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THE BULLETIN

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Ice Lake, Wallowa Mountains
Phil Pearson, photographer

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VOL. 43 SPRING 1985 NO. 2

Bulletin of the American Rock Garden Society

ARGS Members Visit Japan

Clara Benecke and friends
Cliff and Luella Lewis
Helen and Joe Moodie
Seattle and Mercer Island, Washington

It was immediately apparent that we were in a foreign land: signs were printed in beautiful calligraphy; all traffic moved on the left, as in the United Kingdom; the *yen* was the monetary unit. English was understood best in the larger cities exposed to international business and travelers. However, there were friendly smiles that bridged the gaps of culture, customs, and language.

In spite of the excellent freeway through the farmland and rice paddies around Narita Airport, two hours elapsed before we arrived at the Palace Hotel. There, only an avenue, a moat, and a landscaped garden separated us from the Imperial Palace.

Twenty-two members of ARGS from ten chapters jumped at the chance when the extraordinary opportunity arose to explore the mountains and flora of Japan on Honshu Island in July 1983 escorted by Harold Epstein and his

delightful wife Esta who have traveled in Japan for about thirty years. We were most fortunate also to have the assistance of the Japan Alpine Rock Garden Society to help plan the itinerary and personally guide us to areas most prolific in alpine rock plant material.

The clean, comfortable motor coaches that were provided for most of our tour were new. The drivers and hostesses were efficient and helpful. To our delight, during the long stretches of farmland through which we drove on occasion, the hostesses would sing Japanese folk songs with or without taped background music. Some passengers took advantage of their free time on the road to practice using chopsticks.

Our affable, patient interpreter-tourleader, Tochio Ozeki, whom we called Toshi, was knowledgeable about trees, shrubs, and flowers but never before had encountered a group that was primarily interested in alpines. He endeared himself to us when upon parting he said, "These little mountain flowers get close to your heart."

Fog and rain are to be expected in a mountainous land which is completely surrounded by water and is approximately the size and shape of California, so we ignored the light drizzle that cleansed the air and settled the dust as we began our exploration south to the seaside resort Kamakura to visit the Daibutsu (Great Image of Buddha). This is the second largest bronze Buddha in Japan and was cast in the year 1252. We found the surrounding evergreen gardens and groves of huge, treasured pines and cryptomerias just as interesting and beautiful as the Buddha.

Our next destination was west toward the mountains and Fuji-Hakone-Izu National Park where we had lunch at the Fujiya Hotel. For more than a century this hotel has catered to travelers from every corner of the world. Celebrities, heads of state, generals (even Japan's Tojo) have slumbered within its towering walls. Movie-goers would recognize the hotel from scenes in the film *The Bridges at Toko-Ri.* Spies sought safety at the hotel in the closing days of World War II. Pamphlets had been dropped by the allies promising that the Fujiya would not be bombed.

In the Fujiya Hotel garden, colorful fish were swimming in a pond below one of the many waterfalls. A sign nearby reminded visitors, "On a Diet — Don't feed Us," signed "The Carp." It is a ritual with travelers to sip tea in the hotel gardens and gaze solemnly up at Japan's most sacred mountain. Should one fail to catch a glimpse of this snow-capped wonder, one is coaxed to wait. Unfortunately, time did not permit us to linger. One of the nice rituals that took place here was repeated often in smaller hotels. The entire staff of the hotel assembled at the entrance to wave goodby to our departing bus.

The Hakone Art Museum and its Moss and Rock Garden at the elevation of 1800 feet were well placed for viewing under the prevailing weather conditions. The hushed beauty of the fog drifting through the delicate leaves of the maples (*Acer palmatum*) gave motivation to whisper and tiptoe softly lest one disturb the tranquility that the Japanese create so successfully with moss, sand, rocks and water, shrubs and trees. The mossy groundcover looked

like velvet. Originally 145 different varieties of moss had been collected from all over Japan for this garden, but less than fifty have survived. A woman was bent patiently over the mossy carpet painstakingly removing weeds with a one-tined tool and using a basket as a receptacle.

The naturalistic rock garden was most impressive with its massive rocks encrusted with lichens and moss interspersed with many native herbaceous plants and shrubs. Some of the azaleas and particularly an extensive downhill sweep of *Enkianthus perulatus* had been pruned into a dense undulating groundcover. Nearby was a majestic grove of a single species of tall bamboo. Many considered this distinctive modern garden the most impressive viewed during the tour. The museum and garden were established in 1952 by the Church of World Messiamity and are, as we were told, seldom visited by foreigners.

The Hakone Botanical Garden of Wetlands, in the same vicinity, was designated as a National Monument by the Ministry of Education (presently the Cultural Affairs Agency) in 1934 not only to conserve the Sengakuhora Moor but also to educate the public about the ecology of wetland vegetation. It was formerly a flat area containing rice paddies but now is a specially designed eco-system of man-made hills, a rockery, several different types of ponds, streams, and moors. It consists of eight divisions: four moors, a swamp forest, a meadow, and an alpine garden, whose flowers present a continously changing picture with the seasons. More than a thousand species of wild herbaceous and woody plants are displayed in natural plant communities. This helps to identify each plant and its natural neighbors.

As we continued on our trip, we often saw clouds drifting just below the mountain tops as we had seen them in many Japanese paintings. One day we did see the beautiful symmetrical cone of Mt. Fuji, bare of snow by that time.

The highway dropped to the farmland floor. Fifteen percent of the land in Japan is level or of modest enough slope to permit agriculture. Sixty percent of this agricultural land is in rice production. The average farm holding is two and a half acres; more than half of the cultivated units are smaller than that. A farmer struggles to get two or three crops a year off the tiny plots enclosed by ditches and dikes which make the use of machinery difficult if not impossible.

Tiled roof tops in gray, beautiful shades of glossy blue, and brilliant terracotta dotted the countryside. Frequently an old thatched roof would catch our attention. In this area, which received 17 inches of rainfall annually, grew tobacco, soybeans, vegetables, grapes, and orchards of apples, peaches, and pears.

We made an unscheduled stop to visit Mt. Fuji Shrine, built in the 8th century. Stately cryptomerias lined the wide corridor to a Torii arch and the ancient architectural gem of a shrine. Here again, the well-kept garden of carefully groomed shrubs and trees created a sense of serenity. A bamboo water pump by a reflecting pool clicked rhythmically as it filled and emptied.

Its purpose: to frighten away the deer.

At a nearby village, Mr. Kazuo Mori joined us. He is the owner of a native plant nursery, an excellent photographer, and the author of several beautifully illustrated books on alpine flowers. Having attended ARGS meetings and Study Weekends here in the United States, he was warmly greeted. He is a member of the Japan Alpine Rock Garden Society and our own ARGS. We were most fortunate to have such an authority guide us for several days. He provided us with lists of the plants we would be seeing. We especially appreciated his ability to give us the botanical names of plants rather than the common names as translated from the Japanese. He is a veritable walking encyclopedia. His graciousness in helping us and his generosity in giving each of us a variety of seed packets and plants of *Shortia uniflora* will always be remembered.

We seldom had to climb a mountain. Our desire to see the plants at high elevations conquered, at least for some of us, any reluctance to ride the Rope Way, the Japanese term for chairlifts and gondolas. We were initiated to our first ride on one of these in order to visit the Tateshina Plateau on 7500-foot-high Mt. Yokadake. Below us as we rose, we could see the lilac-colored *Iris ensata* var. *spontanea* and bright lilac *I. sanquinea.* A few red blossoms still remained on *Rhododendron Japonicum.* Upon disembarking we were thrilled to see the beautiful fringed pink nodding bells of *Shortia soldanelloides* growing everywhere along with *Empetrum nigrum* var. *japonicum, Vaccinium vitis-idaea, Arcterica nana,* and *Loiseleuria procumbens.* A solitary truss of creamy white still clung to a branch of *R. brachycarpum,* a species with fawn-colored indumentum on the undersides of its leaves. *Cornus canadensis* under *Pinus pumila* and *Betula ermanii* grew nearby.

Four-fifths of the land of Japan is mountainous. All these precipitous mountains are blessed with many hot springs spouting up here and there. Consequently, they are the site of many well-located inns and spas which are ideal summer resorts. Despite the population density, nearly sixty percent of the total land is forested. The luxuriant and diversified vegetation is an impressive spectacle and must be stunning in its fall colors. Many of the mountainous areas support forest stands which serve as watersheds for the many swift rivers and streams and in addition offer wonderful recreational facilities.

Expert engineering was necessary in order to plan and construct the highways that ascend the mountains in almost coil-like form. Conifers and northern hardwoods line these highways. Linden, birch, ash, elm, walnut, cherry, beech, oak, chestnut, katsura, zelkovia, maple, and magnolia have mixed with fir, spruce, larch, hemlock, and pine to produce an interesting study in texture and color.

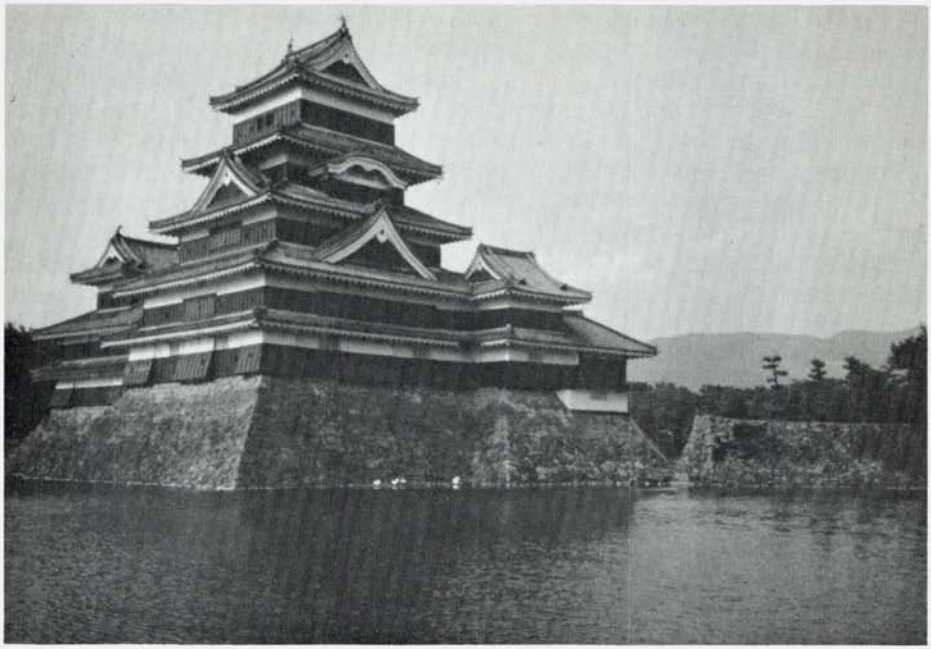
The masses of yellow bloom on the plateau turned out to be hemerocallis. *Hydrangea paniculata* and *Lilium auratum* were in blossom at the edge of the forests. Increasingly abundant above timberline were azaleas, dwarf birch, dwarf bamboo, blueberry, ledum, and roses. The Manchurian dwarf pine (*Pinus pumila*) formed dense low carpets on high ridges.

In order to gain a vantage point above Kurobe Dam, we traveled on one- or two-person chairlifts without bars, small gondolas, and larger ones that would hold eight Japanese or six Americans. We burrowed through tunnels in three-bus convoys and on electric trolleys up and through the mountain. The construction work required to build this dam took place in 1963 and was on the largest scale of any in the history of hydroelectric power in Japan.

The view from above the dam was magnificent. Above us was the 7600-foot peak of Mt. Tateyama. It was necessary to cross a large snow patch in quest of the rare alpine *Glaucidium palmatum*, an herbaceous perennial from 12 to 16 inches tall with lilac-colored flowers over handsome palmate leaves. Snow had recently melted from its sheltered site. Also found in this area were *Paris japonica*, 12 inches tall with white flowers; *Diphylleia grayi* and species of *Trollius*, *Ranunculus*, *Lonicera*, and *Viola*.

The mountains are very popular for skiing in winter, and the many comfortable lodges also provide accommodations for summer visitors. We stayed overnight in such a lodge below 8900-foot Mt. Hakubadake and could see its white snow patches as the morning fog lifted. A short stroll to the gondola lift gave us an opportunity to identify *Magnolia obovata* in bloom, *Hydrangea petiolaris*, *Daphniphyllum macropodum*, *Narthecium asiaticum*, *Astilbe* species, and *Lindera obtusiloba*. The greatest variety and quantity were on the ridge above, called Happo-one. The small blue *Gentiana thunbergii* var. *minor*, a biennial; the insectivorous *Pinguicula vulgaris* var.

On the trail to *Glaucidium palmatum* Moody photo



Matsumoto Castle Moody photo

macrocerus; and *Spiraea nipponica* grow under and among flowering *Menziesia purpurea* (or could it have been *multiflora*?) and *Pinus pumila*. A little further along the trail, in a more moist area, were *Metanarthecium luteoviride*, *Asarum sieboldii*, an *Eriophorum* species, and the white-flowered *Parnassia palustris*. Two attractive composites, *Leontopodium japonicum* and *Erigeron alpicola* as well as *Geum pentapetalum* were growing with a large colony of pink-flowered *Primula modesta*. There were also *Epimedium grandiflorum* ssp. *koreanum*, *Gaultheria adenothrix*, *Sanguisorba hakusanensis*, *Thymus serrulatus nipponicus*, and a *Thalictrum* species along with an almost white-flowered *Menziesia* species. Many of the plants that we grow in our western gardens share the same ancestry as these Japanese plants. Pictures were taken to record all our plant discoveries.

Matsumoto serves as the gateway to Japan Alps National Park. The major attraction of the region is Matsumoto Castle, built in 1504. The original moats and stone walls still remain. It is one of the national treasures of Japan. Large wide planks, highly polished, made walking precarious; we had traded our shoes for slippers and were carrying our own footwear in plastic bags. Ceilings were low for those over five feet tall. There was a constant stream of visitors inspecting this beautiful, historic building.

Quite a few species of plants are endemic to certain areas we visited. We were looking forward to seeing our first *Dicentra peregrina* in bloom and reportedly growing on Mt. Norikura. This mountain, almost 10,000 feet

high, is one of the tallest in the Japan Alps. It was raining heavily as we headed toward the volcano-topped mountain, then shrouded in heavy fog. We stopped by a small ravine and found *Rhododendron fauriei* in bloom, displaying its yellowish-white blossoms with pink flush and green spots. Within arm's reach were *Harrimanella stelleriana, Phyllodoce aleutica,* and the pale rose *Heloniopsis orientalis.* Upon reaching our destination, a few of us braved the heavy downpour and gale winds that fairly blew us over but were rewarded with finding *Diapensia lapponica* with its water-soaked almost stemless white blossoms, *Shortia soldanelloides* var. *alpina, Cassiope aleutica,* and *Campanula lasiocarpa.* All who had ventured out, even briefly, returned drenched. Only Mr. Mori had found *Dicentra peregrina.*

Our itinerary included spending a night in a Japanese inn or Ryokan. It offered us a chance to live as the people of Japan live and to learn and share the customs of a culture where gracious living is as important as having a roof over one's head.

At the door we slipped off our shoes and put on the slippers provided for us. Our rooms did not resemble the ordinary western-style hotel room. The Japanese are almost incapable of making anything that isn't beautiful, that in its simplicity, isn't functional. Covering the floor were tatami mats upon which were placed futons (Japanese bedding) and pillows which felt as though they contained rice grains to cup one's head in a comfortable position. On a low table had been placed a tray holding a canister of green tea, a large thermos pitcher of hot water, and cookies wrapped in plastic. Two legless chairs with pillows seemed to invite one to sit down and pour a cup of tea for refreshment after a day of sightseeing. The chairs sat in an alcove by the windows and could be closed off with shoji screens.

The hotel provided us with freshly washed and folded kimonos to be used during our stay. We were encouraged to wear the kimonos to dinner. Apparently each floor in the hotel was provided with garments of different patterns. For example, third floor kimonos were of a floral pattern and fourth floor, of black and white vertical stripes. These kimonos made for a relaxed atmosphere while dining at the low tables with legless but backed chairs. The tables were artistically set with colorful trays of raw vegetables and beef to be stir-fried on woks in front of our plates. It was one of the many tasty meals we had the privilege of enjoying.

For a change of pace, we visited the famous Bonsai Village at Omiya where we marveled at the ancient trained trees and shrubs in appropriate containers displayed on stands at eye level and benches at hip level. It was a gallery of living objects of art. Because Japan is so crowded and gardeners have very little space available, they have learned to capture the essence of nature in a pot. There, standing in front of us, was a tree twenty-five, fifty, one hundred or more years old, with all the natural dignity and gnarled venerability of a normal tree of its age — yet only 12 inches tall. We also saw some bonsai set on roof tops, benches, and window sills at private homes.

We bade our first bus crew good-by and hurriedly boarded a crowded

local train to connect with the new Tohoku Shinkansen (bullet train) "Yamabiko No. 27" to Sendai. We were loaded down with our carry-on bags, but our larger luggage had been sent to our next destination by truck. This was fortunate as most of us had to stand.

Several nine- to ten-year-old school boys on the train were amused at the labels on our assorted bags. The boys disembarked at the first stop — all but one. He was delayed because his clothing had somehow become caught in the zipper of a jacket worn by one of our group. Once released, he made a dash for the door but soon made his way back to us with a big grin, saying cheerfully, "Missed the stop!"

Our tour leader headed us in the right direction when we got off the local train and bought our tickets for the bullet train for us as signs, as a rule, are all in Japanese characters. Everyone seemed to be hurrying, but we were all assembled at the right platform in ample time to board our clean coach on which we had a most comfortable ride as miles and time sped quickly by.

Sendai is the gateway to the Pacific Coast area of Honshu Island in northern Japan. It is the largest city in the district and serves as a base for a trip to Matsushima with its scenic bay. Two brightly painted boats, one shaped like a bird ("Ho-O Maru," the Phoenix) and the other, a dragon ("Ryu-o Maru"), were tied up at docks on the bay. We were told that these two sacred vessels and a flotilla of several hundred colorfully decorated boats sailed out into Matsushima Bay as part of a special festival in August.

We boarded a sightseeing boat to cruise around the bay to see the fascinating sea-eroded limestone islands covered with pines. Tides in this area are only three feet, making it a natural site for raising oysters.

Before visiting the shrines on the hillside overlooking the bay, we had lunch at the Hotel Grand Palace in Shiogama. We noticed a beautiful display of Japanese silks next door to the hotel. We were delighted with the exquisite and tempting fabrics. We especially enjoyed observing a young lady at the floor-size loom weaving an intricate design.

After climbing 202 steps and going through a vermilion laquered gate, we saw the three buildings that contain the sanctuaries of the deities of Shiogama Shrine. Today they are conserved as cultural properties of Miyagi Prefecture. The exact year the shrine was built is unknown; however, it is reported that when the Japanese race came to the area over 2000 years ago, shrines were established. We heard the rhythmic beat of a drum and saw several white and green robed chanting priests, one carrying a white drum, enter the central shrine to conduct a ritual. Talismans in the form of tightly rolled white paper strips were tied to the branches of the well-groomed shrubs, trees, and even on the stem of a potted iris. The buildings looked vibrant painted in vermilion and gold.

The Bandai Plateau is a year-round recreation area and famous for over a hundred lakes and tarns created by the eruption of Mt. Bandai. Mt. Zao, about 6000 feet high, in the Zao Quasi-National Park, is one of the most

Dicentra peregrina C. G. Lewis photo

popular skiing grounds in Japan and, from what we saw, is as well one of the most popular hiking areas in summer. A brief stop near the top finally rewarded us with the sight of the dainty *Dicentra peregrina* with its ethereal pink blossoms and silver finely cut leaves growing happily in the granular volcanic "soil," almost bare of any other vegetation. The area was roped off so we did not have to worry about stepping on the plants.

Along the sides of the road where the bus was parked, growing in moist conditions, were rose-purple *Orchis aristata, Drosera rotundifolia, Aletris foliata, Trientalis europaea, Salix reinii,* an *Ilex* species, and *Shortia soldanelloides* in a larger form than we had seen previously. There was also *Gaultheria adenothrix* and *Cassiope aleutica.*

Mt. Zao last erupted in the 17th century and left a crater filled with water that reflects the color of the sky. The volcanic soil around it is almost an orange color. Several members of the Japan Alpine Rock Garden Society joined us to help us find our way over a trail through rocks as large as some of our 5-foot-tall leaders. Many busloads of school children were on the trail on a one-day field trip. They were eager to try out their English, so they would extend their hand and say, "Hello, I'm _____. I'm in Junior High," then giggle. They wore identical jogging suits and were faster hikers than our group who were bent double to study the vegetation. Each group of children we met wore a different color.

When we came to a saddle after a particularly difficult part of the trail, we had a choice of riding down the Rope Way or hiking back down the trail

for three miles. The majority decided for the trail and were thus able to become better acquainted with all the plants seen on the way up. The menziesia here had larger flowers in a greater variety of colors than we had ever seen. We did not have our English-speaking botanist with us, but by now we felt we should be able to identify the plants ourselves. In addition to plants already seen we added to our list *Tilingia holopetala, Maianthemum dilatatum, Weigelia hortensis,* and the deciduous *Rhododendron tschonoskii.*

It surprised us to see several groups of children aged four to five or six to seven preceding us on the rough trail. They were all dressed identically in shorts and sneakers and up-brim hats for the girls, visor caps for the boys. At lower levels footing was slippery. Water, into which their little feet would slide, coursed down the center of the well-worn path. Their chaperone-leaders would frequently have to render assistance and rescue them from the ditches. We wondered what their mothers would say when they returned home all spattered with mud. At a point where a plank walk and platform with picnic tables extended over a swampy area, they stopped to join our ARGS group which was resting and waiting for stragglers. They opened their small backpacks for a quick snack. Then their leader led them in a song. We could not understand the Japanese words, but there was no mistaking the tune of "The Battle Hymn of the Republic."

Later, at the invitation of Mr. Yoichi Seino who had been one of our guides, we made an unscheduled stop to visit his private garden. We were especially pleased to see a Japanese home and garden. Mr. Seino is a very successful grower, propagator, bonsai artist, pottery maker, and restaurant owner. His orchids were beautiful, bonsai exceptional, pottery creative, and the garden peaceful.

We deeply appreciated the courtesy extended to us by so many members of the Japan Alpine Rock Garden Society in guiding us and showing us slides of mountain flowers and scenery that we had been unable to see on our tour.

A very special treat was visiting the Minamigaoka Dairy Ranch and Rock Garden. The management hosted two lunches for us at which delicious products from the ranch were served. A large banner reading, "Welcome American Rock Garden Society," hung over the gateway at the Yamagata branch in Kawanishi. After a hearty lunch we were guided through head-high grasses in swampland where we found *Pyrola incarnata,* a *Disporum* species, *Vaccinium hirtum. Chimaphila japonica* grew at the edge of the forest by the swamp. Hiding in the tall grass were *Gentiana* species, *Plantanthera hologlottis,* blue-purple flowered *Lobelia sessilifolia, Epipactus thunbergii,* with green-purple blossoms, white-flowered *Spiranthes sinensis* ssp. *australis,* and the composit *Inula ciliaris* var. *glandulosa* with orange-yellow flowers.

Another banner, this time reading, "Japan — USA Alpine Lovers Symposium, July 21, 1983," welcomed us to the Minamigaoka Ranch No. 1 where Mr. Isao Okabe, president of the dairy, and Mr. Kochi Onoe, president of the Japan Alpine Rock Garden Society, personally greeted us. After another delicious products-of-the-ranch lunch, we visited the largest man-made rock

garden in Japan. It was constructed with the strong support of Mr. Minami and members of the Japan Alpine Rock Garden Society, Kobe Alpine Plants Club, and others.

In the spring of 1982 this garden was opened in the center of Nasu Highlands of Tochigi Prefecture. The rocks were placed to give the impression of alpine meadows, valleys, and ridges. The garden contains an American-Canadian Zone, European Zone, and Asian Zone with dwarf trees, bulbs, woodland plants, meconopsis, *Dicentra peregrina*, and other Japanese alpine plants. Some two thousand species were gathered here from botanical gardens, nurseries, and alpine plant enthusiasts in different countries. In the main, dwarf types of plants suitable for rock gardens were selected. Proper soil and drainage conditions were provided for each area. In spite of the fact that the garden had been opened only a year, plants were well established and looked quite at home. We wished that we had had more time to examine the plants and explore the gift shops.

About fifty members of the Japan Alpine Rock Garden Society had assembled to participate in the Symposium. Officers, committee heads, and honored guests were introduced, and an interesting program with slides from the United States, Japan, and China took place in the morning. Harold Epstein gave a talk on plants native to northeastern America. Kazuo Mori gave a most interesting talk on Japanese shortias. Atsushi Kuyama, Assistant Secretary of the Japan Alpine Rock Garden Society, spoke on garden-worthy native plants of Japan. Mikinori Ogisu discussed wild flowers of western China. Hiroshi Minami, Secretary of the Minamigaoka Rock Garden Association, talked about the rock garden at Minamigaoka, and Kochi Onoe considered the problems and pleasures involved in introducing overseas plants into Japan. The orchid, *Habenaria radiata*, was the subject of Nao Kimura's talk. After lunch, a panel of speakers from both our nations discussed their concerns about nature conservation and the culture and propagation of wild plants. The talented couple, Mr. and Mrs. Atsushi Kuyama, who interpreted did an excellent job. It was a most fascinating and instructive day.

We learned that Mr. Mori had written another book on alpine flowers and we were eager to buy copies. His publisher extended an invitation for us to visit his publishing company the following day. It seems that the publishing company is associated with the Ota Bonsai Nursery specializing in azalea bonsai. Before any business was conducted, refreshments were served as is the custom. We were introduced to the publisher, editor, and author and later browsed through the beautifully illustrated books. Some were printed in English. Few if any of us left without buying at least one or two. As we boarded the bus, each of us was given a large, beautiful book, all in color, about Japanese landscaping. An inspiration, indeed!

We were given the opportunity to visit several nurseries and to buy plants during our tour. Some of us had written to the U.S. Department of Agriculture in Hyattsville, Maryland, for plant permits several weeks before leaving home. We followed the directions very carefully and had no problems going through

agricultural inspection when we returned to the United States.

The museums which we visited contained excellent displays of ancient and contemporary collections that gave us a better understanding of the country and its history. However, a scroll in the museum at Zuigana-Ji Shrine in Shiogama, written in English and signed Edmund Blunden, seems to sum up the feelings we has when we departed.

Here abide Tranquillity
Courtesy, Humility
The traveler pauses to rest
To go his way blessing the blest.

★ ★ ★

Dicentra Hybrids

Roy Davidson
Seattle, Washington

[Photo by Richard W. Redfield]

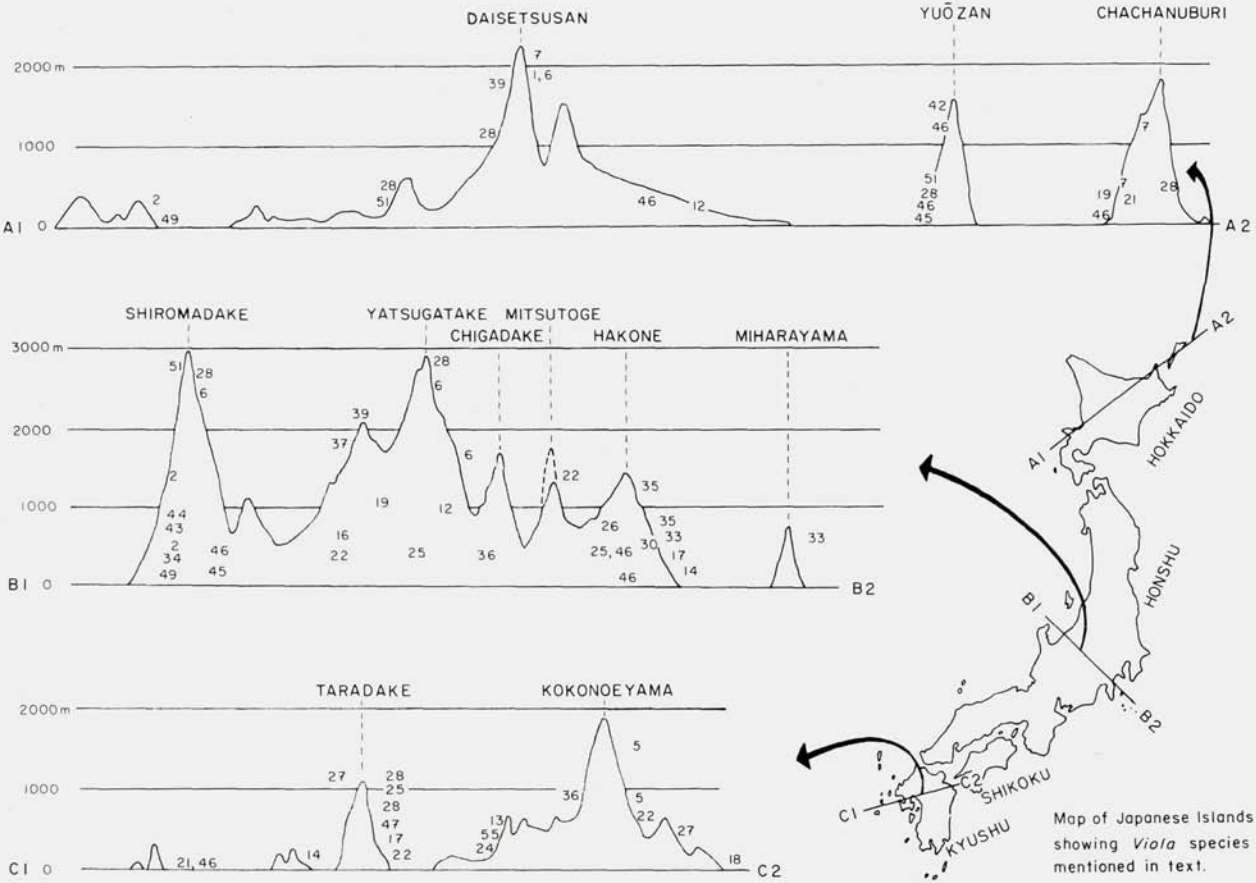
The earliest record, oddly enough, reported the failed attempt of famed German plant breeder Georg Arends to mate *Dicentra eximia* with *D. formosa*, yet later, in the eastern Canadian garden of Manske, the results of crossing *D. eximia* with *D. formosa* ssp. *oregana* were fertile hybrids. These led to the garden introduction of four cultivars, most famous among them 'Bountiful' which has gone on to become one of the most appealing of perennial plants of our time and from which many further seedlings have been raised. It would probably be safe to opine that at least some of the later-named clones came from it, recent among them the patented 'Luxuriant' of quite a reddish color and long flowering habit.

At Washington State University the late Dr. Marion Ownbey, in the course of a cytological study of the genus, made crosses with pollen of the east Asian *D. peregrina* on the American wildflower forms and the Manske hybrids which had been introduced by Wayside Gardens. Although these new dwarf plants were very successfully grown in the continental climate of the interior, they do not seem to have been prosperous elsewhere. One was offered in the trade by Siskiyou from a cross of *D. formosa* ssp. *nevadensis* x *D. peregrina*. In England this has been recognized with an award as *D.* 'Tsuneshige Rokujo' and the strain is there known as "Rokujo Hybrids" for the Japanese plantsman who provided the plants and later pollen-by-air to Ownbey. Wayside attempted the introduction of one very red-flowered clone but was unable to successfully grow the stock.

Dicentra x Ownbey hybrid, *D.* 'Paramount' x *D. peregrina*

The Ownbey Dicentras are primarily (if not entirely) sterile triploids, accounting for their vigor and continuous flowering, May to freezing. Only those from *nevadensis* are not so, having inherited a summer dormancy. In addition to the charming flowers over a long season, most of them are invaluable for their colorful foliage, being possessed basically of the steel-blue color of the Asiatic miniature to which is added a minute hirsuteness colored with anthocyanin pigments in degrees genetically linked to depth of floral coloring. Thus as the plant is gently stirred by breezes or the eye of the viewer shifts ever so slightly, the leaves "change" as does watered-silk taffeta. Stems strung with many flowers arch over the wire-cut leafage to about 10 inches. The flowers have full heart-shaped or locket form in colors from blush-white to pink to rose to rose-red, with some bitoned and striated patterns.

These plants are appealing as to scale for the rock garden. There would surely be much promise in pursuing their production now that the mystery of the pumice-dwelling *D. peregrina* has been solved. It is not difficult in a medium consisting entirely of cinder or ash, fed lightly but frequently, and given full sun.



Map of Japanese Islands showing *Viola* species mentioned in text.

Sumire: Violets of Japan
Translations from Tamotsu Hashimoto

Richard Pearson
Vancouver, British Columbia

[Drawings by the author based on Makino, Kiyoshi, *New Flora of Japan,* and many other sources]

While Japan's more exotic alpine and woodland flowers are gradually becoming known to western gardeners, there are still many wild garden subjects to be introduced. Lacking the total ice sheets of the Pleistocene which scoured North America and northern Europe, the Japanese islands abound in local forms and multiple species of some of our familiar genera. The lowly violet is a case in point. As a way of showing the diversity of the Japanese members of this beautiful genus, I have translated portions of an extremely attractive Japanese book by Tamotsu Hashimoto, *The Violets of Japan (Nihon no Sumire),* published by the Seibundo Publishing Company (1967). The entire book, as with many of this genre, deals with the history of knowledge of this genus and also cultivation, in addition to the characteristics and range of each species.

From mountain peak to sea shore; in pumice, leaf mold, and sand; from subarctic to tropical, Japanese violets (*sumire,* pronounced soomeeray) offer something for gardeners in many parts of America. As in the case of *Primula seiboldii,* the Japanese have selected many forms, not only with distinctive flowers but also with ornamental leaves. Species found only in Kyushu and Okinawa will tolerate very mild, frost-free winters and summer heat. Others, from the Japan Alps and the summits of Hokkaido mountains, will be more suitable for cool alpine conditions.

Most of the violets are short-lived perennials. Many grow tired of the soil in the place where they are first planted and migrate, in successive generations, to greener pastures. When this happens, it is better to leave them growing naturally. Most species enjoy semi-shade. Many of the commoner species are easy to raise from seed. The Japanese have two basic methods for the rarer and more difficult ones. Both of these methods, which are used for many Japanese wildflowers including alpines and orchids, are adapted to the very high seasonal humidity of the Japanese islands. The first, for woodlanders, is to use sphagnum moss, loosely packed, with little fertilizer (since it makes the moss rot). This is used for *Viola iwagawai* and *V. yezoensis.* The high alpine species should be grown in grit through which water and fertilizer pass easily. A combination of the two media, using grit and coarse sand with sphagnum, is good for *V. orientalis, V. hirtipes, V. variegata, V. keiskei, V. kitamiana,* and *V. thibaudieri.*

Perhaps some of these plants might find a home in your garden, if you can meet the challenge of finding seed and of successful propagation.

I have followed the author's practice of dividing the violets into a number of group but have omitted many technical details such as chromosome numbers. Distinguishing characteristics, such as the shape of the pistil and lower petal and the form of the stem, have not been included for each group, since these details are difficult for me to translate accurately and are beyond the introductory nature of this note. In order to facilitate communication with Japanese enthusiasts, I have included Japanese common names after the scientific names.

Group A, Ki Sumire (Yellow Violet) Group
Many species of this group are found along the west coast of North America, extending down into Mexico. Four species are noted in Japan. It is said that this group is rather primitive compared to other groups of violets.

1. ***Viola alliaraefolia*** Nakai (Jinyou ki sumire) From high mountains in Hokkaido, blooming in July. As with many of this group, the flowers are held above the stems, and there are multiple leaves.
2. ***Viola brevistipulata*** Franchet and Savatier (Oba ki sumire) This is a large plant, 15 to 30 cm high, found in beech forests. The leaves appear in threes. The distribution is from Hokkaido to the northern part of the Kinki area, mostly along slopes facing the Japan Sea.
3. ***Viola brevistipulata*** ssp. **hidakana** Nakai (Ezo ki sumire) This is a rare diminutive subspecies, with crisply toothed leaves. It is found on Mt. Apoi in Hokkaido. There are forms which are ciliate and glabrous and other local varieties. It blooms as late as July in alpine meadows.
4. ***Viola yubariana*** (Shisoba ki sumire) The plant looks like *V. brevistipulata.* It likes gravelly areas with ample underground water. [See illustration.]
5. ***Viola orientalis*** Maxim (Ki sumire) This plant is found at relatively low elevations. In western Japan, it likes sunny locations and often grows in association with Miscanthus grass and bamboo. The center of the distribution is the Korean peninsula, from which it ranges to the southern Soviet Maritime Province, southern Manchuria, and the Shandong Peninsula of China.
6., 7. ***Viola biflora*** Linnaeus (Ki bana no komanostume) and ***Viola crassa*** Makino (Takane sumire) These two look very similar. They are found on grassy alpine areas. The former has 12 chromosomes while the latter has 48. The lower petal is notably large. *V. biflora* has a very wide distribution, even for violets, extending from the Eurasian land mass into the mountains of northern Sumatra. It is also found in western North America. However, it is not well known to gardeners in the west, such as England. There are some desirable forms from southwest China. *V. crassa* is found in Sakhalin, Kamchatka, central Japan, and even the northern part of Korea. A large form comes from the Kuriles. [See illustrations.]

4 *Viola yubariana*
(Shisoba ki sumire)

6 *Viola biflora*
(Ki bana no komanostume)

7 *Viola crassa*
(Takane sumire)

Group B. Nyoi Sumire Group

The back portion of the flower is raised and pointed. This group is found in relatively small areas of the east Asian temperate zone, including Tasmania and New Zealand. Two species are found in Japan.

8. ***Viola verecunda*** (Nyoi sumire) Flowers are white, with purple stripes. This species likes warm, sunny locations in fields. The flower diameter is about 1 cm. Pink forms are also found. The leaves are usually heart shaped, but variations include narrow and crescent-shaped forms. Special flower forms have been collected from Kyushu, the summit of Yakushima, and also Taiwan. [See illustration.]
9. ***Viola raddeana*** Regel (Tachi sumire) The flower is virtually white, with a slight purple tinge, and the leaves are elongated. The distribution is from Korea to Amur, southern Manchuria, and central Japan. In the wild, it can grow in clumps as large as 1 m in diameter. [See illustration.]

Group C. Obatachitsubo Sumire Group

10. ***Viola langsdorffii*** Fischer This plant is found in the temperate zone of northern Asia and Alaska. The flower diameter is up to 2 cm. In Japan, it is most common in Hokkaido; in Honshu, it is found in Iwate, Gumma, and Nagano Prefectures in the alpine zones. One other member of this group is found in western North America and yet another in Kamchatka. The remaining species are in southwest China.

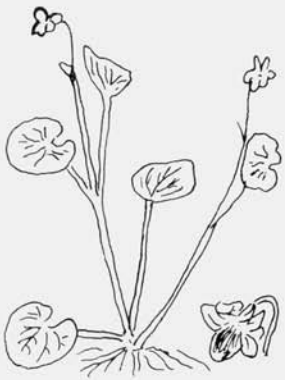
Group D. Tsukushi Sumire Group

Four or five species of this group are found in East Asia; all have small purple flowers. In Japan, only one species grows.

11. ***Viola diffusa*** (Tsukushi sumire) This is found in southern Kyushu near stone walls and dwellings. Different forms are known from Taiwan and South China. The group's distribution extends from the Himalayas to the Chinese mainland and the Philippines.

Group E. Miyama Sumire Group

12. ***Viola hirtipes*** S. Moore (Sakura sumire) This has cherry-blossom-colored flowers with large petals. This beautiful violet is distributed from Hokkaido to the Mount Aso caldera of Kyushu but is known from Korea, the Dongbei (northeast China), and North China. It has triangular upright leaves and hairy stems. [See illustration.]
13. ***Viola yezoensis*** Maximowicz (Hikage sumire) This violet grows in shade, under bamboo thickets. In Hokkaido, it is found only on Mount Hakodate, but related species have been found in other parts of Japan as far south as Kyushu, particularly along the Pacific coast. In the Kanto Plain (Tokyo) area, there is a dark-leaved form called Takao sumire (*V. yezoensis* forma *discolor* Nakai).
14. ***Viola japonica*** Langsdorff (Ko sumire) Found from Yamagata Prefecture in Honshu south to the island of Yakushima, south of Kyushu. This one is easy to cultivate and has many color forms. [See illustration.]



8 *Viola verecunda* (Nyoi sumire)

9 *Viola raddeana* (Tachi sumire)

12 *Viola hirtipes* (Sakura sumire)

14 *Viola japonica*
(Ko sumire)

15 *Viola keiskei*
(Maruba sumire)

17 *Viola phalaerocarpa*
(Akane sumire)

15. ***Viola keiskei*** Miquel (Maruba sumire) Widely distributed, from Aomori Prefecture in northern Honshu to Kyushu and also in Korea and southern Manchuria and the Ussuri region. The flower is white, and there is also a pink form in Kyushu. The Japanese name refers to the round leaves. [See illustration.]
16. ***Viola variegata*** Fischer (Genji sumire) This violet is mentioned in the Japanese classic, *The Tale of Genji.* It is found in the temperate zone of northeast Asia and in Japan in the prefectures of Nagano, Yamagata, Gumma, and Shizuoka. Cultivated by Japanese plantsmen, this species has several desirable forms, one from Manchuria with crimson flowers and spotted leaves. The Japanese form has light-colored leaves, and particularly in western Japan, the flowers are usually white.
17. ***Viola phalaerocarpa*** Maximowicz (Akane sumire) Found in the Japanese mountains from Hokkaido to Kyushu, this plant has a wide distribution from Yakushima to the Ussuri region, Manchuria, North China, and Korea. Several different forms are known. [See illustration.]
18. ***Viola yedoensis*** Makino (Noji sumire) This violet is common to the warm and temperate areas of Asia. It blooms in early spring. It appears to be the same as the Ryukyu ko sumire (*V. pseudojaponica*), which grows in the islands stretching from Kyushu to Taiwan. There is also a white form, *albiflora*, which is cultivated under the name Nikko sumire. [See illustration.]
19. ***Viola patrinii*** D.C. (Shiro sumire) This is from the southern Kurile Islands south to Kyushu, also in Siberia, the Dongbei, and Korea. The form found in central Honshu has a round, broad leaf, while the forms from the south, from Kyushu to Shikoku, have unusual narrow leaves. A form

from the Dongbei termed *angustifolia* has particularly narrow leaves. [See illustration.]

20. ***Viola lactiflora*** Nakai (Shiro ko sumire) This species is found in grassy areas in Korea, Manchuria, and North China. It is not found in the wild in Japan, but it is grown by Japanese nurserymen. The flowers are about 1.5 cm in diameter and white. The leaves are tapered to a point.

21. ***Viola mandschurica*** W Becker (Sumire) This is the most common violet in Japan. It is found from Hokkaido to Yakushima and also in Taiwan and the Ryukyus. There is a great deal of variation in leaf forms, from spatulate to elongate triangular. Double forms and forms with variegated leaves are cultivated. [See illustration.]

22., 23. ***Viola confusa*** Champion ssp. ***nagasakiensis*** (Hime sumire) and ***Viola taiwaniana*** (Taiwan ko sumire) The leaves and flowers are very small; the leaves have toothed margins. Distribution runs from Akita Prefecture to Taiwan, one species seeming to be replaced by the other.

24. ***Viola betonicifolia*** South (Ariake sumire) Found in Japan from Akita Prefecture to the south and in China from the northeast to the south. It is also found in eastern Australia and New Guinea at elevations of 4000 meters. Taiwan and Hong Kong lie within its range. Because of its wide distribution, there are local varieties.

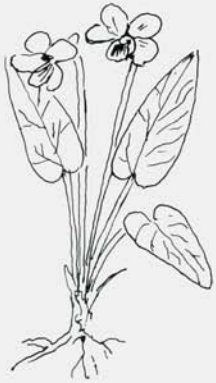
25., 26. ***Viola eizanensis*** (Eizan sumire) and ***Viola chaerophylloides*** (Higo sumire) These have presented problems to taxonomists for a long time. *V. eizanensis* is a Japanese endemic found from Miyagi Prefecture to Kyushu and Tsushima Island. There are many colors, from white to light

18 *Viola yedoensis* (Noji sumire)

19 *Viola patrinii* (Shiro sumire)

21 *Viola mandschurica* (Sumire)

25 *Viola eizanensis* (Eizan sumire)



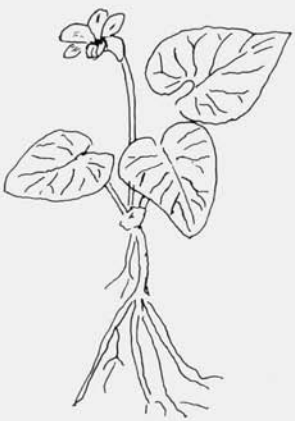
27 *Viola violaceae* (Shihai sumire)

29 *Viola tokubuchiana* (Fu sumire)

red. The Higo sumire extends from Akita Prefecture to Korea. White-flowered forms and unusual-leaved forms have been collected in a number of locations. [See illustration.]

27. ***Viola violacea*** Makino (Shihai sumire) A rather rare violet found in montane forests from central Japan to the southwest. Narrow-leaved forms are also known. This violet is also found in southern Korea, Yakushima, and the Goto Islands. [See illustration.]
28. ***Viola selkirkii*** Pursh (Miyami sumire) This violet has a wide distribution in the Northern Hemisphere. In Japan, it occurs from central Japan to the north and from Hiroshima to the west. A miniature form is found on Yakushima. The plant has rounded leaves, gracefully pointed. [See illustrations.]

28 *Viola selkirkii* (Miyama sumire) variegated form



28 *Viola selkirkii* (Miyama sumire)

29. ***Viola tokubuchiana*** Makino (Fu sumire) This violet, found under the deciduous forests near Nikko in Ibaragi Prefecture, has pale purple flowers. The leaves are heart shaped and glabrous. Other names are *V. nikkoensis* and *V. takadeana*. It is found occasionally in the Central Mountains of Japan. [See illustration.]
30. ***Viola seiboldii*** Maximowicz (Fumoto sumire) This is found in Miyagi Prefecture and to the south in Honshu, and in Shikoku and Kyushu in sunny montane areas. It usually has small white flowers 1 cm in diameter, but there are also reddish- and purple-flowered forms. Also found in Cheju Island, Korea.
31. ***Viola iwagawai*** Makino (Yakushima sumire) A triangular-leaved violet found from Yakushima southward through the Ryukyus to Okinawa.

33 *Viola maximowicziana* (Komiyama sumire)

34 *Viola vaginata* (Sumire saishin)

36 *Viola rossii* (Akebono sumire)

32. ***Viola tashiroi*** Makino (Yaeyama sumire) Similar to *V. iwagawai*, this violet with spatulate leaves is found on Ishigaki and Iriomote of the Yaeyama Islands of the southern Ryukyus.
33. ***Viola maximowicziana*** Makino (Komiyama sumire) The flowers appear to be close to those of *V. seiboldii*. The leaves are 2 to 5 cm long and rounded. There are also variegated and reddish-purple-leaved forms. The distribution runs from Ibaraki and Gumma Prefectures to Yakushima and Tanegashima. [See illustration.]

Group F. Sumire Saishin Group

This group of violet species, without branching stems, can be found in Japan, Korea, the Dongbei region, and the Himalayas. Of a total of six or seven species in this range, four can be found in Japan. The distribution of the

species outside of Japan appears to be discontinuous. The flowers have a form rather like Erythroniums.

34. ***Viola vaginata*** Maximowicz (Sumire saishin) This species extends from Honshu all the way to Etorofu in the Kuriles. The flowers are large, up to 2 cm in diameter. There are white forms and some with very long leaves. [See illustration.]

35. ***Viola bissettii*** Maximowicz (Nagabano sumire saishin) This species has long triangular leaves; white-flowered forms are also known. It is found in beech forests along the Pacific coast.

36. ***Viola rossii*** Hemsley (Akebono sumire) As the Japanese name indicates, this violet has the color of a rosy-pink dawn. It prefers sunny mountainous areas. There are white forms and forms with elongated leaves. The distribution lies from Hokkaido to the middle and northern parts of Kyushu, along the Pacific coast of Honshu, and also in Korea, the Ussuri region, and North China. [See illustration.]

37. ***Viola yazawana*** (Hime sumire saishin) A small white violet with heart-shaped leaves. At the time of flowering, the withered leaves of the previous year persist. This violet is found in central Honshu in coniferous forests. [See illustration.]

37 *Viola yazawana*
(Hime sumire saishin)

39 *Viola blandaeformis*
(Usuba sumire)

40 *Viola hultenii*
(Chishima usuba sumire)

38. ***Viola shikokiana*** Makino (Shikoku sumire) A small white-flowered violet which seems to be intermediate between *V. blandaeformis* and *V. yazawana.*

Group G. Usuba Sumire Group

Twenty species comprise this group which is found in North America, South America as far as Ecuador, and also in the Caribbean. Three species are found in Japan.

39. ***Viola blandaeformis*** Nakai (Usuba sumire) A small and retiring violet which blooms in June and July. It lives in mossy areas under coniferous alpine forests from central Honshu north to Hokkaido. The plant is completely hairless, and the flowers are white. The leaves are broad and slightly toothed. It appears to be very close to the North American species, *V. blanda.* [See illustration.]
40. ***Viola hultenii*** Becker (Chishima usuba sumire) This was taxonomically separated from *V. blandaeformis* in 1954. This species seems to be slightly hairy and to favor damp meadows. It has a northern distribution extending to the Kurile Islands and Siberia. It resembles *V. repens.* [See illustration.]
41. ***Viola repens*** Turczaninow (Tanima sumire) The leaves are flatter and rounder than those of the preceding species. It is found in Hokkaido and the Shiretoko peninsula.

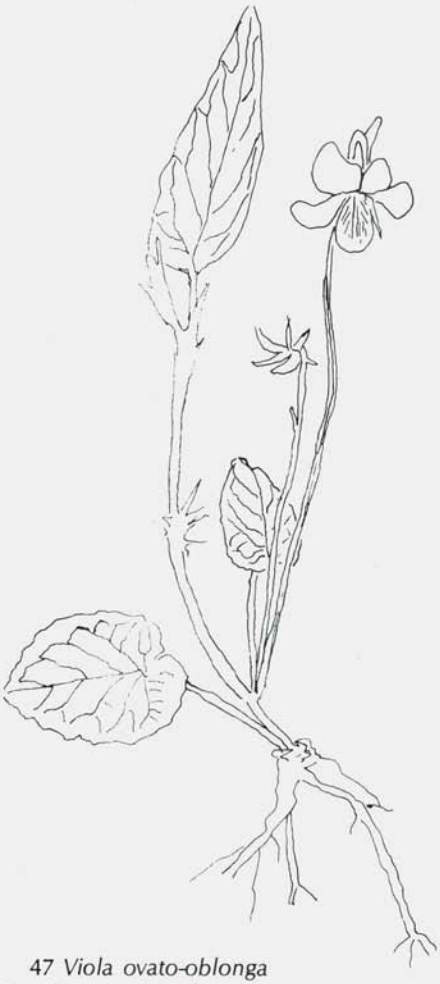
Group H. Shiretoko Sumire Group

42. ***Viola kitamiana*** Nakai (Shiretoko sumire) This is found in Hokkaido on Mount Yuo (1,563 m) and Mount Shirasu (1,661 m). It grows on the edge of volcanic calderas. The flowers are white with yellow centers, and the leaves are round. It seems to be related to species from high elevations in southeastern Australia, New Guinea, and Malaya.

Group I. Tachitsubo Sumire Group

This group is distributed in the temperate regions of the Northern Hemisphere from Kashmir to the Himalayas, through to Europe.

43. ***Viola rostrata*** (Nagahashi sumire) This violet has a wonderful delphinium-like "horn" at the back of the flower. The distribution is from the Pacific coast of Japan around Ishikawa and Fukui Prefectures to Hokkaido, and in North America from Quebec to Georgia. It is found in large clumps in leaf mold under deciduous forests in the same environment as *V. faureana* and *V. kusanoana* (see below for both). It is found in Niigata Prefecture at elevations of 700 m.
44. ***Viola faureana*** W. Becker (Terihatachitsubo sumire) The flowers are pale mauve, attractively veined. The plant is found along the Shimokita peninsula of northern Honshu, in areas along the Japan Sea, in leaf mold soil under beech forests.
45. ***Viola kusanoana*** Makino (Otachitsubo sumire) This very attractive violet is most common in the colder parts of Japan and also in the Soviet Maritime Province, North Korea, and the Dongbei region. However,



47 *Viola ovato-oblonga*
(Nagabano tachitsubo sumire)

46 *Viola grypoceras*
(Tachitsubo sumire)

it also can be found in certain localities in southwestern Japan. The Japanese distinguish many colors and plant forms: *rosea, alba, pubescens, radicans,* and *brevicalcarata.*

46. ***Viola grypoceras*** A. Gray (Tachitsubo sumire) A common species found from Rebun Island on the coast of northern Hokkaido to Okinawa and the off-lying Korean islands, Ullung and Cheju. At least fifteen forms are listed, including those with pink, white, and greenish flowers and reddish and variegated leaves. Also, dwarf forms have been found, notably on Yakushima. [See illustration.]

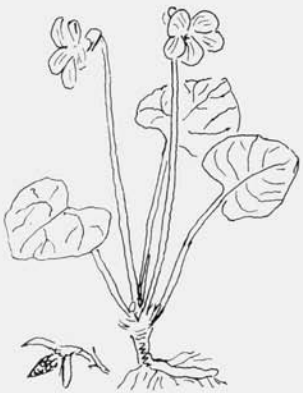
47. ***Viola ovato-oblonga*** Makino (Nagabano tachitsubo sumire) is found

from the Izu peninsula and Aichi to the west, including Kyushu and southern Korea. It prefers shady locations. The leaves are long but are similar to those of *V. grypoceras*. [See illustration.]

48. ***Viola obtusa*** (Nioi tachitsubo sumire) This species has a wider distribution than *V. ovato-oblonga*, being found as far north as Mount Hakodate, Hokkaido. This is one of the most beautiful of the Tachitsubo group, with strong purple color and a white center. The flower petals are rounded. It prefers sunny, grassy areas. Its southern distribution extends to Tanegashima and Yakushima. White forms are known.
49. ***Viola grayii*** Franchet and Savatier (Iso sumire) Blooming in the last half of May, this violet is found in sand dunes along the Japan Sea coast and also along the Pacific coast of Hokkaido. The leaves are lustrous and hairless.
50. ***Viola utchinensis*** Koidzumi (Okinawa sumire) This is a pale mauve-flowered perennial found in coastal areas of Okinawa. It appears to be close to *V. grypoceras*. The leaves are narrow and glossy.
51. ***Viola sachalinensis*** Boissieu (Ainu tachitsubo sumire) This species seems to be similar to the wood violet of Europe. It is found from Hokkaido to Aomori and southwest to the Japan Alps of central Honshu. One form is found on the serpentine outcrops of Mount Apoi in Hokkaido. In the

52 *Viola acuminata*
(Ezo no tachitsubo sumire)

53 *Viola thibaudieri*
(Tade sumire)



54 *Viola mirabilis* var. *subglabra*
(Ibuki sumire)

Sapporo region, this species blooms in the first half of June.

52. ***Viola acuminata*** Ledebour (Ezo no tachitsubo sumire) This species seems close to the dog violet of Europe, with erect stems. In cultivation, it is biennial. Sunlit grassy areas are its usual habitat. Its range is from Shizuoka to southern Sakhalin. It is also found in the Dongbei and North China. The flower is white with pale purple stripes. [See illustration.]
53. ***Viola thibaudieri*** Franchet and Sauvier (Tade sumire) An upright plant reminding one of Polygonum (*tade* in Japanese) and growing to a height of 30 cm. It seems to be similar to *V. acuminata*. [See illustration.]
54. ***Viola mirabilis*** Linnaeus var. ***subglabra*** Ledebour (Ibuki sumire) The Japanese forms are unscented. They prefer volcanic locations. Many different forms have been found in the Dongbei and Korea. They prefer shade and grassy areas. [See illustration.]

Group J. Nioi Sumire Group

This is part of the *V. odorata* (sweet violet) group from Europe. Two representatives are found in Japan.

55. ***Viola hondoensis*** (Aoi sumire). This violet has forms which are mauve as well as white, with rounded leaves. It is found in Honshu, Kyushu, Ullung Island of Korea, and the Huangshan Mountains of southern China.
56. ***Viola teshioensis*** Miyabe and Tatewaki (Ezo aoi sumire) With a more northerly distribution than the species above, it may be the same as the European *V. collima*. However, the habitats differ.

★ ★ ★

One day I was weeding. There were a lot of peculiarly loathsome docks, against which I had declared war. Docks are the worst weeds of all, because, just as you are pulling them up, they make a sickly sucking noise, and break in half. The root remains in the ground, and you find yourself clinging onto the leaf. Whereupon you have to tramp off to the tool shed, arm yourself with a trowel, and return to the scene of action, only to find that you have forgotten where the abominable dock root is lurking. In a rage, you scrape up a lot of earth, feeling like a dog that has lost a bone, and if you are lucky you will find, after ten minutes' search, an obscene sprout that you imagine to be the dock root. It is only after you have thrown it into the hedge that you realize, with horror, that you have destroyed your best gentian.

— from *Down the Garden Path* by Beverley Nichols

A Dwarf Holly for Rock Gardens[1]

Dr. Elwin R. Orton, Jr.
New Brunswick, New Jersey

[Photo by Author]

Ilex x 'Rock Garden' is a new addition to the listing of evergreen plants suitable for use in rock gardens or in other settings where diminutive plants are favored.

'Rock Garden' originated as a seedling (H433-24) resulting from hybridization of a pistillate plant of *I.* x *aquipernyi* x *I.* (*integra/pernyi*) 'Accent.' This controlled cross was made in 1971 and yielded 437 seedlings. Seedling No. 24 was pricked-off from the seedling flat on June 24, 1972 and, subsequently, was readily distinguishable from its siblings by its limited size. In October 1976, Plant No. 24 was judged worthy of propagation and replicated testing to further assess its potential for introduction as a dwarf holly.

In the spring of 1979, two plants of H433-24 were delivered to Don and Hazel Smith, Watnong Nursery, Morris Plains, NJ along with other dwarf interspecific hollies and numerous progeny of crosses involving *I. crenata* 'Dwarf Pagoda,' for evaluation. During one of my visits to the nursery in 1982, Hazel said, "Ort, Don and I think your H433-24 is just great and you ought to consider introducing it as a new cultivar. You know, there really isn't a rock garden plant that has a good 'holly-leaf.' " The enthusiasm of the Smiths served to renew and strengthen my interest in this clone. It is now being introduced as *Ilex* x 'Rock Garden,' the name having been chosen to indicate clearly an intended use of the plants. To date, only one cooperator has expressed a negative reaction to the name. Recently, that individual indicated that his plant had died. So, would-be critics beware, plants do respond to tender-loving-care, or the lack thereof.

Plants of 'Rock Garden' are pistillate and flower profusely. Under greenhouse conditions, plants that I have used (flowers hand-pollinated) to obtain advanced generation interspecific hybrids have set moderate crops of bright red fruit. However, due to the interspecific nature of the plants, it is doubtful if appropriate pollinators will be present in many gardens. Thus, in practice, plants of this cultivar will be admired for their foliage and form. The plants develop a dense, spreading habit and possess green leaves approximately 3.9 cms (1 9/16") long and 2.0 cms (13/16") wide, with 3-4 spines per margin. After five years in the field (seven years from a rooted stem cutting), the plants at Watnong Nursery were approximately 5" high and 12" wide (see illustration). An initial concern that I had regarding this selection related to the fact that the staminate parent is a vigorous plant of extremely erect habit. However, none of the plants of 'Rock Garden' have shown any

Seven-year-old plant of *Ilex* x 'Rock Garden'

indication of developing a central, upright leader. Thus, it would appear that this cultivar truly is a genetic dwarf.

Plants of 'Rock Garden' at my residence in Millstone, NJ as well as those at Watnong Nursery (both sites are in U.S.D.A. Hardiness Zone 6b) have experienced −18°F (several inches snow cover) with no visible injury.

This new cultivar will not be available commercially for several years. However, any member of the American Rock Garden Society can obtain a plant (3-4" pot) by sending a $10.00 tax-deductible contribution (plus $3.00 for packaging and shipping) to the Holly Research Fund of the Holly Society of America, Inc. Checks ($13.00) payable to the Holly Society of America should be mailed to Mrs. C. F. Richardson, 304 North Wind Road, Baltimore, MD 21204. Such contributions will be honored through September 14, 1985. Shipment (UPS Blue Label) of plants will be accomplished during June and September.

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Allium Notes
Part IV

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[Drawings by the Author]

Fall-Blooming Onions

Alliums are undeniably useful in offering an extended bloom season from spring through fall, a meritorious advantage that few other genera of hardy bulbous plants can match. I can honestly report having alliums in bloom without a single day's lapse from March to late November, a total of eight months of continuous bloom.

Allium tuberosum was described in Part II of this article but is mentioned again here on account of its long flowering season. Filling the gap between summer bloomers and the very late onions, *A. tuberosum* is worthy as an ornamental as well as a vegetable.

Also deserving repeat mention is *A. senescens* var. *glaucum*. In my Massachusetts garden, flowering continued until cut down by the first hard frosts. The work of multitudes of bees and moths pollinating this attractive onion always seemed to be in vain, as severe freezing and fall rains inevitably destroyed the late-maturing seed capsules.

Allium callimischon, an odd little onion from Greece, wakes abruptly from its summer rest to produce small clusters of white cups with reddish-brown nerves. A Cretan variant *A. callimischon* ssp. *haemostictum* is more dwarf, growing only about 4 inches tall, with the white tepals enchantingly speckled dark red. The early foliage is thin and wiry, becoming dry by mid-summer. Resist the urge to tidy up, as in September or October the apparently dead foliage will burgeon forth with renewed life, giving birth to the delicate blossoms. The dwarf form is the one usually encountered in gardens.

Surprisingly, *A. callimischon* was hardy in New England for three winters. Ultimately I lost the bulbs in my collection to winter wet, to which it seems particularly susceptible. Seed is rarely offered in the seed exchanges due I suspect to the late-maturing seed capsules. I will keep an eye open for another source of this fall-blooming charmer.

With favorable weather, the onion season comes to a respectable close with two oriental species. The first is *A. thunbergii*, a variable entity from low mountains in Japan and South Korea. I've always been puzzled by Sampson Clay's reference to *A. thunbergii* in *The Present-Day Rock Garden* (a companion volume to Farrer's *The English Rock Garden*) where he describes the flowers as squinny stars on long upright pedicels. I have concluded that he must have been looking at the wrong plant, or perhaps a very poor

specimen, indeed, as *A. thunbergii* has bell-shaped flowers that are hardly starlike, far better than his dismal description might indicate.

In average forms, modest clusters of rose purple to white are produced on sturdy 12- to 18-inch stems. The flowers appear as late as November. A vastly superior clone selected in Japan is known as *A. thunbergii* 'Ozawa' (alias *A. thunbergii* 'Ozoke' or *A. thunbergii* 'Ozawa's Variety') imported to this country by plantsman George Schenk. The stems are very stocky and the leaves markedly trigonous, standing stiffly erect. In this selection, the head is larger and more densely flowered, with puckered crepe-textured bells of bright rosy purple accented by ochre anthers hanging on long exserted purple filaments. The head is spherical at first but later the upper flowers recline outward in flat-topped bird's-nest fashion. The first buds pop in late September and are still going strong the second week of November. This is a terrific plant with which to end the flowering season along with other fall bloomers such as brightly colored schizostylis hybrids and various cyclamen.

Allium splendens has a far greater range, including Siberia and islands off the eastern coast of the USSR. A plant of high alpine meadows, *A. splendens* is confused with *A. thunbergii*, but the two can easily be separated by several characteristics. *A. splendens* flowers in midsummer and has flat leaves, as opposed to the late bloom and trigonous or channeled leaves of *A. thunbergii*. Also *A. splendens* is a shorter plant usually under 12 inches and, unlike *A. thunbergii*, has anthers that are equal to the tepals or only slightly exserted. *A. splendens* is a handsome plant, mentioned here, even though a summer bloomer, in order to clear up some confusion. Both have culinary uses in the Far East.

Blooming later than any other onion in my garden is *A. virgunculae*, a captivating miniature found in rocky habitats on Hirato Island in Japan. Several solid, threadlike leaves spread out horizontally. From the center a small white-spathed bud cluster emerges, months ahead of its eventual debut. Finally, in mid-October, 3-inch stems release loose spheres of handsome white saucers lit with yellow anthers, each tepal touched with a fine green nerve. Two slender teeth rest at the sides of each stamen. The base of the petals show shiny reflectance similar to that found in several other species. It should be noted, however, that rose-colored specimens are more typical of *A. virgunculae* and my imported plants appear to be an albino variant.

What a wonderful little plant to cap off the long and rewarding onion season! Because of its modest proportions, I prefer to cultivate *A. virgunculae* in pots as experience has shown that a large slug can easily devour such a delicate plant. Also, unless carefully placed in the garden, it is in danger from encroachment by more vigorous neighbors.

There are other fall-blooming alliums yet to be tried. A glance through the long list of species in the *Flora of the USSR* reveals several tempting late-blooming sorts. But let's return to those onions that are presently available.

Some More Onions

There are always more onions to try. The allium nut will grow every species he can lay his hands on including those offered under expedition numbers or simply as "*Allium* sp." I have more than my share of unnamed alliums, but with perseverance I've been able to identify a few of them. One allium that came to me with a garbled, unidentifiable spelling is *A. kermesinum*, a Yugoslavian alpine from the southeast Alps. Fortunately the flower color confirmed its identity as true red is a rare color within the genus. This is a dwarf species that will attract the bulb enthusiast, valued for its balanced proportions and unusual flower color. Others may shrug their shoulders with disinterest, as from a distance the subtly shaded flowers are hardly noticeable. With close inspection, one sees that the flowers are actually yellowish white, diffusely yet generously overlaid at tepal edges and apex with carnous red of low brilliance, a hue slightly dulled with brown. I find the midsummer flopheads have a quaint charm, particularly intriguing when the flowers become fertilized and age a brighter beet red. Dormant after flowering, growth reappears in autumn, remaining persistent throughout winter.

Allium roseum is well known and available in fall bulb catalogs. This onion has a wide-spread distribution in southwest and southeast Europe, as well as North Africa. With such a diverse geographical range, along with the plant's natural variability, a profusion of names has resulted. This is an attractive onion with large clear pink or rarely white flowers, invariably with bulbils produced in the inflorescence. The more desirable non-bulbiliferous form is very rare and has a tenuous hold in cultivation. In Massachusetts *A. roseum* was not reliably hardy and had to be protected. Where this species is happy, it is said that it can become a nuisance due to the rapidity with which the bulbs offset, in addition to the bundles of seed and inflorescence-borne bulbils. A single bulb is capable of producing up to forty bulblets per year.

Allium neopolitanum parallels *A. roseum* in range, tenderness, and variability, with equally abundant peripheral "species." Usually a taller plant than *A. roseum*, the attractive flowers of pure white have a polished reflectance of a silky quality like that exhibited by ranunculus blooms. As it was not hardy in Massachusetts and was somewhat tall for pot culture, I gave up on growing this species back east. Here in the Puget Sound area it is perfectly hardy and satisfactory in the garden. Two other Mediterranean species, *A. subhirsutum* and *A. subvillosum*, resemble *A. neopolitanum* in superficial appearance but are much smaller plants with distinctly hairy foliage. Again these are not entirely hardy in New England but appear more amiable in milder climates. Because of their small size, fuzzy foliage, and ease of culture, they make admirable subjects for pot culture or bulb frame.

Allium saxatile is a cute plant with open cups of pink or white above dense tufts of filiform foliage, flowering in July and August. *A marschallianum* (yellowish) and *A. globosum* (purple) hover uneasily about *A. saxatile* and are considered to represent regional color variants in the opinion of some

Allium kermesinum

authors but maintained as separate species by others. All are worth growing whatever their names may be.

With hesitation I mention *A. vineale*, the common field garlic or crow garlic of Europe (and now established in North America), as it is considered a vile weed and is responsible more than any other species for tainting the image of the genus *Allium*. The small head is partly or entirely composed of bulbils, the root of its bad name. A totally bulbiliferous form in my garden provides curious interest for several reasons. The slender 3-foot stems bear perfectly round heads of tightly packed red bulbils, each sprouting a green threadlike leaf 3 or 4 inches long and turning straight up regardless of the angle of bulbil attachment to the stem. My first encounter with this whimsical floral structure evoked a chuckle with thoughts of a Jim Henson muppet creation. When the long-stemmed heads are cut off, the sprout leaves shrivel and disappear leaving pale red drumsticks that are wonderful for dried flower arrangements. If the stems are cut for such decorative purposes before the head fully matures to drop the eager offspring, then little problem should ensue. Also, as an allium enthusiast, I grow *A. vineale* simply to represent this species in my collection. The serious collector grows the ugly as well as the beautiful.

More worthy of space in the garden is *A. oreophilum* (*A. ostrovskianum*, *A. ostrowskianum*), indigenous to high mountain zones in central Asia. This is yet another commercially available bulbous species representing the first of the ornamental onions to be tried in my garden. After many years I still look forward to seeing the bright rose star-cups arranged into largish globular heads sitting comfortably atop 6-10-inch stems. This is a June-blooming plant that combines attractively with yellow *A. moly* for a cheerful effect. This species is easy and hardy in any position in the garden.

A superior clone named 'Zwanenburg' is not only a more brilliant plant, but exhibits a growth habit markedly different from the type species and is a bit more demanding in cultural requirements. The deep green strap leaves are noticeably thick and waxy, held firmly in ascending position. Stocky stems, which are upright in typical *A. oreophilum*, tend to recline in the 'Zwanenburg' selection, stretching only 3 to 5 inches in length. The large buds are fat and pointed and of a glowing carmine rose, forming a starry ball ablaze with color. Three of the six stamens have been transformed into a cone surrounding the ovary, shaded cool white at the base to deep carmine at the apex and resembling a little volcano overflowing with molten gold anthers brewing at the rim. Such connate structures are found in other alliums but seem particularly well developed in this species.

What strikes the observer about this plant is its unique posture, with two poised arching leaves subtending an outstretched gawking neck. If alliums could fly, this would be the first to become airborne. As the flowers expire, their rich coloration fades to tan. They close up tightly as if becoming buds once more, permanently investing the developing seed capsule. These chaffy heads are nice for arrangements and if picked when in full

bloom, some rose pigment will remain to stain the papery dry heads. A well-drained, sandy soil, which has been moderately enriched, and full sun should suit this beautiful plant. Bulbs of *A. oreophilum* 'Zwanenburg' are sold by some nurseries and mail-order bulb companies.

Spectacular Onions

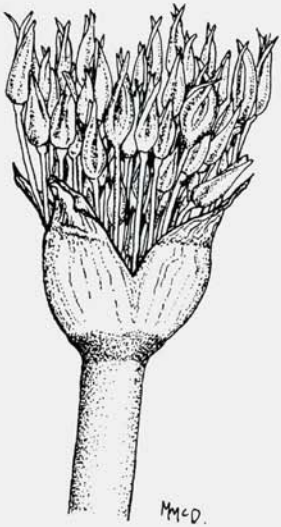
In central Asia and adjacent regions the onion has manifested into countless combinations of large-headed plants, well able to vie for beauty among other stalwart show-offs such as eremurus and fritillaria that share the arid mountains. Wild, almost deranged distortions of scale and proportion have resulted in fantastic floral structures, surely to be considered among the most creative in the world of plants. *A. giganteum* is a noble example of such a plant. Found growing on slopes in lower mountain zones, this species is hardy and dependable in the garden, appreciating a better loam than many as long as the location drains well. A half dozen or more glaucous leaves, 2 inches wide by 12 inches long, form a large rosette on the ground. From the center appears a small bud and a stocky stem capable of reaching 5 feet. The sheathed bud cluster seems far too small to possibly produce the promised 5-inch flower head. Finally, the sheath splits and the buds begin to expand, opening into a small sphere. As these flowers fade, they are surpassed by myriads of fresh flowers on lengthening pedicels. The perfectly round globe grows and grows with a seemingly unending supply of buds ready to push forth from beneath the bloom surface. The individual flowers are small and starry with exserted stamens, composing a shimmering ball of light violet purple.

How marvelous to see these mad lollipops gently sway in the breeze, to observe their perfection of symmetry at eye level, wafting a delicate fragrance and buzzing with preoccupied bees. While out of place in the rock garden, there can always be found some sunny spot, perhaps in a shrubbery border, where *A. giganteum* can be enjoyed.

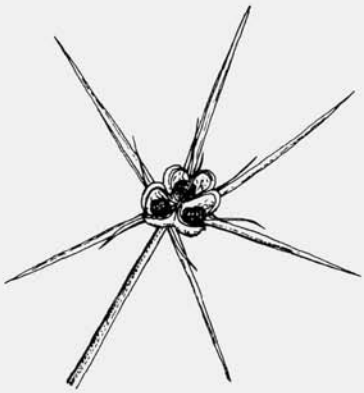
For best results, dig and separate the bulbs every few years because once the bulb has divided, the flower heads will be diminished in size the following year. Plants seem to achieve full magnificence if replanted in deeply prepared beds fertilized with bone meal, the individual bulbs set apart from one another in well-spaced colonies.

Only one problem may be encountered. When the leaves are young, they create a vase-shaped receptacle which holds water as does a bromeliad. The bud sitting in this for any length of time will risk loss to rot. I've actually gone to the trouble of pushing down the leaves after a spring rain, or puncturing holes in the leaf bases to release the trapped moisture. It is well worth the bother to see the beautiful blooms in June.

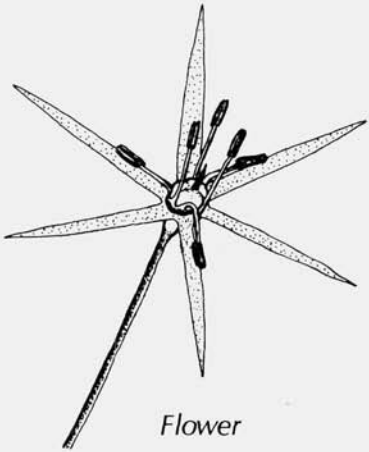
Even more spectacular is *A. christophii* (*A. albopilosum*) from similar low mountain zones. The many leaves form a large starfish rosette covered underneath with bristly white hairs, particularly apparent on the leaf margins. The developing bud is fat and the stem stout, only reaching 12 to 24 inches tall. Buds with twisted tepals shoot upward at first, then spread outward on



Expanding Buds



Seed Capsule



Flower

Allium christophii (syn. *albopilosum*)

long and slender purplish pedicels forming an amazing sphere that can measure over 10 inches across. I am reminded of a Fourth of July fireworks display a momentary instant after the initial burst when streamers of light flash equally in all directions, then simultaneously explode into a multitude of burning pinpoints of light against the sky. This allium head implies such movement, the moment somehow captured in time.

Each flower has exceedingly narrow, firmly pointed tepals of a color best defined by the familiar, if not overused, description of "metallic purple," an intrinsically appropriate phrase to define this strangely attractive shade. The blooms give off a mild, sweet fragrance and are beloved by bees and butterflies.

While it may seem that I have described an onion of bizarre proportions, suggestive of an overbred dahlia, the huge bloom heads appear quite light and breezy with a pleasant wildflower air about them. I derive considerable pleasure and amusement observing these half-crazed onion heads popping out of the ground with their foliage long departed.

Reputably tender in colder climates, I found the bulbs to be quite hardy in the open ground for several years in Massachusetts. *A. christophii* is even more susceptible to rot than *A. giganteum* when the emerging leaves trap a pool of water. In unusually rainy weather, entire plants can rot off. Planting in a very well-drained but enriched soil on a sloped sunny bed offers best chances for success.

Allium karataviense brings us closer to the ground and provides a startling subject for the rock garden. Unlike the previous two, the leaves are present when flowering and are so attractive as to be worth growing for the foliage alone. The two, or less commonly three, very broad leaves are strongly pleated, the leaf bases forming the familiar vase shape. These sturdy oval leaves are bluish-gray tinged with purple, a perfect dark foil for the grayed lavender globes that sit just clear of the foliage. The wispy tepals are linear and twisted, surrounding an ovary which when fertilized becomes conspicuously large. They age dull madder-rose. In fact the entire plant is pervaded by a deep sanguine pigmentation. Shortly after the June show, all energy quickly retreats into the deeply buried bulbs and the dehisced stems may be plucked from the ground and put to good use in dried floral arrangements. Haunting gray lavender is the typical color form met in cultivation, but brighter pink forms do occur. Some consider them too large for the rock garden; I cannot agree. Certainly stocky and somewhat squat plants, I find them quite at home in a sunny pocket alongside a rock garden path where one may stop to inspect the intricacies of such a fascinating onion.

Allium aflatunense is yet another of the commercially available "cricket ball" onions, a term used in England to refer to the large-headed onions generally contained in the Genus subdivision Melanocrommyum. I have been informed by allium experts in England that *A. aflatunense* as seen in cultivation is not the true plant at all but that it is some other species of thus far unidentified status. Regardless of its identity, the plant of horticulture

is a good, easy plant for early color, blooming several weeks earlier than *A. giganteum* and growing up to 3 feet with loose 4-inch hemispheres of bright lilac purple. Not as spectacular as the others, it is still a worthwhile onion for both the garden and for dried flower arrangements.

Allium sphaerocephalon (sometimes spelled *sphaerocephalum*) is commonly known as the drumstick onion, a fitting allusion to the slender 3-foot stems topped with small tight knobs of bloom that roll about with the slightest air movement. It's amazing how they resemble ripening raspberries when the tightly packed bulbs compose a narrowly oblong head of bright lime green, becoming wine purple at the top and slowly oozing color into the lower buds.

This species has a wide geographical distribution, ranging throughout Europe, Asia, and Africa. Hordes of similar species of various heights and colors surround this species, few of which are in cultivation. The drumstick onion is decorative planted in colonies in sun or part shade between shrubs or in the perennial border, giving attractive June bloom.

I rarely bother with seed of any of these larger onions as all can be purchased commercially as bulbs with much quicker results. Seed is the only method, however, of acquiring the rarer types and is a propagation process requiring patience as many may take 5 years to reach maturity from seed. The aforementioned cultivated onions represent the tip of the iceberg. Many other beautiful species await introduction into cultivation. It is worth mentioning some of the outstanding species, as seed is occasionally offered in the seed exchanges.

Returning to the habit of *A. karataviense*, yet infinitely better, is the Afghan and Iranian *A. mirum*, a plant highly regarded by all bulb growers. Since its introduction by Rear-Admiral Paul Furse as little as 25 years ago, the plant has remained rare in cultivation, proving very difficult to grow and flower well but is undoubtedly one of the gems among the world of bulbs. It can be likened to a miniature version of *A. karataviense*, having one or two puckered broad leaves of blue green with purple stripes. A precisely formed ball about 3 inches in diameter sits atop a short stem just clear of the foliage, the umbel varying from pale brownish purple to pure white, those with darker flowers fading to white. A photo of Admiral Furse holding a potted specimen in pristine bloom, grown from bulbs he collected in eastern Iran, can be seen in the *Journal of the Royal Horticultual Society*, Vol. XCI, Part 2, giving clear testimony to the desirability of this plant.

While cultivated in England and by a few growers in this country, I have yet to acquire the true plant. Seed from various exchanges results in *A. senescens* or other unrelated species. Someday I hope to obtain *A. mirum*. It would be an honored resident in the rock garden, or cherished in a pot.

There are a number of closely related species, all of which are desirable plants. One of these, *A. akaka*, is cultivated in England by a few bulb specialists and is as difficult to acquire as *A. mirum*. On two occasions I received a bit of seed but never had luck with germination. What a shock-

ing thought to learn that bulbs of *A. akaka* are sold as food in Iran.

Allium caspium, A. protensum, and *A. bucharicum* set the scene for what must be regarded the most spectacular section within the genus. All are under 1 foot in height and produce magnificent heads capable of exceeding 12 inches in diameter. So distinct in fact, that *A. caspium* (often misspelled *caspicum*) has among its synonyms *Crinum caspium* and *Amaryllis caspia.* Two distinct color forms are noted. The type specimen from which *Allium caspium* was described has flowers of an unusual dull greenish-violet. However, a whitish-flowered form (syn. *A. baissunense*) is the one generally found in cultivation.

Allium protensum has flowers oddly shaded pale buff-brown or tan, in heads that are reputed to be quite stunning. The buff-colored plants have been confused with *A. bucharicum,* but according to the type specimens and descriptions, *A. bucharicum* has dirty white or pinkish flowers with greenish-purple nerves.

In all these onions, the pedicels are of varying lengths, lending an informal, loose appearance to the oversized flowerheads, very different from the concise globes of *A. giganteum.* This feature is most exaggerated in *A. schubertii,* a bizarre species from Libya, Syria, Israel, and Jordan, with monstrous heads documented at over 15 inches across. Some of the tiny white or pink flowers are held very close to the center of the globe while others are hurled outward 7 inches or more on arching filamentous pedicels. The inflorescence of such spidery construction appears quite light and winsome.

No increase bulbs are known to be produced in *A. schubertii,* so propagation depends on seed, requiring 5 years before flowering size is attained. As with some other alliums discussed so far, the plant has the ability to produce above-ground growth that will flower and set seed, while all the time the subterranean portion of the stem between the bulb and the soil's surface has become dried and lifeless (see illustration of *A. hyalinum* in Part III for this characteristic). This is an advantage in the garden, as top-growth remains of the plant may be removed immediately after flowering without deleterious effect to the bulb, unlike other genera such as *Tulipa* and *Narcissus* with slowly decaying foliage that flops about making a mess. It is theorized that this may be an adaptive characteristic enhancing seed dispersal because when the seed heads detach from the bulb, they can roll about on their stiff pedicels like rambling tumbleweeds, dropping seed on their wind-directed travels.

While grown in the Netherlands, *A. schubertii* is seldom seen in gardens in part due to the difficulties with propagation, but also because the bulbs are reportedly frost tender. It would be interesting to learn how to cultivate this onion on a commercial scale.

Another oddity in the genus is *A. regelii* from central Asia, trying its best to mimic a candelabra primrose with up to six-tiered whorls of purple or pale pink bloom. The plant can vary from single-headed specimens little

over a foot tall to more robust 3-foot specimens bearing several heads on a single stalk, each progressively higher bloom cluster diminished in size. Occasionally offered in seed exchanges, this should be sought after as one of the most unusual of the genus.

The last that I'll describe in detail beats them all for inventiveness in form and habit. *A. calocephalum* (the specific epithet means "beautiful head") was described only 17 years ago from plants collected in Iraq. The large shaggy heads of white or creamy yellow, looking like a cornflower gone mad with haywire hormones, are stunning. The mop head appearance can be attributed to two distinctly different types of flowers in the same head. The outer flowers are sterile with very long threadlike tepals well over an inch in length, while the inner fertile flowers have much shorter segments. With stems little over a foot tall, *A. calocephalum* would be highly prized in the rock garden or alpine house, if only it could be obtained. A few growers have managed to grow this plant, but it is proving difficult and demanding in cultivation. Not all onions are as easy to cultivate as crow garlic.

As a final enticement to grow alliums, I offer a few paragraphs highlighting some of the more distinctive onions.

North Africa holds many alliums to try, the most remarkable of which is *A. blomfeldianum*, endemic to a limited coastal area of western Egypt. The stem reaches only a few inches, holding a dense ball of very large flowers which appear curiously overblown in size and attitude. The flower color of glossy silver-white or silvery-cream adds to the exaggerated opulence. Growing so close to the sea at low elevations, *A. blomfeldianum* will undoubtedly be tender, but would provide uncontested interest in the alpine house.

Allium ruhmerianum is a very rare Libyan endemic with a similar liking for sandy coastal plains, but it is an altogether more nomal-looking plant with several balls of white bloom appearing from each scaly bulb. North Africa harbors several other interesting endemic species.

Allium chamaemoly grows in a variety of coastal habitats in North Africa and most of the Mediterranean region. Its habit is very interesting, the plants forming compressed starfish rosettes of flat hairy leaves with stemless umbels of starry white flowers with green or purplish nerves. Early botanists placed this plant in the genus *Saturnia*. Seed is sometimes seen in the seed exchanges. The plant would be valued for its winter bloom if grown with the protection of a greenhouse.

Several Afghan species display the peculiar habit of coiling their narrow leaves with varying degrees of spring tension. Lilac *A. circumflexum*, white *A. spirophyllum*, and the recently introduced *A. stocksianum* with ample purple flowers are all dwarf mountain plants that have definite rock garden potential.

Afghanistan also boasts some unusually colored alliums that break away from the generic tendencies of white, pink, and purple. *A. fedschenkoanum* of high alpine marshes has fistular (hollow) leaves and striking clusters of

yellow flowers accented with reddish bracts. *A. cucullatum* is a desirable mountain species akin to *A. mirum*, but here the large dense globes are golden brown tinged with purple, carried on very short stems. Each flower is uniquely formed with incurving boat-shaped tepals held in globular symmetry. *A. caroli-henrici* and *A. pogonotepalum* are other yellow-brown species of merit, the latter being in cultivation. Unfortunately, the areas in which these alliums grow are politically troubled and therefore most species will continue to be rare in cultivation for some time, with those that are in cultivation largely derived from Admiral Furse's original collection.

The Iranian *A. paradoxum*, well known as a handsome yet invasive plant with bulbils in the inflorescence, is shunned because of its pernicious tendency. The form without bulbils is reputably a very beautiful plant with drooping few-flowered umbels of pure and unblemished white, the individual bells among the largest in the genus.

Regrettably, a number of species discussed in this category are either difficult to obtain or unobtainable, described here on the basis of research rather than personal experience with cultivated plants in the hope that the reader will now realize what a wealth of onions await introduction into our gardens and that their range of form and interest is far greater than generally thought. I'm sure that this huge genus holds at least a few species that could satisfy even the most discriminating plant collectors, including those who scorn alliums as being dull and inferior to more popular genera.

For those who decide to venture into the world of onions, the well of interest upon which to draw may never run out. Unfamiliar names pop up here and there in seed exchange lists to excite the alliumaniacs with anticipation. The mountains and wild places that we visit on plant outings, from desert lowlands to the highest mountains screes, are often abundant with wild onions under foot. Fall bulb catalogs with seductive color photos entice us to buy yet a few more "giganteum" bulbs and perhaps a dozen ruby "Zwanenburg" onions. Correspondence with bulb enthusiasts may reveal an elusive onion for which you have searched for many years. Rare botanical expeditions to troubled areas of the world are eagerly subscribed to in the hope of acquiring a few more species. If the genus *Allium* is given a chance, it will be sure to please and may capture praise similar to that of other highly regarded genera. Even if it were possible for the allium devotee to grow every known species (which is highly unlikely), equal pleasure could be found in growing related genera such as the western American brodiaeas and the diminutive androstephiums, or the stalwart Asian nectaroscordums, South and Central American nothoscordums, the Chinese *Caloscordum*, or the delightful South African genus *Tulbahgia*.

However, perhaps the greatest advantage about growing alliums, apart from their versatility and their fascinating detail, is that if for any reason you are not completely spellbound with an allium that you may be growing, you can always yank it out, wash it, chop it, slice it, dice it, saute in butter and serve it up with a juicy steak and a glass of wine.

Nearing Frame: Theme and Variation

The Nearing Frame

Timmy Foster
Falls Village, Connecticut

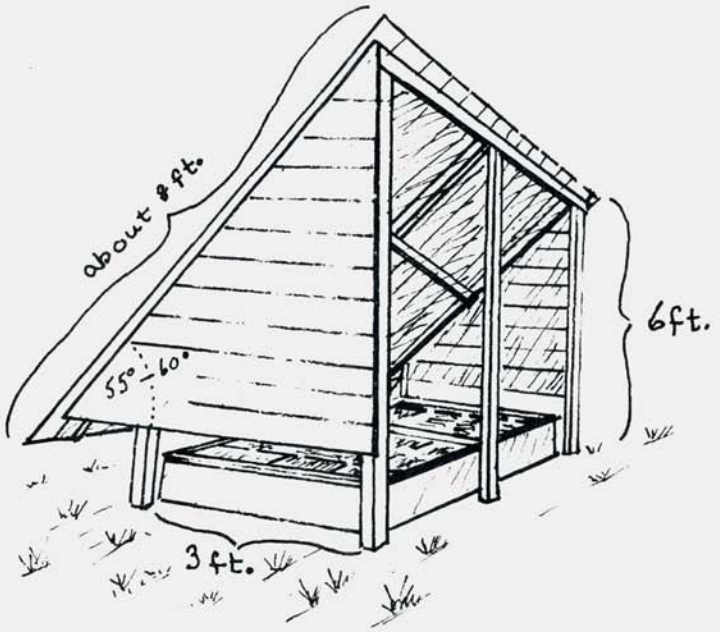
[Drawing by Author]

The Nearing Frame was the brain child of Dr. G. G. Nearing of Ramsey, New Jersey, well-known hybridizer of such rhododendrons as 'Windbeam' and 'Mary Fleming' and propagator of rhododendrons and other woody plants. He was also editor of the ARGS *Bulletin* from 1951 to 1954.

Hard as it may be for present-day propagators to believe, in these days of automatic mist systems, rooting hormones, and plastic sheeting, at the time Dr. Nearing invented his frame in the early 1920s it was considered almost impossible to root rhododendrons from cuttings. Propagation was done by grafting and layering. The Nearing Frame was the first breakthrough. Nurserymen and amateurs eagerly seized its possibilities. When the patent expired Dr. Nearing allowed it to lapse and in 1958 wrote an article in the ARGS *Bulletin* (Vol. 16, p. 23) giving the principles of its construction and use.

In order to produce roots, cuttings of some plants such as rhododendrons require good light, coolness, and especially, high humidity. Dr. Nearing's solution was to build an enclosed cold-frame shaded by a hood which was designed to allow maximum sky light but prevent direct sunlight from falling on the cold-frame in order to prevent heat build-up under the sash. The hood was sited so that the open front faced precisely north. (Dr. Nearing sighted a line to the North Star, Polaris, and originally intended to call his invention the North Star.) In order to allow maximum daylight to reach the frame yet completely shield it from direct sun rays, the top of the hood sloped over the frame at an angle of about 55 to 60°. For a 3-foot-wide frame, the north-facing opening was 6 feet high (see diagram).

Dr. Nearing found that in practice the top of the hood should extend a few inches northward beyond the front edge of the frame and also to the east and west so that the east- and west-facing ends of the hood were partially boarded over to keep out the early morning and late afternoon rays of the summer's more northerly sun. The trailing lower edge of the hood's roof should extend about a foot beyond the back edge of the cold-frame and come to about a foot above the ground. The sides, too, were not boarded right to the ground but left open for about a foot at the bottom. A gap of a few inches was left between the sides of the hood and the ends of the cold-frame. The open space was left at the bottom of the hood in order to permit a free updraft of air around and over the cold-frame to help prevent a build-up of heated air inside the hood. The inside of the hood was painted



Nearing Frame

white or aluminum to give all the reflective light possible to the plants inside the frame.

The cold-frame under the hood was of simple construction: a box with a bottom rather like a large deep wooden flat. Dr. Nearing made his frame 3 feet wide by 6 feet long and a foot deep. Though no effort was made to make the box waterproof, no drainage holes were provided. Dr. Nearing felt that the inevitable cracks between the boards on the bottom provided all the drainage necessary. He was well aware that this went against all the rules of conventional propagation, but he never had any difficulty over many years of rooting thousands and thousands of cuttings.

As high humidity inside the cold-frame itself was essential to root plants such as rhododendrons, he wished to maintain a constant moisture content in the soil. To prevent as much evaporation of this moisture as possible, glass-paned sashes the same dimensions as the top of the box rested on its rim. Dr. Nearing occasionally lifted these off in order to air the frames or to water or inspect his plants. Hinging these sashes to the back of the box might have simplified opening and closing the frame, particularly if strong hooks had been suspended from the underside of the hood so that they could fasten into eyes set in the upper front edge of the sash. Dr. Nearing, however, makes no mention of such frills.

Heating cables were not used in Dr. Nearing's frames either for seeds or for cuttings. The plant material and the soil were allowed to freeze and

thaw as the weather dictated. He encouraged the growth of certain mosses as he believed that they prevented damp-off and other fungus diseases.

As Dr. Nearing was a professional propagator, he had many such frames. They were placed in north-facing rows far enough apart to allow good air circulation and good sky light between them. By painting the outside as well as the inside of the sloping roof of the hood white or covering it with aluminum, he found that the reflection from the back, south-facing slope of the roof of the hood sent a beneficial light into the opening of the hood placed to the south of it.

For rhododendrons and other hardwood cuttings, Dr. Nearing believed that the rooting medium in his frame boxes was of paramount importance. It was built up in layers, the lowest consisting of 4 inches of a mixture of three parts screened peat moss, one part screened mushroom manure, a dusting of sulfur powder, and a couple of handfuls of the same layer from the most successful box of the previous season. Dr. Nearing felt that the dead mycelium left in the mushroom manure was an important ingredient; whenever he tried other forms of manure or plain peat, his results were not so successful. On top of this bottom layer, he carefully placed another about an inch thick consisting of one part sharp sand and one part Michigan sedge peat. The final layer was of 3 inches of coarse sand. Each layer was carefully leveled prior to putting on the next, but he was certain never to compress the mixture as it should remain light and spongy. After filling, the frame was thoroughly watered with a fine spray until water stood on the surface at least one-fourth inch deep. This watering settled the soil so that it was only about 6 inches deep.

Dr. Nearing struck his cuttings at any time of the year that the wood was suitable. He gives quite precise directions both for the soil mixture and the care of broadleaf evergreen and dwarf conifer cuttings in his *Bulletin* article. His instructions for rooting cuttings of alpines and other herbaceous plants are much less specific, but he does say that he found them easy to root in his frame.

For raising seed he put his seed pots in metal pans placed on the wooden floor of the frame. He preferred metal pans to wooden flats because he felt the latter encouraged mildew and other fungi. Plastic pans would serve as well or better these days. All watering was done from underneath by filling the pans with water and allowing the soil in the pots to take it up.

Though Dr. Nearing claimed he experienced no particular difficulties in raising seedlings in his frames, he felt that most alpines and many other sun-loving plants required more direct light than they received in his frame with its sun-excluding hood. For such plants, he suggested using a regular frame or even open ground for seed sowing.

It should not be forgotten that Dr. Nearing's primary interest was in hybridizing rhododendrons and in propagating these and dwarf conifers. It was for this purpose that he invented his hooded frame, and at the time he was working there were neither automatic misting systems nor plastic

sheeting to make it possible to keep such cuttings turgid until they developed roots. His frame and his methods solved this problem with great success. It should also be remembered that his frames were constructed for propagating large numbers of plants and were therefore larger than most people would need. Smaller frames with smaller hoods constructed according to his design would serve very well those of us embarked on less ambitious propagating schemes.

(Drawing taken from a photograph in "Propagation Made Easy" by Dr. G. G. Nearing, ARGS *Bulletin*, Vol. 16, p. 23, 1958.)

Reflected Light for Propagator

Alf B. Birkrem
Dover, Massachusetts

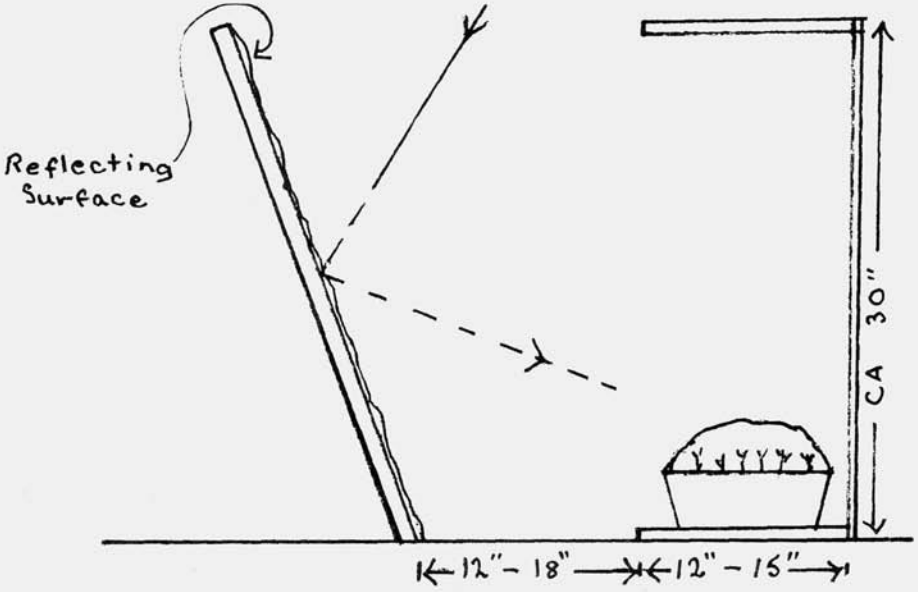
[Drawing by Author]

In the thirties, Guy Nearing developed his propagator which was sufficiently new in concept that he received a patent on it. As I was unable to find any specific material on Dr. Nearing's design, only rather vague descriptions of the general idea, I created my own propagator along the lines of the descriptions I had been given: an open box painted white in the inside and facing the unobstructed skies to the north.

In trying to use this Nearing-like propagator, I found a problem. My house is surrounded by oak trees and open to the skies only at 45 to 60° angles. It occurred to me that placing a 2 foot by 3 foot board covered with aluminum foil opposite the opening of the propagating box would reflect the sunlight into the box. The inclination of the reflective board is set at approximately 60°, but this angle can be changed depending upon the season and the position of the sun. The reflector seemingly speeds up the rooting of many soft and woody cuttings.

A few of the plants I have tried and their rooting times are as follows: *Penstemon procumbens*, 2 to 3 weeks, July-September; *Dianthus* 'Tiny Rubies,' 3 weeks; *Gentiana scabra*, 6 weeks; *Ledum groenlandicum*, 3 months; *Bruckenthalia spiculifolia*, 3 weeks; *Daphne* 'Burkwoodii,' 3 weeks, July. Various dwarf rhododendrons such a *Rhododendron kiusianum* will take 2 to 3 months.

When the weather turns cold in October, the outfit is taken into an unheated pit greenhouse where a 15-watt heating coil gives the needed heat. Rooting continues through the fall and winter.



Nearing-like Frame

Overheating is not a problem at normal summer temperatures, but unusually hot summers can cause difficulties, cooking some of the plants, especially the rhododendrons. Removal of the pots when days over 90°F are predicted would be advisable.

For containers, I use rectangular seed flats 6-by-8-by-2 inches deep. These are filled with a half and half mixture of damp peatmoss and vermiculite clear to the top. Each container is watered once and then one-third of a coat hanger is bent and inserted diagonally from one corner to another. The whole thing is then enclosed in a plastic bag, sealed, and placed in the bottom of the propagator out of direct sunshine. The success rate has been close to 90%.

I have sustained some losses after transplanting rooted cuttings into 2-inch pots as the transplants are very sensitive to drying out. However, placing the pots on wet sand or peatmoss has eliminated the problem.

★ ★ ★

Show me your garden and I shall tell you what you are.
— from *The Garden that I Love* by Alfred Austin

Omnium-Gatherum

Cover You will be thinking that we have sent you the winter issue all over again, but indeed we have not. This cover will be with us for all four issues of 1985. This is a price for progress. It is often slower than we would want. Large leaps are seldom followed directly by more large leaps, especially when the size of the leap is directly tied to the size of the bank roll. Having all four covers printed at once and of the same design has made color possible within our current budget, albeit with the drawback of sameness. To have a different color cover each issue is ideal but far more expensive. To choose four different color covers but have them all printed up at the beginning of an issue year may become economically possible; however, in order to have the cover relevant to text within the issue, the editor must have enough material on hand to plan a year in advance. You see the dilemma. Your comments, suggestions, and solutions are most welcome. In the meantime, search out or take appropriate and exquisite pictures to submit for possible future covers, aid in finding or supplying funding for future color covers, and enjoy Phil Pearson's photograph taken in the high Wallowas where few of us will be privileged to venture.

Gratitude To Laura Louise Foster (Timmy) and to Anita Kistler I offer my most sincere and appreciative thanks. The materials and instruction that they passed on and continue to pass on to me are so complete and efficiently organized that even amidst the utter confusion of building and sorting, packing and unpacking, living in two places at once and working at an 18-by-30-inch desk, I am able to function reasonably well. Without their help, I fear, you'd still be waiting for Issue No. 1 and I'd be whimpering behind a stack of packing boxes.

Adlets There has been a good response to the idea of some form of classified column for members as suggested by Anita Kistler. (See O-G, Winter, 1985.) Look in the Bulletin Board which accompanies this issue for details.

Opportunities If you aren't quite ready or don't have time for a major written contribution to the *Bulletin*, you might enjoy contributing to the Fragment Department. This is a new and, though small, important constituent of the *Bulletin*. It encompasses all of those wonderful bits of wit and wisdom pertaining to plants and gardens, coming from our own experience or alert observation and from choice snippets found in our reading to add zest or humor or a bit of philosophical wonderment to odd, otherwise left-over parts of our pages. Articles on garden construction and plant propagation are also in very short supply.

★ ★ ★

Book Review

The Root Book by Norma Phillips. 1984. Published by the author. Available from the author or from the ARGS Bookstore, $11.00.

This small, 107-page book, subtitled *How to Plant Wildflowers* and authored by the owner of a wildflower nursery, Orchid Gardens, in Grand Rapids, Minnesota, concentrates on the cultivation of some of the plants native to Northeastern and North Central States. It should be of value to wildflower buffs who wish to grow these plants as, unlike most wildflower books, it concentrates on what goes on underground rather than above. In fact the above-ground portions are not even mentioned and for this reason a good pictorial wildflower guide might be helpful as a co-reference book for those not completely familiar with the species mentioned.

The main body of the book, pages 13 through 89, consists of black and white photographs of the roots of sixty-two wildflowers from baneberry to violets, including five orchids, followed by a brief section on non-flowering plants (ground pines and ferns). Each plant or division, such as one would receive from a reputable wildflower nursery, is pictured at the top of the page with its crown or growing point planted at the correct depth against a background of soil of a contrasting color so that the root structure can be clearly seen, though because of the limitations of space it is not always possible to show the full extent of the roots. A notation below the picture (i.e. shown ½ life size) gives an indication of the size of the plant. On the bottom portion of the page are a few brief paragraphs describing the soil, moisture content, and light preferences of the plant in question, along with a line or two of planting instructions.

In a helpful forward by the late Mr. Clair Phillips, general information about transplanting and growing native wildflowers is given. This is followed by a short preface aobut the book itself, an introduction on how to procure wild plants, and a chapter on soils, mulches, diseases and pests, and how to prepare special sites such as hedgerows and bogs.

A group of color pictures, one to a page, of plant communities, a glossary of terms used in the book, and an index listing the plants by their botanical and colloquial names follow. A few paragraphs about the author and her husband complete this concise book. It is ringbound to stay flat when open and has a plasticized cardboard cover. L.L.F.

★ ★ ★

Now 'tis the spring, and weeds are shallow-rooted;
Suffer them now and they'll o'ergrown the garden.

— Shakespeare

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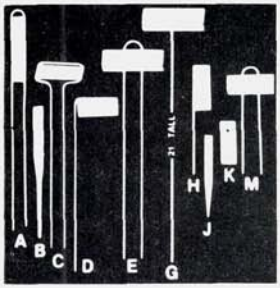

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