Chapter Chairman he instigated the mini-lecture whereby newer members were encouraged to tell something of themselves and their interests, so we came to know them and their skills far sooner than if left on our own. He has also served as program chairman and on special committees, where he freely voiced opinions and gave sound advice, but it is in the furtherance of the Western Study Weekends that he has hit his stride, three such to date, which he has co-chaired along with Thompson and Dan and Evie Douglas. We have come thereby to meet, talk with and learn from plants people from all over the world.

Marvin has written for the ARGS Bulletin and for other publications such as *Pacific Horticulture, Horticulture Northwest,* the *Arboretum Bulletin* and *American Forest.* Will we ever again misname *Sedum spathulifolium* 'Cape Blanco'?

Marvin Black's energies and efforts extend beyond the chapter to the national affairs of the society where he currently serves as a member of the board of directors. He has visited and spoken to many other ARGS chapters as well as to plant organizations in Canada, England and Scotland. Both

plants and knowledge are cycled and recycled, whether by Marvin or by others he has gently pushed onstage by giving them opportunities to shine on their own (followed by recognition for the effort) so that gardeners everywhere have been enriched.

Such is the "stuff" of the Award of Merit.

—Sharon J. Collman
B. LeRoy Davidson

The LePiniec Award

Tom and Bruce Shinn

A wonderful mountaineer team whose love of our native plants enabled them to bring forth a true "miracle in the mountains" — the Shinn Garden — one of the most extensive and most interesting private collections of native plants in the South.

A couple with an incredible store of valuable first hand knowledge about our mountain plants, which they willingly shared with many gardeners, botanists, assorted visitors from across the state, from over the nation and, indeed, from around the world.

Two true "plant people" whose interest in, skill with, and love of our native plants did much to stimulate interest in native plant propagation, realistic conservation and, indeed, lay the foundation for two of North Carolina's Botanical Gardens — at Asheville and Chapel Hill.

— C. Ritchie Bell

Bruce and Thomas Shinn

The Wherry Award

Dr. C. Ritchie Bell

For more than 40 years, Dr. C. Ritchie Bell has been tromping the southeastern United States, its mountains, hills, fields and swamps, studing the native flora. From his first article about sarracenia in 1949, Dr. Bell has written extensively about native plants. The scholarly work, *Manual of the Vascular Flora of the Carolinas*, which he wrote with A.E. Radford and H.E. Ahles, is the Green Bible to many plant enthusiasts in this part of the country. Recent popular works include the *Wild Flowers of North Carolina*, with W.S. Justice and his 1983 book, *Florida Wild Flowers and Roadside Plants*, with B.J. Taylor.

Dr. Bell teaches both graduate and undergraduate students at the University of North Carolina at Chapel Hill, where he is a professor in the department of botany. His teaching influences extend far beyond the classroom, however. He and his botanist wife Anne Lindsey frequently lead groups of eager amateur botanists up and down the mountain trails of the Smokies. They teach many workshops on native plants and lecture throughout the state.

They also travel extensively, ever curious, ever learning. Their most recent jaunt in 1983 took them to Australia, Singapore, Thailand, India, Kashmir and Egypt. They brought back numerous photographs and a great deal of information about the native plants of other parts of our world.

Dr. Bell's passion for native plants is evidenced by his involvement with the North Carolina Botanical Garden, where he has been a director since its inception in 1961. During the years of its growth and development, the garden has become the recognized center for native plant research, propagation and dissemination throughout North Carolina — indeed, throughout the entire Southeast.

Dr. Bell's concern for our horticultural heritage is obvious not only in his writings and teaching but in his state-wide conservation activities. He serves as a consultant to the Board of Trustees, N.C. Nature Conservancy and to the Natural Areas Advisory Council, N.C. Department of Natural and Economic Resources. He was instrumental in drafting the plant protection law for North Carolina and serves on the Scientific Board of the N.C. Plant Protection Program.

In appreciation of his lifetime of botanical scholarship and his Pied Piper enthusiasm for native plants, which has created an ever-widening circle of admirers, growers and conservators of our Southeastern flora, the American Rock Garden Society is delighted to present the Edgar T. Wherry Award to Dr. C. Ritchie Bell.

— Sandra Ladendorf

Gold Medal

Thomas H. Everett

What better way to help celebrate our 50th Anniversary than to give a very special award to the patriarch of the American Rock Garden Society.

It was in 1935 that this Gold Medal, designed by Florence R. Smith, was struck. It shows on its face an Aquilegia species in bold relief against a backdrop of the Rocky Mountains. A few years after its inception the die for the medal was lost and could no longer be traced and, as far as anyone knew, this medal could no longer be duplicated. Then, with serendipitous timing, the last of the original medals turned up last year in Harold Epstein's basement where he had inadvertently and unwittingly been storing it along with other Society memorabilia turned over to him during his years of presidency.

Tom Everett came to these shores some 53 years ago. Despite the fact that his background at Kew was in tropical horticulture, Tom is without question the patriarch of American rock gardeners.

In 1929 Beatrix Farrand had the good sense to recommend Tom to Hiram Manville to be in charge of horticulture on his 400 acre estate in Pleasantville, N.Y. Tom took the job and the first thing he did was to build a very large rock garden.

By 1932 Tom's reputation, as a result of both his gardening and his writing, was such that the Board of Managers of the New York Botanical Garden asked him to chair a panel of three horticulturists to review horticulture at that institution, which at the time was, to quote Miss Elizabeth Hall, "rather in a mess." Tom wrote the panel's report, the Board was impressed and forthwith asked him to take over horticulture at the New York Botanical Garden. Tom said he would do it on two conditions — one that he report directly and only to the president (Tom was no fool!) — the other, naturally, was that he be allowed to build a rock garden. He was hired and set to work.

He chose the site and with horses and blocks and falls, using $4,400 left to NYBG by a Dr. Thompson created that wonderfully beautiful garden that in its heyday had over 2,500 species growing in it. Tom is fond of telling the story that when they overshot the budget a bit and found that there was no money left to buy sand, he was able to solve the

Thomas H. Everett

problem by using sifted cinders from the coal boilers at the garden instead.

With that achievement under his belt, Tom, together with his counterpart Montagu Free at Brooklyn Botanic Garden, and with other plantsmen and enthusiastic amateurs founded of all things, The American Rock Garden Society and helped launch it on the right track. Tom, among other roles for the Society, was the chairman of the editorial committee which was responsible for publishing "Saxiflora," ARGS's first publication of plant portraits.

So, I think you'll agree that Patriarch is, indeed, a most appropriate term. It is doubly appropriate that on this day, fifty years after Tom Everett assisted in launching our society that the American Rock Garden Society should honor him as a founding father with the last and surely the best of its original Gold Medals.

The inscription reads:

1934 - 1984
Awarded to
Thomas H. Everett
Founding Member of the Society
Plantsman Extraordinary,
Horticultural Writer par Excellence,
Raconteur, wit, and friend.
— Francis H. Cabot

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The 50th Anniversary Celebration in Asheville, North Carolina from June 6 through June 11, at which these awards were presented, and reports of the Pre-Anniversary Tour (June 1 through June 6) and the Post-Anniversary Tour (June 12 through June 15) will be made in a special Anniversary Issue to be sent to all members. §

New Award Instituted

To Honor Carleton R. Worth

The Board of Directors of ARGS recently approved a new award to be given by the Society to commemorate Carleton R. Worth, an outstanding plant explorer, seed contributor and editor of the Bulletin. This award has been made possible by a fund initiated by the Adirondack Chapter of ARGS.

It is to be known as the Carleton R. Worth Prize and is to be "awarded to an author of distinguished writing about rock gardening and rock garden plants ... in the form of a book or a magazine article with special preference given to material published in the ARGS Bulletin ... [though] the recipient need not be a member of ARGS."

The recipient "shall be selected by the Publications Committee of the Society including the editor of the Bulletin ... [and] shall be given whenever the committee finds a worthy candidate, preferably not necessarily annually. ...The selection committee shall determine the appropriate form of the Carleton R. Worth Prize."

Dr. Worth was given the ARGS Award of Merit in 1966 for his outstanding contributions to the Society and especially to rock gardening in general. A mathematician by vocation this was only one facet of his interests. True, he taught mathematics at the University of Arkansas, Rutgers, and Ithaca College and the Rutgers University Press published two editions of his *Mathematics for*

Students of Biology. In addition he served in the Naval Reserve in WW II, leaving the service with the rank of Commander.

But despite his busy life in the field of mathematics he found time to pursue a second career in plant science and horticulture. In addition to his eight year stint as editor of the Bulletin of the American Rock Garden Society he was an ardent seed collector. During his summer vacations from his job as professor of mathematics, he took off for remote places to collect seed. He made fourteen trips to our own West, mostly to the Rocky Mountain region. He also travelled to other countries and other continents and in 1938 was a member of the second University of California Botanical Garden expedition to the Andes. The attachment of "Worth coll." to a contribution to the seed exchanges ensured its demand.

He was long associated with the Scottish Rock Garden Club and the Alpine Garden Society of England, serving for several years as a vice-president of the latter organization. He wrote and lectured extensively about rock garden plants and in 1961 was a speaker at the International Rock Garden Plant Conference in London.; his subject, "Rocky Mountain Natives." To the great amusement of the audience while at this conference he saw for the first time plants and pictures of plants in flower that he had previously seen only in seed time when he collected seed to send in to the exchanges as "sp. unknown."

Joseph Witt

We regret to announce that Joseph Witt, long time member of the Northwestern Chapter of the American Rock Garden Society died at the age of 63 on May 7, 1984 after a long illness.

He was co-chairman (with James MacPhail of the Alpine Garden Club of British Columbia) of the First Interim International Rock Garden Plant Conference in 1976 and had been chairman of the Northwest Chapter of ARGS in 1967 and 1968.

Joe Witt had been curator of plants at the University of Washington Arboretum for the past ten years, after originally coming to the arboretum over thirty years ago as a graduate teaching fellow and working his way up to a full professorship. He was president of the American Association of Botanic Gardens and Arboreta in 1972 and vice-president of the Pacific Northwest Chapter of the International Society of Arboriculture from 1979 to 1981. He was given the UW Alumni Association's Outstanding Public Service Award in 1982.

Joe was highly thought of by his students, colleagues and the volunteers at the arboretum. "His path was crossed by thousands of people and he always had time for them. He was a fine gentleman." said Dr. Harold Turner, Director of the UW Department of Urban Horticulture. Joe Witt's assistant said of him that "he was attuned to plants in a way very few are."

Our deepest sympathy goes to his wife, Jean.

A Oaxacan Journal

Part II - The View from Zempoaltepetl (In Search of Weldenia Candida)

Francis H. Cabot
Cold Spring, New York

Pictures by the author

"The region [i.e. Oaxaca] *is rich but extremely mountainous: the highest peak is Zempoaltepetl (Zempoal=twenty and tepetl=mountain). From the summit (11,965 ft,) of this towering giant one may enjoy the unusual experience of looking clear across the continent, the Gulf of Mexico is visible on the East and the Pacific Ocean on the West. Few mountains of the world offer a grander panorama than Zempoalteptl which should be climbed if only for the sake of the view."*

— Terry's Guide to Mexico - 1947

Our next trip to the Casita in Ixtlan de Juarez, Oaxaca was in February, 1982 and there was no question that this time it was Zempoalteptl or bust; after all we were rock gardeners and primarily interested in alpines. Boone Hallberg was unable to accompany us, but kindly delegated his son, Oscar, who had been with us on our trek to Villa Alta the year before and who had been up the mountain with Boone when he had found the *Weldenia candida.*

We set off after a comfortable Saturday night's sleep at the Casita marred somewhat by an all night celebration at the new "Cultural Center" in the Indian Village of Capulalpan across the valley, whose music, wafted by the soft Oaxacan breezes, was still blaring forth at daybreak (when do Mexicans sleep?).

To get from the pine forests around the Casita to the pine forests on Zempoaltepetl one must drop some 4500 feet down to the desert valley of Oaxaca, drive east along it to Mitla (the great example of pre-Columbian jigsaw puzzle baroque that escaped destruction by the Spaniards because it was a palace rather than a ceremonial center) and then turn north through an arid moonscape that only very gradually begins to show green as one slowly gains altitude. The road bumps along this wasteland, fording the occasional river, until, near San Lorenzo de Albarradas, the earth and rocks are suddenly purple. A few kilometers further one leaves the Zapotec desert, crossing a ridge into Mixe country (pronounced Mee-Hay), and is greeted by the welcoming sight of pine trees once again. As the road climbs through the villages of Ayutla and Tamazulapan, there are Indian villagers in native costume. Across the valley lies the massif of Zempoaltepetl with our destination for that night, the Village of Santa Maria Tlahuitoltepec, Mixe, at 8000 feet on its flank. (Mexican Indian villages apparently make up for their lack of amenities by their resounding and tongue twisting names).

Boone had stressed the importance

of paying our respects to the Tlahuitoltepec authorities and requesting their permission to climb Zempoaltepetl. To this end he had given us a letter of introduction explaining our interest in climbing the mountain and collecting plants.

Tlahuitoltepec is a kilometer off the "main road" and is perched on a precipitous hillside with its church, school and municiple buildings squeezed onto a narrow ledge and its residences scattered down the hillside below it. We had brought a tent so as to avoid the concrete floor problem but there was apparently no spot to pitch it other than in the road itself or the miniscule village square, neither of which seemed a prudent course. Maybe the floor of the municiple hall, so enjoyed by Boone, was the only alternative after all.

We drove up to a colonnaded structure. Anne, feeling a bit under the weather, stayed in the car and Oscar and I presented our credentials to an attractive young girl who asked us to wait while she talked with an official. Expecting a perfunctory authorization, Oscar and I were rather startled when the entire council of Santa Maria Tlahuitoltepec Mixe some thirteen strong, including the attractive young girl, trooped in and arrayed themselves behind the council desk led by their "Secretary", a young, well-educated, bespectacled and very cool Mixe indeed who looked and acted for all the world like the commissar played by Jerzy Kozinski in *Reds*.

We were asked to sit on a bench against the wall opposite the council, who proceeded to launch into a definitely hostile interrogation of our purpose in visiting their town and climbing their mountain. Under what authority were we there? What were we going to do with the plants?

Embellishing the truth and dropping institutional names and connections in both the U.S. and Mexico was of no help at all. Even with offical documents, we were told they would be unable to give us permission unless we paid a fee for the privilege. The Mixe, they made quite clear, were not subject to the laws of Mexico or even the State of Oaxaca. They had their own laws.

"How much of a fee?"

After much huddling and palaver the "Secretary" announced: "2000 pesos."

At this November 1982 writing 2000 pesos is worth something between $15.00 and $28.00 depending on whether one uses the official or "free" exchange rate. Then it was equivalent to the cost of a first class Mexico City hotel suite.

Since it wasn't the principle, but the money, I remonstrated:

"In the United States we don't charge people who want to climb our mountains and look at plants."

"We own Zempoaltepetl and set the laws here."

I looked at Oscar who nodded glumly.

"I think this is an outrageous rip-off and will report it to the authorities in Oaxaca."

"Go ahead, they don't tell us what to do."

"This behavior will discourage tourists and visitors to your village. Is that what you want?"

"North Americans come here and study our culture and folk ways taking from us and never giving anything in return. We are sick of it."

"How many North Americans have visited your village?"

"Maybe 200."

"In all time?"

"Yes."

"And in the last year?"

"Maybe 20 or 30."

"And that upsets you?"

"North Americans are known to be cruel to Mexicans when they work in the United States."

Having had some direct experience with the labor practices of southwestern U.S. agribusiness I knew this to be unfair and said as much.

"We don't like North Americans."

Oscar, whose mother is Zapotec Indian, had lost his normally swarthy hue and was looking rather pallid around the gills. The often repeated opening lines of the narrator in Gabriel Garcia Marquez' *One Hundred Years of Solitude* --- "As I stood there before the firing squad --- " flashed through my mind and I hastily changed the subject.

"My wife has asked if there is a bathroom in the village."

"There is one in this building at the end of the gallery."

"May I show it to her?"

"Yes."

I inspected the premises. There was no way!

"Is there another bathroom in the village?"

"Yes, there are the public bathrooms but they are kept shut."

"May I ask why?"

"Because the people use them too much."

I went out into the gallery and gave Anne the May Day signal.

"Well, I think it's too much and we'll just have to return to Ixtlan (the thought of two days wasted on the road was sickening). What would we get for 2000 pesos?"

"We will give you a room to sleep in and a police escort up the mountain."

"Ah, the fee is not so bad if you are providing us with a room."

"The room has nothing to do with the fee. We are not a hotel."

After paying the 2000 pesos (these were going to be the most expensive weldenia ever collected in the wild), the councillors prepared a receipt from the Tlahuitoltepec municipal treasury for the money characterizing the Payor as an "Administrative Botanist" (quite a flattering term since to this day I am not quite sure whether a pistil is a male or female organ) and authorizing us to climb the mountain and collect plants, and stating furthermore that the funds were to be used for community purposes.

This last intrigued me and I asked to what purpose the funds would be put. The prompt reply was that they would be applied to a public toilet for the niños, the village children, a worthy cause indeed and one guaranteed to soften the cruelest gringo's heart. I couldn't help but wonder whether it too would be kept locked so that the villagers will remain uncontaminated by capitalist luxuries.

By this time night had fallen and we were led across the square to an eight by ten foot cement block "cell" with a raised bed consisting of a sheet of plywood on cement blocks propped against one wall. Still it was better than nothing and gringos apparently can't be choosers in Mixe country. After eating a picnic supper we wandered briefly around town to find that we were not only comfortingly close to the locked public bathrooms (there was no key available) but that the adjoining cell was inhabited by the president of the Municiple Council, a rather more genial and less educated type than the Secretary and was filled with band instruments (not another musical night a la Villa Alta!). Suddenly three vans drove by filled with attractive young from North America, England and the Continent. What were they doing? Sociological studies of the Oaxacan Indian Villages. Where were they going? A local farmer had

offered them a level patch of field in which to pitch their tents.

Hmmm! What did we do wrong?

School boys were playing basketball in an open air court near the church, the band master had turned out the lights and, leaving Oscar to ogle the local girls, we unfolded our Cosmic Sleep mattresses (cosmic maybe, sleep, no!) from Early Winters on the plywood board, climbed into our sleeping bags and collapsed to the sound of the bouncing basketball.

It seemed only an eternity later (one can stand about 15 minutes on a side with the Cosmic Sleep - plywood combination) that we were awakened at 4:30 am by the same bouncing basketball. Since anything was preferable to remaining supine, I stumbled out into the dark to find that this time the girls who were using the court (when do Mexicans sleep?) making a charming picture against the backdrop of the Church. Reassured I fell back onto our bed of pain knowing that any country who can arrange for its schoolgirls to use the athletic facilities before dawn can't be all bad and sank into what promised to be a deep and lasting sleep.

And then it happened.

At 5:30 am a loudspeaker directly outside the window blared forth with a Mariachi version of "Las Mananitas", Mexico's get up and go — keep your sunny side up — wake-up breakfast song. Anne began to giggle again and after a rendition of "Vivas Aguacalientes" and Colonel Bogey's March from the *Bridge on the River Kwai*, she was flailing helplessly with mirth on her Cosmic Sleep and gasping for breath, apparently recovered from her troubles of the evening before. It was only when the loudspeaker settled into a string of Sousa marches that we were able to pull ourselves together and get up for breakfast, communicating by sign language because of the din.

The warming sun and the stimulating music did the trick and by 6 am we were ready to meet our police escort. To our surprise it consisted of three policemen. Oscar knew that the route directly up from the village to the top of the mountain took four hours so it was bewildering to be told by each of the three policemen that there were two or three quicker ways if we could just drive a bit in one direction or another around the mountain.

While the policemen ate breakfast we had the good fortune to run into the local schoolteacher, a Colombian draped in a marvelous woolen gabanes (the local serape). He quickly reassured us that our way was the only way and suggested that the police probably wanted an easy trip back to their native villages. He also showed us where we could obtain the gabanes and led us down the steep hillside past rude shacks, smothered in bougainvillas and alamanda and emitting delicious smells of wood smoke and heartening fare, to a thatched hut where the attractive young girl councillor lived with her parents and a supply of reassuringly simple and earthy homespuns. They were delighted by the morning's business and the embarrassingly low price made the fee seem less obnoxious.

We returned to the square, announced our decision to go straight up the mountain from the village, bade a warm goodbye to the friendly Columbian and set off with one policeman, the other two having thought better of their plans. On the way out of the village, we passed the group of young gringos tenting on a rock pile by the side of the road and looking thoroughly miserable. The authorities had evicted them from

the village at midnight. All in all it had been a busy evening for the Council of Tlahuitoltepec.

It is hard to determine whether the town's hostility springs from a quite natural and commendable desire to keep their Mixe Indian ways uncontaminated or whether it is a deliberate effort to keep foreign influences out so that the Indians can be manipulated by the "left." Probably both elements play a part in their attitude. The "Secretary", the Jerzy Kosinski of the piece, had all the earmarks of a dedicated Marxist and mouthed much of anti-American propaganda current in leftist Mexican circles. The schoolteacher, on the other hand, was probably a good influence on the community and that young girl had healthy capitalist instincts, so maybe the Mixes will be spared the agony of Central America. (* see footnote)

As the trail wound up to the 8500 foot level through the pine forest and Tlahuitlotepec lay placidly on the slopes below we could just hear the strains of Auld Lang Syne, a fitting end to the morning's musicale with the implicit promise of more visits, more fees and more locked public facilities. But then the music was supplanted by the cascading warble of the Brown-backed Solitaire, the Joann Sutherland of the bird world, and there were plants along the trail to look at.

Alpine gentian species on Zempoaltepetl

Many of the pines had been cleared from the lower slopes of the mountain; in fact too many. The familiar cycle of overgrazing, erosion and habitat destruction was well underway. Hypericum and red and blue Salvia species bloomed amongst a rather coarse ilex. Gaultheria and vaccinium grew among scrub oak and *Juniperus monticola*. Alongside most of the trail, from 9000 to 10,000 feet grew the charming, ubiquitous dwarf alchemilla that carpets the higher reaches of the Sierras. Arctostaphylos abounded in a variety of sizes and shapes.

On the whole, the vegetation was disappointing when compared with the profusion of Ericaceae that cover the comparable elevation of Cerro Pelon at the edge of the cloud forest, which grows a bewildering array of gaultheria, vaccinium, symplocos, pernettya, and ilex amidst a carpet of alchemilla interspersed with nertera. Zempoaltepetl was clearly on the dry side, but then there were compensations such as coming upon a clearing of several steep acres filled with a sea of eryngiums, their greenish gold bracts and flowers burnished in the morning sun.

The familiar landscape of ridges and Indian villages was dropping away in the distance below us on three sides and the air was cool and crisp. At a resting point in the shade we were visited by a curious herd of goats on their way to destroy what

Top of Zempoaltepetl looking over Chinantla toward Gulf of Mexico

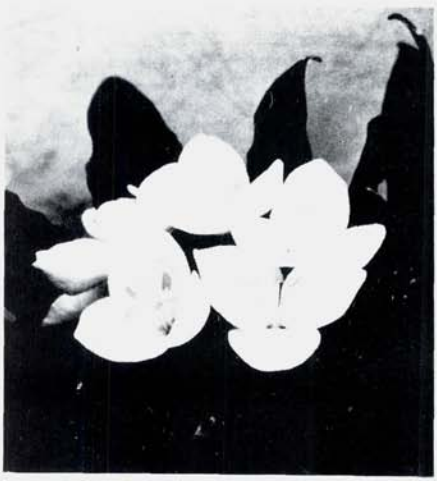
was left of the mountain's vegetation. Maguey, the giant agave and source of pulque and mescal, was planted in patches here and there and at 10,000 feet a tiny annual penstemon grew next to a field of corn that seemed to be planted on a slope of at least 60°. And yet it was being plowed by an ox driven by a woman, her children happily playing nearby.

A choicer form of ilex grew at this level along with a pale geranium and at 10,100 feet *Arbutus menziesii*, the Madron, put in its first appearance. From 10,300 feet to the summit the alpine gentian of the region grew sparsely and loosely in full shade under the pines on the steep slope and compactly in full sun on the summit, looking very garden worthy indeed. A dwarf composite (a kind of anthemis?) was interspersed with the gentian making a pleasing carpet of yellow and blue; and there were seed pods everywhere.

The summit consisted of a short ridge with the gentian clearing at one end and, after a brief scramble through a grove of pines, a rocky promontory hanging out over a panoramic view to the north, a view that had been hidden to us until now. Below us on all sides were the mountains of Oaxaca with clouds clinging to the rain forest cliffs to the north and the serrated jungle hills of the Chinantla, the more intriguing for their inaccessability, sloping to the northeast down to the steamy tropical plain stretching from their base north to the Gulf of Mexico some 115 miles away. To the south towards the southern coast of Oaxaca and Tehuantepec, range after range of mountains ringed the horizon with peaks that in some instances seemed as high if not higher than our own vantage point. There was no way one could

see the Pacific Ocean with that extended barrier, nor for that matter was it likely that one could see the Gulf of Mexico even on the clearest of days. And our altimeter showed about 11,150 feet - so much for Mr. Terry's accuracy. But the guidebook writers must yearn for a bit of poetic license.

Boone had said that the patch of grass on the rocky promontory was in fact a patch of solid *Tigridia seleriana* in May. In February there was no evidence of tigridia, but it was clear that the promontory was a special place, a rock rimmed bowl perched on the edge of the world, a Mixe altar on which to sacrifice fowl and livestock so as to propitiate the Mixe gods to ensure they would deliver the solution to one's problems or the answers to one's needs. Chicken feathers and entrails littered the ground; no wonder the tigridias flourished under that mulch. Oscar said that after the sacrifice the Mixe practice was to become thoroughly drunk before heading down the mountain and then it was important for them to come back at least twice more and repeat the drinking bit to ensure the success of their mission. But what lovelier place could one choose for a sublime and spiritual happy hour and, at least, getting home again was all downhill.



Weldenia candida

We returned to the gentian patch and began to dig and sure enough in the very rocky, humusy turf it was not long before we came across the characteristic tuberous roots of a Commelinaceae growing amongst the dormant bulbs of what presumably was a tigridia. Our police escort was soon dozing in the morning sun, no doubt bored by our digging and collecting, since that 2,000 peso fee ensured that we were going to collect our money's worth.

We had grown *Weldenia candida* in the mid-sixties in the alpine house in Cold Spring and had bloomed it for a couple of years before losing it. A genus of a single species named after L. von Welden (1780-1853) a naturalist and Austrian army officier who, presumably, found it in the crater of a Guatemalan volcano.

It can be propagated by root cuttings (we tried but we were unsuccessful) and the RHS Dictionary suggests cutting the fleshy root which protrudes through the drainage hole of the pot, (plunged in sand or ash) in September into pieces one inch long and inserting them in sandy soil. The tubers we were digging looked the part but seemed to be rather on the small side, which I ascribed to their alpine habitat. For good measure we collected some gentian seed as well.

Farrer's description of weldenia bears repeating at this point:

> *Weldenia candida* must be looked to with care: for it is a high-alpine of the Mexican Mountains, only to be trusted out in deep. light, and perfectly-drained soil in a warm and sheltered position. And if glass or boughs are put over the spot in winter when the plant has died

down, it is not to be imagined that the *Weldenia* will resent that attention, but the more securely in spring will it again send up, from its long radish of a root, its unfolding rosettes of smooth and pointed, narrow, succulent leaves, like those of some wee unfolding glossy pine-apple, among which sits for some weeks on end a succession of three-petalled, rounded little flowers of extraordinary diaphanous white, like the ghost of a snowy Tradescantia long since drowned, very quickly come, and yet more quickly gone again, but succeeding themselves in such profusion that there is never a moment bare of their translucent trefoils of living and shimmering light. *Weldenia* is still rare and horribly expensive; yet the beauty is worth more than the pounds demanded in payment. But, alas, there is as yet no question of multiplication; this can only be achieved by division, and one would as soon divide one's grandfather's corpse as an established clump of such a treasure.

It was with a light heart and a great sense of satisfaction that we slid and tumbled down Zempoaltepetl and endured the long journey home. Our mission had been successful despite the obstacles and we had enough tubers to give interested plantsmen, especially in England, where the Guatemalan form is grown in alpine houses. Since the Mexican form is said to be slightly different, it was with a sense of pleasure, if not pride, that we later dispensed some thirty sets of tubers along with gentian seeds to the great English growers, both individuals and botanic gardens. After all it is never easy for an American to give an English grower a plant they don't already have and how many weldenia from Zempoaltepetl had ever been introduced. One extremely capable grower went so far as to say he had never seen such healthy weldenia tubers before. All in all then, the 2,000 pesos had been worth it.

That tinge of pride should have tipped me off: inevitably trouble follows!

In the spring of 1982 the tubers left in Cold Spring began to grow with characteristic Commelinaceous leaves. As growth went on however the leaves appeared to be longer and thinner than I remembered. Another week passed and the growth was a good deal leggier than it should have been as well. Were we growing it right? Was the Mexican form that different?

It was just at this moment that my growing suspicion turned into panic. A gardening correspondent from England dropped a casual reference in a letter on another subject.

"We've been talking about your *Weldenia* over here!" - That was all he said.

Oh Lord! I could imagine what they were saying (and thinking). I wrote back hastily stating my own misgivings and begging for more information. As a fall back and desperately trying to salvage what was left of my newly established plant collecting reputation I inquired about the gentian seeds and expressed the hope that they germinated well.

A week later my English friend's letter was a coup de grace. My weldenia had turned out to be a commelina, and a rather scruffy one at that, even, if it was the rarely seen white flowered form of *C. tuberosa.*

"Too bad," my friend said, "but then these things do happen even to the most experienced collectors. And, by the way, your gentian has turned out to be a Monocot!"

The English have the most polite and graceful way of letting one down. Oh woe!

Well I *do* know the difference between a gentian and a monocot and how other seed became comingled with the gentian I'll never know. My feeble reply after these crushing blows expressed the hope that the Monocot would turn out to be *Tigridia seleriana* which the bulbs we

collected had indeed turned out to be and which was as choice as advertised if, typically, fugacious.

Commelina, the Day Flower! Farrer doesn't include it in the *English Rock Garden*, nor does anyone else for that matter and for good reason. 2,000 pesos for a weed!

I looked up Commelina in Dr. Stearn's Gardener's Dictionary.

Commeli'na f. Day-flower. Named for the Dutch botanists Commelin (Commelijn), Johan (1629-1692) and his nephew Caspar (1667-1731), by Plumier and adopted by Linnaeus, who while in Holland evidently learned of Caspar's son Caspar, the author of a Latin poem in 1715 but otherwise unknown. To quote Linneaus, 'Commelina has flowers with three petals, two of which are showy, while the third is not conspicuous, from the two botanists called Commelin, for the third died before accomplishing anything in botany.'

I know just how young Caspar felt! But then, once more, the value of those two homespun truths had been pressed home.

A little knowledge is a dangerous thing, and

Pride goeth before a fall.

At least that view from Zempoaltepetl, over the mountainous wilds of Oaxaca, can't be denied me!

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*Footnote - A little homework would have prepared us for the Mixe. Later on in Miguel Covarrubias' *Mexico South* (Knopf 1946) we learned the following:

"[Of all the Indian tribes of the region] perhaps the most rabid isolationists are the Mixe who live in the abrupt crags, ridges and upland valleys of the Sierras of Zempoaltepetl, the grandiose maze of Titanic mountains rising suddenly from the plains of Vera Cruz to a height of over 11,000 feet. The Mixe never submitted to anyone and have not tolerated the presence of strangers in their midst [we could vouch for that]; they are sheltered by the asperity of their territory and undeserved [?] reputation for ferociousness. Today they live unmolested by predatory strangers in their mountain fortress, where not even the long hand of government reaches them. No one ever visits them except for rare Zapotec traders and stray missionaries. [and the occasional ill-informed plantsman!] They govern themselves remarkably well, electing their own municipal authorities every New Year.

The Mixe are a sturdy mountain people, as rugged as their country, enduring the constant cold and dampness of the mountain tops forever buried under a sea of clouds. There are Mixe villages where the sun does not shine for months; in Totontepec [above Villa Alta and where we collected our first *Rhodochiton volubile*] they say that the year has three months of mist, three months of showers, three months of mud, and three months of all three.

. . . . . The Mixe suffer from a terrible ailment called onchocercosis, caused by a parasite that eventually brings on blindness. It is spread by an insect bite. It is reported that in one village . . . almost ninety percent of the people are affected. The brown skin of many Mixe . . . is mottled with clearcut pink, brown or deep blue spots - the dreaded pinta disease - the cause of which is a recently discovered spirochete also transmitted by an insect. [Whew! Gulp!]

[The Mixe] worship the spirits of lightning, of the earth, and of the clouds, to whom they make offerings of tamales, eggs, tortillas, candles of beeswax, incense, and the blood of turkeys and chickens, which they sprinkle on the earth to render it fertile or to make a boundary inviolable. [Their favorite] sacrificial place [is] the summit of Zempoaltepetl." Well, there's nothing like hindsight! §

Back to the Bog

Louis Budd Myers
Brooklyn, N.Y.

My childhood introduction to the rock garden was a neighbor's collection of large and outlandish concrete mushrooms arranged "naturalistically" (somewhat aesthetically if naturalistic cannot apply; there were no elves). They rose from among mats and masses of *Arabis albida*, cemetery-mounded *Phlox subulata*, *Aegopodium podagraria* var. *variegatum*, striped grass, hostas, and fountaining yews and junipers strewn over an extensive hillside of natural rock outcroppings and boulders in an order imposed upon nature that impressed me greatly.

I soon lost interest in the neighbor's new mode of landscaping because within a year or two weeds, invasive grasses, and tree seedlings began to diminish its glory, and I became involved in my own version of rock gardening at the family cottage, which stood in wooded isolation near the shore of a large pond in northeastern Pennsylvania.

Dismissing the ideal rock-garden setting at hand, practically outside the window, which embraced a spring, a swamp, and streams at the foot of a stony embankment, streams that flowed into the pond, the memory of which now makes the *mouth* water, I chose a spot to my liking and turned to dramatic imposition of rustic corries, runic cairns, and Stonehenge in miniature. To this seat of worship I brought the wonders of native flora, the lady slippers, violets, trilliums, small ferns, decorative grasses, hemlocks and pines that I called stunted, rhododendrons, mosses and club mosses, innumerable species that had merit in my eyes. Without thought of plunder I had miraculous success. It was a rough-and-tumble world unmolested by intruders and was overwhelmingly satisfying.

But the Earth turns and one does not catch a ring at each revolution. Years passed and, although the long-ago garden was a memorable thing, literature supplanted practice and the alpine world opened, book after book, as an incomparably sophisticated version of my early fulfillment. In an attempt to turn the word to action, I acquired a country place, again in northeastern Pennsylvania, for the main purpose of experimenting with growing alpines and other plants suited to rock gardening.

Starting plants from seeds and bringing them on has been the goal, sometimes satisfying, always interesting, but creating appropriate settings within a small rock garden has been the astonishing outcome of the needs imposed by the plants.

Memories of the swamps and rills of my youth, and of their untried promise, made the garden seem incomplete. My present garden is located in rocky, hill country on the edge of town and has no surface water nearby. Articles in issues of the ARGS Bulletin and sections in many books inspired me to create a small bog, a rather secret need to work with a seemingly primordial link, a need possibly opposed to the laboriously devised tufa cliff and the painstaking screes.

In a low spot in the garden I planted an old concrete-stoppered porcelain bathtub into which a rotted log was placed and thoroughly water-soaked peatmoss was shoveled. Above the tub on either side there are rather sharp inclines, and they are held back by naturalistic walls of large squarish rocks that edge the bog so that one is obliged to peer down into it at a level below the rest of the garden. Once again a manmade, cirquelike basin, almost unintentionally, came into my life.

The enthusiasm for collecting from the wild began, but this time careful cuttings of certain plants were gathered, and the bog took shape. Most of the plants that I have introduced, whether gathered, bought, or started from seed, have survived. The casualties have been few, chiefly plants that were buried and mangled by deer hooves; I woefully discovered, months after the rock garden was underway, that it was created in the path of a deer run. The garden is now fenced, a hateful but necessary limitation.

One of the first plants introduced, itself a minor reason for establishing the bog, was *Geum pentapetalum*, raised from a sole seed that germinated from a seed-exchange packet of many years ago. Before its bog days, the plant languished for several years in a wrongly calculated scree. Moved to the lip of the tub, so that its roots had access to both the supersaturation of the bog and a bed of sandy peat, the shrublet flourished, gnarling itself into a splendid bonsai. Its lines and compressed foliage added inspiratory charm to my vision of the garden. It was shattered by a deer hoof, and its parts proved to be unpropagative. New seedlings have replaced it.

The bog was sprinkled with bits of fresh sphagnum moss that grew to make a solid coverlet of red-rust and green tufts, much of which came to be studded with self-sown *Drosera rotundifolia*.

One of the most beautiful plants in the bog, in a raised area and its own gravelly pocket, is *Primula frondosa*, the leafy primrose, made up of velvet swatches in hazes of silver, at flowering time graced with a diadem of vivid rose pink.

Jutting up from one end of the bog is a hollow-centered stump, a jagged plinth, much less monumental than my Stonehenge, but a protective nave in which *Linnaea borealis* shelters. Against this base huddle *Streptopus roseus*, *Montia sibirica*, and a diminutive *Spiranthes*, as well as *Arisaema jacquemontii*, a surprise from seed sent by Mr. Ghose of Darjeeling. This is a tripartite single-leafed aroid similar to the pale form of *A. triphyllum* and rarely reaches a foot in height; were it not for the exotic fantasies that its Himalayan origins evoke it would add little to the setting. A find of this summer was a stand of pygmy *A. triphyllum*, the tallest plant being six inches. I wait with apprehension for time to tell whether or not the dwarfism is persistent.

A grasslike plant with irid traits appeared in the bog, which after three years flowered and revealed itself as *Xyris montana*. A small lily, *Tofieldia coccinea*, increases and now flowers profusely. *Rubus chamaemorus* persisted for three years, unflowering, its beautiful, crinkled, orbicular leaves diminishing in size in each succeeding year. *Dalibarda repens* flowers a bit and barely increases.

A mistake was the introduction into the bog of *Eriophorum viridicarinatum*. The parent plant, seen in stark isolation at the edge of a tarn on a Mount Desert Island mountain-

top, was an autumn sensation. A piece planted in the bog increased rapidly but, after three years, had bolled no cotton. Taking the sedge off things was a major surgery but a great benefit to the pride of the place.

Coptis groenlandica was another miscreant of hordelike reproduction, one which tried to rule the bog and had to be crusaded against and crossed off.

From the West, chiefly the Rockies of central Colorado, came *Caltha leptosepala* (which flowers, but not robustly), *Gaultheria humifusa, Juncus mertensianus, Primula parryi* (seedlings in a gravelled spot), *Ranunculus gmelinii,* and a completely prostrate form of *Kalmia polifolia var. microphylla* that raises on slight stems deep pink globs of bloom. From a hot-spring valley in Yellowstone Park came *Gnaphalium viscosum,* a curious plant which should be a weed, but one which nestles in the hollow of the bog stump, a wonderful cushion of gray, spider-haired, tonguelike leaves forming rosettes of sticky pubescence.

Perhaps the plant with the greatest charm, and one that attracts much attention considering its size, is *Laurentia minuta,* a wide-awake treasure that visitors have confused, cursorily, with other tiny plants, among them *Houstonia caerulea.* A member of the Campanulaceae, it is from Mediterranean marshes. A single plant may have many lobelialike flowers at a time, each flower springing three to four inches from a basal rosette of spatulate leaves, a marvel of bold blue-violet edging a prominence of whitewash on a trilobed lower lip, faintly yellowing at the eye, its two small upright pointed petals holding the color. Now and then a plant tends toward albinism. An annual with me, *Laurentia* seeded about, then disappeared, but has been reintroduced from seed. If one starts plants from seeds indoors under lights in the winter, as I do, *Laurentia* will give early spring color for it abounds with flowers within eight weeks after germination.

Flamboyantly flourishing plants which need some pruning are the small-leafed cranberries, *Vaccinium macrocarpon* and *V. oxycoccus,* invasive and entangling, but indispensable; *Gaultheria hispidula,* which buries its white fruit in the sphagnum; *Chamaedaphne calyculata* var. *nana:* and *Andromeda glaucophylla.*

Salix serpyllifolia may be the slowest grower in my garden as it plods its way each year. *Meehania cordata* creeps in and out of the bog, but is disproportionately big for this setting. *Rhododendron tsusiophyllum,* formerly *Tsusiophyllum tanakae,* from central Japan, has hurdled two winters.

The centerpiece of the bog is *Sarracenia purpurea,* with its bold, protecting petals that soon fade and leave a much too coarse but fascinating calyx and huge globose style, a plant that, happily, from time to time entraps slugs in its huntsman's cups and gorges itself upon them.

The bog, because of its moistness, is an ideal medium for seed germination and needs constant weeding. A therapeutic bit of time given here and there is a necessary effort.

After two or three years the main body of the bog tends to subside because of the breaking down and compacting of the peatmoss. This I rectify by sinking the blade of a long-handled, round-point shovel at the edge of the tub, gently lifting the bed soil and filling the space underneath the shovel with new, well-saturated peatmoss, then mold with

the hands the old, top material over the new until I am satisfied with the shape of the bogscape. I have done this more than once, and, although a few deep roots were exposed in the process, no plants have suffered. Where tiny plants huddle, I use a hand trowel, rather than a shovel, and employ careful manipulation.

The times of need for additional water coincide with those of the other parts of the rock garden and, in that I am chiefly a weekend gardener, sometimes a month-end one, the garden must and does adapt to my erratic presence. Good-natured waterers who live nearby lend a hand in emergency times of drought. §

Another Version of a Bog Garden

Judy Glattstein
Wilton, Connecticut

Unique habitats engender unique plants. Think of the incredible adaptations that have evolved so that cacti can thrive in the deserts, and epiphytic ferns and bromeliads festoon the tropical rain forests. One such unusual habitat, a little closer to my home, is a bog. A wetland environment, a bog is generally the result of the slow filling of a pond with plant material, where the conditions are so acid that decay does not take place; the dead plant material becomes peat, rather than humus. The plant adaptations required for survival include the ability to adjust to very low nitrogen levels; thus the insectivorous plants evolved. Another factor is the odd but interesting datum that a bog, while physically wet, is physiologically dry. The area is so acid that plants have difficulty in utilizing the water that is present. Therefore in a bog many of the plants have small, thick, waxy leaves, the same adaptation that is found in areas of low rainfall.

The first bog I ever visited, in northern Connecticut, impressed me on two counts. The first was how lush and verdant the area was, and second was the sounds we made while trying to walk across it. The squelch and suck of feet lifting clear of the mat of vegetation, and the slowly filling footprints of water, gave true indication of how wet a bog really is.

Next stage in my fascination was a visit to the garden of Paul Kiesling, in Massachusetts. He had built several artificial bogs, and the plants in them were thriving. There were pitcher plants, sundews, little bog orchids, all growing nicely in the habitats he had built for them. I had read of this before (see Vol. 39, pp 10-15), but seeing is believing, and I drove home determined to have a bog of my own.

The first step was to select a site for a bog. It should be in full sun. Next, if it was to look natural, it should be at a low point in the landscape. And thirdly, for an artifical bog, it should be within reach of a water supply; clear hot summer days will dry out any garden and necessitate watering. The spot I selected was at the foot of a west facing bank, in full sun, and was part of the lawn. If I had my way, we should have no lawn, so digging

up some of it was fine. A bonus was that the soil in that area is exceedingly sandy. This reduces the likelihood of animals and earthworms burrowing into the bog and upsetting things.

An artificial bog needs at least a ten square foot surface area. Bogs have a very high air humidity, and unless it is at least this size, evaporation at the surface is not sufficient to produce this. Depth should be at least fifteen inches, and mine is two feet deep, by a yardstick. The first problem in bog-building became quickly apparent. Who was going to dig this elephant trap? That was solved by hiring a strong high school boy for the manual labor. The second problem speedily manifested itself — where to stockpile the enormous mound of dirt coming out of the excavation? This is something that should be decided before the digging begins.

Problem duly solved, I eventually had a deep hole approximately five feet long, parallel to the slope, varying from two feet wide on the left, to two and a half feet wide on the right. The bottom of the excavation sloped from left to right, so that the water would run to the side farthest from the hose. Then the excavation was lined with polyethelene plastic. As this was not a pond, I did not want to make it water-proof, only slow draining. Therefore I used pieces of plastic that reached from side to side, but were overlapped to accommodate the length. The sandy soil was again a plus, since it meant that the plastic was cushioned against rocks and roots that might tear it. The edges were disguised with oak branches that had lost their bark and weathered to a driftwood grey, both lovely and rot resistant. Any chemical perservative might contaminate the bog, and damage the plants. Filling the bog was speedily accomplished by buying numerous bags of long fiber sphagnum at a garden center and dumping the contents into the excavation. Wetting the long fiber sphagnum was a good deal more difficult. Eventually it was accomplished, and then about two hundred pounds of coarse sand was added and mixed with the upper half of the bog, to provide some stability.

The hardest part of building a bog is planting the surface with a mat of living plant material. Live sphagnum moss is difficult to grow. Luckily, Paul Kiesling had said that haircap moss would also serve. Finally the moss took hold and it was time to plant. A bog is not a neat type of garden. The plants grow at their best in a community of grasses, rushes, cranberry vines. I had brought some potted orchids back from Massachusetts with me: *Calopogon pulchellus* and *Pogonia ophioglossoides*, which were separations from those in Paul Kiestling's bogs. I traded with other friends and got *Pectilis (Habenaria) radiata*, and *Spiranthes cernua*. Two *Sarracenia purpurea*, pitcher plants, graced the wetter end.

The bog was built in early summer. The orchids flower in mid to late summer, into September. I was delighted with the first season's growth. These were new and unusual plants to me, and I wasn't sure that I had correctly provided for their well being. The first bloom was encouraging, but winter was coming. Any plant could make it for a season, but could they establish themselves. The only autumn care was picking leaves off the surface and making sure that the bog went into the winter wet.

Next spring provided a marvellous crop of weeds. The sphagnum is a great germination medium for chickweed, oxalis, and almost anything

else. And then, slowly, from little green shoots unfolded the simple leaves of the orchids. When the buds formed, late in summer, all the preparation showed its value. For in the second season of growth both the *Pectilis radiata* and *Pogonia ophioglossoides* had increased the number of shoots they sent up, and the *Calopogon pulchellus* had doubled the number of flowers each shoot produced, from one or two the first year, to as many as four. Also, many of the flowers set seed. I don't expect to have orchids germinating in the bog, but I do consider completion of the growing cycle a sign of healthy growth.

A bog garden is a great deal of work. The site preparation is extensive. Weeding is constant. Watering in dry weather is critical. I am fortunate that my water comes from my own well, so that at least I don't need to worry about chlorine; fortunately, too, it is non-alkaline.

It should also be stressed that these plants are endangered in the wild and should not be subjected to any additional pressure through collecting except from those areas where their habitat is about to be destroyed. Many are threatened in the wild by development of the marginal land where they grow. While a tiny bog such as mine cannot begin to accommodate the hundreds of plants that can be destroyed by making a single parking lot, it can give insight and understanding of the unique growing requirements of these plants. If the plants grow and prosper in gardens, daily observations can give a better understanding of their growth than occasional visits to the wild. §

Rock Gardening the Unorthodox Way

The Semibog and Paper Walls

Alexej B. Borkovec
Silver Spring, Maryland

Diagrams by the author

Let me start with a question: Is it necessary to experiment when constructing a rock garden? After all, there are many well tested prescriptions in countless books and manuals, most of them good, sound, and almost guaranteed to bring you happiness. However, now-a-days we question everything. James Thurber, you may recall, even wrote a delightful story called "Is Sex Necessary?" True, some people may answer negatively to both questions but others won't. This article is directed to the others.

The site for a rock garden is seldom what it ought to be. Problems abound in countless combinations and each of us, formally or informally, keeps a list of specific obstacles that, when the time comes, can be conveniently used to explain why this or that did not grow right. Eventually, we may get sufficiently mad or desperate to actually try to do something about these problems. Since prescriptions are seldom available, one has to experiment, and two such experiments are described here.

The Semibog

The trouble with gardening experiments is that it takes a long time before one can declare success. With failure it is easier, but to find out whether a particular set of conditions was a favorable one and what exactly it was favorable for is a lengthy process. At the first ARGS Winter Study Weekend held in Washington, DC, I rather enthusiastically recommended the so-called raised semibog (Bull. ARGS 36:115-9 (1978). Let me just briefly repeat what a semibog is and what it is supposed to do.

A semibog is a bog with an added layer of a very porous soil. To construct a raised semibog (Fig. 1), one digs a shallow basin in the ground, reinforces the sides with firmly anchored stones, and lines the resulting cavity first with a layer of newspapers and then with a strong plastic, waterproof sheet. Filling the basin with water, peat moss, and sand will produce a bog — so one half of the job is done. The next part is to further build up the rim of the bog by adding a 30 to 40 cm. high wall around it's periphery and then fill this new cavity with a very porous, rapidly draining material: crushed stone, sand, and leafmold (3:1:1) seems acceptable for most purposes. This then completes the construction and you have a raised semibog.

What is it supposed to do? First of all, a semibog needs no watering, at least not in our area, and that I can confirm. Second, it eliminates penetration of tree roots into the bed. If the nearest tree to your rock garden is more than thirty feet away, you may not consider root penetration a problem, but the rest of us have a different opinion. The third point is not a problem but a presumptive advantage. Many plants, and among them are some of the most desirable ones, require constant moisture at their root endings but a relative dryness in their crown region. These ideal conditions a semibog approximates better than any regular rock

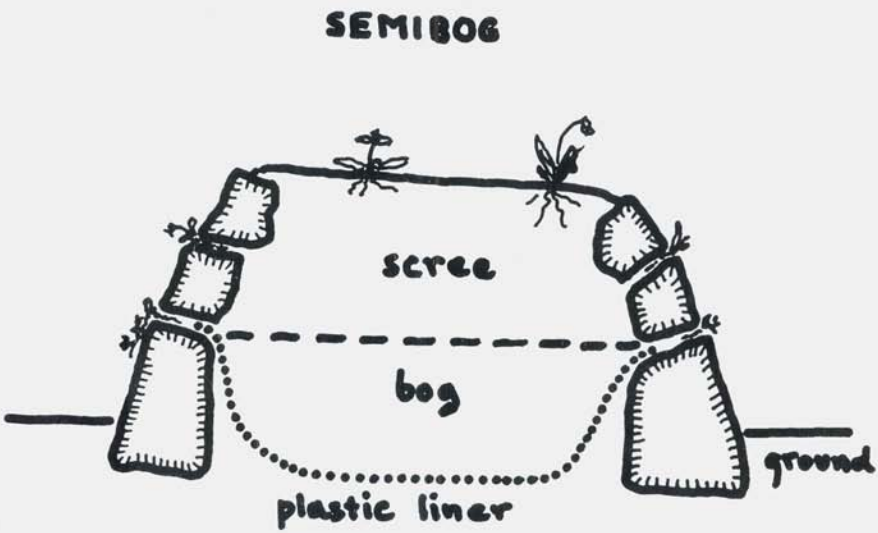


Fig. 1

garden bed. There are some other advantages, but let me stop here and return to the question of experimental results.

In general, my experience indicates that a semibog has few distinct advantages if it is located in a shady place. It dries and drains too slowly and though there are many plants that it will support, none are sufficiently unique to make the construction labor worthwhile. Nevertheless, even the shady semibog eliminates the root penetration and watering problems. The other extreme, a semibog in full sun, is unfortunately outside of my personal experience, so let us turn to a semibog in partial shade. Here my enthusiasm returns. A semibog with three to five hours of summer sun, longer exposures in late fall, winter, and early spring, is excellent for saxifragas, androsaces, douglasias, drabas, and European and Asiatic gentians to name just those genera with which I have had several years of experience and which are sometimes notoriously difficult to grow in our region. The somewhat less open areas of a semishady semibog are well suited for dwarf ferns and a variety of primroses. The only real disappointments that I should report were soldanellas, phyllodoces, western gaultherias, and some other ericaceous plants.

Paper Walls

The second part of this article may sound a bit crazy, but if behind each successful man there is a woman, then behind each craziness there is some rationale. Most of you who have seen the great British public rock gardens or have read some British garden books must have at one time or another considered the peat wall. A peat wall, strangely enough, is a wall made of peat. Peat blocks, apparently quite common and cheap in Great Britian are virtually unknown here, and that is where our rumination about peat walls usually ends. By the way, I don't think a peat wall would do well here; our summer heat, torrential downpours, and drastic winter cold waves would probably destroy it in no time — but let me continue. My reaction to a peat wall craving was a mixture of science and practicality. Peat is mostly a polysaccharide called cellulose; what else is mostly cellulose? A lot of things, but paper comes to mind most readily. Newsprint in 99.9% cellulose, it comes cut in rectangular pieces, which when placed one on top of the other constitute a block. Voila, a peat block. I must confess to an additional, more mundane and mercenary consideration, which played a significant role in my undertaking. All the stone I used in my rock garden had to be purchased from a quarry. Lately, the prices of stone have been simply fantastic but, on the other hand, we drown in newspapers. Well, putting two and two together I built a paper wall (Fig. 2).

Nothing can be simpler than constructing a paper wall. The newspapers are folded in half, stacked up, and allowed to age outside, for several months or a year. Newsprint contains small amounts of sulfur, a residue from cellulose production, and the combined action of rain and air will remove most of this highly odoriferous material. A shallow trench is dug where the wall is to stand and about 1 cm. thick segments of the newspapers are used as building blocks. Because aged newspapers are brittle and sticky, the stock should be submerged in water and the individual layers peeled off one after another. As Fig. 2 shows, the building blocks are the thin segments that overlap and

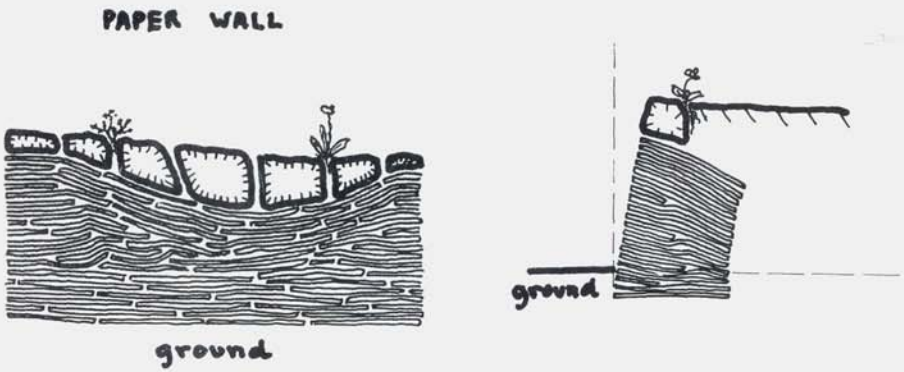
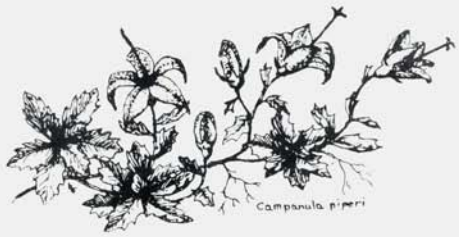


Fig. 2

thereby tie the entire wall into a single solid unit. I did try using large paper blocks placed one next to another but that wall was an esthetic and practical failure. Irregular overlap of the thin building segments causes rather pleasing effects reminiscent of aged tree trunks. Sharp corners should be avoided and the wall should curve gently with no projections. The paper should be laid with the folded edge to the outside. A definite, but no more than 15°, inward tilt (see cross-section in right part of Fig. 2), will minimize erosion and unsightly tearing of the surface. After the wall is built up to the desired height, the space behind it is filled firmly with ordinary garden soil reaching three to five cm. above the upper surface of the paper. A rim of larger stones may then be placed on top of the soil together with a final layer of fast draining material such as crushed stone and leafmold (1:1). I find this rim esthetically pleasing but it also serves a more practical purpose by preventing erosion and anchoring plants at the top of the wall. My experience, thus far limited to two years, suggests that exposure to full sun is undesirable. However, in partial to complete shade, the wall remained neat and may well last a decade or longer.

Before everyone rushes out to construct paper walls, let me present some sobering information on what you should and should not expect from your potential creation. Unfortunately, my experience indicates that very few plants will grow directly in the wall and none will really prosper. Since a paper wall is exceedingly dense and compact, plant roots will not survive in it, probably because of lack of oxygen. *Phlox stolonifera, Linnaria aequitriloba, Saxifraga sarmentosa,* and some sedums will survive for a time and may even bloom sparingly, but their growth is stunted and slow. Several types of mosses pressed into the crevices between paper layers have lived rather contentedly and imparted a pleasingly ancient look to the new wall, which a few weeks after construction turned from papery white to yellowish brown. However, the rather severe disappointment of being unable to grow plants *in* the wall was partly compensated by the luxurious growth of almost anything planted on top of the wall, between and under the stone rim. *Phlox adsurgens, Gaultheria ovatifolia, G. rupestris, Cassiope mertensiana, Primula auricula,* and a number of less difficult plants are now persisting through their second winter in apparently excellent condi-

tion. It seems that the paper wall, which their roots must have reached perhaps a month after planting, provided the desirable "cool root run", a very scarce commodity in our hot summers. Dwarf ivies and other creeping plants clothe the face of the wall throughout the year and some may even shallowy root in it. Attempts to include layers or pockets of soil in the wall were not encouraging but I have little doubt of other variations for which a paper wall may be suited. Further experimentation is wholeheartedly recommended, but be it as it may, I have yet to hear of a better way to use newspapers.§



Lewisia cotyledon Albino Forms

A long time ago I was told of a specific place in northern California where all the lewisias were said to be white. In order to verify this and to try for some cuttings, we went in flowering time. The lady not only knew her plants well (though she did not know their names), she could not have fabricated it, for all the plant associations, the soil and the exposure, all were precisely right, yet try as we did for hours we could find not a lewisia, not one.

The first albino *L. cotyledon* of record seems to be that found in 1959 by Marcel LePiniec, that intrepid searcher of the Siskiyou Mountains. Of this loveliest of white flowered plants, Victor Reiter wrote in Pacific Horticulture, Winter 1980-1, that it comes true from seed, and of course much further horticultural selection has been practiced among plantsmen, both here and abroad. Boyd Kline tells that he went with LePinec in 1960 to refind his plant and to look for more; they saw three and took one of them to propogate from. "With the help of Lawrence Crocker we soon had them world-wide. They came about 80% true and the others had only a faint blush of color."

The British and Scots who love our lewisias so well have given no less than three high awards in a single year to albino *Lewisia cotyledon* specimens, and have developed their own seed strains, which tells us something of just how really magnificent it can be, prized even above the colorful or (excuse it) blatant ones of their many strains.

— Roy Davidson
Seattle, Washington

Lewisia Hunting

Vaughn Aiello
Chicago, Illinois

Richard Turner, whom I met at the first Interim International Rock Garden Plant Conference in 1976, turned out to be the head landscape architect for the University of Michigan in Ann Arbor. We quickly became friends and when he moved to California, where he worked at the Strybing Arboretum, he persuaded me to visit him in the fall of 1980. While I was there he convinced me to attend the Western Study Weekend of the ARGS, and since the Eastern Study Weekends had provided me with so much enjoyment and information, I decided to attend. A stop at Siskiyou Rare Plant Nursery cemented a friendship started by telephone with Jerry Colley and Baldassare Mineo and the three of them convinced me to go West for the winter. Once there I met Roger Raiche, a plant collector for the University of California at Berkeley. Richard, Roger and I then made plans to visit a few lewisia stations in the wild. This was set for the period around July 4. Thus started our lewisia hunt.

The morning after my arrival from Chicago, we met, packed the car, and started the six hour drive to reach Cook and Green pass in the Siskiyou Mountains. Since neither Roger nor Richard could remember the route exactly, there was a certain amount of bemusement when the road gave out and became a network of loggers' trails, however we eventually reached the campsite and made a quick survey of the ridge. This station proved the easiest to reach of all the stations we went to. We soon found many plants of *Lewisia cotyledon*, but all were out of flower and the seed already gone, though Richard did find one blossom just off the path as we returned to camp. We figured we were about two weeks late for the best bloom. A year earlier, we would have been a week too early and probably would have encountered some snow and storms.

We set up camp in two tents under some *Picea breweriana*, made coffee and prepared our first meal. This was going to prove interesting for me as I had grown up on the prairies of Illinois, but had always come home to sleep. I had later explored fairly widely and made some brisk climbs, but I always had had some warm place to spend the night. Even two summer camp experiences as a child, sleeping in tents in Indiana, did not prepare me for sleeping in a tent in the Siskiyous.

Cook and Green pass is just that: the lowest point between two mountain ridges. On the southeastern slope the air was warm and dry, while on the northwestern slope the air was cool and laden with moisture. All night long the two currents met over the campsite. The warm air moving up hit the cold, moist air and created a constant dripping. The tent was pitched right on the drip line where it was cold and damp; ten feet over and we would have been cold, but

dry.

Breakfast was invigorating, however, and prepared us for the day ahead. A quick survey of the misty side of the pass showed it was extremely rich in woodland plants, reminding me of the dense wooded areas of Illinois and Indiana. The drier side hosted a completely different plant community and reminded me of the dry scrub forest of the Yucatan Peninsula of Mexico. Another visit to the ridge confirmed our findings of the previous night, though with better light we located some *Lewisia leana*. We therefore decided to hike to Red Butte to see if we'd have better luck.

The day was extremely sunny so we walked in dry, 60 degrees F. weather. The logger's road was terribly rough, passable only for a four-wheel drive vehicle. It went along the side of the mountain which butted the pass. Once we reached the summit where the road turned, we could view Mt. Shasta and a wide expanse of mountains. There also was Red Butte, a five mile walk away along the road, which here received a level wind around the mountain's crest. About half way between where we stood and Red Butte we could see the mist sweeping up from below and being met by the dry air. It was then I realized why the road was placed on one side of the pass rather than the other; someone else also preferred dry sunlight to damp shade. After passing Lily Pond Lake, we lunched, while Roger, who had brought along a rather large book on the classification of California flora, keyed out many of the plants that we had encountered on the way. Roger proved to be energetic and scientific all in the same breath.

Once reached, Red Butte was inherently beautiful — sculptured and host to many *Lewisia cotyledon*, again all out of flower. They were growing in what appeared to be nothing except rocks fragmented by frost, sun and wind action; there was no traceable amount of soil to be found anywhere. We found them growing in fully exposed areas of rubble and in deep fissures on vertical slopes. This proved to be the situation whereever we found lewisias. Disappointed not to find any in flower, we made the three hour walk back to the campsite and car and decided to pass up Alex Hole because of the nearness of that site and its presumed lack of bloom.

When we arrived at the Siskiyou Rare Plant Nursery, the welcome from Jerry and Baldassare was great, but the warm dry beds they provided were even more appreciated. The next day they took us to Rabbit Lake where they both said the lewisia station was right off the road — another loggers' road, but this one in better condition. We did drive right up to the area, but once out of the car we just stared at the steep slopes; vertical was the only word that can be applied to this site. Small gullies, ripped open by water action and covered by tree limbs, proved the only access to the summit. Only after a two hour climb, during which we pulled ourselves under trees, through dense scrub, and stirred up small landslides, were we able to reach the place where the lewisias grew. But once again we could find only two in flower; other than those the area was all bloomed out. No seed had been collected here before our arrival and considering the approach to this site it was no wonder.

A small pond, inhabited by numerous salamanders and surrounded by tall cedars created a perfect situation for our delight. We all laughed at

the description of this station as being right next to the road, but sure enough, a little later we were able to see the car — approximately three hundred feet directly beneath us.

Going down with camera equipment was nothing short of a nightmare. Only laughing at our situation helped when we would reach a place where a straight drop-off forced us to turn around and beat our way back up in order to find another possible route of descent. Once we reached the car and lunch, our recent struggles could be better enjoyed. We also discovered that only good solid, but old boots should have been worn for this expedition as the leather of our footwear was deeply scratched, even torn in several places, as a result of the rough going.

Several days later we left our friends at Siskiyou and headed home to San Francisco. We decided, however, to make a stop at Mt. Eddy on the way as this was Roger's favorite mountain in this particular area and since he knew it well, we all agreed to do the trek. As we approached Mt. Shasta, Roger made the turn-off and this time he really did know the way. We hit the loggers' road about two hours before sunset, located our campsite and then went back to check an open exposed ridge we had passed on our way in. Again it was too late for the best bloom, but we marveled at the variety in this plant community, though there were no lewisias of any type. The view was superb.

Upon our return to camp, we prepared a slight meal, and after the others had turned in, I remained beside the fire to keep warm. The temperature kept dropping and I kept moving closer and closer to the fire. I was truly miserable. A full moon illuminated the cloudless, star filled sky against which the trees on the mountain ridges were black silhouettes. At one point I was so close to the fire that when I moved my leg I burned my knee against the hot fabric of my pants. I lept to my feet and found I had hoar frost on my hair. Back in Illinois, when the day is warm, the night is but a few degrees cooler and camp fires are used only for cooking. My whole view of camping in the mountains is rather dim after that night and I give the highest praise to plant and seed collectors working the mountainous regions of the world.

Day finally dawned and heat started moving back up the slopes. A hearty breakfast did much to raise my spirits and we started our hike, moving up the slopes of Mt. Eddy with the heat. Signs of animals occurred everywhere and we stopped to watch a pair of Western Bluebirds at their nesting site. The plant community proved to be extremely varied and after three hours of climbing I discovered a *Lewisia leana* in full bloom. We celebrated with an elegant lunch of tinned crabmeat, cheese and avacados on crackers followed by sliced oranges. As we lunched we found we were surrounded by hundreds of *Lewisia leana* in full bloom. I collected seven of these and as of this writing they are still doing quite well in my garden in Chicago. There were also quite a few Phlox species in bloom. Roger located many other genera in this wonderful area. It was midnight before we arrived in San Francisco.

Some observations about lewisias in the wild might prove helpful to anyone trying to grow these plants. They were all at high elevations near or slightly above timber line where they could enjoy as much sunlight as possible. None were growing at lower

elevations in anything resembling shade. On open exposed fellfields and clinging to the sides of these areas they could live without competition except from the occasional penstemon that was able to survive on the windswept slopes. All exhibited signs of having been hit by hail. As soon as the snow melted, if indeed any snow had managed to settle on these windswept fellfields, the plants received the heat of the sunlight, probably followed by hoar frost or freezing temperatures at night. Since our trip was in July, I am fairly confident that these conditions prevail almost every day until autumn snows give them some degree of protection.

The three plants of *Lewisia cotyledon* we found in bloom — one from each station, none at Red Butte — all had the same washed-out pink, candy-striped flowers. Much better flower color and a wider variety of form have been selected from cultivated plants. As mentioned and pictured in plant journals, *Lewisia cotyledon* in cultivation appears to be larger and healthier than any we saw in the wild. Both English and Western American nurseries have demonstrated that these plants come easily from seed and respond well to being fertilized; they do not have to be grown as they do in nature. Rock and gravel around the top inch or two of the caudex or crown seems to be the most important factor. They certainly need no major protection in winter other than snow if there is any. After flowering they set seed in the garden. In Western American nurseries I have seen lewisias lined out by the hundreds, so many, indeed, that I have wondered when the baby boom of cultivated lewisias would create a world surplus. With such easy access to nursery grown plants, it appears to me that there should no longer be a need to collect lewisias from the wild.§

Pleiones

Molly Grothaus
Lake Oswego, Oregon

Photograph by the author

Pleiones continue to grow in popularity and at the Alpines '81 show had two classes to themselves. The display of Dr. D. J. Harberd with many pans of pleiones, each with dozens of blooms, well deserved the gold medal it received. We skipped one lecture in the main hall in order to see the show in the exhibit hall leisurely and let me photograph the plants we particularly liked, but it turned out that the best part of that hour was the chance to have a quiet conversation with Dr. Harberd.

As Jim Archibald pointed out in his talk "The Introduction and Maintenance of New Plants", pleiones have not always been popular. Tropical orchid growers, to this day, ignore them. Farrer doesn't mention them; Sampson Clay dismisses them as "too magnificent" for the rock garden. That attitude has changed during the last twenty years for rock gardeners, perhaps because of the increasing popularity of pot shows. But some plei-

ones, especially the yellow-flowered *P. forrestii*, remain expensive and hard to come by.

"Pleiones have been freely imported from Taiwan and from India for many years, but the center of diversity of the genus with its finest forms is mainland China most notably the the province of Yunnan. Until recently only five pleione plants from mainland China (all collected about fifty or more years ago) have been available for cultivation," Dr. Harberd noted, "and all of these five species were represented by only a single clone apiece."

All plants of *P. forrestii* in cultivation were, until 1979, decendents of a single clone collected by George Forrest in 1925, according to Dr. Harberd, and this original introduction has since been proved to be a hybrid, thought earlier to be a cross between the true *P. forrestii* and *P. albiflora*. These plants should now be referred to as *P.* x *confusa*. The true *P. forrestii* was recently collected by the 1979 Sino-British Expedition to Yunnan.

P. yunnanensis has been in cultivation in Britain since 1904, however several new collections of this species were made in Yunnan province in 1979 and since then all these plants, including those previously named *P. yunnanensis*, are now referred to as *P. bulbocodioides*.

In 1908 a single clone of a species named *P. pogonioides* was collected by Wilson in Hupeh province. Not until 1980, when Harberd and Haw found it again on Mt. Omei, was a second clone of this plant collected. The type plant of *P. pogonioides* is not now considered to vary significantly from *P. bulbocodioides*, and has been lumped with this species. *P. formosana* is also now considered part of the *P. bulbocodioides* complex.

Pleione bulbocodioides in the Berry Garden

Both the common and the pink form of *P. limpichtii* are from single plants collected by Smith in 1932, but now some authorities consider this species also should come within the confines of the same highly variable species *P. bulbocodioides.*

It might seem from the above that almost all pleiones have been thrown into the one pot, *P. bulbocodioides,* but there are nine other species besides the bulbocodioides complex. Twenty-two species and hybrids are represented in the beautiful color plates in the recently published "The Genus Pleione," an issue of Curtis's Botanical Magazine devoted entirely to this genus. This excellent publication contains much interesting new information, including numerous line drawings and distribution maps in addition to the magnificent plates. It is available from the Alpine Garden Society.

While the pleiones survive in a cool spot in the garden, it is difficult for most of us to achieve the flowering seen in the outdoor bed at the Berry Botanic Garden in Portland, Oregon. Even though they are found in the wild in a shallow amount of soil or debris, often on rocks or the lower part of tree trunks, pleiones are not true epiphytes. Success is easier if a shallow, well drained pot is used and the equivalent of cold frame protection is given in winter.

Here is the method Dr. Harberd uses to grow the species and his many beautiful hybrids to perfection: "Mix equal parts of coarse bark chips, fine bark chips, perlite, ordinary peat, coarse peat and either composted forest bark or another part of peat. The pseudobulbs are set into this compost just far enough to hold them upright. When the shoots are one inch high in spring, set the pot under water until bubbles stop coming up. Wait twenty-four hours and set the pot under water again. No water for a month; then only a trickle is needed."

I found it better to set the pot in water not quite up to the rim when watering pleiones, as part of the bark has a tendency to float out if the pot is set completely under water. Later in the season when the foliage begins to die, gradually quit watering and let them rest until growth begins again.

The *Pleione bulbocodioides* growing outdoors in the Berry Botanic Garden are planted in a raised bed under large rhododendrons. The mounded soil in the bed consists of half leaf-mold and half bark chips with the admixture of some sand. The bed is covered with about six inches of leaves during the winter with a few boughs to keep them in place. Remember that Portland, Oregon has a fairly mild climate with open, wet winters and cool, dryish summers.§

Portions of this article appeared in the June, 1983 Newsletter of the Columbia-Williamette Chapter of the ARGS.

Compulsion

Judy Glattstein
Wilton, Connecticut

A short time ago, my husband and I celebrated our twentieth wedding anniversary. As we lifted our glasses in a toast, I left myself wide open by asking, "If you could change one thing about me, what would it be?" And my

husband replied, "Your obsession with plants!" I sat there, wondering if our first twenty years were also going to be the only years. But then I decided to take the comment in light of its source.

To say that my husband is uninterested in plants is putting it mildly. He has an engineering mind: happiest with lists and mechanical marvels, not the naturalist's world. When we went to Holland for the summer, accompanied by our two children, my dachshund and two cats, he never complained. When we returned, two months later, with the aforementioned plus two Greek tortoises, seven and a half kilos of flower bulbs, some rhododendrons and other plants, he tried to beat a hasty exit, only to be told that his landing pass said 'and wife' and he could not leave without one. I cleared public health, I cleared agriculture, and we approached customs. There really wasn't much room left to write on the landing pass, so that went fairly quickly. The agent asked if I were a biology student. "No," snarled my husband "she's insane." I suppose it depends on your point of view.

Can I help it if plants seem to leap out at me from all directions? When we attend a conference in Chicago — all petrochemical engineering or something like that — if I visit a fellow ARGS member rather than go on tours for the ladies, and that fellow gardener wants to give me plants, how could I, in all politeness, refuse? So there were some stray bits of dirt around the hotel room. That's why they have maids, isn't it? And the plants fit into my handbag, — well, sort of. It wasn't as though I wanted to put them in the suitcase or anything.

And it is true, that when we lived in Norwalk, Connecticut four years ago, on a tiny, tiny (sort of small) lot, which I quickly overplanted, when I told my husband that we had to move, or I'd plow up the driveway, we moved. It was only a gravel driveway, it would have been easy to plow. Anyhow I had the garage so full of things, his car hadn't been down the driveway in years. But that would have been a stop-gap measure at best.

You do need priorities. When it was time to move, it seemed only logical (the engineer should have approved, but I guess not of my kind of logic) to dig the plants I was taking before I started to pack.

If the October 1981 issue of Natural History magazine is all about Keeping Warm — a special issue on surviving winter's worst — and out of twelve articles one is on flowers that make heat while the sun shines and the writer mentions *Trillium nivale* and *Anemone patens, Dryas integrifolia* and *Papaver radicatum,* he is speaking my language, not talking dirty as my husband puts it when I use Latin names. Or when another article, in the same issue, about plants in high places is dealing specifically with arctic-alpine plants, true love of all the rock garden societies, should I read about keeping our family warm first? If a student in a class I'm teaching at the New York Botanical Garden brings me a small walking fern, because, he says, "For you, this is better than an apple," isn't he showing a true understanding of my likes?

There are only two things about gardening that my husband is adamant about. The first is "Thou shalt not cut down all the trees." I only want to get rid of the weedy, scrubby, too-much-shade trees, and besides, we have a wood-burning stove; you'd think he'd be grateful. The other rule is "Thou shalt not get rid of all the

lawn," but he didn't say to fertilize it. And besides we're on a well and he really doesn't want to strain its capacity in the summer by watering grass. One must always consider the alternatives.

And, I suppose, if you really aren't interested in plants, his comment, "You'd have plenty of room in the refrigerator, if all you kept in it was food," might seem sensible. But there are all these pots of cyclamen and arisaema I want to trick into an extra dormant period, for two seasons growth in one, and where else can I keep seeds nice and cool.

But suppose he did like gardening; he might want to grow plants himself — and in my garden. Better he should work on my alpine house, or wire up grow-lights and timers. I cook and do laundry, don't I? Fair is fair.

Guess we'll just have to work it out and see what the next twenty years have to offer, together.§

The Complete Shade Gardener
by George Schenk, 1984. Houghton Mifflin, Boston, Mass. $24.95

George Schenk's latest book *The Complete Shade Gardener* begins with a step by step description of a tour de force transformation of an unpromising, ugly corner into a "shady den," a tiny part one supposes of a larger garden built around his house. When we visit other people's gardens we inevitably have the urge to rush home and work on our own. This is often brought on by recognizing that the owner has solved a problem which resembles one of our own. This book not only hits us with an idea but tells us just how the author set about solving the problem and realizing the idea. The author continues with more general instruction on how to handle the preparation of a variety of soils, how to plant, prune and how to cope with garden pests. He ends the first part of the book with a quicky review of the year's gardening activities and some enlightening definitions of various types of shade.

The writing is spontaneous and friendly; Mr. Schenk happily shares his opinions as well as his expertise. His experience is clearly of long duration and seems to have been gathered from a number of very different geographic locations. Most garden books seem to cater to English gardeners with occasionally Northeastern U.S. gardens emphasized. It is refreshing to read a book with a distinct slant towards Western gardens. It is refreshing to be reminded again of the variety of gardening situations in the United States. If you garden in the Northeast there is still a lot you can

learn from George Schenk even though this is a region that gets less well noticed in the text.

There is a rather broad definition of shade taken when we get to the lists of plants suitable for a shade garden that comprise the second part of the book. Perhaps anything that grows in Washington state qualifies as a shade plant?

First we have a useful tree list which points a finger at the villains as well as praising the more desirable shade-providers. Just the same it would be advisable to check for hardiness in your own garden by referring to a more detailed analysis, or at the very least consulting a local nurseryman. The same caveat holds for the list of shrubs; there is a heavy emphasis on rhododendrons, again betraying the author's West Coast roots. A list of groundcovers, ferns, and then perennials follows. A few of these can only be included as shade lovers by stretching the meaning to include somewhat shade tolerant. The plant lists end with a necessarily brief but unadventurous collection of annuals.

This is not a book on creating a woodland garden as you might expect from the title. Also there is very little specifically for rock gardeners. However, very few of us are single minded enough to restrict ourselves to alpines. We all have some shady areas, and if we don't now we shall have in ten years time; here is a book that will entertain and inspire us all when this "problem" arises. The illustrations are mostly photographs by Don Normack and do justice to the text and the overall nice "feel" of the book.

— Geoffrey Charlesworth

Rock Gardens, Informative Bulletin 159
by Jerry S. Stites and Robert Mower.
New York College of Agriculture and Life Sciences, Cornell University, Ithaca, N.Y. $3.00

This "Informative Bulletin" replaces the former publication *Rock Gardens* also published by the N.Y. State College of Agriculture, now out of print, and would make a good start for the beginner. It is 8½ by 11 inches in size with pictures in color. There is a quantity discount available.

— H. E.

. . . of Cabbages and Kings . . .

As the northeastern quadrant of the United States slips inexorably toward the winter solstice the green of our fields, swamps and forested hills fades almost imperceptibly from day to day as though the rich color was being overlaid by a tarnish. Yet even as the green dims a new light creeps across the stage and, as it strengthens, the landscape begins to brighten again, but now transformed, no longer green but glowing with hot color: lemon and gold, scarlet, purple and crimson, which spreads and swells to an almost unbearable incandescence. The very air is suffused with its reflection. "Let fall no burning leaf", whispers the poet and we hold our breath lest even the faint draft of our breathing shatter the beauty.

But it cannot last. The light thins and pales and the curtain falls and we, still bemused, sigh and rustle to our feet to return to the everyday, work-

aday world.

But would we, if we could, choose to live in this magic world forever? I think not. Soon our sensibilities would be exhausted by this flaming landscape; we would long for less vibrant colors on which to rest our eyes just as a wanderer in the desert must long for the cool shade of a grove beside a spring. And just so we must remember, in our anxiety to have color in our gardens, that green, too, is a color and perhaps the most important color of all.

Green is the color of life. It is the green things in this world that nourish us and create the very air we breathe. It offers, too, the peace and rest we need. In the dog-days of summer we seek the cool, ferny, green places to escape the hot, brilliant light. A jangle of colors may briefly excite us, but the eye soon becomes jaded with no place to rest. The loveliest blossom is lost in the kalaidoscopic tangle.

So when you plan your garden, first think of green. Green is the frame that gives shape to your landscape and its subtle variations enhance the colors of the flowering plants. Deep blue-green gives a more vibrant glow to hot orange. Gray-green will tame the most vicious magenta. Pale yellow-green lends a richness to purple. Blue flowers acquire a jewel-like brilliance when set among silvery foliage.

We make white gardens and blue gardens, pink, lavender and purple gardens and gardens in hues of yellow, gold and orange. Why not a green garden? Blossoms are fleeting and soon gone, while you can have green in your garden throughout the year. Consider an evergreen garden to walk in or just to look at through the window to remind you during the cold, dead months of winter that there is still life in the earth and it will burgeon once more. Or plant a green garden for summer in which to enjoy the coolth and shade on glaring hot days.

Green gardens are not as easy to create as one might think. Multicolored flowers can cover a multitude of mistakes in garden design by distracting the eye so that it overlooks clumsy proportions and awkward shapes. Shape and proportion must therefore be even more carefully considered than in a flowery garden in which the season of bloom and the combination, juxtaposition and balance of the various flower colors are frequently the prime concerns.

In a green garden the shapes and textures of foliage are as important as the various shades of green. A planting of solid hemlocks, or large leaved rhododendrons, or pines is monotonous and can even be depressing, but a combination of their contrasting foliage can delight the eye. On the other hand a helter-skelter mixture of plants with undistinguished leafage, such as that of average garden perennials or deciduous shrubbery, is equally dull and tends to be confusing to the eye and appear merely weedy and messy. Bold contrasts in the shape, size and texture of foliage placed in well apportioned swatches are best suited to the primarily green garden.

For the shady garden consider the feathery fronds of *Dryopteris intermedia* and the lacy whorls of *Adiantum pedatum* combined with the broad planes of a few hosta and groups of the graceful ladder-like wands of Solomon's Seal against the glossy foliage of Mountain Laurel or pieris; the intricate foliage of astilbe set off by the rugged polish of bergenia and the clustered lances of *Clintonia borealis* or *C. umbellata:* the neatly pat-

terned leaves of *Hexastylis (Asarum) shuttleworthii* or *Cyclamen purpurascens* in contrast to the tufted lacework of *Aruncus aethusifolia* and the soft furry rosettes of *Primula kisoana;* the polished leather of shortia, be it *S. galacifolia, S. uniflora,* or *S. soldanelloides,* with the delicate tracery of *Gymnocarpium dryopteris* rising from among the tangled skeins of *Mitchella repens* or *Linnaria borealis.* The permutations are endless.

For rock gardeners, whose plants tend to blossom in spring and early summer, the textures, shapes and shades of green in foliage are of vital importance and rock gardeners are fortunate in that so many of the plants they prefer have interesting leaves. In fact some, such as the huddled masses of sempervivums, are more attractive without their gawky upthrust of flowering stalks. Even the saxifrages, lovely as they are in bloom, present, perhaps, an even greater attraction when flowerless; there is an almost irresistibly touchable quality to the tight cushions of intricately patterned rosettes. Many rock garden plants also have the advantage of having foliage that is evergreen and with rocks to set them off can be as enchanting, if more subtle, out of season as in the full flush of bloom.

For a moist, well shaded nook nothing could be much more appealing than a mossy limestone rock, set beside a tiny pool of water, planted with a few lacy cowlicks of Maidenhair Spleenwort *(Asplenium trichomanes),* the rugose penwiper rosettes of *Ramonda myconi,* and the slender, creeping, pale green strands of fleshy leaves and stems of the shade-loving, Eastern native *Sedum ternatum;* or a rocky pocket, filled with leafy soil containing a small clump of *Athyrium japonicum pictum* footed by the fairy foliage of *Thalictrum kiusianum* and the tripartite leaves of a few trilliums.

The variety of leafage in rock garden plants that like sun or light shade makes for an even wider possibility of striking combinations. Buns, pads, mats, tuffets and shrublets in every shade from almost black through emerald to sunny golden-green, from "blue" to "silver" and sheened with bronze; striped, stippled and splotched. There are plants with leaves of all shapes and textures: hairy, felted and furry, crinkled and smooth, matte, succulent and glossy; grasslike leaves and leaves dissected into hairlike segments; leaves that are toothed, lobed, and imbricated. There is foliage that invites the touch and leaves as prickery as a sea urchin, crisp leaves and feathery leaves and leaves as stiff as wrought metal.

As you clean up the garden this autumn, even though the foliage is past its best, pause to examine the leafage of your plants. Note the delightful variety of its embroidery over the soil. Seek out plants whose leaves compliment each other in the contrast of their shape, texture and color. Then you need not mourn if your *Aquilegia jonesii* refuses to bloom; enjoy its tuft of silver-blue filagree. Don't fret because guests arrive in mid-summer to see your garden; let them admire the rich brocade of the foliage undistracted by a clutter of bloom.

Inevitably some blossoms will mar your tapestry of green. These you can either consider a bonus or accept philosophically — after all they don't last very long. Or, of course, you can always cut them off.

• • •

I now bid you adieu. This is my final "Cabbages and Kings" and my final issue of the Bulletin. It is suit-

able, I think, to start our 51st year with a new editor with new ideas. Sharon Sutton of Seattle, Washington will take over most ably; she comes to the editorship well prepared. You are all familiar, or should be, with the superb job of editing she did on *Alpines of the Americas*, the Report of the 1st Interim International Rock Garden Plant Conference. In addition, Sherry is the daughter of Albert Merle Sutton, Editor of the Bulletin of the American Rock Garden Society for 13 years and though Sherry has never said so, I'm sure she helped her father many times, particularly during his last few years. So you see the Bulletin is in good hands and I hope you will be as kind to Sherry as you have been to me.

Before I turn over the editorship to Sherry, I wish to thank you, my readers, for your encouraging notes and remarks, and I particularly want to thank and, yes, bless those of you who sent in articles either on your own or in answer to my letters. You are the ones who created the Bulletin and it is to you the membership should tender thanks. I also wish to apologize to my authors for the frequently prolonged delays in the appearance of articles you sent in and thank you for your patience. It was only by planning issues many months, usually over a year in advance, and collecting a good backlog of material with which to work that I was able to do the job at all. And I wish to assure those authors whose articles have not yet appeared that these are being turned over to Sherry so that she will not have an empty cupboard as she starts her editorship.

I truly enjoyed being editor (mostly). It was exciting, stimulating and creative and I made many new friends — though some I have yet to meet in person. I learned a great deal about plants and plantsmanship during my stint as editor, but mainly, I learned, what I always suspected, that the members of ARGS are extraordinarily wonderful, enthusiastic, generous people with many and varied skills and talents that they are eager to share. Thank you all. May your seeds all germinate, your plants thrive and your gardens burgeon.§

— Laura Louise (Timmy) Foster

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