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BULLETIN

of the

AMERICAN ROCK GARDEN SOCIETY

Dorothy Ebel Hansell, Editor

VOL. 7 January - February, 1949 No. 1

EPIMEDIUM AND VANCOUVERIA

HAROLD EPSTEIN, New York

(*continued from the November-December issue*)

THE ELITE of the Epimediums in cultivation is unquestionably *E. grandiflorum* (*macranthum*) which occurs in Japan, Korea, Manchuria and far eastern Russia. This species was introduced into Europe by von Siebold about 1830, although it had long been cultivated in Japan. The accepted name now for this species is *E. grandiflorum*, which name was published in September 1834, whereas *E. macranthum* was not published until December of that year.

This species produces a few color forms, one of the more unusual being known as *E. grandiflorum* var. *normale*. This is the original or typical form, in which the inner sepals are tinged with pale violet, especially along the edge, and the long spurred petals are white. Inasmuch as these flowers are often predominately white, the form has sometimes been referred to as *E. grandiflorum var. album*. This is an outstanding plant when in bloom in the New York area in late April and early May. It is easily recognized by its "large and long-spurred orchidaceous looking blossoms" and the conspicuous long, tapering spurs. It is interesting to note that the forms of *E. grandiflorum* always carry a single leaf on the flowering stem, a character also typical of *E. alpinum* and *E. pubigerum*. It is distinct and cannot be confused with any other cultivated *Epimedium*.

On a par with this choice plant is another with similar form, but with deep rose flowers. This variety is known as *E. grandiflorum* var. Rose Queen and is at times offered as *E. macranthum* Rose Queen. The color is very distinct and is sometimes termed "crimson carmine", the petals being slightly paler than the inner sepals, with the spurs becoming white at their tips. This aristocratic species has no peer among the Epimediums, for the flower, as large as one and a half inches across, is not exceeded by any other. The early spring foliage adds to the charm of the plant, inasmuch as its dark metallic hue is a beautiful foil for the attractive flowers. It always brings forth the admiration of all who have had the good fortune to follow its growth in the spring. This is, indeed, a jewel for any selective gardener.

These two forms of *E. grandiflorum* have at times been said to require special garden care, which would indicate a possible inherent weakness in their make-up. But, after several years of garden experience, they have proven as tolerant of varying cultural conditions as many of the other Epimediums. They are not "miffs" and do not require coddling.

A form more commonly encountered is *E. grandiflorum* var. *violaceum*. Although a desirable subject, this does not have the long-spurred feature of the two previous forms. The flower is completely light violet, the petals not much exceeding the size of the inner sepals. Another form with yellow flowers is

E. grandiflorum var. *flavescens*, but this is extremely rare in cultivation and is now being sought by the writer. It was originally introduced into England as a weed in a clump of native plants which had been imported from Japan.

Of the several differing yellow Epimediums in cultivation, one of the handsomest is *E. pinnatum* var. *colchicum*. This is a particularly vigorous species and is the only one of three sub-species of the type *E. pinnatum* readily available. The species is easily identified by its leafless flower stalk, yellow flowers, very small petals and protruding stamens. *E. pinnatum* var. *colchicum* is a Caucasian species which was introduced into cultivation about 1840. Its flowers, which resemble a small *Verbascum*, are open and saucerlike. of bright yellow, with very short brown nectar spurs and protruding stamens. The plant in flower is about twelve to sixteen inches high.

Another of the yellow-flowered species, with which the former is sometimes confused, is *E. perralderianum*, an Algerian species, introduced into cultivation in 1867. It is the only African representative of the genus and is 2,000 miles distant from its nearest allies. Although it is closely related to *E. pinnatum* var. *colchicum*, there are certain prominent distinguishing characters, even though the flowers resemble each other with minor variation. *E. perralderianum* may be recognized by its dwarfer growth and its more profuse spiny leaflets, of which there are never more than three to each leaf. In contrast, *E. pinnatum* var. *colchicum* has leaves with five as well as three leaflets; the spines not more than half as long (and sometimes not spiny at all), as its relative when grown under like conditions. *E. perralderianum* is, perhaps, the dwarfest species in cultivation, being only six to a maximum twelve inches high when in flower and so is particularly choice for the small rock garden.

One of the fastest spreading varieties is *E. alpinum*, which is the only representative of the genus in the European Alps. Its range extends across north Italy along the southern foothills of the Alps into the west Balkan States. *E. alpinum* is the standard species and was named by Linnaeus. It was brought into European cultivation about 1580 and has become naturalized in many countries of northern and western Europe. This species is easily cultivated and is a very vigorous grower, its long rhizomes spreading rapidly. The plant varies considerably in stature, dependent upon local conditions (four to twelve inches in height), although the flower is rather constant in size. The leaves of this species are as decorative as others in the genus, but the flowers are not very showy, being small and of a dull crimson color.

A closely related, but more desirable species, is *E. pubigerum* which at one time was regarded as a variety of *E. alpinum*. *E. pubigerum* is a native of southern Bulgaria and travels east along the Black Sea coast of Turkey. It is a graceful plant of compact and slow growth, rising from eight to fifteen inches in height when in flower. It has leaves of firm texture and loose sprays of small rose, white and yellow flowers which rise above the stem leaf. This is in contrast to the rampant *E. alpinum* whose dingy flowers are hidden beneath the foliage.

Another of the smaller and daintier species is *E. diphyllum*, which grows to rarely more than eight inches when in flower. Although supposedly in cultivation, its delicate constitution has precluded it from the casual growth of the other species. In fact, search for *E. diphyllum* during the fast few years has not disclosed a source. It cannot apparently withstand any neglect, for it was lost by some gardeners during the difficult war years. This species is known only from the south of Japan. It has white spurless flowers which are campanulate and pendulous. The distinctive leaves normally have only two nearly spineless leaflets.

It was introduced into Europe about 1830 with other Japanese species but had been cultivated in Japan for many years before. It has also been known as *Aceranthus diphyllus.*

Another Asiatic species rarely encountered today is *E. sagittatum.* This has been cultivated in Japan for centuries, being valued for its distinctive foliage and supposed medicinal properties. Its native distribution is in the mountains of central China, from which it was introduced into Japan and thence into Europe by von Siebold shortly before 1856. This species is recognized by its flowering stem which usually has two opposite leaves, each with three leaflets. The numerous flowers are minute with purplish and white coloring.

Besides these seven described species, which are known from their native sources, there are also in cultivation ten horticulturally distinct Epimediums. Some of them had been considered varieties of the species, but it appears that all are garden hybrids. Several had appeared in European gardens in the first half of the nineteenth century; most are hybrids of species that do not occur in proximity in nature. It is, therefore, conclusive that they are hybrids of species that had been under garden cultivation.

Following are the recorded hybrids and their probable parentage:

Epimedium perral-chicum combines the various features of *E. perralderianum* and *E. pinnatum* var. *colchicum.* Both of these species are planted together at the R.H.S. garden at Wisley, England, and apparently have interbred for years, thus producing offspring of intermediate character.

E. rubrum is one of the more attractive garden hybrids, which had erroneously been described as emanating from Japan. Some authors had even considered it as a large-flowered variety of *E. alpinum.* Actually, its parents are *E. grandiflorum* and *E. alpinum.* In some catalogs, it is listed as *E. coccineum* or *E. nigrum.* It is believed to have been originated around 1854 by Andre Donkelaar, head gardener at the Ghent Botanic Garden from 1835 to 1858. The carmine and yellowish flowers are much larger and brighter than those of *E. alpinum* and it has more tapering, slightly upcurved petal spurs, which indicate its *E. grandiflorum* parentage. It has bright red young foliage in spring and again in fall, as it prepares to wither. *E. rubrum* has a less rampant rhizome than *E. alpinum* and is a more ornamental plant than its parent.

E. versicolor refers to a group of plants also of garden origin, which appear to be hybrids between *E. grandiflorum* and *E. pinnatum* var. *colchicum.* Four other clons are described, all having many features in common. Their flowers are about three quarters of an inch across with the general form of *E. grandiflorum,* but smaller and with shorter petal spurs. The inner sepals are broader, thus resembling *E. pinnatum.*

E. versicolor var. *versicolor* has old rose inner sepals, yellow petals and red-tinged spurs. It is not as common nor vigorous a plant as *E. versicolor* var. *sulphureum.*

E. versicolor var. *cupreum* is very similar to the preceding clon, but has coppery red inner sepals. Both of the aforementioned clons of *E. versicolor* are reputed to have been raised by Andre Donkelaar between 1842 and 1849.

E. versicolor var. *sulphureum* has been commonly known as *E. macranthum* var. *sulphureum,* or *E. sulphureum.* It is really the commonest Epimedium in culti-

vation. In this form, the entire flower is about three quarters of an inch across and of a pale lemon color. The petals and inner sepals are generally of the same length.

E. versicolor var. *neo-sulphureum* is very similar to var. *sulphureum*, but not as common in cultivation. Its leaves consist usually of three leaflets, whereas in *sulphureum* there are nearly always nine leaflets. Besides this, the spurs of *neo-sulphureum* are always shorter than the inner sepals. It is also a later bloomer than the variety *sulphureum*.

E. warleyense is a plant of unknown origin, although its characters indicate that it is a hybrid between *E. alpinum* and *E. pinnatum* var. *colchicum*. This plant had been growing in the garden of Miss Ellen Ann Wilmott since before 1914, where it was mistaken for *E. perralderianum*. The name of this hybrid is derived from the garden address of Miss Wilmott at Great Warley in England. The plant was of great pride and value to her for, although in her garden for over twenty years, it was not released for more general cultivation until 1934, the year of her death. While the flowers of this plant are small, they are, nevertheless, distinct and decorative. The loose raceme (about twelve inches high) is of an unusual color, which may be described as bright bronze. This is a logical color effect, considering the red in the parent *E. alpinum*, combined with the golden-yellow of the other parent. The flowers really open a bright coppery red and fade to a yellowish salmon. The leaves consist of five or nine leaflets and the flowering stem may be leafless, as in *E. pinnatum*, or have a single leaf, as in *E. alpinum*.

E. youngianum covers a group of hybrids with supposed parentage of *E. diphyllum* and *E. grandiflorum*. The following are the clons in cultivation, each of them differing in their flower color, leaf structure and habit of growth.

E. youngianum var. *typicum* may be a natural hybrid for it emanates from Japan, being another introduction by von Siebold (about 1839). Its name commemorates the Young family, English nurserymen, specializing in uncommon plants. This type plant cannot be termed attractive, for its few flowers, white with a greenish tinge, are small and hidden under the foliage. This Epimedium generally blooms earlier than the variety *niveum*. The plant, while in cultivation, is rather rare today.

E. youngianum var. *roseum* has been known under many names, such as *E. lilacinum*, *E. roseum*, *E. musschianum violaceum*, *E. macranthum* var. *roseum*, *Bonstedtia lilacinum* and other variations. It is one of the more common varieties available from nurserymen and is a neat and desirable plant, variable in leaf structure, the flowers small and purplish mauve and varying in depth of color.

E. youngianum var. *niveum* has also had various designations such as *E. musschianum*, *E. macranthum* var. *niveum* and *E. macranthum* var. *musschianum*. The name *E. niveum* has been traced to a Belgian nursery catalog, prior to 1860. This plant is generally similar to variety *roseum*, but has pure white flowers. It is a dainty plant, low and neat in habit, and excellent as an easy groundcover. *E. youngianum* var. *niveum* is generally available in the trade and merits greater use in the garden.

There is only one other garden hybrid, as yet unnamed, which has been discovered. This appeared in England during the last war and is, apparently, *E. alpinum* crossed with *E. pubigerum*.

EXPLORING FOR PHLOX, 1948

EDGAR T. WHERRY, University of Pennsylvania

NEED FOR additional data on various species of *Phlox* led to the planning of a field trip during the spring of 1948, some of the high lights of which may be of interest to members of the American Rock Garden Society. I was able to arrange to have my teaching work taken over by others for eleven weeks, so made out a schedule to use this time driving to the Pacific Coast and back, with stops at points of botanical interest and visits to as many friends and correspondents as practicable. A car with a bed built into the back was ordered in the summer of 1947 and delivered in March, 1948, so the trip could start the last week in that month. A young botanist taken along at the start proved uncooperative and did not complete the trip.

The route was planned to go first southwest to the Gulf Coast, then west to Arizona, northwest to Washington, east to Michigan and home. It was hoped that this would avoid wintry weather and reach localities when many species were in bloom, but because of the extreme lateness of the season, neither was fully attained. My principal aims were to obtain photographs and notes of the features of the Phloxes in fresh condition, and to make herbarium specimens. Living plants of a few of them were also sent to some rock gardeners.

Ranunculus andersonii

Phlox nivalis was the first to be found in bloom, in southern North Carolina, and *P. amoena* and *P. pilosa* appeared along the route to the southwest. In Louisiana I visited Mrs. Evans, who has written for the Bulletin; she grows rock plants on a sandy slope toward a Cypress slough, miles from any rocks. And there were many to see in spite of the garden having been inundated the year before, so that a fresh start had had to be made with divisions of plants which had previously been shared with gardens on higher ground. The so-called Phlox *texensis*, located next, toward the southeast corner of Texas, proved to be typical

P. nivalis, separated from the Alabama-Florida colonies by a gap of over five hundred miles.

Some time before I had named a *Phlox oklahomensis* on the basis of herbarium specimens and naturally wished to see this in the field. With the aid of Mr. Jack E. Engleman, of the Soil Conservation Service, this was finally located north of Mooreland, in northern Oklahoma. It proved to bear lovely lavender stars (see cut); its rarity is due to its growth only around the rims of limestone breaks, where deep gorges interrupt the otherwise level prairie land. Two other plants found in this state deserve special mention. Some twenty years before, I had met there an *Allium* with hyacinth-scented flowers, and by good fortune rediscovered it on this trip; its name is not yet established. Then, my favorite Anemone, *A. caroliniana*, appeared in one tiny patch, luckily preserved between railroad and range-land, with flowers of a striking blue color.

The trip then led via Carlsbad Cavern and El Paso to Las Cruces, New Mexico. Here Professor A. L. Hershey helped locate the type station of *Phlox stansburyi*, a much misunderstood species. We also saw some fine forms of *P. triovulata* — the plant to which British horticulturists award prizes under the false name of "mesaleuca". In the Santa Catalina Mountains in Arizona, *Phlox tenuifolia* proved to be delicately fragrant, but in the colonies native in the Boyce Thompson Arboretum, farther north, it had an unpleasant musky odor.

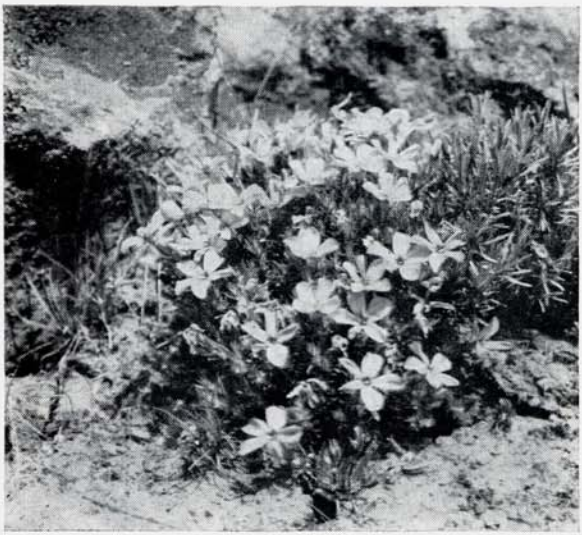
Many years ago, the late Marcus E. Jones had collected in Zion Canyon a Phlox which I had named in his honor, and a visit to the Zion National Park was made in the hope of finding it in bloom. The weather was icy, and the large colony on Lady Mountain seemed to be only in bud; but finally a few open flowers were found and proved to be bright pink. Where a highway crosses the Beaverdam Mountains, the paler-hued *P. austromontana* was in full bloom, at its type locality.

In eastern Nevada, three gray-leaved Phloxes were beginning to bloom in spite of the cold — the long-known *P. bryoides* and my newly described *P. griseola* and *P. tumulosa*. The last is probably the dwarfest member of the genus, forming sheets of growth scarcely half an inch thick over little mounds of sand (to which the species epithet refers). And this region yielded a surprise. Leaving a paved highway near Ely, we were able to proceed but half a mile when the ruts became too deep for a modern low-slung car. Continuing on foot, the bleak road summit was reached; and there in humus among granite rocks, close to the melting snow, was an unrecognized Buttercup-relative. Above rosettes of tiny dissected leaves arose one to two-inch stalks bearing solitary cupped flowers over an inch across. The petals were white on the face, but bronzy on the back, and were so translucent that the latter color showed through, yielding a remarkable rosy glow. This has now been identified as *Ranunculus* (*Beckwithia*) *andersonii*, a rare endemic (see cut).

The weather continuing unseasonable, southern Idaho yielded little, although *Phlox aculeata* was photographed at its type locality. Westward across Oregon an interesting find was made. Many years ago, Clarence Lown had shown me in his rock garden at Poughkeepsie, N. Y., a diminutive white umbellifer, *Orogenia linearifolia*, but I had never seen it in the wild. Crossing a high plateau, where the snow had but recently melted, the ground was covered with a grayish haze, and this proved to consist of thousands of blooming plants of the tiny *Orogenia*.

The new home of the Le Piniec's at Ruch, Oregon, was reached in the midst of snowstorms; they had selected their place because it never snows there, but did not anticipate April, 1948! In the Bulletin, Marcel had told of finding

several rock plants flowering one February and I wondered if they would still be open; but this year most of them had not even begun to bloom in late April. However, in the Rough-and-Ready State Park, we did get the striking violet-



UPPER LEFT: *Phlox hoodii viscidula*, lavender-blue.

LOWER RIGHT: *Phlox oklahomensis*.

flowered form of *Phlox diffusa* which has been called *P. cyanea*. In Mrs. Smith's garden not far away, it was interesting to see a number of eastern natives thriving alongside of western ones. She also guided us to a locality for the lovely *Dicentra oregana*. *Phlox hirsuta*, in northern California, was still under snow, but Mr. Le Piniec kindly went back later and sent me fresh flowers of it.

In the Portland region, visits were made to Mrs. Berry, whose wonderful collection of Primulas and rare rock plants were in good bloom; and to Saxton and Wilson, who, alas, find labor costs too high to continue extensive propagation of rock plant material. Seattle was reached in early May, and several days were pleasantly spent there, renewing acquaintance with Mr. and Mrs. Carl S. English, Jr.; presenting an account of the trip to the local Rock Garden Society unit and to the Puget Sound Botanical Club; and visiting the Frye's and the Roberson's and others who contribute so much of interest to our Bulletin.

Several Phloxes remained to be located in central Washington, especially *P. lanceolata*, *P. whitedii*, and a tiny lavender-blue one, discovered on a recent

field trip of the Society's Washington Unit, which proved to be what I had recently named *P. hoodii viscidula.* (See cut). Then, in northern Idaho, *P. colubrina* and *P. speciosa* were photographed. Crossing into Montana, *P. douglasii rigida* was obtained northwest and *P. missoulensis* northeast, of Missoula. Here I met Frank H. Rose, who had brought back some interesting Phloxes and other plants from a field trip.

In Butte I had a nice visit with Mrs. Regan, although her miniature rock garden, where she grows such a wealth of interesting plants, had on May 16th not yet realized that spring was supposed to be here. She guided me to a place named Dewey, where there was a dwarf Phlox which proved to be *P. muscoides.* Proceeding east, following directions from Mr. Rose, a hillside south of Boulder was found to support a fine colony of the heretofore little-known *Phlox alyssifolia collina.*

The type localities of two Phloxes having been near Helena, this was visited next. The dwarf *P. albomarginata* was readily found on the slope of Mt. Helena; and then the Fair Grounds was entered, with the idea of looking for *P. kelseyi,* even though its discoverer, Rev. F. D. Kelsey, had reported fifty years ago that its station was destroyed. Fortunately, this proved to have been a mistake, for it was growing in profusion in a tiny patch of saline marsh, varying in hue from chalky white to delicate lavender-blue. Mrs. Regan is trying it in the rock garden, for she had already found its dwarf relative, *P. kelseyi salina,* to thrive on rocks as well as it does on marshland hummocks.

Late in May the weather warmed up, and specimens of Phloxes were obtained in eastern Montana and western North Dakota, the only one of the forty-eight states in which the writer had not previously made plant collections. *Phlox alyssifolia* was in fine shape in South Dakota, and the large variant known as subspecies *abdita* was found at its type locality. At Hot Springs, *P. diffusa scleranthifolia* was fortunately still in bloom and yielded the final photograph of the trip. Had it only been possible to get more film-packs, I would have taken more of the showy natives seen, especially the glorious blue *Penstemon angustifolius.*

At Smithwick, a visit was paid to Claude A. Barr, who acted as guide for an interesting trip to Crow Butte, Nebraska, where various attractive species were seen. The Laramie Mountains of southeastern Wyoming were crossed on State Highway #26, at the summit of which numerous alpines were in full bloom, including exceptionally dwarf *Phlox hoodii glabrata.* I also spent some time with Mark and Claire Norton, at Laporte, Colorado. The final visit was to the rockless rock garden of Mrs. Kathryn A. Boydston, "Fernwood", near Buchanan, Michigan. Throughout the 14,200 mile trip the schedule was successfully adhered to, and I reached home June 11th with five hundred herbarium specimens, one hundred photographs, and a host of pleasant memories.

ENCOURAGEMENT FOR BEGINNERS

DORETTA KLABER, New York, N. Y.

WHEN READING the invaluable Farrer's counsels of perfection in making a rock garden — or when reading some of the articles in this Bulletin that are contributed by undoubted experts — I think that my experiences in growing alpines and other rock garden plants from seed may prove encouraging for beginners.

For this purpose, I swear by the coldframe. Some like pots, some like flats, some like discarded coffee cans—and for extremely fine and rare seed these are occasionally necessary. But for the run of seed, and this includes the Primrose, common and rare, Gentian, Penstemon, Silene, Draba, Iris and a host of others, the good old coldframe that doesn't need quite the constant attention that

the other methods do, that is more nearly akin to the natural growth, answers the purpose.

When I lived in the suburbs, my coldframes were never empty. Now that I live in an apartment in New York City for five months of the year and spend the other seven in my garden in Pennsylvania, the procedure is somewhat different. Seeds are ordered in the fall and when they arrive, are put in a tightly closed canning jar in the refrigerator. There they stay for the winter, thoroughly fooled, thinking they are on a mountain top under the snow. About April 1st, when I return to the country, the very first job is to get the seeds into the ground.

Now a word as to coldframe. Mine are not expensive "boughten" frames. Many years ago, when I started growing plants from seed in a serious way, I asked my young son to make me a coldframe. He was no expert carpenter, and though the side boards had the necessary slope, the second-hand window I purchased as a cover did not fit very closely. I found this to be a great advantage. All this talk about "airing" a coldframe, raising it one inch, etc., etc., was entirely unnecessary. My frame was always aired. To this day, I slap any kind of old boards together and cover with a second-hand window. When the glass breaks, I buy any of the glass substitutes and tack it on.

Into the coldframe goes a layer of cinders and then about six inches of compost and sand in about equal parts with a little peat moss mixed in. The top layer of soil is usually screened, but if there are still old seeds that haven't come up, I rake gently, firm the rows with a slat, sow lightly and cover—just cover—with sand. Very tiny seeds are not topdressed at all, but only pressed in. After watering with a fine spray, they are covered with newspaper. Burlap works equally well, but I find it is easier to uncover a row at a time as they come up, if I use paper.

"Slugshot" does for slugs, snails and other marauding creatures, while ant-powder discourages the ants. Slugs can go for a row of sturdy seedlings in no time at all, and I've caught ants just waiting for my rarest and most expensive seeds. If green mold appears, I remove all cover and let the sun and light stirring of the soil along the edge of the row help that situation. Of course, my first pleasure each morning is to look over the frames to see what has come up and also to watch for any of these enemies, water when necessary and transplant into a nursery bed as soon as the true leaves appear.

Where to get seeds is always a problem. I find that collectors of native plant seeds usually have fresh seed - the one most important requisite. The larger the number of varieties a seedsman sells, the less chance there seems to be that the seeds will be true to name and fresh. On the other hand, I can sometimes get rarities from such a source that I can't get elsewhere. One can save seed but it too is likely not to be "true to name" as, for instance, my experience this year proves.

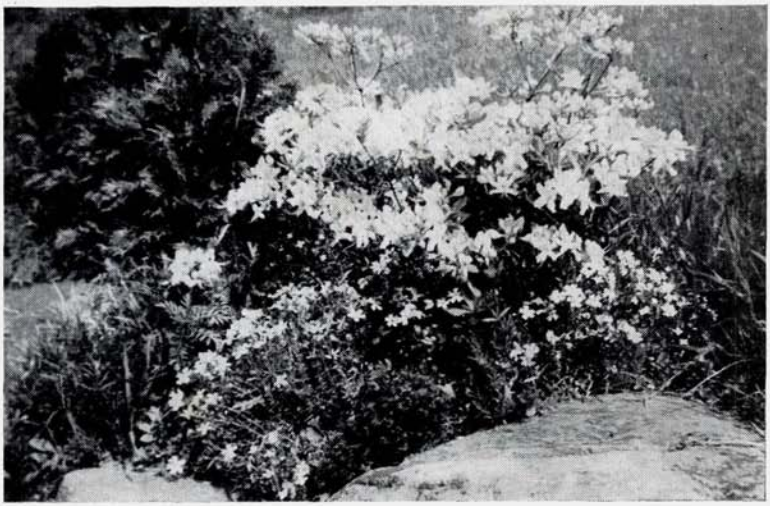
I gathered seed from some lovely *Dianthus alpinus*. They happened to be growing near *D. deltoides*, which tries its best to "take" the garden. Seedlings came up with typical *alpinus* foliage. They started to bloom almost immediately. Lo and behold! the flowers were two or three inches tall instead of being practically stemless and their size was halfway between the two. The little plants are charming, but not *alpinus*.

My pride and joy this year has been a plant of *Gentiana farreri*. It is just as beautiful as the late Reginald Farrer described it. I planted my seedling between two stones on the bank of a little runway between two small pools. It took hold, grew happily and bloomed for weeks in the fall. Other Gentians in less moist situations grew and bloomed but didn't thrive as well. Most of them have now been transferred to this bank. It was not specially prepared as a "Gentian bed", but the soil and drainage are good, the moisture adequate.

My garden is on a stony hillside. I believe geologists would call it a "primary formation" - great granite boulders and some sandstone. Here, I had only to level off areas and build shallow retaining walls. To the natural clay and loam, I added a mixture of equal parts compost, sand and bluestone chips, plus a little peat moss. This gives a soil with some nourishment and excellent drainage. A topdressing of this mixture, in spring and fall, is all the fertilizer or winter cover the plants receive. When I return in the spring, the only losses are young seedlings that were not well rooted before I left them. Had I been there to tuck them in when they were heaved out by frost, they, too, would have survived. As it is, some of them up and die each year.

I also have woodland with rich natural soil where the shade-loving Primroses flourish. However, *Primula rosea* looks as happy as can be near the Gentians on the moist bank and *P. denticulata alba* blooms well before there is any shade.

Naturally, I've had some failures but, on the whole, my labor-savings methods have been most successful. I hope this article will encourage some who may be "scared off" from this delightful pastime by the arduous and, at times, expensive methods urged by others less trustful of nature than myself.



Rhododendron atlanticum

RHODODENDRON ATLANTICUM IN MAINE

MRS. EDWARD M. BABB, Portland, Maine

ONE OF the loveliest shrubs in my rock garden was a mystery for many years. It was brought to me as a small plant from a New Jersey woodland. The foliage identified it as an Azalea, so it was planted in my small woods garden with plenty of leafmold and acid Hemlock soil. It lived but did not seem to thrive. After a year or so, I moved it to a sunny location, giving it the same acid humusy soil. Like many other plants here, it immediately showed its pleasure in the sun by beginning to grow strongly for the first time. However, several years passed before it bloomed well. In the meantime, it still puzzled me by remaining dwarf instead of shooting up into a tall shrub as I expected. After it bloomed, I called it *Rhododendron nudiflorum*, but the description didn't seem to fit perfectly — and it still remained dwarf. Finally, after almost ten years, I

read something about *R. atlanticum* and began to suspect I might have a real treasure.

The clump is now about fifteen years old and has spread from short underground stolons just under the surface to about three feet in diameter. Only one or two stems reach as high as two feet, with most of them about a foot tall. The fat pink buds appear in late summer at the branch tips and are almost hidden until the leaves fall. In the spring, the buds turn deeper and deeper rose, finally separating and showing themselves to be thick clusters of individual, small, flattish flower buds, paling in color again as these expand into flowers. The open blossoms are very lovely and very fragrant, two to three inches across, a delicate pale pink with long showy stamens, tipped in bright red and curving well out beyond the petals. The effect of partly opened clusters is especially good, with the combined deep rose of still closed buds and the freshly open, paler rose flowers with their red stamen accents.

The blossoms appear before the leaves, in May or early June here; when fully open, they hide the bare brown stems from sight. They seem profuse in alternate seasons and rather scattered in the off-years.

In a good year, every branch tip, large and small, will be crowned with a cluster of a dozen or more blossoms. As they begin to fade, the leaves develop. Breaking off the wilted flower clusters must be done very carefully in order not to damage the leaf buds. During the summer, the foliage makes an effective background for other flowers; in the fall, the frosts turn it a delicious warm red-purple, adding another good color display to the garden in October.

A delightful companion for several years has been *Polemonium delicatum*, which comes into bloom just ahead of the shrub and lasts about the same length of time. The combination of delicate pale blue sprays and light green, ferny foliage with the dark stems and deep rose buds or pink blossoms of the Rhododendron is always charming. Other nearby neighbors include a thriving clump of the little Broom-Crowberry, *Corema conradi*, the climbing fern which clambers up through the stems, a clump of rusty Woodsia fern, and a drift of *Silene pennsylvanica* below.

After a third move over ten years ago, this lovely dwarf shrub is now growing at the top of my rock garden slope, in full sun, sheltered partially on the north by a young cedar tree. I believe there is a natural underground flow of moisture, but perfect drainage. Besides the acid soil mixture, the surface is kept mulched several inches thick with Hemlock or Pine soil and needles, leaves or peat moss (whatever is most easily available). The new shoots which appear every year sometimes have a few feeding roots, and probably could be propagated by some one more expert than I.

The native range is given as southern Pennsylvania to South Carolina, but like many other southern plants, it has proven perfectly hardy in my part of Maine. It has never been given any special winter care or protection, and the buds have burned and blighted only once or twice in all these years. To my mind, this is a shrub "beyond price" for the rock garden.

MYOSOTIS RUPICOLA

CLARA W. REGAN, Butte, Montana

THIS is a miniature Forget-me-not suited especially to the confines of the small rock garden. The larger members of the family are not just of the right character, but this little sister of the clan is a true alpine growing in the high screes and among the rocks of the British Isles. In its chosen haunts it forms tiny, tidy mounds of grey-green leaves surmounted by little clusters of vividly blue flowers with a yellow eye.

In cultivation, it flowers best in poor, gritty soil in full sun and must be divided every two years to prevent its dying off. This is very important. The clumps are easily pulled apart for further propagation.

It is somewhat like *M. alpestris* of the Rocky Mountains and both are said, by some botanists, to be forms of *M. sylvatica*. The western American plant, however, is not the hearty, robust grower that *M. rupicola* is nor does it live as long. At blooming time, it is more scraggly with fewer flowers, though the color and form are very similar to its European sister. It does not like division while *M. rupicola* revels in it and indeed demands it.

The writer likes to grow this little plant with the equally small *Armeria caespitosa* and the tiny *Iris arenaria*. All three suit each other in size and character. In May, the blue of the Myosotis, the soft rose of the Armeria and the clear canary of the Iris form a liliputian picture of great charm.

IF I COULD NAME BUT ONE ROCK GARDEN PLANT

ARTHUR H. OSMUN, Plainfield, New Jersey

YEARS AGO, I compiled and published a list of the best rock garden plants. I have no doubt it was received in the same spirit that I now regard it—an atrociously inane list! I have read other lists of ten, twenty-five, and one hundred best rock garden plants that were no more conclusive than mine. They all add up to the patent fact that each list expresses the opinion of one individual and is acceptable to that person alone. Small as the world appears to be at times, we cannot choose in Maine for a garden in California or in England for a garden in New Orleans. Of the many who are engaged in the lovely pastime of rock gardening, probably no two see eye to eye on every item in any given list.

We may consider a plant perfect in one situation or on one certain day and see it in an entirely different light in another situation or on another day. What appeals to us this year may not please us next year. I presume that I have altered my choice twenty-five times in the past twenty years. If my choice were confined to Campanulas, I could readily choose the one that does best in my garden. If there were only *Aquilegia* or *Dianthus* or *Phlox* or *Penstemon* or *Sedum* from which to choose, I could easily pick the one that is my favorite, but from which species to choose? I know a man who will solemnly aver that *Thalictrum kiusianum* is the one perfect rock garden plant. But walk with him through his garden and he will tell you again and again how he loves best of all this or that plant until he has a dozen "bests."

How then shall we choose the one best plant? Well, it boils down just to this—each one must compile his own list. If he is able to pick from that list the *one best*, he is gifted above the angels. Having started out on this limb, I am going all the way and choose as the best the Violet. Which one? All of them.

What is your best rock garden plant? The Editor is waiting to hear.

THE RANCHO SANTA ANA BOTANIC GARDEN

PHILIP A. MUNZ, Director

TWENTY YEARS ago, there was founded in California a unique institution by a woman of a pioneer California family. Susanna Bixby Bryant established in memory of her father, John W. Bixby, an endowed foundation and segregated from her 6,000 acre ranch in eastern Orange County some two hundred acres as a botanic garden to be devoted to the study of the native plants of California. This Garden is a research institution and is for scientific study. But

in addition to the more technical aspects of botanical science, its program also includes possible uses of California plants, particularly for horticultural purposes. To that end, native species are tested for desirability as groundcovers, as hedges, as shade trees, as flowering herbs and shrubs, and, of course, as rock garden plants. Many very beautiful native annuals and flowering shrubs, widely used in European gardens, are quite unknown to American plant lovers. It is hoped that this Garden may spread the knowledge of such plants on the Pacific Coast.

Many western species offer great problems as to germination and propagation. Anyone familiar with the California chaparral is aware of the great masses of highly colored annuals that appear after fire. Seeds of some plants germinate then that have lain dormant for years. Some corresponding technique may be helpful for their germination in the nursery and heat, from the burning of straw on a planted seed bed or from hot water treatment, may break dormancy. With other species other treatment, such as scarification of seeds, may be effective. But the problems do not end there. Proper treatment of the seedlings and of the older plants after transfer to the open ground must be ascertained. Summer irrigation, especially in heavy soil, may be fatal. At present, the results of twenty years of experimentation in this field are being assembled for publication as a guide to nurserymen and gardeners.

Handling of the small herbaceous perennials suitable for rock gardens has received some attention. The native succulents, bulbs and small herbs that may succeed in the rather warm arid region, in which the Garden is located, have been grown. Some recommendation can now be made concerning many such plants. Others, such as the herbs from the more northern and cooler sections of the state, especially those from somewhat acid conditions, have mostly failed. Many of these have had to wait until shade and humus could be developed, but it is hoped that before long the Garden can do more with such plants.

Part of the program of the Garden is educational. This is partly accom-

The Administration Building of the Rancho Santa Ana Botanic Garden

plished by lectures to garden clubs and similar organizations and partly by publications on work done at the Garden. It is further brought about through opening the Garden to visitors on Fridays and Saturdays in April and May. On these days, a wild flower show is maintained and a non-technical lecture is given. Presentation of a free admission card, arranged for in advance, is required.

Information on publications and visiting days can be obtained by writing to the Rancho Santa Ana Botanic Garden, R.F.D. 3, Anaheim, California.

EDITOR'S NOTE—*Susanna Bixby Bryant became a member of the American Rock Garden Society in April, 1934, and we are delighted to acquaint other members with the interesting and worthwhile Botanic Garden described in the foregoing article.*

HOW TO MAKE A ROCK GARDEN

ALEXANDER IRVING HEIMLICH, WOBURN, MASS.

THE ALPS were beloved by travelers for their unbelievable beauty in vivid, breathtaking colors produced by countless millions of small alpine plants. Visitors never left Switzerland without a strong desire to carry some of this colorful plant life home with them and many attempts were made to move these small plants to other parts of Europe as well as to America.

The first obstacle these plant hunters encountered was in digging the plants. They discovered that although the plants were tiny, the supporting root systems were often immense, sometimes nine feet in length. After the weary hunter had the plant out of the ground, he found it was so mutilated it was useless. Learning his lesson the hard way, he went after small seedling plants. These were dug up easily enough, but most of them failed to survive the journey. The few that did, died after a short time because the hunter was unfamiliar with the soil in which the plants grew.

The plants reacted to different minerals. For example, if a rock plant has grown on rocks rich in potash as in Italy, or rich in soda as in Norway, or rich in titanic oxide as in eastern Spain or the western Mediterranean, and then is moved to a locality totally lacking in these, the plant is naturally going to die. All this was true back in 1870, but the plant hunter did not know it.

A young horticulturist, by the name of Henry Correvon, in his native Switzerland watched all this. He, too, had tried to move the plants without success. One day in June, while sitting in the warm sun, he was lost in admiration of the matchless view of the capped mountains, timberland, and acres of colorful alpine plants in the bright sun, with the sky-blue lake below. He bent over to examine a June flowering plant and as he ran his hand through the color, he noticed the seed pods of an April flowering plant. As he broke a pod open in the palm of his hand, the tiny seeds fell out and he knew he had solved the problem of sending the message of the small plants to the far corners of the earth.

He reasoned that as the seed grew up, it would adjust itself to the new surroundings. He made a thorough study of the soil, found that it was well drained and very gravelly; in fact, that most other plants would perish in it. He carefully prepared his seed bed, transplanted his small seedlings into a gravelly soil, and as the plants grew found that he could move them at will without a setback.

Several years later, he exhibited some of his prize plants at the flower show in Geneva. Horticultural minds of that era were trained to judge stately specimens of trees and shrubs, also topiary art, and so it was not surprising that Correvon's straggly but artistic alpine plants failed to elicit the admiration they deserved. The judges, however, wished to encourage the young horticulturist so they awarded him

four silver spoons, little realizing that whatever else they judged would more or less die out with that era. Correvon and his plants struck a new and responsive note that made both himself and his little plants famous.

He called his plants his jewels. One of his sentences that I like to remember, goes like this, "The little jewels were scattered about the mountains by the great Master and Teacher to enlighten our lives and lead our thoughts to high altitudes, far from the ugliness of present-day civilization, far from the grime of low-lying places, high to the heavens, where everything is pure and clear."

He was often called the father of rock gardens. Correvon hated to leave his beloved Switzerland, but wherever he traveled he was a welcome guest. How proud that humble man must have felt while spending a week-end in his later years on a lovely English estate or at a fine home in America, whose owner possessed a well-known rock garden filled with plants raised from seed sent by Correvon. A smile of satisfaction must have played on his lips as in retrospect, he thought of a much younger man toying with a seed pod and wondering.

Today, in order to have a rock garden we know no such hardships. The nearest nursery can hand you a catalog containing the names of hundreds of charming alpine or rock plants. You can have color from early spring until long after taps have been sounded for most other plants in the fall.

The most logical place for a rock garden is, of course, in natural out-croppings of ledge, if you are fortunate enough to have them. Unfortunately, you will often find that the soil around these ledges is acid, a condition most alpine plants abhor; also very often you will find a clay soil, which means poor drainage, and that the plants simply cannot and will not tolerate.

My long association in this profession has shown that ninety per cent will grow in a well-drained soil. The mixture which I have used time and time again is two parts light garden soil and one part sand and gravel, thoroughly mixed. This should be to a depth of eighteen inches. If the garden is located on a slope, that is all that is required. If, on the other hand, the garden is on a fairly level surface and you are not sure whether it is waterlogged underneath, it will be necessary to excavate an additional two feet and fill in with gravel and broken stone and on top of this place the prepared soil.

Not every one has an outcropping of ledge handy on his premises. Very serious mistakes have been made in the selection of stone or ledge. To my mind, all excavated and light-colored field boulders and quarried rock, no matter how large, should be excluded. Only weathered ledge, flat in appearance and so arranged as to simulate the natural stratification of existing ledges, should be used. If your first attempt fails, try again until the pieces of ledge take on pleasing lines. Only then are you ready for your plants.

Be careful where you place the garden. To place it without reason in the middle of the lawn is as unattractive as it is unnecessary. It is just as inconsistent as a washtub full of Geraniums or Coleus. If there is a bank near the foundation of the house, that might become an ideal spot. Together with the evergreens in the foundation planting, a colorful effect might be achieved. If the grounds are small, as is the case with most suburban homes, I like to place the garden in a corner. Develop a background of Hemlocks. Their lacy effect is always intriguing. For a mass of color, plant a number of Azaleas that bloom at different times and a few Mountain-Laurels in front of the Hemlocks. When the rock garden is not in bloom, the background will present a picturesque appearance.

Reprinted, in part, from the 76th New England Spring Flower Show Program, of the Massachusetts Horticultural Society.

THE AMERICAN ROCK GARDEN

IMPORTANT EVENTS: Annual luncheon of the Society on Thursday, March 24th, at 12 Noon, Essex House, Central Park West, New York City, Pilgrimage to the gardens of the Misses Hill, Sea Breeze Farm, Lynnhaven, Va., on Saturday, April 23rd. To both these events, all members are cordially invited. A very interesting and unusual program is being planned for March 24th, and the visit to Sea Breeze Farm promises to be a real treat. Full details of both events will be mailed to all members. In the meantime, reserve these dates!

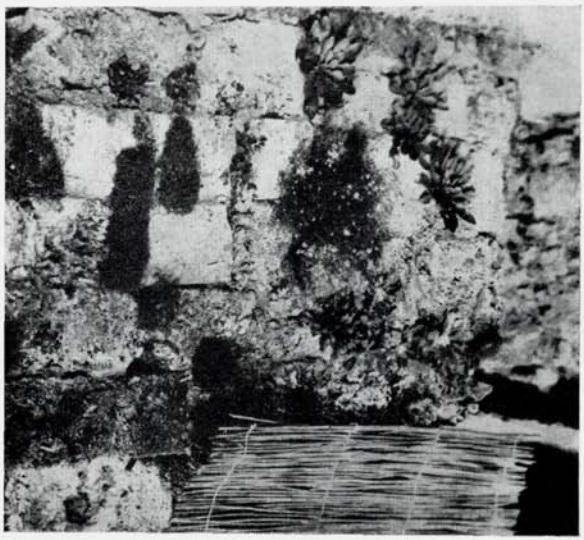
FROM THE EDITOR: The photograph on page 105 of the November-December issue was contributed by Mrs. Maxcine Williams, the caption prepared by Dr. Edgar T. Wherry. It was a separate feature and not intended to illustrate the article, "A Blue Lyric" on page 104 although the line, "See illustration on page 105", added by the printer, would so indicate.

TO THE EDITOR: Recently, when looking over some old photographs, I came across one of the late H. Correvon's tufa walls at Geneva, Switzerland. Perhaps our members, who received his seed catalogue in former years, may be interested in the accompanying picture.

It was a very warm day in Summer, when I visited Mr. Correvon about twenty years ago, and he had placed a lathe shade over his plants. Though he felt that the wall itself was a little too angular, he was, nevertheless, content because the plants in it were flourishing. ROBERT M. SENIOR, Cincinnati, Ohio.

TO THE EDITOR: May I add to the Gentians mentioned in the last Bulletin one of my favorites, *Gentiana sino-ornata?* It is one of that group of Gentians which helps to redeem the rock garden in fall from utter desolation. The blooming period begins in September and continues until severe freezing weather, undaunted by early snowfalls. *G. sino-ornata* likes full sun, a bed of humus, and will not tolerate the slightest trace of lime. The foliage is grasslike; the flowers are huge, beautiful trumpets of peacock-blue. It can be easily propagated in March or April by pulling a plant to pieces; each tuft, being furnished with thong-like roots, then goes on to form a new plant. Discovered by Forrest in 1904, *G. sino-ornata* is one of the finest of Gentians ever to be introduced into gardens.

CLARA W. REGAN,
Butte, Mont.



H. Correvon's tufa wall, Geneva, Switzerland

SEED EXCHANGE LIST

Mrs. L. D. Granger, Director of the Seed Exchange, announces that she has received the following seeds for distribution among members of the American Rock Garden Society. Members desiring to avail themselves of this opportunity, should direct their requests to Mrs. Granger, at Warren, Mass., accompanied by stamped, self-addressed envelopes. If the request is for a number of packets of seeds, please provide additional postage. This list, below, is in addition to the seeds offered in the September-October issue of The Bulletin.

When the supply of seeds of any particular plant is limited, those who contribute seeds to the Seed Exchange will have preference. As there is a constantly growing demand for seeds, we hope members who have collected seeds from their gardens or field trips, will send some to Mrs. Granger. The Seed Exchange is becoming an important activity of the American Rock Garden Society.

From Mr. H. Lincoln Foster, Norfolk, Conn.

Aquilegia flabellata alba.

From Mrs. F. A. Lowman, Willimantic, Conn.

Campanula medium (single Canterbury Bells, white, blush-pink, pale blue, lavender)

From Mr. Arthur H. Osmun, Plainfield, N. J.

Magnolia fraseri (*auriculata*)

From Mr. H. E. Jacobs, San Carlos, Calif.

Aethionema persicum
Cistus villosus
Convolvulus mauritanicus
Erlangea tomentosa
Francoa ramosa rosea
Gunnera manicata
Lavandula stoechas
Omphalodes linifolia
Salvia pratensis
Tecoma stans
Trachelium caeruleum

From Mrs. Pete Johnson, Rexford, Mont.

Anemone globosa
Aster conspicuus
Dryas octopetala
Penstemon scouleri

From Mrs. H. P. Magers, Mountain Home, Ark.

Lilium regale
Lobelia cardinalis
Lupinus—? (*Prairie Lupine*)

From Mr. Will C. Curtis, South Sudbury, Mass.

Aletris farinosa
Allium cernuum
A. pulchellum
Aquilegia canadensis
Asclepias tuberosa
Aster kumleinii
Clematis ovata (*ochroleuca*)
Convallaria majalis fl. pl.
Dodecatheon media
Dryas octopetala
Gentiana linearis
Geranium maculatum album
Helonias bullata
Liatris punctata
Rhexia virginica
Sieversia ciliata (*Geum triflorum*)
Trollius laxus

From Mr. Harold G. Rugg, Hanover, N. H.

Gentiana asclepiadea
G. crinita

From Mrs. E. M. Babb, Portland, Me., for American Penstemon Society.

Penstemon brandegei
P. canescens
P. hirsutus improved
P. murrayanus
P. ovatus
P. secundiflorus
P. unilateralis

From Mr. E. J. Booth, Bellingham, Wash.

Anemone sulphurea

From Mr. E. L. Totten, Ho-Ho-Kus, N. J.

Aquilegia spurless double pink
Asclepias tuberosa
Aster linariifolius
A. spectabilis
Gentiana porphyrio
G. porphyrio albescens
Gypsophila fratensis
Liatris graminifolia
Lobelia cardinalis
Potentilla tormentillo-formosa
Scilla sinensis
Serratula shawii
Solidago brachystachys

From Mr. Robert M. Senior, Cincinnati, O.

Globularia trichosantha

From Mr. Harold Epstein, Larchmont, N. Y.

Cyclamen neapolitanum (mixed)
C. neapolitanum album (mixed)
Iris tectorum album
Hyacinthus aureus
Lilium speciosum x *auratum* (dark red)
L. sulphureum (bulbets)
Penstemon cobaea (dark, light colors)

From Mrs. L. R. Bartlett, Lake Stevens, Wash.

Gentiana sino-ornata

From Mrs. M. J. Fox, Peekskill, N. Y.

Allium flavum
Allium pulchellum
Lilium amabile (dark)
Lilium concolor
Lilium davidii (dark red hybrid)
Lilium davidii superbum
Lilium elegans x davidii (dark red hybrid)
Lilium formosanum (medium high)
Lilium philippinense (tall and late)
Lilium regale (fine white)
Lilium regale hybrids
Lilium regale x (with brown anthers)
Lilium sargale on huge *regale* x
Lilium speciosum
Lilium speciosum album

From Mr. Charles G. Crawford, Toledo, O.

Scabiosa alpina

From Mr. Stephen F. Hamblin, Lexington, Mass.

Chrysopsis falcata

Foot note: Mr. E. L. Totten recommends the following cultural procedure with respect to certain of the seeds he offers: "Very poor acid soil in full sun for both Asters and acid sand in full sun for the Liatris and Gentians. The only shade lover is *Lobelia cardinalis*, and it will do very well in full sun if ample moisture is provided. *Scilla sinensis* seems to thrive for me in almost any situation."

Mr. Crawford describes *Scabiosa alpina* as six inches high, a mass of deep blue flowers continuously from June to September and very hardy.

Mr. Senior has prepared an article on dwarf Globularias for the March-April issue of the Bulletin.

Mayfair NURSERIES

Orchard Street Bergenfield, N. J.

Rock Plant Specialists

Below are six very choice, quite rare and highly desirable rock plants for the connoisseur, collector or general rock gardener, offered here to the readers of The Bulletin at reducd prices.

PENSTEMON ABIETINUS—A rare little shrub about four inches high with tiny glaucous leaves and an abundance of little delicate china-blue flowers in July.

DIANTHUS NEGLECTUS HENRIETTE—A tight little green burr about the size of a quarter that sends up a garland of immense deep salmon-pink flowers in June.

CASSIOPE LYCOPODIOIDES—A tiny member of the Heath family from Asia. It forms a compact dome of arching scaly stems like a dwarf weeping Heather, with comparatively large white bells hanging from thread-like red stems in late June.

ANDROMEDA GLAUCOPHYLLA — A low-growing evergreen shrub, about twelve inches high, with sturdy bluish gray leaves topped with nodding umbels of soft pink bells in June.

IBERIS SAXATILIS—A real dwarf, scarcely more than two inches high, with very tiny, closely set evergreen leaves, completely hidden by the huge clusters of white flowers in April.

HEDERA COLCHICA — An excellent, very slow climbing, evergreen ivy for the rock garden. Thick leathery dark green leaves with a light marbled effect that turn bronze in winter.

ANY THREE OF THE ABOVE PLANTS FOR $2.50

One of each (six plants) for $4.50

Three of each (eighteen plants) $12.00

Send order and remittance now for delivery in April and receive free our valuable Handbook and Catalogue listing 566 varieties of choice rock plants. Catalogue sent free on request to members of the American Rock Garden Society; to all others, 25c in coin. No C.O.D. orders, please.

WALTER A. KOLAGA, Proprietor