

American Rock Garden Society Bulletin



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A SIMPLE BULB FRAME

A. J. MACPHAIL, *North Vancouver, B. C.*

Few would deny that, from the standpoint of appearance, the best way to grow bulbs is in the rock garden or other naturalistic garden setting. If one were to limit one's choice of bulbs to those that would thrive under such exposed conditions, there would be no problem. And not much fun, either.

There are a great many bulbous plants which have evolved in climates so vastly different from our own that they are simply unable to cope with an environment so alien. This group includes some of the most outstandingly beautiful plants in cultivation, so ineffably appealing as to engender at once the desire to possess them at whatever the inconvenience.

The most universally accepted method for dealing with these difficult bulbs is pot cultivation, the pots being over-wintered in a cold frame, alpine house, or cool greenhouse. But the cultivation of bulbs in pots is a very time-consuming proposition, especially if there are a lot of them. They must be watered, fed, and repotted regularly, and one seems to be forever moving the pots about—from potting shed to cold frame to alpine house; from alpine house to cold frame, from cold frame to drying out frame, etc. Moreover, a great many bulbs never do give of their best when grown in pots. They seem to ask for a more spacious root run and more soil over them. It is not unusual when repotting to find the bulbs have worked themselves right down to the bottom of the pot among the drainage crocks.

Obviously then, a more convenient method is required, and in fact such a method has existed in one form or another, probably dating back to the dawn of horticulture. In an article headed "The Culture of Mariposa Lilies" in the June, 1903 edition of *Flora and Silva* one Robert Wallace very succinctly described a bulb frame as follows:

“. . . Another method of cultivation is to plant the bulbs in a frame and, where frames are to spare, nothing is simpler or better; the light is raised at each end, so that there is plenty of fresh air, and, at the same time, all rain is excluded. Remove all covering from the beds early in February, when the bulbs should be well advanced in growth. As they pass out of flower remove all flower stems, as, if left, they quickly seed, and, ripening on the plant, weaken the growth. Place a light over the bed towards the end of July and thoroughly rest and ripen the bulbs.”

Considering the advantages of bulb frame cultivation it seems surprising it has not become popular since those words were written at about the turn of the century. To be sure, commercial growers have always recognized the virtues of bulb frames but, by and large, amateur growers have passed them by. No doubt the constant maintenance, let alone the expense, of all that glass counted against them. There is nothing quite so shattering—in both senses of the word—as the sound of breaking glass.

The design of the bulb frame to be described evolved out of our desire to use white corrugated PVC (polyvinyl chloride) plastic panels instead of the more conventional glass frame lights. Not only is this a much cheaper material than glass, it is light-weight, virtually indestructible, and the sections nest together for convenient storage. The fact that they are translucent rather than transparent has not been a disadvantage; they are, after all, only required for use during those periods when very little foliage appears above the ground anyway.

The frame itself is merely a big wooden box made of heavy planks nailed together. It can be made any length, in our case 14 ft., which happened to be the length of the available planks. The PVC panels are sold in a width of 26 inches and in varying lengths. We chose ten foot lengths and cut them in two (easy with scissors) to provide panels five feet long. The use of five foot panels requires that the overall width of the frame be about 54 inches in order to provide a suitable curvature when the panels are in place.



Bulb frame with panels in place

James MacPhail



Bulb frame with plastic panels removed

James MacPhail

On each side of the frame along the upper edge are two strips shaped like an inverted letter "L" and held out from the side of the frame by one inch thick battens. The plastic panels are snapped into place between the inverted "L's" and are held in position by their own natural spring tension. Each panel overlaps the corrugation of the one next to it and can easily be snapped in and out. Reference to the accompanying photograph will clarify the construction details. The two ends are normally left open as shown, for ventilation; on very cold winter days they are covered with burlap sacking.

The inside of the frame was given a waterproofing coat of asphalt emulsion and, below grade level, the same attention to drainage as one would employ in the building of a scree or rock garden. The soil mix used could probably be described as a very rich scree mix; something like equal parts loam, sand, pea gravel, and screened leafmould. To this was added about ten pounds of bone meal. Bulbs in cultivation are not, as a rule, overly fussy in their requirements as long as the soil is fairly rich and well drained. We also added a few handfuls of dolomite lime to neutralize our slightly acid soil.

A couple of rock outcroppings were set into the surface to relieve the frame's austere billiard table appearance and it was ready for planting.

The choice of plants is, of course, dictated by one's own preferences. There is a wealth of material to choose from, though it requires an uncommon degree of persistence to root out a source for the rarities. Western North America offers a superb hunting ground to the collector, to whom self-collected bulbs take on a preciousness far beyond their intrinsic value. Often the only way of acquiring a given species is growing from seed and, while this can be excessively slow, the effort required to grow the seedlings on to maturity in the frame is practically nil.

The blooming season in our frame begins in October, during which month the panels are entirely removed. Shortly after the first autumn rain, which the bulbs interpret as a signal to start doing their thing, the first of the autumn-winter crocuses explodes into bloom, the creamy-white *Crocus ochroleucus*. Since the panels are in place during the months of November, December, and January, these winter-blooming things are best grouped together at one end of the frame where the panels can be removed on sunny days. Other crocus species in bloom through the winter include tiny *Crocus niveus*, brightly-coloured *C. laevigatus fontenayi*, and later, the most beautiful *C. imperati*.

The earliest narcissus is the November-blooming *Narcissus bulbocodium monophyllum*, to my mind the best of the genus. It thrives in the frame, whereas in the open we have managed to keep it for but a season or two. It is followed in late December by *Narcissus bulbocodium romieuxii*, with its pale yellow flowers. Later comes the great spurt of narcissus species, from the smallest *Narcissus bulbocodium tenuifolius* to the most gaudy, *N. bulbocodium obesus*, and including *N. rupicola*, *N. watieri*, etc.

The first of the winter-blooming irises is the non-bulbous *I. unguicularis*. This is distinguished as being the only evergreen species in the frame and seems not to object to a total summer baking along with other inhabitants. It eventually grows too big for the frame and must be divided, but it is a joy as a young plant. The bulbous species begin with the most delicate of all, *I. bakeriana*. Then follow the various forms of *I. histrioides* and *I. reticulata*. The yellow *I. danfordiae*, which elsewhere splits up into little bulblets seems, in the frame, to have mended its ways. *I. winogradowii*, of fairly recent introduction, was planted last autumn and we look forward to the appearance of its flowers of sulphur yellow with orange markings on the falls.

Around the middle of February, if the weather is not too sloppy, the panels are permanently removed until the bulbs go dormant again in July. March and April, of course, are the most colorful months with the flamboyant species tulips, the later iris and narcissus, the scilla species, and the intense blue of *Tecophilaea cyanocrocus* all competing for attention.

But of all the inhabitants of the bulb frame, the two genera which provide the most fascination are Calochortus and Fritillaria. Through the generosity of Laura Jezik, of Seattle, we have been accorded the privilege of struggling with many of the American fritillarias which she wrote of in her helpful article, "American Fritillarias" in the July, 1969 ARGs Bulletin. They are plants of surpassing beauty and I wish I could say that all of them have responded splendidly and effortlessly. Not so! But many of them have done well enough to spur on our efforts. Perhaps our favourite in this group would be *Fritillaria purdyi*, which bloomed superbly, all silver-and-black mottled, and glistening like fine hammered sterling. *F. falcata* is also very choice, in fact it would be hard to imagine anything more delightful than this tiny species, only 2" tall with a flower relatively enormous for the size of the plant. Our form is handsomely mottled in shades of subdued red and copper, with wonderfully attractive scarlet anthers. It, too, has that singular metallic quality of light reflection peculiar to some others of the genus. Other

American species that have bloomed so far are *F. biflora*, *F. glauca*, *F. recurva*, *F. pudica*, and *F. striata*. Those which have not bloomed, and some of these likely have not yet attained blooming size, are *F. pluriflora*, *F. tristulus*, *F. viridea*, *F. liliacea*, *F. roderickii*, *F. phaeanthera*, and *F. agrestis*. *F. pinetorum* set buds which failed to develop.

The European and Asiatic fritillarias are, in general, much easier to tame than their American counterparts and are a diverse and attractive lot. *F. assyriaca*, about 10' tall, has slender, very elegant yellow flowers with dark purple markings. *F. persica* is variable, our form having a dusky, grape-purple, bell-shaped flower. *F. obliqua* has an almost black flower which would be unduly sombre-looking were it not for the contrasting bright yellow anthers. *F. crassifolia*, at 18", is tall but has very distinctive bells of purple, lightly chequered and overlaid with jade green. Finally, we have a very confusing complex of species from Greece, Turkey, and Asia Minor regions. These are very appealing dwarf plants, usually under 6", with flowers in shades of yellow, green and purple. They are available as *F. graeca*, *F. pinardii*, *F. sibthorpiana*, *F. caucasica*, and *F. armena*, but I have received the same plants under different names, and vice versa.

Surely no other genus of bulbous plants has so many desirable species (the latest revision lists 57) which at the same time are almost impossible to grow, as the genus *Calochortus*. Admittedly, some of them are of questionable hardiness, as the genus extends south through Mexico to Guatemala. Of the few we have tried in the open rock garden only *C. subalpinus*, collected on Mt. Hood, in Oregon, has lasted for any length of time. In the bulb frame, on the other hand, we have about 18 species, of which about a dozen have bloomed so far. Easiest and most free-flowering are the Fairy Lanterns of the *Eucalochortus* section: *C. amoenus*, *C. albus*, and *C. amabilis*. *C. uniflorus* threatens to become a weed! Less free-flowering are those of the *Mariposa* section, of which we have flowered *C. macrocarpus*, *C. luteus*, *C. clavatus*, *C. nudus*, *C. splendens*, and *C. venustus*. The last has appeared in three colour forms, one a strikingly vivid scarlet. Another outstanding species of this section is *C. howellii*, creamy white with a chartreuse center. Many of these we have had for only three years or so; hardly long enough to know whether they will be permanent.

Some of the rhizomatous irises are summer-dormant and thus ideal subjects for frame cultivation. Those of the *Regelia* and *Oncocyclus* sections, and the hybrids between the two, are exquisite plants, marked with delicate, subtle veining, and have the virtue (!) of being sufficiently difficult as to pose an interesting challenge. Outstanding in this group are: the *Oncos* *Iris susiana*, *I. gatesii*, *I. lortetii*, the hybrid *I. x 'Chione'*; and the *Regelia* section, *I. stolonifera*, which has falls and standards edged with a warm brown shade like the ears of a Chocolate-point Siamese kitten.

The *Brodiaeas* are for the most part modest plants but at least three species border on the spectacular. *B. ida-maia*, with flowers like red fire-crackers, is a showpiece when seen with the sun behind it. *B. volubilis* has a flower stalk that twists and winds snake-like for several feet through the other plants in the frame, terminating in a burst of pink florets. And *B. minor*, an endearing purple-flowered dwarf, which, in July, is the last plant in the frame to bloom.

THE GLIDE WILDFLOWER SHOW

KENNETH LODEWICK, *Eugene, Oregon*

Glide is a small town on a small river in western Oregon, 18 miles up the North Umpqua River from Roseburg, and yet, always on the last weekend in April, flower lovers from all over the state, and from farther away, gather there. Each year the fame of the Glide Wildflower Show spreads farther; each year the exhibit displays more of the fascinating plants of the southwestern corner of Oregon. Glide is on the edge of the Oregon Cascades near the boundary between the northwestern Oregon flora and the Siskiyou flora, and has plants in all three areas.

These three areas cover most of an area extending from about 40 miles north of Roseburg, south into northern California, and west from the Cascades to the Pacific Ocean. The Oregon Cascades begin about Glide and extend eastward about 50 miles to the summit in a range running north and south through the state. The northwestern area, usually not represented as such at the show, comprises the Willamette Valley, a coastal strip and the northern extension of the Cascades.

The Siskiyou command the most attention, with their steep hills, fireforested and with soil of decomposed serpentine. The climate is dry in summer and snowy in winter; alpine plants grow at low elevations. The mountain area is one of the richest in the country florally, with representatives of species from the northwestern, Californian, and eastern Oregon desert areas, as well as unusual indigenous species, many of them of interest to rock gardeners.

The Oregon Cascades, beginning near Glide, are of andesite basalt and include several climatic zones as they climb from about 1000 feet to near 10,000 feet. Their flora is varied and contains many rock plants and alpiners. However, only lower elevation plants are in bloom for the Wildflower Show at the end of April.

The Wildflower Show was started at Glide in 1965. When Mrs. Raymond Miller (who prefers to be called Reggie) was approached about a community money raising project, she suggested a wildflower show. This first exhibit was held at Idylwyld Park Lodge, which is several miles up the Little River from Glide. That year Reggie picked some 71 specimens in her back yard and prepared the exhibits with the aid of Mrs. Harry Young; thirty-two people came to see them.

However, local people liked the show so much they asked Reggie to arrange another for the following year, this time at the Glide Community Building in Glide. The last week end in April was chosen as the best for bloom, and Reggie got to work. Some 90 specimens were collected, but, because of poor publicity, attendance was discouragingly low. Luckily someone volunteered to carry on publicity for the next year. Then, newspaper stories brought visitors from as far away as Portland and Medford. That year, with help from friends and Ammon Dishner of Ophir, Oregon, on the coast, Reggie was able to assemble over 100 specimens.



Displays are not crowded

Reggie Miller

The year 1967 also brought more botanical help with an offer to aid from Mrs. Harry Wesley and Mildred Thiel from Roseburg, who have spent their free time on plant collection and identification for years. In 1968, with Harry Wesley driving, the enthusiastic women collected species from most of the Oregon Siskiyou, going long distances for some of the rarer ones, gathering 245 specimens for the exhibit. Publicity was good and the large room was filled with people on both days. Mrs. Young did a woodland scene and the U. S. Forest Service joined in with an exhibit on native trees.

Some of the citizens of Glide, pleased as they were about the visitors from out of town, could not understand what all the fuss was about. Reggie's own children asked her what people were so excited about when "all you do is go out on the back forty, gather some weeds and put them in vases." However, the townspeople have joined in with a will to entertain the guests, opening the hall, helping decorate and supplying a mimeographed list each year of the previous year's species. A snack bar is operated in the hall, and tables and chairs are available for coffee, lunches, or just resting. One year, members of another wildflower club who had come by bus were heard to say that they would never dare to have a show in their own area, after seeing what had been done here.

In 1969, the Wildflower Show was even larger. Different species, and more species were in bloom due to a quick, early spring, following an unusually snowy winter. Two hundred and eighty-nine specimens were available for exhibition. More people took part. Joan Fosback and John Hoffstetter of Roseburg helped collect. The Society of American Foresters arranged sight-seeing-flower-and-forestry tours to Colliding Rivers Wayside (where Little River meets the North Umpqua head-on) and on up the Little River. They also cooperated with the Forest Service and Bureau of Land Management on exhibits. Mr. and Mrs. Wesley invited an outdoor club, the Obsidians of Eugene, Oregon, for a special tour, including a flower trip by



Displayed plants well labeled

Reggie Miller

car and trail up the North Umpqua River. No attendance records were kept; too many people to count! Reggie Miller took charge, though she was attending university classes at Eugene, some 100 miles away, and was home only on weekends.

The exhibit this spring, 1971, may draw from even larger territory, with help promised from Lawrence Crocker at Medford, and others. The collecting may be harder, as Harry Wesley died in the fall, and his help will be deeply missed.

Among the many plants that have been, and still will be, exhibited are rarities like *Kalmiopsis leachiana*, *Allium falcifolium*, *Calypso bulbosa*, *Asarum hartwegii*, *Silene hookeri*, *Darlingtonia californica*, *Boschniakia strobilacea*, and several *Lewisia* species and color variations. This year, a fern, newly found in the area, *Asplenium septentrionale*, will be included. All flowers are collected in such a way as not to endanger the plants, and the locations of the rarer ones are kept secret. These people treasure their flowers, and have seen too much damage from irresponsible collecting to encourage it. Most of the species are available to gardeners from specialty nurseries, if not as plants, then as seeds.

Many of the plants from the Umpqua are desirable rock garden plants. *Viola hallii* is a beautiful violet with light cream lower petals and purple upper ones, except for a few clumps found last year that are cream on the face of all petals, purple on the back only of the upper petals. *Silene hookeri*, the vivid Indian Pink, is another fine rock plant. We do not need to mention *Lewisias* in this regard as they are well known to most rock gardeners.

Who is Reggie Miller, and where did she get her interest in Oregon wildflowers? She grew up in St. Louis, the daughter of a Swiss immigrant family. She helped maintain their very nice garden and brought her interest west with her. During World War II she met and married a man from Roseburg, a craft instructor at the U. S. Veterans Hospital there. He brought her

to live in the North Umpqua Valley, where she became fascinated with the local flowers and plants, experimenting with many of them as dyes for yarn weaving. Being the sort of person, who, if she found a seed, had to plant it to see if it would grow, she quickly had wildflowers around any house she lived in. Now, after her work with the wildflower show, she is coming to know the flowers botanically, too. Those of us who like wildflowers have a great deal for which to thank Reggie Miller.

THE GENUS *SYMPHYANDRA*

ROBERT M. SENIOR, *Cincinnati, Ohio*

In the family of Campanulaceae, there are attractive plants in every genus, such as *Adenophora*, *Phyteuma*, *Codonopsis*, *Platycodon* and *Edraianthus*. The Campanulas, of course, are the most popular and numerous. Probably the number of species and varieties included in this genus exceeds that of all the other genera within the family combined.

The genus *Symphyandra* is a very small group and possibly includes only a dozen different species of which only a half dozen are in cultivation; possibly because most of the flowers resemble those of the Campanulas. In the region in which we live, I have never seen one of them in any garden. Moreover, I have seldom found them listed in the catalogues of American nurserymen. In the last Seed List of our Society, if I remember aright, seeds of *S. hoffmannii* and *S. wanneri* were included. The Seed List of the Alpine Garden Society generally includes a few species.

The difference between *Symphyandras* and *Campanulas* is to be found in the stamens, which, in *Campanulas* have stamens attached to the base of the flower: in *Symphyandras*, the stamens are attached to the style. This difference may be of some interest to the botanists, but not to the amateur gardener.

At various times we have raised all of the species mentioned in the *English Dictionary of Gardening* with the exception of *S. asiatica*, a plant growing in the Himalayas. We have never been able to secure seeds of this species.

All of our plants have been kept either in our little Alpine House, or in a cold frame. We have always been doubtful whether they could withstand our winter weather without any protection. This winter, however, we intend to try a couple in the rock garden—considering that most of these plants grow in the Caucasus Mountains, they should be fairly hardy.

Incidentally, Mr. Crook, the English authority on the Campanulaceae, states that nearly all members of the genus *Symphyandra* are likely to be biennial or monocarpic and this has been our experience also. Occasionally a side shoot, bearing no flowers, may live over, whereas the rest of the flowering stems all die; but the plants usually seem to bear copious seeds, which, when planted promptly, germinate readily. Thus every year we have been able to retain a few plants. Incidentally, the seedlings do not seem to be particular about the soil, provided it is light and porous. We use ordinary garden soil to which we add a little sand and possibly a very small amount of bone meal.



Symphyandra zangazura

Robert M. Senior

The following is a brief description of those that are known to be in cultivation.

S. armena—A plant about twelve inches high, with some erect and some decumbent stems, with ovate, coarsely-toothed leaves, the lower ones long-petioled, the upper ones almost sessile. The flowers are terminal with bluish violet, tubular campanulate flowers, with very short lobes. In the Caucasus it grows in crevices, blooming in midsummer.

S. asiatica—A picture of this plant, as well as a description, can be seen in the *Curtis Botanical Magazine*, plate 8887. It has stems up to 1½ ft. high, and large, bell-shaped, violet-colored flowers, with somewhat recurved lobes.

S. hoffmannii—Our plant is somewhat over one foot high, with lanceolate, acute leaves and nodding cream-colored flowers about one inch long. If I remember aright, it bloomed in June.

S. ossetica—This must be an attractive plant since it received an Award of Merit. It is said that the erect stems are almost one foot high, bearing many slightly nodding, rather narrowly bell-shaped, deep lilac flowers. One charac-

teristic is said to be the calyx lobes that are denticulate, and almost as long as the corolla. It is also a native of the Caucasus.

S. pendula—A fairly low-growing plant, with drooping stem and somewhat funnel-shaped yellowish white flowers, ovate, cordate leaves, and long pendulous flower stems. If placed in the rock garden, I should imagine it might well be inserted on sloping ground with a rock below it, over which its prostrate stems could droop. Though it may be perennial providing all the fading flowers are cut off, it blooms so freely that the seed bearing process exhausts it.

S. wanneri—This is possibly the best known species, and apparently is frequently raised in English gardens. This plant has also received an Award of Merit. It is about 1½ ft. high, with many branching stems bearing a very large number of drooping, tubular, campanulate, bluish violet-colored flowers, with short, fairly erect lobes. The leaves are serrate narrowing into winged petioles. The upper stem leaves are ovate and sessile. The flowers are so numerous that, no doubt, they sap the strength of the plant, but it bears numerous seeds that germinate readily. If I remember aright, Mr. Crook once remarked that *S. wanneri* was probably the most attractive species.

S. cretica—This is my favorite. Many years ago, Dr. Peter Davis conducted a botanical expedition to Crete, and we subscribed to the expedition. As a result of his distribution of seeds, we secured seeds of *S. cretica*. The flowers of our plant are different in color from any member of the Campanulaceae that we have ever raised. In our little Alpine House, it usually attracts the attention of chance visitors. I have tried vainly to think of some other flower that has its color. I judge that if you had some paint of a light raspberry color and added to it a very slight amount of purple paint the resulting shade would be about the color of our flower. Moreover, the drooping cylindrical corolla is good-sized, and well over an inch long. It is very possible that in its native habitat, it often bears violet-colored flowers. A. deCandolle, who many years ago wrote a monumental book on the Campanulacées, has a picture of this plant which corresponds with the characteristics of our plant.

I should like to mention two other species, that as far as I know have never been raised in this country. Many years ago, by chance, we learned that these plants were raised in a Botanic Garden in Russian Armenia in which province they are native plants. Briefly, we wrote this Garden and secured seeds, in exchange for which we sent seeds of certain American plants. Apparently the two species are named after certain districts in that province.

S. daralaghegica—This was described in a Russian magazine as a new species. It is an erect branching plant about 40-60 cm. high. The stem leaves are dentate. The margins of the calyx are faintly puberulent, its lobes triangular, acute, with very short appendages. The corolla is white, tubular, campanulate 15 - 18 mm. long. Perennial, growing at an altitude of 6000 ft. among rocks.

S. zangazura—This plant is about one foot high. The lower part is pilose, usually slightly branching. The lower leaves long-petiolate, cordate, oblong triangular, dentate or entire, the upper sessile, the uppermost sublanceolate, subentire. Peduncles thin. Flowers nodding. The calyx lobes linear lanceolate. Corolla violet-colored, slightly dilated at the mouth, its lobes cut almost half way. The style is pilose, and three-parted.

JOURNEYING IN NEW ZEALAND

GLADYS FLETCHER DANIELS, *Seattle, Wash.*

Can you imagine a country where mostly all of the flowers are white, where vines grow as big as trees; a land of glaciers and thermal springs? An exotic experience awaits the traveler in New Zealand. Especially when that traveler is a lady botanist from Seattle. Now in Seattle the buses hustle and bustle along and so do the Seattleites. In New Zealand the buses travel slowly and stop to deliver medicines and food and sell chances on the races. We stayed six weeks in New Zealand and traveled by bus down one side and up the other. I got off each place it stopped to collect plant specimens, to view the wonders of this strange land, and to meet its handsome Polynesian peoples, the Maoris.

New Zealand is in the center of the greatest water surface of the globe. It consists of North Island and South Island and a tiny island called Stewart Island. All together it is a little bigger than Great Britain. It is often called Land's End as it is the jumping off place for Antarctica.

New Zealand is historically new even as the United States is new. It is known that in the 13th century, seven giant canoes filled with Maoris came there. Where they came from no one knows for certain. Each canoe load chose a different location on which to settle. They became warlike and feuded with each other. There was no meat and they began to practice cannibalism.

It was tragic to find no wild meat of any kind. There were, however, birds. There were no fresh water fish. The Maoris had brought a few dogs with them and these were bred so that at least the chief could have meat. Food was scarce, but they had brought sweet potatoes and these were planted. They used the wild fern roots for food, too.

Captain Cook landed there in the 18th century. The Maoris were amazed to see a strange boat being rowed in which the rowers were facing away from where they were going. He left some pigs with them and these eventually went wild. There are wild dogs and wild pigs there today. Later other animals were introduced and they flourished mightily. Nowadays the government has been forced to furnish exterminators. Fish were planted in the lakes. It is said that they grow twice as fast as in the United States.

The Maoris are concentrated in the North Island. They are treated with great respect and have equal rights in the government. They are a handsome and healthy looking people. They have cast about themselves a mantle of legend and romance. Much has been done to preserve these legends. Ninety percent of the place names are Maori. All plants have

Maori names which are not only names but descriptions as well, as: Waukari-moana (rippling waters) and Manapuri (sorrowing heart).

The English took over the country about 1840 after much war and bloodshed. After winning, their attitude toward the Maoris became wonderful. The Maoris were treated as equals. Some even gained seats in the government. Today they are a very happy and contented people.

New Zealand is in the Southern Hemisphere. It has infinite beauty and infinite charm. In this small land are crammed the counterparts of most of the world's wonders. It has fjords as majestic as those in Norway, mountains as beautiful as the Swiss Alps, many thermal geysers and springs, glaciers and volcanoes, alive and dormant. It also has dense forests. Unique in the world are the big glowworm caves. The climate is as varied as the scenery.

Vegetation consists of two great plant formations, forests in the north and tussock grassland in the south and east of the Southern Alps. The forest is composed of trees of several kinds. Under the trees nature runs wild. A dense gloom prevails. Tree ferns, bananas, epiphytes, parasite masses and herbaceous plants are in mats. Some trees start as vines and later become trees. Over 200 kinds of trees and shrubs have juvenile foliage.

In the South Island, to the west of the mountains are found large groves of beech consisting of at least six kinds. In them at Christmas I saw clumps of red mistletoe. To the east of the mountains are the tussock grasslands. Sheep thrive on the tussock grass, but it was found that cows would not eat it. Exotic grasses were planted. In the north, forests were felled in order to make pasture. This was found to be detrimental to the soil as it caused soil erosion. The deforested areas were then planted with exotic trees; mostly radiata pine (*Pinus radiata*) was used. Douglas fir (*Pseudotsuga menziesii*) was also used and a few others. It was found that the pine would reach lumbering size in 25 years. In neat rows these new plantings march to the top of the hills.

New Zealand has been well botanized, although as everywhere else there are new plants to be found. Captain Cook in 1790 sent plants to England for identification. Later, Captain Vancouver came and he had with him the botanist, Archibald Menzies. The names of early Calvinists are again and again found in the flora. Many of these were missionaries. After 1890 came Dr. Leonard Cockayne, the greatest of all New Zealand botanists. He gathered seeds and waited for these to germinate and grow. It was he that discovered that a great percentage of the trees had juvenile foliage.

The botany of New Zealand is the most remarkable known. Ninety percent of the indigenous species are not met with elsewhere. Very few of the species are used in horticulture. The flowers, with few exceptions are white. This might be due to the absence of bees in the early days, to the few grazing and browsing animals, and to other factors now unknown. Fertilizing of the flowers was probably done by moths at night.

The principal timber trees are from the families *Araucariaceae*, *Cupressaceae*, and *Podocarpaceae*. The first is represented by the Kauri (*Agathis australis*), the *Cupressaceae* by *Libocedrus plumosa* and *L. bidwillii*, and the last by the genus *Podocarpus*, of which there are four or five species. The beech and myrtle are also used for lumber. The myrtles are very beautiful.

Metrosideros tomentosa was in bloom in December in Auckland. It has numerous long red stamens and the flowers are red and brush-like.

There are many small trees, the most beautiful being the Sophora with yellow flowers and the calyx old gold. The Maori name is Kowhai. It is the national flower and has been the subject of song and verse. One odd tree is the Fuchsia tree.

The shrubs are numerous including the *Hoheria* with clusters of white flowers. There are 23 different shrubs in the genus *Olearia*, a composite with daisy-like flowers. There are many Senecios. *Senecio grayi* was brought to the United States from New Zealand and has been used for landscaping.

The most beautiful of all the flowers is *Ranunculus lyallii*. The leaves are large saucers 12 to 15 inches across. The flowers are pure waxy white 3 to 4 inches across. In the alpine areas are the cushion plants, the Raoulia and the Haastias. In the swamp areas are found the New Zealand flax, *Phormium tenax*. This flax was used to make the Maoris clothing. Also in the swamps were found the primitive Cabbage tree called *Cordyline australis*.

While in Auckland, I spent most of my time at the museum which had a good herbarium. I knew what to look for and where to find it. Also each city has a good botanical garden where I was made most welcome and furnished specimens of plants I could not find close to the bus stops. These were mostly alpiners.

I came away from New Zealand with a fine collection and many wonderful memories.

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ITALIAN ARTICLES APPRECIATED—While preparing the two articles on Italian flora, the editor, what with the necessity of editing, proofreading, etc., read and reread these articles many times and with each reading became more and more appreciative of the excellence with which the authors treated their subject. He realized that to get the fullest benefit from the articles it was necessary that they should be read several times and he hoped that some members, at least, would come to the same conclusion. It is gratifying to receive an unsolicited expression supporting his belief and to find that at least one member so thoroughly enjoyed the articles. Mr. Gil Finkbeiner, of Seattle, wrote, "I have read and reread the descriptive articles on Italy; "Naturalistic Itineraries" by Nino Arietti and Oscar Fervidi in recent issues of the *ARGS Bulletin*. The comprehensive view of history, topography, geology, botany, and geography, with an eye on the artist's palette all the while, treating this armchair gardener to an articulate student's loving sojourn in his fatherland's countryside, compels me to awe. I give thanks to those writers, and to the *Bulletin*, for the great pleasure I have been accorded."

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BONSAI ENTHUSIASTS—The First International Bonsai Convention, sponsored by the Bonsai Club International, will be held in Cleveland, Ohio, May 28-31, 1971. Persons interested should contact Keith Scott, Program Chairman, 17771 Snyder Road, Chagrin Falls, Ohio 44022. This information was received from Mrs. Paul W. Johanning, 2241 Harcourt Drive, Cleveland Heights, Ohio 44108.

THE STINSON BEACH WILDFLOWER SHOW

ARTHUR AND BARBARA MENZIES, *Stinson Beach, Cal.*

The Stinson Beach Wildflower Show is always held on the first weekend in May at the Stinson Beach Community Center. A small admission charge is made with the proceeds going to Community projects. This show was started 13 years ago before the words "ecology" and "environment" were foremost in everyone's mind. It was started by three women who even then were concerned with the need to help preserve our native flora for future generations to enjoy. After attending several wildflower shows it became very clear to us that the flowers should be rescued from being shown in beer cans, dixie cups and milk cartons. We have tried, in our shows, always to match the flowers to the vase and this is achieved by using anything from silver to Indian baskets.

Each year one special group of plants is featured. Last year we had probably the largest collection of native California succulents that has ever been displayed. This year the poisonous plants of California are being done.

Weather conditions are the all important factor as to whether mostly shrubs, bulbs, annuals or perennials will be collected. If the season is good or even normal, Northern California will still have the early blooming flowers while in the southern part of the state a few of the early summer flowers can be found on the warmer banks and hollows. The Inner Coast Ranges, the Sierra Nevada foothills and the Coast are also covered by our trips north and south.

Each year some group of plants, or even just one family seems to dominate the scene. There are never two years alike. Last year seemed to be our "Green and White" year. This wasn't realized until the day we set the show up and discovered that one after another green and white arrangement was being made. We had *Anemone deltoidea*, *Disporum smithii* and *D. hookeri*, *Maianthemum dilatatum*, *Achlys triphylla*, *Smilacina racemosa* and *S. stellata* var. *sessilifolia*, *Trillium ovatum* and *T. rivale*, *Xerophyllum tenax* and *Odontostomum hartwegii*. We try to have several genera of each family displayed as this makes it more interesting and educational and allows the visitor to compare the differences.

In spite of the disastrous fires in the southern part of the state this fall it should bring out the uncommon in plant life next spring (1971). We may be able to display several flowers which are considered "fire followers" such as the Fire Poppy, *Papaver californicum*, *Phacelia grandiflora*, *Dicentra ochroleuca*, Whispering Bells, *Emmenanthe penduliflora* or *Turricula parryi*. *T. parryi* is the largest and showiest with its great waving wands of lavender. Some bulbs seem to respond to fire; we have seen *Fritillaria recurva* and *Calochortus catalinae* come up in unusual numbers after a fire only to have them disappear after a couple of years, leading one to believe that either heat or light are needed for them to really extend themselves.

From the desert area ordinarily we find Stinging Nettle (*Eucnide urens*), Desert Holly (*Atriplex hymenelytra*), Desert Prince's Plume

(*Stanleya pinnata*), Desert Senna (*Cassia armata*), a member of the Pea family though you would never guess it from its yellow daisy-like flowers; but "By their fruits ye shall know them"! If conditions are just right and they have been twice already, *Astragalus coccineus* is collected. This is probably our most beautiful *Astragalus* and is a sight to behold with its cardinal red flowers against the gray of its leaves. What a prize if it could be grown well. We often have *Calochortus kennedyi* unless the rain has been nearly non-existent. This *Calochortus* wins hands down as being the most spectacular of its genus. To see these flowers making their display in the desert is something one is treated to perhaps but once in a lifetime. *Mimulus fremontii* and *M. bigelovii*, from the desert, round out our collections from other parts of the state of the small, red Monkey Flowers. Thistle Sage (*Salvia carduacea*), with its pure lavender flowers, is always a must, as is the Apricot Mallow (*Sphaeralcea ambigua*) because of its wonderful color. Unfortunately, desert flowers are the hardest group to get home in good condition, but over the years we have discovered which flowers will keep and which will not. This is also true of all other areas.

We have many beautiful shrubs in California that are used for the show, the choicest being the Snowdrop Bush (*Styrax officinalis* var. *californica*). Others include the Yellow Bush Penstemon (*Penstemon antirrhinoides*), Honeysuckle Penstemon (*P. cordifolius*), Island Bush Snapdragon (*Galvezia speciosa*), and Woolly Blue Curls (*Trichostema lanatum*). These are good garden plants. From farther north there are Flannel Bush (*Fremontia californica*), Tree Poppy (*Dendromecon rigida*), Tree Anemone (*Carpenteria californica*), Chaparral Pea (*Pickeringia montana*) and Sweet-scented Shrub (*Calycanthus occidentalis*). All are worthy of a spot in the garden.

Generally we have but two vines. One is Virgin's Bower (*Clematis lasiantha*) from our Sierra Nevada foothills. However, it takes great patience to pick and it is a trying subject to arrange. The other vine, Dutchman's Pipe (*Aristolochia californica*) with a most curious flower is an early bloomer, but usually a nice piece is obtained. The Campo Pea (*Lathyrus splendens*) from San Diego County has been displayed only once, but is one of those flowers that we will go to any limit to try to have. Words can hardly describe it.

If one travels in and around California many displays of annuals are seen. We try to collect many of them as they are the flowers most people are aware of. The most popular one, of course, is our State Flower, *Eschscholzia californica*. There are many lupines but it is *Lupinus nanus* that makes the great splashes of color on our hills and in our valleys. Also, *L. benthamii* may be seen sweeping over the Sierra Nevada foothills. It is *L. succulentus* and *L. subvexus* that can be seen making color in our coast ranges, while *L. stiversii* makes a pink and yellow stand on our higher mountain banks, particularly in the Yosemite region. *Phacelia ciliata* and *Downingia pulchella* are two species that can make an area, wet in winter, a sea of blue in spring. *Limnanthes alba* and *L. douglasii* are two other plants growing in wet places that make masses of color. *L. alba* makes drifts of white in the folds of the foothills and as the ground gets drier, Tidy Tips (*Layia platyglossa*), Goldfields (*Baeria chrysostoma*) and Cream Cups (*Platystemon californicus*) take their place. When one finds a drift or field

of Baby Blue-eyes (*Nemophila menziesii*) with their dainty and ethereal quality one knows that spring is definitely here. Another *Nemophila*, not as well known and also a wet grower, is *N. maculata*, called Five Spot because of the very dark purple spot at the end of each white petal.

On our wooded north-facing slopes one may find Chinese Houses (*Collinsia heterophylla* making a purple splash, or if one is really lucky he may find a bank of Wind Poppies (*Stylomecon heterophylla*). This can be a good garden plant if one can outwit the birds. To see these orange-red poppies in a mass is one of the rewards of taking a back road. Owl's Clover (*Orthocarpus densiflorus*) will make great areas magenta with its flowers, or it may just be making a show in a fenced-off field or perhaps even in an abandoned lot in a semi-rural neighborhood. This is a plant that seems to be able to put up with civilization. Why some flowers will stay in a fenced area is puzzling, but we have seen it more than once. As spring is on the wane Turkish Rugging (*Chorizanthe stacticoides*) from the hot, dry South Inner Coast ranges will carpet the ground with the raspberry-red of its stems and flowers. Thus one knows that the great floral parade of spring is passed.

Bulb plants are favorites of many visitors and we try to have as many as possible. It is early for all the true Lilies except *Lilium maritimum*. The Brodiaeas are always a joy; they are plentiful and keep well. *Brodiaea ida-maia* is the queen of this genus. It is really a good garden bulb and does best in full sun. Most years we have a good collection of Calochortus. The genus *Calochortus* is divided into three groups: the Globe tulips, *C. albus*, *C. amabilis* and *C. amoenus* and these are always gathered and are easy to grow. The "real" Calochortus are a different matter. The Star tulips also seem to be of easy culture. These include *C. monophyllus* from the Sierra foothills, *C. tolmiei* from our coast, *C. umbellatus* from the interior hills and *C. uniflorus*, a wet grower as well as one of the first to flower. There are four onions in this area. All are worth growing in the garden and are *Allium dichlamydeum*, *A. serratum*, *A. unifolium* and *A. falciifolium*.

The Saprophytes and Parasites give us our most bizarre flowers and plants for the show. These are displayed in a natural setting. As many of them are not often seen in the wild, they are always of great interest to nature lovers and city dwellers alike. These include the Broomrapes (*Orobanche uniflora*, *O. fasciculata* var. *franciscana*) and the Ground Cones (*Boschniakia strobilacea*). From the Orchid family we have Coral Root (*Corallorrhiza striata* and *C. maculata*), and in an early year the Phantom Orchid (*Eburophyton austinae*). In the Wintergreen family is the best known of the saprophytes, the Snow Plant (*Sarcodes sanguinea*). Also in this group are *Pityopus californica*, *Hemitomes congestum* and Sugar Sticks (*Allotropa virgata*) which really look like Christmas candy canes.

The three of us who do the bulk of the collecting for this show each travels about 2000 miles in that week before the show. Special flowers are brought to us by others and we have help on the day we set-up. Each of us is interested in different groups of plants thus insuring a wide range of families. John Thomas Howell of the California Academy of Sciences comes over on the afternoon before the show and identifies the flowers we do not know.

The Wildflower Show Committee hopes you will have been inspired to some small degree to consider coming to see the "glories" of California in May 1971. It would be a meaningful and rewarding experience for you to come to our show and relate to the ecology of our environment in this area.

COLLECTOR'S NOTEBOOK—DIAPENSIACEAE

ROY DAVIDSON, *Seattle, Wash.*

Among the plant kingdom's remarkable fascinations are many plants so strangely grotesque or eerie as to hold a spell, or a macabre delight, and some so utterly and disarmingly simple and charming as to endear them forever and ever. With these latter must indisputably belong the members of the *Diapensia* family (Diapensiaceae), remarkable in themselves to the degree they furnish the name for the higher order Diapensiales. These were once thought to be rather closely related to members of Ericales, the order consisting of Clethra, heath and heather, Rhododendron, Indian pipe and pyrola assemblage, also with the Epacrids. Although there are strong structural similarities, the major opinion now regards *Diapensia* and its charming kin as extremely ancient and quite distinct, possibly deriving from ancestral stock common to both orders.

Any pursuit of garden materials for treasuring could only result in an assemblage including all the Diapensiaceae, for there are no second-rate subjects among them. A great deal has been written in late years of *Pyxidantha*, and many, many plants of it have been collected, grown, flowered and marveled at. One (of three) tiny sods grew here in a wet but warm peat plunge for four years, giving its globular pink buds and pearly chalice to the sun, before departing with a sudden completeness. I suspect birds, as they do carry away such similar booty as strands of club mosses, *Saxifraga oppositifolia*, and *Chiogetes (Gaultheria) hispidula*, to my utter dismay.

Galax was the first one to be grown here, and there are now sufficient divisions for carpeting a dryish woodland with the shining crisp leafage whose burnished coloring in winter is such a delight. Although its wand of tiny white flowers is not possessed of the spectacle of the solitary *Shortia*, a handglass will show each blossom to be a superb miniature. If an individual flower of *Galax* were enlarged ten times, it might possess the qualities of a truly refined mullein, but I wonder if we should give it a second glance? In spite of its lesser show of blossom, it remains, with the rest, first class without dispute.

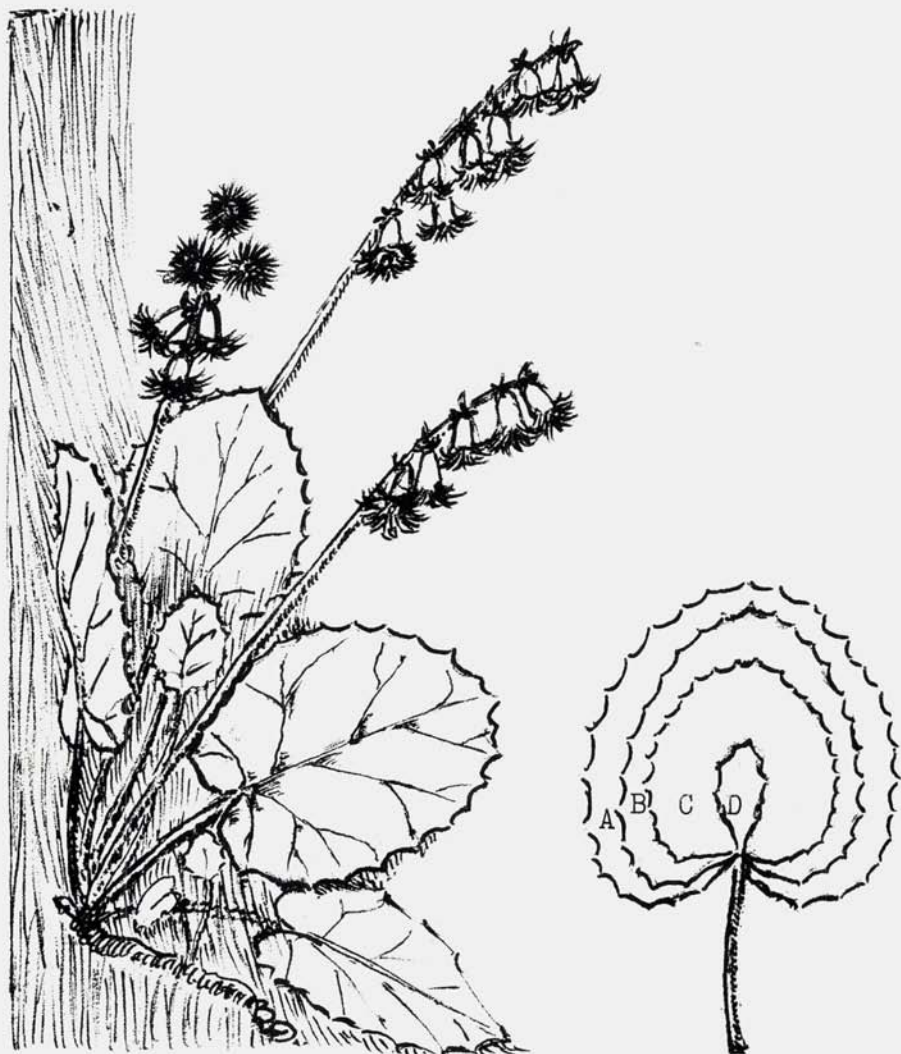
Diapensia itself is the only one of all difficult in cultivation, and it has an "impossible reputation." No illustration does it half justice. Last year, I found it budded on a Japanese alp, and some, brought down, flowered for their portrait. A gift plant remained living, but never actually put forth new leafage, and "dissolved" the following spring. This seems to be the common manner of demise; it is not happy away from arctic breezes and thin air, no matter how one attempts to simulate these conditions, even to refrigeration, which I tried. *Diapensia lapponica* is the circumpolar member, found around the arctic regions of America and Eurasia in two forms, based on the shape of the foliage; the one called *D. l. obovata* occurs in the same area. *Pyxidantha*

thera barbulate (once called *Diapensia barbulate*) comes from coastal dunes of the Atlantic seaboard of eastern United States. Taxonomists are of differing opinions as to whether the more inland southern "Pyxies" belong to the same species or constitute the separate *P. brevifolia*.

Probably the most beloved of these cousins is *Shortia*, made a mystery of by circumstance from its date of discovery. The chronicle of Asa Gray's search to relocate Michaux's original station for it captures the imagination the way a good mystery should. Not only will its pursuit lead to a love affair with one of nature's loveliest, it will lead, as it did the eminent Dr. Gray, to the study of the entrancing parallelism of certain botanical elements of Japan to certain of those of eastern North America, before the mystery is unraveled. *Shortia galacifolia* is remarkably like *S. uniflora grandiflora*, the oriental one, though the latter has a larger and ordinarily pinker flower on a more compact plant. In the Japanese tradition, many variants have been accorded names. For years the location from which the first American plant was recorded eluded rediscovery, but the plant was later found in other places, well hidden, extremely local, but locally abundant. It was propagated to good stocks for wide distribution to those who would know and grow it. A moist but sunny woodland is all that appears necessary for its easy culture. For some ten years now *Shortia galacifolia* here has borne simple divisions which have been planted among *Galax aphylla** which it so resembles in foliage. A friend made the pilgrimage to the original Michaux station and, for sentiment, contributed a small plant to the garden; it may differ in being more nearly stoloniferous, if at all.

A group with disputed nomenclature is found solely in Japan, known familiarly for so long as *Schizocodon*. Most recent Japanese botanists would now have us ally them in our minds (and on our tongues) to *Shortia*. While there is little dispute they are indeed close to *Shortia*, their deeply fringed flowers borne several to the stem certainly distinguish them from *Shortia* which has larger, non-fringed and usually solitary flowers. Within *Schizocodon*, Japanese botanists have defined quite good geographic "races" based mainly on size and form of leaf. It would seem that, as with many plants having a degree of variability in altitudinal distribution, the smaller are found higher, a necessary response to the short season, while the more lush are disposed below, and are not necessarily more elaborate in floral display. I was privileged to observe populations from low elevations to the summit itself of a 10,000 foot peak and to observe this; strangely it was in flower simultaneously below and on the heights. It was a delightful surprise to stumble onto the lush populations of the white-flowered one (var. *intercedens*) without knowing it was going to be there, having not read my geography well enough to correlate distribution maps! This is a truly delightful innovation, even if one does not have a hang-up on white flowers, which I must admit to.

It was a satisfaction to me to note that one current publication in Japanese botany holds out for retaining the name *Schizocodon*; Hara and Kanai (*Distribution Maps of Flowering Plants of Japan*) contend that *Schizocodon* has been derived from *Shortia* (or pro-*Shortia*) and represents an advanced development. The complexities of phylogenetic rank can only allow guessing at derivations, yet a certain few (i.e., *Peltoboykinia* from *Boykinia*) were here cited: I was convinced! By contrast there are many plants yet in a very ac-



Shortia soldanelloides (Sieb. & Zucc.) Makino var. *intercedens* Ohwi (*Schizocodon ilicifolius* Maxim. var. *intercedens* Yamazaki), forms a very distinct and constant population in the watershed of the Ten-ryu River in Shizuoka Prefecture, and nowhere else, differing in form of leaf and in being white-flowered. At right—redrawn from "Herbaceous Plants of Japan, by Kitamura, Murata & Hori, comparative leaf outlines of (A) var. *magna*, (B) var. *intercedens*, (C) "typical" variety, and (D) var. *minima*, following Makino's classification, about 2/3 natural size.

Roy Davidson

tive state of flux, as witness so many generic groups of scrophs, for example.

There are two illusive and almost totally unknown Asiatic genera of Diapensiaceae in addition, so rare, if indeed they do exist, as to be among the semi-mythological. *Berneuxia* is said to be of Himalayan disposition, whereas *Shortiopsis* is accorded to Taiwan (though neither of the floras of that island give it mention, by that name or another), and with this I pass them by until such time as they become known.

The members of the Diapensiaceae with which we are familiar are stealthy, small shrubs, advancing but slowly in evergreen garb. *Pyxidantha* forms a web-like, prostrate plant of lace-delicate aspect; *Diapensia* huddles as a small tuft until old age, when it may have spread to bun size, while ancient plants are of bun warmer dimensions; *Shortia*, *Galax* and *Schizocodon* are prominently leafy, so much so that their true shrubby nature may not be readily recognized and, indeed, they may be almost totally subterranean, with only leaf and blossom in evidence.

The floral structure of Diapensiaceae is utterly simple: a five part corolla is united below into a "cuplet," expanded outwardly above into five lobes; inserted within and at the apices of the corolla are five prominent stamens and the cuplet contains, in addition, a bead-like ovary, all this in ivory-white or pink waxiness, perhaps tinged with the green of leafiness. Certainly no flowers could be of more simple design, yet not even the Medusa-curved *Paphiopedilum* ladyslipper orchid is as lovely.

SOME OBSERVATIONS ON PLANTED WALLS

PALMER S. CHAMBERS, *Guilford, Conn.*

In the spring of 1969, I moved into a new house and was confronted with a rock gardener's nightmare—"no rocks"! At least no visible ones. Toward the back of the property there was a big, upward-sloping bulldozer scar about 90 feet by 15 feet, exposing the rankest kind of subsoil. If my wife had not wanted me to lay a flagstone patio against the back of the house, I might still be sitting there in frustration.

I laid the patio, and as I worked on it, it occurred to me that it might be nice to put a free-standing wall around it. Across the back of the property was an old stone wall buried under bull-briers, honeysuckle, Virginia creeper and poison ivy, of which I had been only dimly aware. Upon uncovering it, I found that it was one of the highest and thickest walls that I have seen. About six feet of it, which I replaced with a wooden gate, furnished enough material for the thirty feet of wall which I needed around the patio.

All instructions which I have seen for building planted walls call for a fairly smooth-faced construction using angular blocks of stone and leaving an open trough at the top. My supply of rocks consisted of boulders and somewhat flattened stones with rounded edges. With limited expectations, I started a double row of rocks about twenty inches wide. This sort of wall is easy to build, as you just keep piling soil in the middle and leaning rocks against it. To make sure that the soil was well compacted and also as wet as possible, I kept the hose trickling in it as I worked. Here and there to strengthen the wall I would lay a big rock all the way across. Occasionally a thick clump of heather or a heavily-rooted evergreen was substituted for a rock, or a sod of sempervivum will do if it doesn't have to bear the weight of a rock on top of it. The wall is only eighteen to twenty inches across the top. Instead of an open trough, the top is largely stones fitted together with just enough space between for the roots of plants. To keep the plants from becoming too rampant I used a mixture of subsoil, peat moss, and 3/4 inch gravel.

As the wall goes around two corners, it has every conceivable exposure, and the boulders have made all sorts of irregularities, providing shady nooks (although there is no external source of shade until two or three o'clock), narrow ledges, and almost innumerable spots where plants can be kept from each other. There *Athyrium*, *Goodyera*, *Coptis*, and *Hepatica* have been doing well. The only plant that has become invasive is *Potentilla tridentata*. Right now there are over a hundred varieties, including such unlikely wall plants as *Salix uva-ursi*, *Vaccinium vitis-idaea minus*, and *Pyxidantha*. I don't know whether *Penstemon davidsonii* var. *menziesii* is customarily used in walls, but that is the only way I have ever used it, and it grows and blooms well. I just learned the other day that it is considered difficult in Connecticut.

I won't try to enumerate all the plants that I have used, but as the top of the wall must be extremely dry, a list of plants that have done well there may be of interest to some members:

<i>Sempervivum</i> , several varieties	<i>Antennaria dioica</i>
<i>Saxifraga cotyledon</i>	<i>Draba rigida</i>
<i>Saxifraga longiflora</i>	<i>Herniaria glabra</i>
<i>Arabis sturii</i>	<i>Acantholimon spinosum</i>
<i>Saponaria ocymoides</i>	<i>Arenaria laricifolia</i>
<i>Geranium dalmaticum</i>	<i>Veronica spicata</i>
<i>Campanula caespitosa</i>	<i>Sagina glabra</i>
<i>Paronychia pyrenaica</i>	<i>Androsace chumbyi</i>

I want to give particular mention to a shrubby sort of *Phlox subulata* which I obtained from Read's Nursery in 1966 (I had brought a number of my favorites from my last garden and heeled them in over the winter of 1968), which is the most outstanding phlox I have seen. It grows very slowly and compactly with heavy, thick, conifer-like leaves. Its bright pink flowers are big and beautiful, and it is a fresh emerald green all summer. It occupies a position of honor at one corner of the wall.

Incidentally, I would like to report on a method I have been using to get plants rooted in a wall like mine where the funnel-shaped crevices make it particularly difficult to get soil to hold. Tear up the sides of a peat pot and soak it well in water. Place the root of the plant along with some soil from an old flower pot, which is interlaced with fibrous roots, on a piece of the peat pot and roll it up. This will be sufficiently stiff to push into a small crevice, and the soil will not wash away in the next rain.

Presumably many purists would have reason to call this wall a poor thing, but anyway it is mine own, and every time I look at it I think of Bottom's "sweet and lovely wall." The ancient weathered rocks, many of them pitted by the action of leaves and water in the old wall, rising out of the green lawn, give some of the effect of an Irish ruin.

My enthusiasm for rock gardening reached new heights after the completion of this wall, so I tackled the bulldozer scar mentioned above. I worked like a demon getting out the roots of the weeds that had already established a claim there, and covered the area with two or three inches of 1/4 inch gravel. Here and there I dotted it with rocks that were excavated in the process, some of them enormous. Many plants do well in this subsoil, but when occasion

demands, I can scoop out a hollow and fill with whatever is required. This medium has surpassed all others for keeping plants alive and green through the hot summer, even though it is in full sun all day long. I must confess that I am only beginning to get started on varieties considered miffy, but I intend to give many of them a try, even though I have sworn off them at least twice in the past. I can hardly wait for the August plant sale at Eleanor Brinckerhoff's, or the fall shipping season of the nurseries.

PLANT HUNTING IN THE CAROLINAS

DONALD W. HUMPHREY, *Falls Church, Virginia*

During Easter vacation of 1969, my wife, Lois, and I, and our children Mark and Naomi took a trip into South and North Carolina as part of a continuing exploration of the Southeastern flora suitable for the wild garden and the rock garden.

Our main objective was the Carolina Sandhills National Wildlife Refuge in Chesterfield County, South Carolina. This 46,000 acre area lies in the high, but gently rolling sandhills of the inner coastal plain at an elevation of 250 to 500 feet above sea level. The higher elevation and consequent drainage is a feature that distinguishes the sandhills from the flatter, wetter, outer coastal plain. Some areas of the sandhills, in spite of ample rainfall, have an almost desert aspect.

In primeval times those hills were undoubtedly covered by magnificent stands of long-leaf and loblolly pine and a variety of oaks and other deciduous trees. Recurrent wildfires created an open park-like atmosphere. In wet areas a variety of broad-leaved evergreens formed nearly impenetrable thickets or pocosins as they are commonly called in the Carolinas.

Following European colonization, these lands were cleared and farmed. In a short time the surficial humusy soil was exhausted and in its place gleaming white expanses of barren sand remained. By the time of the economic depression of the 1930's, these were areas of extreme poverty and under resettlement programs the depleted acres were acquired by the Federal government. Today, besides the wildlife refuge, there are two state parks and a large state forest. Thirty years have evidenced a remarkable recovery in the forested areas, but old fields are in many instances still sandy expanses with sickly plantations of southern pines doing their best to reclaim the ravaged land.

We had written the refuge manager in advance of our trip, requesting permission, as members of the ARGS, to collect not more than 30 specimens for non-commercial purposes. The answer was prompt, positive and hospitable and we were invited to enjoy our brief visit to the refuge. I had a list of plants I hoped to find, but no assurance that I would find them. Indeed, in our short stay we did not find all we were looking for.

Our adventuring was hindered by two factors. A three-day ice storm in February had reduced a 75 by 35 mile area of the sandhills into a scene of utter chaos. Near refuge headquarters a stand of 30-year-old slash pine had been nearly 100 percent topped at the lower limb line leaving a vast

expanse of leafless poles. Lumber mills were jammed with salvaged pulp wood but the woods were full of broken tops and downed trees. On top of this the warm weather of early April had activated both the diamond-backed rattlesnakes and the cottonmouths, so even could we have done so we would not have been inclined to gambol blithely over the landscape. In spite of all, we did range rather widely across the hills in a very full day and a half.

Along the rather deeply excavated stream channel near the refuge road, the children busied themselves gathering petrified wood and other oddments. Here I collected my first sandhills plant, a plant with obovate basal leaves, that turned out to be a typical southern coastal plain composite, *Marshallia obovata* var. *scaposa*. The head of white tube flowers bears a superficial resemblance to *Scabiosa*, being over an inch across on nearly naked stems.

Nearby were hairy, grassy-leaved plants of a grayish olive color. This plant was commonly met with throughout the sandhills and turned out to be *Heterotheca graminifolia*, synonym *Chrysopsis graminifolia*. In October, they send up one to several stems above the 5-inch basal leaves. The flowering heads, in corymbs to 24 inches high contain 4-10 bright yellow ray flowers about one half inch long. The entire effect is light and airy compared to the stiffness of *Chrysopsis mariana*.

Specimens of *Viola pedata* collected in the sandhills have leaf segments noticeably larger than those collected in West Virginia and less round in outline, tending to be more fan-shaped. Those collected were all solid colors and unlike their more northern brethren in the garden, bloomed nicely in late October and early November, the last flowers being killed by a sharp frost in mid-November.

Under good stands of pine, wire grass (*Aristida stricta*) is the predominant form of vegetation. Intermingled with it, however, are a number of fine plants. *Opuntia compressa* was not uncommon. *Iris verna* var. *verna* characterized by longer rhizomes than the mountain form, var. *smalliana*, was widely scattered throughout. Plants of *Sisyrinchium albidum*, or *arenicola* looking for all the world like tufts of fine-leaved grass, were not infrequent. Numerous remnants of leaves of past seasons contribute to the effect. The flowers are small, even for this genus, but are in scale with the plant and are charming.

One of the pleasant surprises of the sandhills was *Hypericum lloydii*, a dwarf, evergreen shrub to 8 inches high with narrowly linear leaves less than an inch long and pleasant bright yellow flowers one half inch across. Two of these plants are set in a dry sunny location in my rock garden, where, if they survive the winter, I shall pronounce them rock garden shrubs of good quality.

In the most barren sandy old fields, three of the more conspicuous plants are *Arenaria caroliniana*, *Euphorbia ipecacuanhae* and *Lupinus difusus*. The first two plants are well known to those who know the flora of the New Jersey pine barrens. The lupine, along with *Lupinus villosus*, occur only on the southern coastal plain. Unlike all other lupines that I know, these two species have ovate, simple, hairy leaves rather than the palmately divided leaves that are the hallmark of the genus. *Lupinus perennis* also occurs in good-sized colonies.

All five of these last mentioned plants have long rope-like taproots and

are almost impossible to transplant. I did manage to find a small plant of *Lupinus diffusus* and it seemed to be doing well in the rock garden until the wet, wet weather of the summer of 1969 claimed it. It and *Lupinus villosus* are first-rate flowering plants with blue and reddish purple flowers respectively. They probably are not grown in American gardens at all.

Two plants which I was actively seeking proved elusive and the first full day passed without locating them. They were *Phlox nivalis* and *Tradescantia rosea*. Both are excellent rock garden plants. On the second day we moved nearer to the piedmont and there Lady Luck came to our aid. We walked around a small reservoir impounded for waterfowl and there in somewhat moist soil we found *Tradescantia rosea* just beginning its spring growth. The very narrow leaves proclaimed it to be the variety *graminea*. Two of these plants grew to 5 inches high in the rock garden and were in bloom for several weeks with lovely, clear pink flowers. Seeds of these plants along with those of *Hypericum lloydii* and *Marshallia obovata* were sent to the ARGS Seed Exchange in the hope that these uncommonly grown but desirable natives might be tried by others.

Leaving the reservoir, we found *Phlox nivalis* in bloom, its pink flowers marked with small, star-shaped eyes. Later, leaving the refuge but still in the sandhills, we found fair numbers of it in the moist, cut-over pine forest.

One other sandhills plant deserves mention as a curiosity, though it is hardly a rock garden plant, nor does it have attractive flowers. This is *Eryngium yuccifolium*, an umbellifer with a few grayish, yucca-like leaves to 1½ feet long and ball-like heads of greenish flowers.

A favorite southern plant is *Gelsemium sempervirens*, the yellow jessamine. This twining, evergreen vine with its fragrant yellow flowers in early spring is a trademark of the Old South. I brought home a single plant which I placed along the warm south side of the house where it is now clambering up a *Photinia villosa*. The hardiness test comes in late winter.

Leaving the sandhills, we set out for a day and a half in the rough piedmont hills of Montgomery County in central North Carolina within the Uwharrie National Forest. Located only 70 miles from the sandhills, this area has a distinctly different flora, though both areas do share certain species in common, such as *Phlox nivalis*, *Viola pedata*, and *Iris verna*.

Of the three major physiographic provinces of the eastern tier of states, the piedmont is probably the most altered and densely populated region. We may therefore be thankful for the Uwharrie National Forest in North Carolina and the two much larger units of the Sumter National Forest in South Carolina in helping to keep intact at least a portion of this marvelous forest flora.

Our first stop was on an old timber road. Though the spring had been very dry, the area appeared moist and we soon found this to be a result of an almost impervious, whitish clay soil. We made two finds here, the first being *Hexastylis virginica*, a beautifully marbeled evergreen ginger also known as *Asarum virginicum* or *A. memmingeri*. One great plant with numerous leaves was well over a foot across. In later stops, we found this lovely plant not uncommon. Along with it was *Hexastylis arifolia*, with a few brownish green, triangular, evergreen leaves.

Phlox nivalis was rather common along the woods roads, and highly

visible since it was in bloom. At the site of an old saw mill we found rosettes of densely pubescent, ovate leaves to 5 inches long with parallel veins. The leaves were usually in the form of a cross. It turned out to be *Arnica acaulis*, the only southeastern representative of this north-temperate genus. In late spring, my six plants sent up stalks more than a foot tall bearing a few typical *Arnica* flowers.

The next day, in a drizzling rain, we continued our peregrinations. Mountain laurel was abundant and *Rhododendron maximum* occurred along rushing streams. We saw a number of lovely pink-flowering shadbushes. *Iris verna* was sporadic in occurrence and along a rocky stream we found *Iris cristata*. In this same locality, in waterlogged soil, *Zephyranthes atamasco* was common.

We collected several plants of *Hepatica americana* with variegated leaves and clear blue flowers. *Coreopsis auriculata* was found in a number of places and *Viola sororia* (synonym *V. palmata* var. *sororia*) was in bloom and very attractive. *Vicia caroliniana* occurred on road cuts and was beginning to bloom. In a shady ravine, I collected two plants of *Heuchera americana* that are now gracing my dry wall. The leaves are attractively marbled and a number of my gardening friends have commented on their charm.

As we neared the northern edge of the forest on a graveled road, we stopped along a rushing stream. Here on a north-facing slope below a canopy of oaks and mountain laurel was a solid carpet of *Galax aphylla*.* For a moment I sensed what some of the early plant explorers must have felt in trodding the virgin lands of the Southeast. Beauty must have surrounded them everywhere. The spell was entrancing but short lived as I looked to the opposite side of the stream where a recent logging operation had devastated the scene. Hopefully, in the years ahead, we can identify disappearing and unique botanical habitats of the Southeast and afford protection before it is too late.

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FROM A MEMBER IN CZECHOSLOVAKIA—On a Season's Greeting card came this message: "We are trying to obtain permission for a trip to the Rock Garden Plant Conference in England in April. The hope is minute but still we are struggling. Remember us, please!"

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HAPPY RESULTS—Evidences of the success of the "Requests by Members" column are always appreciated. Here is one following a request for books: "Thank you very much for the opportunity that the *ARGS Bulletin* offered me in obtaining books, new and old, on rock gardening. Here in Minnesota alpine gardening is almost non-existent—so also are books on the subject. Members parted with thirteen books from their own collections, and also gave me sources where I might obtain more. It was a thrill for me to get all those letters. Thank you again and thank those responsible for the 'Readers Inquiry' column." This from Mrs. Joan C. Lindusky, 256 12th No., South St. Paul, Minn. 55075.

ROUGH AND READY BOTANICAL WAYSIDE

OLGA W. JOHNSON, *Grants Pass, Ore.*

(Editor's Note)—Mrs. Johnson states that she wrote this article in consultation with Letha Kopsas, Lawrence Crocker, Ireta Kirhofer, Al Hobart and Robert Mansfield. That the article does not pretend to be a complete and entirely accurate listing of the flora of the Rough and Ready Flats. Rather, it is intended to be a challenge to botany students to complete such a list.

Rough and Ready Botanical Wayside is only a sampler designated out of a rough expanse of country rich in varied flora. Here is the valley cross-roads of ecological zones characterizing the Cascades to the east, the Coast Range to the west, and the Siskiyou of the California-Oregon border just to the south.

The rather mild, wet winters and the long, hot, dry summers, and the rocky serpentine soil have much to do with the quantity and character of the plants yielding spectacularly concentrated spring bloom on Rough and Ready Flats. The Wayside now comprises eleven acres touching Rough and Ready Creek where it crosses Redwood Highway 199, thirty-five miles south of Grants Pass, Oregon, near Cave Junction. The creek is thought to have been named in the 1850's by miners who had served under General "Rough and Ready" Zachary Taylor—later President—during the Mexican War.

In summer, the Wayside and adjacent areas appear to be a colorless stony desert where even the scattered shrubs yield but a grudging growth. Geologists explain that the sparse character of the plant life is due not only to summer drought typical of the whole region, but also to the complex of mineral elements present. The rough cobblestone surface of most of the Wayside has been deposited partly by the old flow of the Illinois River branches, in the valley of which Wayside lies, partly by outwash from the canyon of the West Fork Illinois tributary, Rough and Ready Creek. According to information from Robert Mansfield, retired Forest Service specialist in local flora and recreational resources, and from Len Ramp of the State Dept. of Geology, the actual rocks include granites and basalts and other types as well as serpentines; but the soil itself, in which grow so many dwarf-sized and often summer-dormant plants, contains an effective share of peridotite and serpentinite—the second a hydrated form of the first, from serpentine rock typical of some areas above.

Since serpentine rock is high in magnesium and contains more-than-average amounts (though actually in small percentages of the whole) of iron, chromium, nickel, and molybdenum (the latter often poisonous to plant life), but is low in potash and trace elements common in granitic and limestone soils, it does not support lush plant growth. Certain trees, such as Knobcone and Jeffrey pines (*P. attenuata* and *P. jeffreyi*), are known to be especially adapted to the mineral offerings of the serpentine localities; it is apparent that certain lesser plants also are thus adapted, for quite a number of these are endemic to the area.

Soil Conservation Service personnel advise that in Rough and Ready Flats enough of the too abundant magnesium and poisonous trace elements have been leached out to permit growth of restricted-size plants. We might add, where at least a certain amount of humus has accumulated on the site, or has been contributed by wash-down or flooding, the same is true.

In the earlier years, most residents of the Upper Illinois Valley took casually for granted this annual show of spring color on the Flats. But the commercial promotion of the Oregon Caves, and the improvement of the highway to the coast brought an influx of tourists, among whom quite a few were inclined to stop and dig. Mrs. Harry O. Smith and the Illinois Valley Garden Club, which she helped to found, became alerted to the danger as collectors carried away plants ranging from *Azalea occidentalis* to low-growing bulbous species.

After many years of often discouraging efforts, during which the Club erected at its own expense roadside signs citing the state conservation laws, the Rough and Ready Forest Wayside became a reality in 1938. Mrs. Smith, off-time president of the Oregon Federation of Garden Clubs, was the recipient of a state horticultural award in recognition of her services in helping to preserve local flora, and for her so often successful efforts in growing natives in her own extensive garden. She testifies now that much credit for the establishment of the Rough and Ready protected area goes also to Samuel Boardman, at that time State Park Superintendent, and to Jessie Honeyman, for whom the Honeyman State Park near Florence on the coast is named.

According to Chester A. Armstrong's *A History of the Oregon State Parks 1917-1963*, the original 20-year lease of seventy acres was not renewable because different public land agencies were involved; instead thirty acres were acquired by patent in 1962, of which nineteen acres were turned over to the Road Division of the State Dept. of Parks and Highways as "right-of-way" and the remaining eleven retained by the Parks Division as a Botanical Wayside.

Rough and Ready Creek dries up in summer, yet it is unfortunate that the present much reduced park includes practically no streamside land—an error that should be corrected if possible before removal of more gravel, or other land alteration or development, destroys the sometimes choice flora to be seen along the watercourse. Mrs. Ralph Kopsas (Letha Cook), who lived for many years in the Rough and Ready area, reports observing along the stream above and below the highway bridge (in some cases a hike for some distance upstream might be involved), such species as *Viola occidentalis*, *Cypripedium californicum*, *Pinguicula vulgaris*, *Downingia elegans*, *Synthyris reniformis*, and *Trillium rivale*. Al Hobart, also an area resident, mentions in addition, *Epipactis gigantea*.

Species reported for the Flats in this article may not all occur within the official boundaries of the Wayside. Other species mentioned are designated as residents of woodlands in the general area. The marking of the Wayside as a restricted area still has not put a full stop to the lifting of plants by local or visiting collectors. Mrs. Kopsas speculates that some species once occurring in the immediate area may have already disappeared; flooding and road work take their tolls, as well as does vandalism.



Fritillaria lanceolata from areas adjacent to Rough and Ready Botanical Wayside.
Richard Boyd

Most years, the spring display of successively blooming species extends through April and May into June. Visitors should not expect the lavish masses of color to be encountered in the Southwest deserts; there are no cacti here, nor poppies; modesty characterizes most individual blooms. But even a casual car stop in the open flat, and examination of the terrain close by, is almost certain to amaze because of the great number of species and individuals growing in any square yard of what seems little more than a flattened rock pile.

Shrubby residents of the Flats include the sizable *Mahonia aquifolium*, more restricted in growth here than often seen elsewhere, and the lower-growing species *M. nervosa*, and *M. repens*. *Ceanothus sanguineus*, or Oregon Tea Tree, so common in southern Oregon that it is often referred to as Buckbrush, or Chaparral, is also accompanied here by a ground-hugging relative, the fascinating, tough and difficult-to-grow *C. pumilus*, with its soft little globes of bloom in varying blues, curious in fruit. In places shrubby oak growth provides some shelter for small plants liking a little shade.

The survival adaptations of the typical open-flat plants of the Wayside,

where the season of moisture-plus-warmth is so brief, and the soil so lean and so minerally peculiar, would make a revealing study. There are, of course, on the Flats monocarpic species which persist from season to season through seed alone, including *Crocidium multicaule*, *Collinsia rattanii*, *Linanthus bicolor*, *Mimulus guttatus* and *M. douglasii*, *Lupinus nanus* var. *apricus*, *Amsinckia intermedia*, *Calycadenia truncata* ssp. *scabrella*, *Cardamine oligosperma*, *Draba verna*, *Thlaspi alpestre*, *Trichostema simulatum*, and others.

Dormancy of the bulbs is the answer of the Liliaceous plants to the short growing season. The common Fritillary in the Wayside is an unusual form of the nodding, spotted Checker Lily or Mission Bell, varying both in growth habit and flower color (more yellow) from *F. lanceolata* of adjacent areas. There are speculations that two different species may be involved here, but even experts consulted have not given any final decision. Could the mineral factor be critical in this case?

The variable species of the genus *Brodiaea* are, according to reports, quite numerous at the Wayside locality, including *BB. capitata*, *coronaria*, *multiflora*, *pulchella*, and *hendersonii*. The *Allium* of most interest to rock gardeners is the uniquely attractive *A. falcifolium*, frequent at the Wayside along with *A. amplexans*. *Calochortus tolmiei* is common; *C. uniflorus* occurs in wooded sections of the general area. *Zygadenus venenosus* and *Z. micranthus* are happy residents of the flats, as are *Camassia howellii* (at least along the streams) and *Erythronium howellii*.

The Iris family is represented in the area, but not at the Wayside, by *Iris bracteata*. *Sisyrinchium douglasii* is typical of the Flats, and *S. bellum* of adjacent wooded sites. Mrs. Kopsas believes she once saw the yellow *S. californicum*, supposed to belong in coastal areas, on the Flats.

Non-bulbous species that nevertheless die down in summer and depend upon various root forms to store nutrients and maintain life until the following season include *Lewisia oppositifolia*, *Dodecatheon latifolium* (*hendersonii*), (*D. alpinum* probably occurs not far up in the hills from here), *Delphinium decorum* (hybrids of this or of one or more other blue-flowered larkspurs with the scarlet *D. nudicaule* are reported for other sections of the upper Illinois Valley), *Saxifraga oregana*, *Lithophragma parviflora* and/or *L. heterophylla*, and some others of those listed subsequently in this article.

Among the most precious spring bloomers, according to some flower lovers, is *Viola hallii*, which seems to prefer the half-shade of some shrub. *V. cuneata* and *V. lobata* grow in the region, but not at this locality. The same may be said of the treasured miniature, *Hesperochiron pumilus*. Endemic to the area (S. Josephine and S. Jackson Counties) are four delightful *Arabis*, some or all of which may be seen at the Wayside. Unfortunately, these tend to be biennial, or short-lived perennials, even where growing naturally. They are *AA. breweri*, *koehleri stipitata*, *aculeolata*, and *oregona*. Perhaps best remembered by passers-by are the conspicuous, showy clumps of *Phlox diffusa*. *Phlox speciosa* and *P. adsurgens* are to be seen in wooded parts of the general area, along with *Silene hookeri*. *Eriophyllum lanatum* is showy on the Flats a little later, but this is more common to the whole of southwestern Oregon. Plentiful, if not so colorful, are the Lomatiums (*Cogswellia*) of varying heights, reported occurring in the species *martindalei*, *nudicaule*, *triternatum*, and *utriculatum*.

Always showy is *Balsamorhiza deltoidea*; the more rare *B. platylepis* of the valley is not found at the Wayside, according to Robert Mansfield. Other spring yellow flowers include *Ranunculus occidentalis*, *Erysimum capitatum* and *Senecio canus*. Additional Composites of the Flats are *Antennaria dimorpha* (practically a miniature bun), *Chaenactis douglasii*, and species of *Eriogonon*. Penstemon at the Wayside include *P. laetus* and *P. azureus*. *Horkelia sericata* represents the Rose family.

Of parasitic plants the following have been noted: *Orobanche uniflora* and *O. fasciculata* var. *franciscana*, and the Dodder (*Cuscuta occidentalis*), an annual. An aside on ferns: the *Cheilanthes* at the Wayside is probably *siliquosa*.

The species mentioned as occurring along the creek or in area woodlands may usually be encountered by taking the Oregon Mountain road leading west from O'Brien (a number of miles south of the Wayside). The roster of plants to be seen in the lower Illinois River Valley, reached by a road leaving Highway 199 at Selma (between Grants Pass and Cave Junction) varies interestingly from the upper valley list. From this rather narrow road a branch trail may be followed up into Kalmiopsis country.

REQUESTS BY MEMBERS

Will the members who are able to fulfill any of the requests below please contact directly the person making the request!

Mr. Richard Langfelder, 170 Bedford Road, Chappaqua, N. Y. 10514, for his Florida garden, would like information concerning the sources of the South American plant, *Hippeastrum* of which he lists the following species: *HH. advernum*, *aulicum*, *miniatum*, *pratense*, *reginae*, *reticulatum*, *rutillum*, *solandriflorum*, and *vittatum*. He also would like to know about any dwarf tropical plants that might be tried in his Florida rock garden where it gets very hot in the summer.

Soldanella cultural advice is wanted by Mr. Chris A. Simonsen, 653 St. John Street, Pleasanton, Cal. 94566. He writes, "Do you have any information as to Soldanella culture, time of sowing the seed and suitable compost? Also, I would like to know where good seed is obtainable." Help him if you can.

Wanted by Mrs. Jane Smallwood, Sand-Martins, Sene Park, Hythe, Kent, England: Seed of *Geranium fremontii*, wild or garden forms. Seeds of *GG. erianthum*, *maculatum*, *richardsonii*, *shikokianum*. Information on the natural habitat of *G. cataractarum*. Could swap seeds of *Lapageria rosea albiflora* x *Lapageria rosea*, *L. rosea albiflora*, selfed, *Boenninghausenia albiflora*, *Geranium transbaicalicum*, and a beautiful deep rose-pink form of *Geranium sanguineum*.

Please send your requests for seed, plants, books, slides and information to Mrs. Sallie D. Allen, 18540 26th Ave. N.E., Seattle, Wash. 98155. For

inclusion in a specific issue of the *Bulletin*, requests must be received by the first of the month, two months prior to publication date. It is not possible to acknowledge receipt of requests. We would like to hear the results, if any, from those who have utilized the "Requests by Members" column in the past.

PLANTS TO KNOW AND GROW

VERONICA REPENS

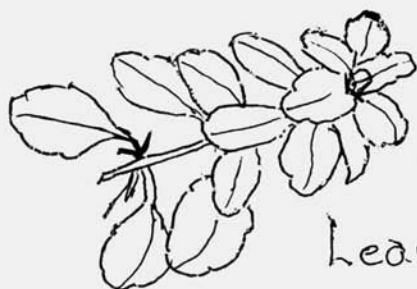
Veronicas have always been a happy choice in my garden. Their ever-green colors, whether it be a shiny green, or a hairy gray, give a lovely color pattern to the garden in the off-season of bloom. Some Veronicas are overly spectacular in their spring finery, others are a quiet delight.

When given seed of *Veronica repens*, I thanked the donor and planted them—wondering where I had room for a plant with a name like "repens." Repens sounded sort of invasive—knowing the habits of this branch of the Scrophulariaceae family. No trouble germinating the seed, and in a short time there were about two dozen or so little plants.

What a love *Veronica repens* is! Absolutely flat on the ground—shallow rooting as it grows. It has tiny, opposite, bright, shiny, lightly notched, ovate leaves, just as perky as they can be in all four seasons of the year. The number of blooms from May to July is not overwhelming, rather spotty; a very light, misty blue, typical four-petaled Veronica bloom, with protruding anthers. For the size of the plant, the bloom is relatively large and sits right on the foliage.

It does not like full, hot sun, and is inclined to suddenly turn brown for no apparent reason. This browning has occurred in hot, dry weather, and in wet weather, so I have no answer to this problem, but if you put several plants in different locations in the rock garden, you'll always have this Veronica with you.

The top of a wall in light, high shade, along a path, between the stones where there is a shadow or two to break up the noon sun are suggested locations. It is a great cover for the small rock garden bulbs. With a little judicious pinching of shoots that head in the wrong direction, it makes



Leaves 1cm including
petiole

*Teucrium subspinosum*

James Baggett

a lovely little plant to hang over the edge of a sink or trough garden. The scale of both the foliage and the bloom is perfect. Although originating in Corsica, it is perfectly hardy here in my garden 30 miles west of Philadelphia.

Mrs. John S. Kistler, West Chester, Pa.

TEUCRIUM SUBSPINOSUM

Why is this spiny little shrub not better known? Perhaps it is not hardy enough to be widely cultivated outdoors, though it should be adapted to the entire West Coast and many other areas where the winters are not severe. Its adaptation to growth on sunny south garden slopes should permit its placement in sites where risk of winter damage is minimized. There has been no hint of damage at about 10 degrees F., which is, of course, not cold by Midwest or New England standards.

The home of *T. subspinosum* is in southern Europe, according to Royton Heath (in *Collectors' Alpines*). The one botanical reference in which I found it mentioned (*The Gardeners' Dictionary*) by George Don, more specifically located its source in the Balearic Islands, off the coast of Spain in the Mediterranean.

My own impression of *T. subspinosum* is of a miniature sagebrush, though, of course, the resemblance is actually only slight, and it might also be likened to a spiny broom, such as *Genista horrida*, with a better color thrown in for good measure. The character of this plant is imparted by the stiff spiny stems and silver-gray color. If you insist on a floral display, don't bother with it, as shown by the accompanying photograph of a plant still

in flower. The habit is somewhat spreading, though not procumbent. The 2-year old plant pictured is 2 inches tall and about 4 to 5 inches wide. Another known specimen several years older is 3 to 4 inches tall and covers about a square foot. The leaves vary from very small normal ones at the base of the shoots to narrow rudimentary ones toward the tips. The shoots terminate as bare spines, sometimes with opposite leafless branches near the tips. A member of the mint family, it bears small, pinkish labiate flowers on the spine-like branches over a long period in late summer and fall. As mentioned above, they are not a great asset to the general appearance of the plant since they are not showy and tend to persist after they are faded.

Seed is produced, but one attempt to germinate a batch planted in the fall has failed. A second try, employing scarification and again fall planting is underway. The recommended method of propagation is by half-ripened cuttings in July. More mature cuttings are difficult in comparison to other *Teucriums*.

James Baggett, Corvallis, Oregon.

* * * * *

A FRIEND OF NATURE—DONALD J. LENNOX—A letter from Mrs. Gertrude Pevarnek, North Conway, N. H. tells us several interesting things about Mr. Lennox. She writes of him as an “. . . outstanding naturalist, a long time member of the ARGS, a very fine artist (oils and watercolors).” She adds, “A better friend Mother Nature never had.” A clipping from a recent issue of the Manchester (N. H.) Union Leader, accompanying her letter, disclosed that Mr. Lennox had recently given to the University of New Hampshire a collection of Lepidoptera (15,000 butterflies and moths collected over many years). Since these insects feed on plants and are agents of plant propagation, they are of interest to gardeners. Mrs. Pevarnek, in mentioning this gift, closed her letter with these words, “. . . he also gave a lifetime of love and devotion to nature, his everlasting tribute to our wildlife heritage, and inspiration to all of us to preserve what is left.” As an afterthought, she announced that she had purchased Don’s alpine nursery stock since to maintain it meant too much work for him alone. Under the name of Mountain Valley Nursery, Jefferson, N. H., Mr. Lennox had been for many years an advertizer in the *Bulletin*. His retirement from the nursery business will make it possible for him to devote more time to those other pursuits for which he has so much talent.

* * * * *

A GARDEN IN WINTER—A short description of a wonderful garden: “The garden seems lovely even with its peppering of snow. The snow caps across the Sound are “apricotty” in the sunrise. The Poodle Dog tree, *Cunninghamia lanceolata* has almost the same tones and *Callicarpa giraldiana* is especially lovely against the snow. The waterfall is frozen on two sides, narrowing its aisle until it leaps up before dropping its more than 50 feet into the summer swimming pool and the five-fingered ferns are frozen in their shapes and wierd, icy branches make patterns. I love this, and every season.” So writes Mrs. James W. Watson (Susan) in describing their garden at “Ar Dachaigh” in West Vancouver, B. C.

OMNIUM-GATHERUM

THE 1971 SEED LIST—This exciting seed list was left by the postman a few minutes ago. Only a glance was necessary to reveal that it was an outstanding list in every way. While no statistical data has been published in the *Bulletin* concerning our seed list since 1967, it is most interesting and satisfying to make a comparison between the two years. In this simple way a remarkable growth is brought to light.

Year	No. of Donors	No. of Listings	No. of Genera
1967	154	1964	401
1971	249	3294	706

A breakdown of the donors by state and country shows that of the 249 total, 182 live in the United States, 67 live in 16 different overseas countries, and 13 in Canada. The donor score is as follows: the State of Washington again leads with 31 followed by Connecticut with 25, New York 18, Pennsylvania 14, Canada and Oregon 13 each, Czechoslovakia 11, New Zealand and California 10 each, England 9, Massachusetts 7, Maryland, Scotland, Ohio, Maine and Nebraska 6 each, with 30 other states and countries totaling 58. Other overseas countries, not listed above, from which donors sent seeds are Australia, Austria, Belgium, Chile, France, Germany, Iceland, Israel, Italy, Japan, Sweden and Tasmania.

In our list the leading genera listed are: *Allium* with 96 listings (surprising), *Dianthus* 83, *Penstemon* 71, *Primula* 63, *Gentiana* and *Saxifraga* 62 each, *Rhododendron* and *Campanula* 60 each, *Draba* 55, *Iris* 50, *Lilium* 46, and *Pulsatilla* 45. In 1967, *Primula* was the leading genus followed in order by *Campanula*, *Saxifraga*, *Dianthus*, *Penstemon*, and *Anemone*.

Mr. Henry R. Fuller, his committee and consultants are to be congratulated on this year's seed list, the largest for the ARGS. Especially interesting to the seed planters are the "Notes on Seed Sowing" at the front of the list. Be sure to read them. Also note that this year's harvest of seed is to be sent to the new Director of the Seed Exchange, Mrs. Armen Gevjan, 536 Dogwood Place, Newton Square, Pa. 19073. Read what Mrs. Gevjan has to say about the Summer Seed Exchange. It is at the end of the present list.

In recent years there had been such Directors of the Seed Exchange as Dr. Arthur R. Kruckeberg, Bernard Harkness, Lawrence Crocker and Henry R. Fuller. How much good has been done throughout the world because of the dedicated work of these men, their hard-working helpers, and the seed donors, can never be measured. This is unfortunate for the world needs to know the good that is done if for no other reason than to counteract the bad which is forever being thrown at us by every type of news medium.

FROM THE EDITOR TO THE MEMBERS—A certain movement, originating I know not where, but within the ARGS, to send the editor of the *Bulletin* and his wife to England to attend the 4th International Rock Garden Plant Conference and Show at Harrogate in April was carried to a most successful conclusion. As an expression of appreciation for the work Eileen

and I have done in the interests of the Society, it is a tremendous outpouring of good will and, it seems to us, a testimony that present members believe that we must be going to live forever—for it will take that long, at least, for us to express our gratitude and our love for the ARGS and its flower-happy people. Only by many more years of devotion to the idea of a constantly improving *Bulletin* (one that gets *betterer and betterer*, as one member expresses it) can we adequately express our thanks.

But, there arises a question! By what stretch of the imagination can it be rationalized that one should be rewarded in such a touching manner for doing what seems to come so naturally and affords us such a great amount of pleasure? Truly, though some of the necessary work in preparing the *Bulletin* leans toward drudgery, most of it is so fascinating, seemingly so worth while in so many ways, and such pure enjoyment that our years of retirement have been made happy ones. With this work comes a sense of accomplishment which helps us keep well in body, mind and spirit. Nor do we forget the many friendships that have resulted from this work, both for ourselves and between members, many living in foreign lands. So it is that Eileen and I are the ones to be grateful. To every member and every friend of our Society do we say "Thank you from our hearts."

A POSSIBLE SPRING TRIP FOR 1971—Perhaps your reading of this issue of the *Bulletin* has already suggested to you a most worthwhile flower journey, which it is not yet too late to organize for this year. A start could be made by attending the Glide Wildflower Show. Glide is a few miles northeast of Roseburg, Oregon. If you are not already acquainted with the wild flowers of southern Oregon, this is a fine chance to start your education. This show is always held during the last weekend of April, a bit early for camping, but there are always motels. On Monday you could drive to the Rough and Ready Botanical Wayside, southwest of Grants Pass, Oregon, and revel in the natural flower show presented in this unlikely spot. This will be your second class room. Then down into northern California and as far south as the San Francisco Bay area. On the way you should leave the main highway and take to the back roads where in the hilly country you may see great sweeps of intense color as northern and central California celebrate their own magnificent flower carnival. Take several days for this, but plan to be in the Bay area during the first weekend of May to attend the Stinson Beach Wildflower Show. Should you live north of San Francisco, your return home should be made so that you traverse the whole length of the Oregon Coast Highway. The entire trip can be made in ten days, but two weeks, even three, is better.

Required reading: "The Glide Wildflower Show" by Kenneth Lodewick, "The Stinson Beach Wildflower Show" by Barbara Menzies and Roberta Shockey, and "Rough and Ready Botanical Wayside" by Olga Johnson, all appearing in this issue of the *Bulletin*, which you must now be holding in your hand. As a result of this trip as outlined, with any variations you may see fit to make, you will return home greatly exhilarated, with a much greater knowledge of the richness of the wild flowers that southern Oregon and northern California have to offer in the spring. You should

have enriched your colored slide library and brought home with you many new ideas, and perhaps new plants, for your own garden. You will have made new friends. You might even have accumulated material for an article for the *Bulletin*. Your editor had planned to make this spring trip in 1971, but since he will be in England at the crucial time, he is now looking forward to 1972.

* * * * *

SHALE BARRENS AGAIN—From a letter written by our President, Bernard Harkness, "On our fall trip (1970) we were able to penetrate a few of West Virginia's secrets, gather a few seeds and, as before, come home feeling there was much more to know than was revealed to us. A fine new camera which Santa left me enforces a notion that an early summer trip would be most rewarding next, especially for the herbaceous plants of rock garden interest. Thanks to Humphrey's article and our own investigations, the shale barrens are not the mystery they always have been. But the only seed we collected was from the shale barren *Oenothera*, rather a rank grower. Better luck was had from the woody plants but here, too, many things still eluded us."

*Perhaps this plant name should be written *Galax rotundifolia* (G. aphylla). There will be some discussion on this name change in the July issue of the *Bulletin*.

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