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The American Rock Garden Society, incorporated under the laws of the State of New Jersey, invites you to join with its members in the pursuit of a better understanding of the problems of rock gardening. The annual dues are $3.50. *Address all communications to the home office,* 19 *Pittsford Way, Summit, N. J.*

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AMERICAN ROCK GARDEN SOCIETY

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TYPES OF ROCK GARDENS

FROM THE standpoint of the ecologist, there are several types of rock gardens; in a large tract all may be combined, but most beginners will have to make a choice. Thus, many rock plants do best where no trees or bushes stand close-by to the south, so that they receive *full sun.* On the other hand, a number of east-American wild flowers prefer *partial shade.*

For plants native at more northern latitudes or higher altitude than its site, the garden must be kept *cool.* It should slope more or less northward, so that the heat-yielding rays of the sun strike the surface in glancing fashion. Also, the surface materials should be light in color, so that the maximum amount of the sun's rays will be reflected. Snow white sandstone or marble may not look well, but pale gray forms of these or other rocks can be made attractive. In addition, since Nature's summer cooling agent is evaporating water, the cool rock garden should have moisture constantly rising to the surface and turning to vapor there.

Species from more southern latitudes and lower altitudes call for the rock garden to be relatively *warm.* Its slope should be directed more or less southward; and, since cold air tends to settle, it should be located well above the base of a slope. The darker the color of the surface materials, the more of the sun's heat will be absorbed, so here are to be used the more sombre-hued rocks.

The majority of plants widely used in rock gardening thrive best in approximately *neutral* soils. To supply the necessary neutralizing bases, limestone and other more or less readily soluble rocks are commonly introduced. The addition of mildly alkaline humus, leaf-mold, and for that matter spring water, will aid in neutralization.

On the other hand, some attractive rock garden subjects do better in soils which are from the chemists' standpoint *acid* (not "sour"). The less soluble rocks, such as granite and sandstone, are here more suitable; and since leaching tends to develop surface acidity, any water flow should be so arranged as to sink down as deeply as practicable. With the mineral soil there is now to be mixed some sort of humus or peat which proves intensely acid when tested with indicator dyes.

Many plant catalogs furnish information as to the preferences of the individual species they offer, from the standpoint of the factors just discussed, and the beginner will do well to select a series of plants suitable for the conditions of his prospective rock garden. One would have to possess an unusually green thumb to grow alpines from a granite peak in a black limestone rock garden at sea level.—E.T.W.

ROCK GARDEN CONSTRUCTION

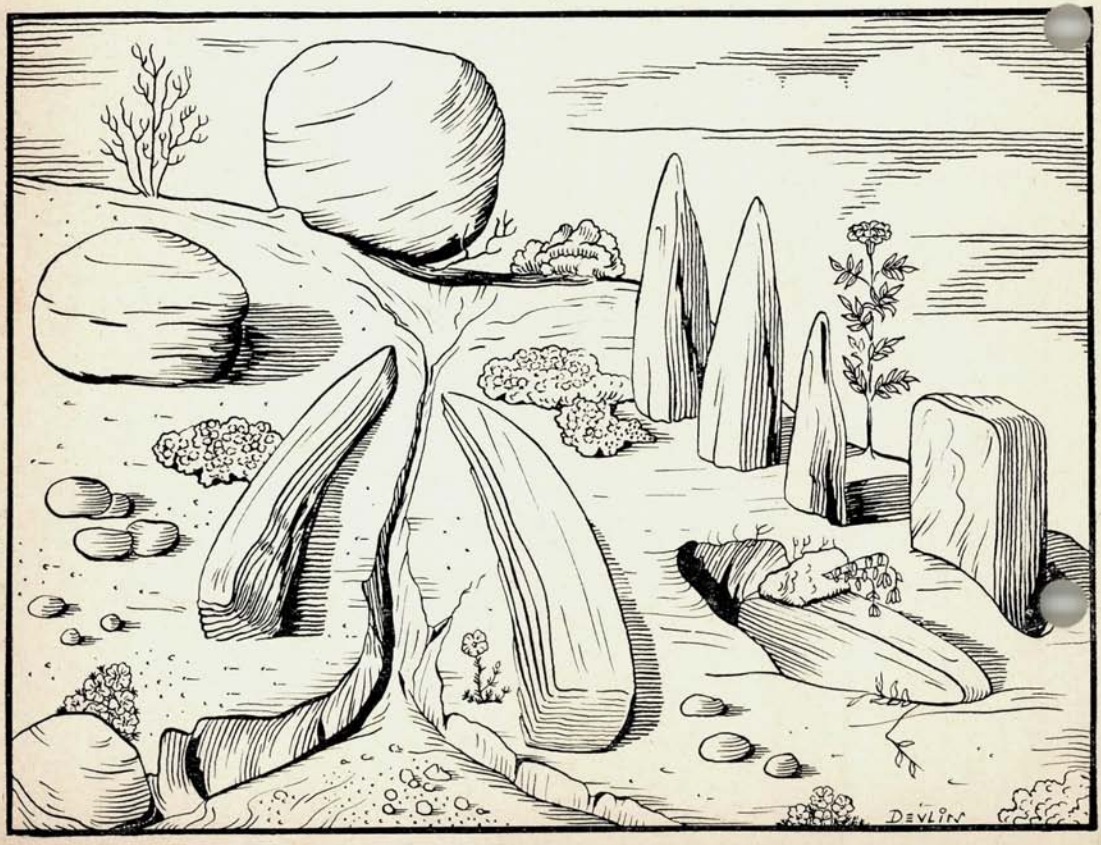
A. C. PFANDER, New York Botanical Garden

WHAT IS a rock garden supposed to be? Here is the best answer I have heard: "A rock garden is an assembly of naturalistic settings for rock plants and alpines; and, inasmuch as a large number of these plants come from the mountainous regions of the world, a miniature mountain scene with small meadows and water features seems the most natural picture to aim at."

During the past 10 years, there has probably been more advancement in rock garden construction than in any other phase of garden making. The banks of boulders and the studiously built-up "almond-cake" type of gardens are rapidly disappearing and, even in the roadside garden, the signs of more careful planning have become discernible. By far the greatest part of this improvement is due to the splendid rock gardens on exhibit in our Flower Shows; but there has also been an awakening of the general public to the importance of developing the garden as part of the home.

A Rocky Garden vs.

Borrowing some of Farrer's matchless expressions, the Humpty-Dumpty's are placed in the Plum-bun System, too far out of the soil, with the larger ones higher up than the smaller. The Spikes are set in the Dog's Graveyard pattern, the whole making up a Drunkard's Dream. Not only are these arrangements unnatural, but they are also unstable, in that the rocks are subject to being tumbled down.



To get the most out of our efforts, we should first do some planning:

What sort of building site is available?

What sorts of rock plants and alpines do we expect to grow?

Are we willing to make a hobby of caring for some of the more demanding plants, or will we be satisfied with a quick and brilliant spring display, which can be had with a minimum of effort?

Let us assume that we are primarily concerned with a rock garden which is to be a place of recreation and rest for the man or woman who makes a hobby of caring for those rock plants and alpines which are the miniature jewels of the garden: our chief concern, then, is to place them in the most picturesque setting possible, and provide all the conditions desirable for satisfactory growth.

To construct a really good home for our alpines may be both an expensive and trying task under certain conditions. In sections where natural rock is not easily obtainable, it may be a costly procedure to bring in selected and well-weathered rock by truck or rail; however, it is not desirable to buy from any except most reliable sources, as the selection of the rocks is one of the most important steps to a picturesque garden.

A Rock Garden

Here the rocks, of heterogeneous size, shape, and character as though deposited by a melting glacier, are skilfully set just as Nature might have done it, and so embedded in the soil that no shifting can occur. Two other views in Mr. Baasch's garden, showing desirable arrangements of rocks, and the use of trees and shrubs for a background, were published in this Bulletin vol. 4, pages 38 and 39.

BY KURT BAASCH

If we happen to live in a section where natural rock is easily obtainable, our problem is merely careful selection of the type and texture which appeal to us most, and which are most likely to give us that appearance of picturesque ruggedness which is so desirable in the rock garden.

To give full freedom to our imagination is preferably the next step in our planning. It is of great help if we can see in our mind at least the salient points of our proposed construction. Perhaps we had better get busy with paper and pencil and make a rough topographic sketch. It is amazing how our imagination is stimulated with the help of a visible likeness of our dreams. However, we should keep aware that minor detail sketches are of little or no value in the rock garden; for the shape and appearance of our rock will finally dictate the use we can make of it and this will, in the end, invariably make its own detail picture.

A careful study of the kind of rock we expect to use is essential, because only after we can tell the natural lines of strata and the weather lines at a glance, and have a good understanding of texture and the finer character lines, will we be able to successfully tell which rocks can be used together and look natural.

The easiest rock to build with is limestone. Its breaks are inconspicuous as a rule and easily hidden in the structure. The rock itself is very picturesque and lends itself beautifully to the formation of an interesting alpine landscape.

Granite, and rocks similar to it, are relatively hard to handle. They usually come from large, solid ledges and have in most cases straight and decided breaks, which are difficult to hide. To combine these rocks into ledges and cliffs is a trying job and calls for slow and careful study. The color usually runs from light grey to dark grey-green and brown. The textural lines and weather lines vary greatly, appearing very fine in some rocks, while in others they are decidedly coarse.

A good trick is to try and keep the rocks together as they are gathered in one locality. In this way, we often can get enough rock of a character for at least one group.

Tufa rock has been used to some extent (it is light in weight and easy to handle), but the natural light gray color of tufa does not look as well in an outdoor setting and is only really successful where a desert garden is intended, with a sandy and arid character.

Boulders are the most difficult and unsympathetic rocks to handle for a good picture. Personally, I can see only the boulder-slide type of arrangement on a slope. The varied-sized boulders need to be placed with studied care, as if rolled into position by nature, with the largest the greatest distance from the slope; some rolled together in three's or five's of various sizes, with some half-buried in, and a few on top of the slope, as if ready for the journey down. With what appears to be a spring near the foot of the slide, and a small brook going from this into nowhere, a skilful designer may be able to make an interesting setting.

In places where rocks are not easy to obtain, or very costly, it is entirely possible to make a more or less informal wall garden with field stones or paving stones using soil in place of mortar. To insure against frost damage, these walls should have a slight lean to the back, about 1½" off vertical for every foot of height. A series of such walls of varying heights filled in behind with soil can be made into a very pleasing pattern and will support a surprising number of rock garden plants.

Whatever rock we decide to use, one thing is important, *let us get the largest rocks we can possibly handle.*

We are now rapidly approaching the actual work, and a careful check of our available rock is in order. Let us pick out those pieces which will have to form the strong points of our garden, trying at all times to keep character and texture of the rock uniform in each rock group. Odd pieces may be used in places which are not conspicuous and should be laid aside for the present. This procedure of selecting and separating rocks, according to importance, and laying them out where they are wanted, also gives us a good idea whether we have enough rock of the right kind to successfully start building. Should we find that we are short of rock, we will take steps now to remedy this shortage.

In addition to an adequate supply of the right kind of rock, we have to give thought to proper drainage and a generous quantity of the right kind of soil. Drainage and soil are both equally important in the rock garden. If the subsoil is of a gravelly or open nature we have little to worry about drainage. However, if we are working on a level or nearly level site with a retentive soil, we must make adequate provision for drainage.

A soil that will grow a variety of vegetables will successfully support most of the plants grown in the rock garden. Sedums, Dianthus, etc. like a somewhat leaner, grittier soil and steamed cinders or a coarse sand should be added for these plants. For heavy feeders like Primulas, an addition of organic manure is advisable. The depth of the soil should be not less than 18—24 inches, because once the garden is planted, our plants may have to get along for years without very much more than shallow cultivation and perhaps occasional light top dressing.

The old, well-known practice of using stone chips in the soil mixture has, in the writer's experience, very little to its credit. They have a tendency to attract a considerable amount of sun heat and also have a habit of packing tightly in the soil, whereas coarse sand or cinders keep the soil loose and moist.

Starting the rock assembly, we begin with the strongest group and lay out the entire unit tentatively, to facilitate study from the viewpoint of picturesque and sturdy appearance. This strongest group will be the backbone of our garden, and all consequent work will be in relation to and in support of this unit. In a large rock garden, it is sometimes advisable to have more than one strong group for focal point; care should then be taken to vary the pattern of each group, so that we have an everchanging interest as we wander around.

A waterfall, pool or small brook, or a combination of all three, adds enormously to the aliveness of the rock garden. However, water features call for care in construction, because concrete must be hidden in the rock-work with great skill to attain natural and informal appearance. All pool basins, the waterfall and the brook should be built in concrete thick enough to permit the placing of rocks over the edges and into the bottom of the structures. By building all concrete work first without rocks, we insure against later leaking, and also have a good opportunity later, and with leisure, to hide all traces of the cement. (At our Flower Shows, a water-proof canvas is laid first wherever water is expected to flow, then the ledges of the waterfall are built. The pool edges and watercourse are filled in with rock and soil so as to hide the canvas, and even the bottom of the brook may be covered with sand and pebbles.)

All the planning and preparing up to this point will probably seem unduly cumbersome to many readers: but the work from here on will progress faster and more satisfactorily than if the early steps are taken in a slipshod and impatient manner. Considering the setting of each rock in relation to the group we are working on, we start with the largest pieces and prop them securely to the necessary height. When we feel sure that the first few rocks are set into the proper pattern, we proceed to ram the mixed soil underneath with the blunt end of a board, carefully packing all spaces in order to avoid air pockets. (Wherever hollow spaces are left under rocks, the soil will dry out and our plants will suffer. Also, mice and chip-munks will find lodgings in such places and often do considerable damage.)

The owner-builder at this stage of the game may well have a head crowded with visions of a wealth of color for the planting areas as they are being graded. However, it is best to hold our patience and not plant, until construction work has moved a respectful distance away, or, better still, the entire garden is finished. We may find it desirable, or indeed necessary, to backtrack and make minor changes to better harmonize or improve some details as the total picture evolves. The final details will depend on local conditions and on the imagination of the individual guid-ing the work. A well-built rock garden should be picturesque and natural-istic to a high degree, where the work of man is not apparent; rather, it should impress the beholder as an excellent effort on Nature's part.

For alpines known to be difficult, we should construct a moraine. Select an oblong section of the rock garden,—the size depending on the number of plants to be accommodated,—and dig the entire section out to a depth of 30 inches. Next, pour a concrete floor into this with a coping all around 4″ high, so that it will look like a level tray. Next pipe in running water (the flow from a ½″ pipe without pressure will be sufficient) to one end of this tray; at the other end, chip an overflow 1″ deep out of our coping (to be guided into the brook or into a drain). We now have a pool with 3 inches of water, with an intake at one end and an outlet at the other. The entire basin is now tightly packed with stones about 3—4″ in diameter up to, or a little above, water level. Next, spread a 2″ layer of crushed stone over the top, to close the spaces between the stones, and then a layer of cinders, to keep soil from washing down into the basin. A soil mixture of broken stone, soil, sand and leafmold or humus, in equal quantities about 18″ deep, will bring us back to grade. The constantly running water will keep the soil cool, and enough moisture will come up to make over-head watering unnecessary.

SOME GEOLOGICAL TERMS.—Rocks may be (a) *igneous*, i.e., solidified from the molten state; examples *basalt* ("trap-rock"), fine-grained and dark-colored, *granite*, coarse-grained and light colored. (b) *metamorphic*, i.e. altered, without destruction, from their original state; examples *gneiss* (pronounced nice), massive-banded, *schist*, laminar. (c) *sedimentary*, i.e., formed by the hardening of layers of sediment; examples *sandstone*, with grains of sand; *argillite*, grains of clay; *limestone*, grains of calcite (a form of lime).

The igneous rocks and more massive phases of the other kinds tend to weather into large rounded *boulders*, colloquially termed in the North hard-heads, in the South nigger-heads. These are the most difficult to fit into the rock garden. Many metamorphic and sedimentary rocks split into *slabs*, and so are more adaptable. Most desirable of all, except for plants which require acid soils, is limestone; for from it grains tend to weather out, developing crevices and cavities into which roots can penetrate.—E.T.W.

A LIMESTONE ROCK GARDEN

The rock garden pictured below is that of W. E. Th. Ingwerson, in Sussex, England. The rocks are evidently thoroughly weathered limestone, and have been skillfully fitted together so as to simulate a natural outcrop. (The standard work on matching geological features in artificial constructions is "Natural Rock Gardening" by B. H. B. Symons-Jeune, which can be consulted in horticultural libraries).

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ROCK GARDEN PLANTING AND CARE

LOUIS P. POLITI, Thompson Memorial Rock Garden

TO ACHIEVE even moderate success with a rock garden, and to provide reasonably comfortable and congenial quarters for the many types of plants usually grown in it, it is important to know something of the conditions under which these plants grow and flourish in their natural environment.

Any garden area devoted to the culture of plants in conjunction with rocks or rock-work, whether natural or artificial, may be termed a rock garden; evidence of this can be seen in the multitude of misappropriate monstrosities which have been, on every hand, foisted upon an innocent landscape.

However, today's real rock gardens follow a definite trend in the direction of the alpine or alpine-type garden; that is, the greater part of the plant material grown consists either of true alpines, or of perennial plants chosen for their close resemblance to the popular conception of what alpines should look like.

This latter group, while it includes an occasional perverse individual, is on the whole amenable to cultivation; and most of the plants in this category do well with the same treatment accorded ordinary garden perennials.

The true alpines, however, typified by such genera as *Androsace*, *Eritrichium*, *Pinguicula*, *Soldanella*, etc., are a different story entirely. They have no love for our lowland gardens, and while many of them may be tamed into some semblance of domesticity, the remainder resist our friendliest overtures and languish or perish in their stiff-necked stubborness far from their high-flung mountain aeries.

Let us look in upon them for a moment in their native homes, and perhaps we can understand a bit more about their seeming perverseness. The majority of alpines are found on high mountain slopes in the region between the tree line and the perpetually snow-covered summits. Here, snug and dry, they enjoy an uninterrupted dormant period for the greater part of the year. The growing season is very short (90—120 days) and the plants bloom, make their annual growth and mature seed with amazing rapidity. During this season they are exposed to the full intensity of the sun's rays, and dry atmospheric conditions prevail. An abundance of subsurface moisture, derived from the melting snows upon the peaks is, however, available to them.

To provide growing conditions such as these is for most of us an impossibility. Tonight as I write this, the temperature here in New York City stands at 13° and bitter cold winds howl at the windows like demented ghouls, yet today the temperature stood at 50°, the sun was shining brightly and it seemed like a balmy spring day. The temperature dropped 46° in less than 12 hours. This is but one example of the climatic conditions we are up against. No more do our precious alpines lie quiescent under their warm blanket of snow; here they are exposed to every vagary of the

weather, unprotected from the buffets of the vicious winter gales. Their dormant period is delayed far beyond its normal time, and just as they do get to sleeping well, presto, the gales abate, the sun comes out and the earth is warmed. Our poor bewildered "D.Ps." lift up their heads, survey the situation, decide spring is here and start growing, only to be sadly disillusioned. They never become properly dormant, for their entire growing season is thrown out of schedule. During our summer they fare no better, being fried one day by a blazing hot sun and then subjected to humid, cloudy periods with none of the free air circulation of their alpine peaks.

Obviously, the weather is something we cannot do much about; we can only accept philosophically whatever Nature hands out. There are however, several devices which are helpful, and tend to mitigate to some extent the extreme fluctuations of the weather.

Probably most important is the proper placing or locating of the plants. No matter how skillfully a plant is set into the ground and no matter how much loving care is lavished upon it, if it is not planted in a situation to its liking all is wasted effort.

Plants which require the same treatment should be gathered together into areas by themselves, where they may be handled as groups rather than as individuals. For example, *Aethionema lanuginosa*, *Alyssum montanum*, *Anemone alpina*, and certain of the Saxifragas like full sun, a well drained position and a limestone soil, and may be grouped together. Problems of watering, mulching and winter protection are much facilitated by such groupings.

Another type of grouping is the moraine planting. Here, in gravel and humus, with a constant supply of fresh water beneath, many of the more difficult species such as *Armeria juniperifolia*, *Cerastium villosum*, and *Petrophytum caespitosum*, may be grown successfully.

By strategically placing the plants in relation to rocks, trees and shrubs, it is possible to control the amount of sunlight received. Alpines which make their growth very early in the spring may be kept dormant for a longer period by protecting them from the sun.

Many of the evergreens such as Vacciniums and some of the dwarf Rhododendrons do better when protected from the eastern sun during the winter and early spring. Morning sun on unprotected evergreens often causes burning of the foliage, due to excessive transpiration of irreplaceable moisture.

While many plants require shade, certain of these, (the encrusted group of Saxifragas in particular) will not tolerate curtailment of free air circulation or drip from overhanging branches; shade should be provided by trees and shrubs at a good distance from the plants.

Some, as *Penstemon rupicola*, the Sempervivums, etc., show a predelection for narrow crevices in rocks exposed to the full heat of the sun, while others such as the alpine Anemones prefer flat meadow-like areas, or, as in the case of the Ramondas, crevices facing north.

Actual outdoor work in the rock garden does not begin until the middle of March, when removal of the winter covering may be begun. It is a good plan to remove this bit by bit, and to let the sun and air in gradually, until it is safe to uncover the plants completely. The fallacy of covering very early flowering bulbs during the winter can be seen clearly at this time. In lieu of covering these bulbs with an artificial winter covering, it is far better to plant them under some ground cover, such as *Muhlenbeckia axillaris*, *Thymus serpyllum*, or one of the Veronicas.

All planting done in the rock garden can and should be fitted into regular seasons. Spring planting commences in the early part of April and lasts until the middle of May. Later plantings are usually unsatisfactory, as the plants do not become sufficiently established before they are exposed to the heat and dryness of summer.

BY NEW YORK BOTANICAL GARDEN

A water course in the Thompson Memorial Rock Garden

Most rock garden plants may be planted either in the spring or fall, especially in the case of pot grown material. Exceptions are such fleshy rooted plants as Daphnes and Gentians, which are preferably planted in the spring.

Before doing any actual planting the area to be occupied is prepared by loosening the soil and incorporating into it a quantity of humus.

I like to have ready for the planting season a sizable stock-pile of a mixture of one part leaf mold and one part rough cinder (about ¼ inch diameter). This is spread over the ground to a depth of two inches and forked into the upper ten inches of soil. If this can be done in the fall it is all to the good; the soil will then have an opportunity to settle naturally, and will moreover be broken up by the frost to a good consistency.

The plants to be used in any area should all be laid out on the ground and arranged at one time. By doing this it is possible to get a good idea of what the finished planting will look like. Care must be used to obtain an artistic and naturalistic effect with the plants, quite apart from their cultural requirements. Low-growing plants are used around the smaller rocks, while around bold rock masses taller growing material is preferable. While the desirable varieties for a rock garden are numberless, enough of one variety to avoid spottiness should always be used.

Plants are removed by inverting and tapping the pots, in which they have been started, on some solid object. If this fails, a stick may be pushed up through the drainage hole and the plant thus be forced out. Except for removing the drainage crocks from the bottom of the ball, it should not be disturbed in any way. A trowel is the most convenient tool for planting root masses up to four-inch pot size; anything larger is planted with a spade. Plants should be set in very firmly; but care should be exercised when firming the soil to apply pressure only from the sides and not close to the neck of the plant.

A stout stick about 1½ inches in diameter and a foot long with a blunt, wedge-shaped point is an invaluable aid for planting in narrow crevices.

Material which has not been pot-grown usually requires a little more care in planting. A fairly large hole is then necessary to accommodate the spreading roots. These should be spread out carefully; any that are broken should be cut off cleanly. The soil is carefully worked around the roots and if the plant is held by the stem and shaken up and down a few times, it will help in settling the soil.

Planting must never be attempted either when soil is in such a sodden condition that it will stick to the trowel or spade or, conversely, when the soil is powder dry. If it is necessary to plant in dry weather, the planting holes may first be filled with water and allowed to drain before planting. All plants must be watered thoroughly after planting; a watering can with a fine rose is best for this purpose.

The rock garden should be top-dressed every spring to counteract the effect of the winter rains and frost and to provide some nourishment for the plants. I prefer a mixture of one part soil, one part leaf mold and one part cinders screened through a ¼ inch sieve. The entire surface of the garden should be examined minutely and any exposed roots or offshoots should be carefully covered. Plants thrust out of the ground by the frost should be gently but firmly pressed back into place. Where new crevices have been caused by the movement of the rocks during the winter they should be filled, packing the mixture in firmly with a stick. Many of the tufted plants will benefit by having some of the top-dressing mixture carefully teased in among the rosettes.

Along about June, thought should be given to the taking of cuttings and to divisions of plants. Even with the best of care, many rock garden plants are comparatively short-lived and, to keep the rock garden well furnished, it is wise as well as economical to do some propagating each year.

While, from the standpoint of health and vigor, seed-grown plants are undoubtedly the best, it is often advantageous to resort to asexual propagation, especially with plants that are difficult or slow from seed. In many cases certain forms will not come true from seed and this is the only method of propagation possible.

Cuttings are preferably made from new growth; they are usually one to three inches in length and include several nodes. The basal cut should be made directly under a node, and care should be taken to make a sharp, clean cut. The cuttings must be firmly inserted to a depth of about two inches in a sand bed in a cold frame or cool greenhouse. The atmosphere about the cuttings must be kept close and moist, and they will require syringing on hot days. Most cuttings will have rooted in a month's time, and should then be potted up into a light sandy compost. *Aethionema*, *Arabis*, *Aubrieta*, *Cerastium*, *Dianthus*, *Iberis*, *Phlox*, *Thymus*, *Veronica*, etc., are all easily propagated by this method.

Another good method of asexual reproduction which is especially adapted to difficult plants is layering. This consists of pegging down a side shoot into the soil. A notched stick will suffice to hold it firmly in place.

Many rock plants are easily propagated by division. Some, as *Phlox procumbens*, *Thymus serpyllum*, and the Campanulas, Saxifragas, Sedums, Sempervivums, etc., may be divided by merely pulling rooted stems or rosettes from the parent plant and potting directly into soil. Others, such as *Cerastium villosum*, the Androsaces and Campanulas and some of the Dianthus will need a short period in the sand bed to enable them to make sufficient roots to support themselves.

Summer brings with it the ever present problem of weeds. In the rock garden, due to the nature of the material grown, there are few short cuts possible and a relentless, thorough, hand weeding is the only method which will insure good control.

The most painstaking effort should be made to get out all of the weeds even to the tiniest seedlings. The ground should then be shallowly cultivated to preserve moisture as well as to destroy recently germinated weed seeds. Frequent cultivation during the summer is desirable. It is essential also to keep the weeds from seeding especially in the case of annuals, which of course perish with the first frost. Many of the perennial weeds are also prolific seeders, such as *Oxalis corniculata*, that fiend in plant form which is sure to establish itself in your choicest tussock of Androsace or bed of Sedum.

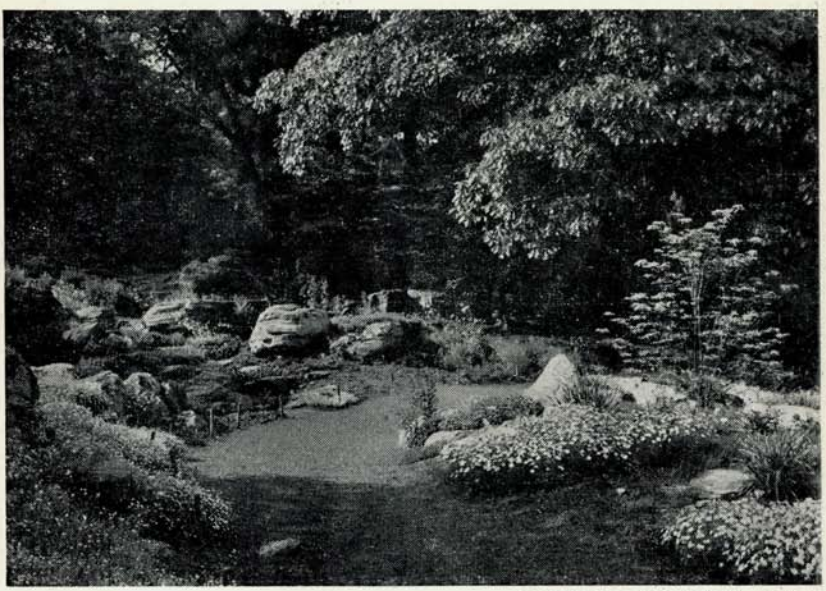
An effort should be made to do as much weeding while standing on the rocks as is humanly possible, for continued treading on the soil will soon render it unfit for cultivating rock plants.

Summer also brings droughts and the attendant problem of watering. Watering should be resorted to only when the plants really need it and then should be done thoroughly. The soil should be soaked to a depth of at least four inches and this should be tested by actually digging into the soil.

Neatness is desirable in the rock garden, and every attempt should be made, during the summer, to clean up dead foliage and unsightly seed heads. After flowering, such plants as *Alyssum saxatile*, *Arabis albida*, *Cerastium tomentosum*, *Linum perenne*, etc., will benefit from a severe cutting back.

The fall planting season extends from the middle of August to the middle of September. In latitudes above 37° it is unwise to do any planting later than September 15th, as the plants would not have sufficient time to become established before winter sets in.

With the exception of the Erythroniums, Muscari, Narcissus, Sternbergias, and autumn-flowering Crocus (which should be planted in late August or early September), the bulk of the spring-flowering bulbs are



BY NEW YORK BOTANICAL GARDEN

A path through the Thompson Memorial Rock Garden

planted in early November. Bulbs must have a well-drained position, and to improve drainage it is often advisable to place an inch or so of sand beneath them when planting. As a general rule, bulbs should be planted at a depth equal to three times their long diameter.

In the vicinity of New York City, it is generally not necessary to cover the rock garden for the winter until the early part of January. Evergreen boughs are best for covering, but if these are not available, salt hay or straw will suffice. These last must be held down with brush to prevent blowing about the garden. The covering should be applied when the ground is in a frozen state and should not be so heavy that it will mat down upon the plants. An attempt should be made to apply the covering neatly and tidily so that the garden presents, even in winter, a good appearance.

A HUNDRED SUPERIOR SUBJECTS FOR THE ROCK GARDEN

WARREN C. WILSON, Maplewood, Ore.

THE VARIOUS garden magazines periodically carry articles recommending "easy" rock garden plants for beginners. These messages are necessary and sometimes informative. But all too many seem to lack imagination in selecting species and varieties. The same old names come up time and time again: *Arabis "alpina," Aster alpinus, Aubrieta* in mixed colors, *Cerastium tomentosum, Dianthus knappii* (a weed hailed as the "Yellow Pink"), *Geranium sanguineum, Nepeta mussini, Phlox subulata* (magenta), *Sedum acre, Sempervivum tectorum*, and so on. To be sure, when used wisely and in moderation, these plants have a place in the gardening world. If ease of culture is the only criterion, then these well-known and oft-repeated listings will suffice. I believe, however, that the beauty and overall usefulness of the plants selected for the rock garden should be given much greater consideration. We allegedly experienced gardeners are doing an injustice to beginners by recommending a group of "commoners," when there are so many "aristocrats" available which are just as easy.

With these points in mind, I have selected a hundred species, varieties, and forms, which I personally like and have enjoyed over a period of years. Almost all are kinds which I grew near New York City as an amateur, or while carrying on rock gardening studies at Cornell University in central New York State. I have added a few of these favorites since taking over the gardens here at Maplewood, Oregon. In my experiences, all are "easy," although they most certainly will not grow like ditch weeds (*Cerastium tomentosum*, for example) when planted in poor soil in the wrong exposure and left unattended during a drought. However, by using a little common sense and judgment in planting, and giving them even a minimum of care, these plants will repay with an abundance of bloom and year-long pleasure for many seasons.

For convenience' sake I have divided my selections into two main groups: those plants which require a sunny exposure and those which need a shaded or protected location. Without writing an article of unwieldly length, it is impossible to describe each entry fully. I have merely indicated the flower color, desirable features, and reasons I consider it superior. I wish to emphasize that these plants are purely personal choices and other rock gardeners will, no doubt, differ with me. Probably a few kinds are not satisfactory for certain sections of the country with difficult climates. I wish only to encourage those beginners interested in rock garden perennials to grow the better sorts instead of the common, standard types seen in so many gardens.

FOR THE SUNNY ROCK GARDEN

I have used the word "sunny" in a rather broad sense. I mean a rock garden having an average open exposure (not one abnormally hot and dry) and a reasonably good loamy soil which has adequate drainage. My nominations for the list of Beginners Best Ten plants are marked by an asterisk.

Aethionema warleyense (or Warley Rose; The Persian Candytuft).—A compact sub-shrub with steel-blue foliage and small pink flower heads which resemble a miniature Rock Daphne.

**Alyssum saxatile* var.*flore-pleno* (Double Basket-of-Gold). — More compact than the ordinary sort, with double flowers of deeper golden-yellow. Does not self-sow and become a nuisance.

Alyssum saxatile var. *luteum* (often listed as *citrinum* or Silver Queen). —Soft, pale yellow flowers which lack the harsh tone of the common type.

**Anemone pulsatilla* (Pasque Flower).—Exceptionally large blooms in lavender to purple shades in earliest spring. Many rock gardeners probably have not seen the remarkable improved forms in white, pink, or red. They are still rare in this country.

**Arabis albida* var. *flore-plena* (Double Rockcress).—This and the other varieties of *A. albida* are persistently labelled "*alpina*" in catalogs. This is a vigorous type which needs room; its snow-white double flowers have strong stems. A useful cut flower, too.

Arabis albida var. *Carminea.*—Superior to the more generally known Rosabella, which is often weak and short-lived. Compact but vigorous and a deeper carmine-rose.

Arabis ferdinandi-coburgii.—Forms an evergreen carpet or mound which is attractive the year 'round. The small but numerous pure white flowers contrast beautifully with the dark emerald foliage.

Armeria juniperifolia (*caespitosa*).—The species is somewhat temperamental, but hybrids of it with more robust species are easy. The fascinating hummocks grow slightly larger than the type and the white to rose-pink flowers have somewhat longer stems. Much better than the coarse, grassy-leaved sorts with foot-high stems.

Aster subcaeruleus var. Star of Eisenach.—A gay Daisy with large blooms of bright lavender-blue with golden center. This variety is permament if replanted every third season. (Lovely *Aster alpinus* is frequently recommended but, in my experience, it has been fussy and short-lived.)

**Aubrieta.*—The color forms, hybrids, or call them what you will, are infinite. Instead of planting the usual mixed seedlings which often run to small flowers and muddy colors, I suggest using the improved varieties; then you know in advance what you are getting. Here are a few large-flowered varieties I enjoy:

Borsch's Brilliant: A very bright crimson-red with especially attractive foliage. Dawn: Semi-double pink. Dr. Mules: Rich blue-violet. Gloriosa: Very large, soft pink. Gurgedyke: A new variety with unusually dark-purple flowers.

Campanula carpatica (Carpathian Bellflower).—The type and its many varieties are all excellent. The rather new, large-flowered varieties such as Loveliness (mauve-blue) and Viscountess Byng (very large, opal-blue with lighter markings) are especially noteworthy. At the other extreme is the diminutive variety *nana*. Its enormous flowers (lavender-blue) on very short stems rival many of the finest (and difficult!) campanulas.

Campanula cochlearifolia (*pusilla*).—This is a creeper and both the lavender-blue and white (*alba*) types are easy and attractive in crevice or wall settings.

Campanula garganica.—An old standby which hardly can be surpassed in beauty, usefulness, and dependability. Prolific with its starry light blue flowers.

Campanula portenschlagiana. — Another of the faithful, easy Bellflowers. Bell-shaped violet-blue flowers in profusion. The variety *minor* is a good miniature version.

Campanula poscharskyana.—A robust sort with rather open, lilac-blue flowers. Needs ample room and often blooms in the Fall if sheared after the Spring flowering period.

**Coreopsis auriculata*.—An especial favorite because it usually flowers from mid-Spring to Autumn if the faded blooms are removed. The vivid orange-yellow heads are on stems only 8 inches high. One of the few "everblooming" rock garden perennials.

Daphne cneorum (Rock Daphne).—Included even though it sometimes dies suddenly and mysteriously. The delightfully fragrant pink flowers make this dwarf shrub worth replacing if it should prove unsuccessful on the first try.

**Delphinium grandiflorum* var. Blue Mirror—(incorrectly listed as *cinereum* or "*cineraria*").—Intensely luminous blue flowers without spurs. Although the plants sometimes reach 2 feet, a group of Blue Mirror can often be used effectively against a large rock or shrub background. Perennial and hardy if the drainage is good and the spot warm and sunny.

**Dianthus* Little Joe.—Everyone who sees this little Pink is captivated. Introduced by Mr. Fred Borsch several years ago and still unequalled for bright color, neat habit, and long blooming. Single, flaming crimson blossoms on 4-inch stems over tight gray tufts. It should be cut back occasionally for best results.

Dryas octopetala var *minor*.—A tiny edition of the beloved Mountain Dryad. Large white flowers rest on dark green mats in the spring and off and on thereafter.

Erica carnea (Winter Heath).—The type is rather dull when compared with the fine named varieties: King George (early, rosy-pink), Springwood White, Vivellii (late, almost crimson). Hardy but in cold sections with little snow cover the plants should be mulched to protect the flower buds.

Gentiana septemfida.—(I would very much like to recommend the wonderful *G. acaulis* but it is far too unpredictable for beginners.) *G. septemfida* and its varieties are well-behaved and can be depended on for a bright show of blue during the Summer, year after year.

Geranium sanguineum var. *prostratum* (*lancastriense*).—Most Geraniums are not appealing to me, but this variety is in a class by itself. The clear rose-pink blooms have dark veins and are borne on compact plants. A photograph of a clump of this plant in Dr. C. R. Worth's rock garden at Groton, New York, in June, 1940, is reproduced below.

Globularia bellidifolia (Globe Daisy).—An easy, 2-inch, evergreen carpeter or crevice plant with fuzzy, globular flowers. A useful groundcover for small areas.

**Helianthemum nummularium* (*vulgare*).—The Sun Roses are dwarf shrubs that give more color per square foot than any other I know. The seedlings in mixed colors are satisfactory, but the named varieties are preferable. They are available in many solid colors, delicate shades, and combinations. The Ben series (Ben Ledi, Ben Nevis, etc.), Jock Scott (tomato red), Double Yellow, and Wendel's Rose are just a few. It is important to shear the plants after blooming and to winter-mulch them in very cold climates.

BY WARREN C. WILSON

Geranium sanguineum prostratum in Dr. C. R. Worth's garden

Hypericum rhodopeum.—Silvery mats and golden flowers even in hot, dry locations. Not invasive but occasionally self-sows a little.

**Iberis sempervirens* var. *Snowflake* (Hardy Candytuft).—A fine improvement on the old type with extra-large flowers of the usual virginal white and in the usual abundance. Robust and will crowd smaller plants if not given ample room.

Iris cristata.—Equally at home in the sun or light shade and prolific with its blue and gold blooms. The variety *alba*, white and gold, is very charming and rather rare.

Iris pumila var. *azurea*.—Large blue flowers on very short stems. Much better than most of the *pumila* types (which tend to be coarse).

Penstemon.—The shrubby Penstemons are important rock garden perennials. They are also all evergreen, bloom heavily, and are particularly attractive when planted in walls or where they can grow between or on rocks. A severe pruning after flowering helps to keep them compact and vigorous. They must have sun and a lean soil. Under such conditions they have proved, in most cases, long-lived and eminently satisfactory. A light winter mulch of salt hay or similar material is desirable in cold sections without snow. Below are a few outstanding kinds:

P. cardwellii.—Ample dark green foliage and showy purplish blooms.

P. heterophyllus erectus.—Matted basal foliage and 18-inch spires of intensely blue flowers.

P. rupicola.—A view of this species in full bloom on the massive basaltic cliffs of the Columbia River Gorge is a sight of a lifetime. The condensed plants, dusted with silver-gray powder, are covered with bright rosy-carmine blossoms. Needless to say, this is one of my favorites as are the rare varieties *albus* (white) and *roseus* (pink).

Phlox subulata (Moss Phlox).—Why use the old, dull magenta species when there are so many fine varieties generally available? A few are: Blue Hills (robust, lavender-blue), Brilliant (fiery magenta), Emerald Cushion (good foliage, lively carmine-rose), Vivid (salmon-rose).

Pterocephalus parnassi.—*A Scabiosa* relative with grayish leaves in dense mats and mauve-pink flowers on 3-inch stems. Needs sun and will tolerate poor soils and dry conditions when established.

Ranunculus montanus.—An alpine Buttercup with huge golden blooms only a few inches off the ground. A very showy plant in earliest Spring.

**Rosa.*—The Miniature Roses are dainty, cheerful favorites with all who know them. They are easy to grow, long-blooming, and very useful as cut flowers. Several distinct varieties have been introduced since the advent of pink-flowered *R. chinensis minima* (Roulettii) several years ago. It is still one of the best because it is so tiny, but the newer varieties have given us other colors, especially Midget: Red and very double. Pixie: Double white fading blush pink. Tom Thumb: Tiny double red with a white heart.

Sedum cauticolum.—A fine newcomer on the order of *S. sieboldii*, but more compact and with brighter flowers of rosy-red in late Summer. There are some good Sedums and many more invasive, weedy ones, sometimes useful in covering barren, inhospitable spots.

Sempervivum "*tectorum* var. *robustum.*"—This more than likely is the wrong name, but where can one look for the correct one? The plant we grow in our gardens under this name is striking with its large rosettes, green-tipped and glowing red at the center. The remarks above about Sedums apply to Hens-and-Chicks also.

Thymus serpyllum.—Mother-of-Thyme has countless offspring of a sameness that makes them a rather undistinguished family. But they are sturdy and willing even under adverse conditions and a few, such as the following, are worth noting: Annie Hall (tiny green carpet with pink blooms); *coccineus* (dark foliage, crimson flowers); *lanuginosus* Hall's Form (silvery and more free with its rosy-pink blooms than the old Woolly Thyme).

Tunica saxifraga var. *flore-pleno.*—This double variety of the Coat Flower, carmine-pink with deeper shadings, is showier than the common single sort. It thrives in ordinary soil and sun and gives summer color in the rock garden.

Veronica (Speedwell).—There are many kinds, but I like Crater Lake Blue, a garden form, especially well, even though it is almost too big (1½ feet) for the average rock garden, unless placed carefully. *V. pectinata* var. *rosea* is a good though common variety which makes gray, woolly mats and has rosy flowers. It is useful in crevices and between stepping stones.

Zauschneria californica (California or Rock "Fuchsia").—I remember seeing very few plants of this blazing scarlet westerner while in the East. We had a group of plants in the Cornell Rock Garden and they were perfectly hardy when mulched lightly. The plants reach about a foot in height but tend to sprawl gracefully. The blooms come in late Summer and early Fall and, I claim, can be seen half a mile distant on a foggy day!

FOR THE SHADED ROCK GARDEN

I have in mind a north or east exposure with sky light but little or no direct sunlight, or a location under or near trees receiving dappled light to moderately heavy shade at least during the hot part of each day. It is not as difficult to create lovely and lasting effects in such a shaded rock garden as we might imagine. Except in unusually bad locations under dense shade trees like the Norway Maple or certain conifers, we can grow a wide variety of exciting plants. We must, to be sure, give more thought to soil preparation, elimination of roots, selection of appropriate plants, and maintenance than in our sunny rock gardens. In general, "shade plants" need a richer soil containing more organic matter (humus) than those which grow in the open. Another point we must keep in mind: it is rarely possible to produce as colorful flower effects in the shaded garden as in the sunny one. We must rely more on the subtly pleasing effects created by foliage color and texture and by the contour and habit (character) of the plant. Double asterisks mark my suggestion for the Beginner's Best Five here.

Anemone nemorosa, (European Wood Anemone).—All varieties are attractive but I recommend: *alba* (also listed as *flore-pleno;* white with a dense crest), *allenii* (large lavender-blue), and Royal Blue (very clear and deep). The Wood Anemone "runs underground" moderately and is valuable for carpeting and naturalizing.

Astilbe crispa.—The handsome foliage is rich green and much cut and "crisped." The tight flower plumes in shades of pink grow a foot or less high. We can see no reason for maintaining the varietal names Lilliput, Perkio, etc., because there is so little difference between them. But perhaps our varieties were not true to name.

Caltha palustris var. *monstrosa-plena* (Double Marsh Marigold).—This name always gives me cold shudders! It applies to a double variety, a much showier shade or waterside plant than the single type. The attractive leaves are dark and shiny and the buttery, orange blooms look good enough to eat.

Coptis laciniata (Goldthread).—Many of you may know the eastern Goldthread and, like me, consider it a pleasant little wilding in its own obscure way. *C. laciniata* is really a far better plant. The polished, deep emerald leaves are rather finely cut and the creeping plants make an exceptional groundcover. The white flowers are small and only moderately effective. There are also other western *Coptis* species (*asplenifolia, occidentalis,* etc.) for those who enjoy unusual shade plants.

****Dicentra formosa* Sweetheart (White Bleeding Heart).**—Here is a rather new variety that has all the good qualities one could ask. It is hardy, easy to grow, everblooming, and beautiful. From amongst the pale green, cut leaves rise slender stems bearing clusters of dainty, pendent, heart-shaped blossoms of pure white, here figured. The plants start to bloom in mid-spring and continue until frost cuts them down.

Sweetheart has an interesting history. Mr. Fred Borsch secured his original stock from Mr. Rex Pearce in New Jersey, who had recognized the beauty and garden value of this White Bleeding Heart several years ago and named it Sweetheart. We contacted Mr. Pearce and he relayed the information that his first plants had come from one of his customers in Oregon but he no longer had the person's name. There the matter rested for several months until a visitor to our gardens saw Sweetheart blooming in the

BY WARREN C WILSON

This white form of *Dicentra formosa* well merits the horticultural name Sweetheart

greenhouse. She casually asked if it was not the White Bleeding Heart found by Mrs. L. E. Brown of Coos Bay, Oregon. We wrote to Mrs. Brown and received a letter from her son, recently returned home from overseas, saying that his mother had died just the month before. However, he has questioned her neighbors and they recalled the plant. They agreed that Mrs. Brown had found the original specimen in a grove of Douglas Fir trees about one mile from her home and within the city limits of Coos Bay (which is on the southern Oregon coast), and that it is still growing in Mrs. Brown's yard. Since this information came to light, another visitor to our gardens mentioned that she knew Mrs. Brown and remembered her as an enthusiastic gardener and grower of native plants. This lady's version of the story of the discovery of Sweetheart is, however, that Mrs. Brown found it on one of her collecting trips to a wild, picturesque valley of the Coast Range. Someday we hope to check these stories further.

Epimedium.—Many of the species and varieties are too tall for the rock garden, but *E. grandiflorum niveum* (white) and *E. g. violaceum* ("*lilaceum*," soft lilac) are most compact. The foliage is very decorative and colors well both Spring and Fall.

FERNS.—I have collected these for years and there are so many I enjoy, it is difficult to know which to choose. So let's be impartial and select two found in the east: *Asplenium trichomanes* (Maidenhair Spleenwort) and *Cheilanthes lanosa* (Hairy Lip Fern); and two from the *West*: *Cryptogramma crispa* var. *acrostichoides* (Parsley Fern) and *Pityrogramma triangularis* (Gold-back Fern). Nothing adds more to the attractiveness of a shaded rock garden than a liberal planting of suitable Ferns.

Galax aphylla.—Standard on almost every list of dwarf plants for the shade and justly so. The flowers are not very showy but the evergreen, glossy leaves are superb.

***Geum Waight's Brilliant.*—This variety is far above the average dwarf *Geum*. The 6-inch (or less) stems carry large, glowing, orange-scarlet flowers. This is one of the few plants for the shaded garden that will give real color.

***Hepatica nobilis* var. Blue Beauty.—A liverleaf from England with striking blue flowers which have contrasting white anthers. *H. n.* var. "*rubra flore-pleno*" is a rare, double, rose-red form which is also showy. These are not any more difficult than our own natives which, by the way, are very good in selected color forms.

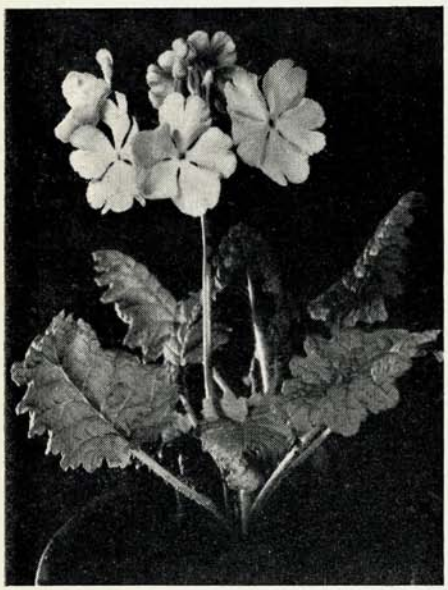
Hosta "*minor* var. *alba*," also known as *H. albiflora.*—Whatever its correct name, this is a refined Plantain Lily with white flowers. It verges on falling within the border perennial class, but is satisfactory for some locations in rock gardens.

Iris gracilipes.—A fine little woodland *Iris* from Japan, bearing lilac-blue flowers with darker veins. The variety *alba* is a lovely white and gold combination. Neither have caused me any difficulty when I planted them in light shade and good soil containing ample humus. They do suffer from excessive dryness in the Summer.

Phlox divaricata—(Blue Phlox).—This sometimes runs to muddy colors and has flowers of poor form in wild plants. Two of the several improved varieties of this fine native are *laphamii*, violet-blue form, and White Butterflies.

Primula juliae Hybrids (Juliana Primroses).—There are a multitude and confusion of varieties, many poor and very much alike in color. I suggest the following to give a wide range of colors: Chief Multnomah (reddish-purple); Dorothy (cream); E. R. Janes(somewhere between orange-rose and shrimp-pink); Kay (violet-blue); Roberta (lavender); and Schneekissen (very dwarf white). There are many other good ones. All are very dwarf and easy, giving quantities of bloom in early spring.

***Primula sieboldii*—I have not mentioned *P. polyantha* because they are so well known everyone sooner or later grows them. *P. sieboldii* seems to be relatively little grown, yet in some ways it is even better than the Polyanthus Primroses. Judging from my experience and that of other gardeners, it will tolerate poorer soils and drier conditions. During the summer it retreats underground, thereby avoiding the damage caused by heat, drought, and pests. Siebold's Primrose has large blooms in many shades from white through lavender to almost red, but the colors are mostly soft pastels. This species blooms later than the Polyanthus types, thus lengthening the Primrose season. A few choice varieties are: Dora (light lavender); Maiden's Blush (delicate pink); Purity (snow-white); Southern Cross (lavender with lighter markings and fringed).



BY WARREN C. WILSON

Primula sieboldi

Although the vast genus *Primula* is one of the rock garden standbys, portraits of only two species have appeared in the Bulletin thus far. The native of Asia here illustrated is not only very beautiful but also especially easy to grow. It thrives best in a partly shaded rock garden, reaching a height of 8 or 10 inches and flowering in mid or late spring. The hue varies from light red through rose pink and lilac to pure white.—E.T.W.

Pulmonaria angustifolia var. *azurea*.—The Lungworts (or if you do not like them, "Spotted Dog") have their place in the early spring picture. The common *P. saccharata* is an old reliable but has been superseded by the above, which is sky-blue, and by *P. montana* (*rubra*) with flowers of a shade I call "violet-red."

***Shortia galacifolia* (Oconee Bells).—I can not pass up this outstanding American native. The white to pearly-pink bells and glorious evergreen foliage are a never-ending delight. I would like to recommend also the wonderful Japanese *S. uniflora*, but it is temperamental in some climates. If you do not mind risking a failure, by all means try it.

Viola odorata (Sweet Violet).—These cheerful little flowers appeal even to those hard-hearted souls not interested in gardening. Try Rosina (deep rosy-pink); Royal Robe (very large blue-violet); and Vilmoriniana (apricot touched with violet on the back). The doubles are not nearly so well-known: Marie Louise (mauve); Swanley White; and others. A word of caution,—in sections with severe winters and little snow, a light mulch is desirable to protect the exposed stems and flower buds.

THE AMERICAN ROCK GARDEN SOCIETY

REGIONAL GROUPS IN REVIEW

NORTHWESTERN GROUP.—At the regular meetings, which are held at the homes of members, subjects pertinent to active rock gardening are discussed. In addition, during the past year, the group enjoyed programs presented by two outside speakers: Dr. Victor B. Sheffer, of the U. S. Fish and Wildlife Service, who showed exceptionally fine slides and spoke of the plants of the Pribilof Islands; and Mrs. Maxcine Williams, of Juneau, Alaska, who presented kodachromes of wild flowers of southeastern Alaska. These two talks broadened the members' knowledge of possible rock garden plants.

At the height of the flower season in May, a tour was made of gardens of members located in the northeastern part of Seattle. In June, a large group of members and their friends gathered at the summer cottage of Mr. and Mrs. Burton J. Wheelon on Mercer Island for the annual picnic.

In July, the Northwestern Group was happy to have as guests Mr. and Mrs. Harold Epstein, of Larchmont, N. Y. In order that they might have an opportunity to see real alpines in their native habitats and rock gardens as Nature makes them, Regional Chairman Carl S. English, Jr., accompanied Mr. and Mrs. Epstein up the northeast side of Mt. Rainier.

The entire group went to this same region for its annual outing in August, having breakfast in the forest on the way up, then spending the day climbing and enjoying the wonderful display of alpine plants in bloom.

At the well-attended annual dinner, held in October at the Meany Hotel, Seattle, H. W. Higman, of Seattle, presented a motion picture, "Wild Life of the Swamp," in natural color.—C.S.E., JR,.

NEW ENGLAND GROUP.—The activities for 1946 were few, as local interest was disorganized by our labors in time of war. At the public meeting in Boston on November 15, 1946, colored slides were shown of the alpines of Mt. Washington, taken by Prof. Stephen F. Hamblin and his son on their exploration trip last June. Plans were made for a year of real effort, and new officers chosen: chairman, Prof. Stephen F. Hamblin; vice-chairman, George Graves; secretary-treasurer, Mrs. Clement S. Houghton; executive committee, Fletcher Steele, Mrs. H. W. Wright, Miss Mabel Turner, Mrs. Lucien B. Taylor, Mrs. Harry Hayward, Mrs. Grover C. Richards.

Besides meeting in Boston, it is planned to have regional meetings in gardens of members in the several states belonging to the New England Group and on public reservations. Our group, it may be interesting to learn, is affiliated with the Trustees of Public Reservations. The emphasis this year is on native plants.

Only one meeting of the Maine Unit was held in 1946,—on November 14, at the home of Chairman Francis O. Libby, So. Portland. Mr. Libby urged the members to get new members and to renew their interest and enthusiasm which of necessity was suspended during the war years. Plans for greater activity in 1947 will be carried out on the return from the south of the chairman and a number of the members. Planting alpines in tufa rock was the subject of the evening, and Mrs. Harry Hayward showed slides demonstrating Saxifrages and Sempervivums growing directly in the rock, and alpine Primulas in crevices between the pieces of tufa. Other slides included *Meconopsis betonicifolia* (*baileyi*) growing in a Maine garden and the newer, brilliant hybrid Aubrietas planted in a wall.—S.H.

NORTH ATLANTIC GROUP.—The February 1946 "Stump the Expert" Program was such a success that it was repeated at the January 1947 meeting drawing out a large number of members. For the February 1947 meeting, Stanley Anderson, of Saxton and Wilson, of Maplewood, Ore., prepared a lecture, accompanied by slides of "Flowers from the Sawtooth Mountains of Idaho" and "European Horticultural Highlights of a G.I."

The annual luncheon in New York City during the week of the International Flower Show is always a delightful event: Mr. Cleveland Morgan was guest speaker in March, 1946, and Dr. Ira N. Gabrielson in March, 1947. At the April 1946 meeting, the members enjoyed Arthur H. Osmun's praise of the Violets. What is in store for them in April 1947 has not yet been announced.

May 1946 found the members making pilgrimages to the beautiful gardens of Mr. and Mrs. Walter D. Blair, at Tarrytown, N. Y., and of Mr. Leonard Buck at Far Hills, N. J.,—the latter being the occasion of the 1946 annual meeting.

After a lull during the summer, the season re-opened in October, 1946, with a round-table discussion and in November Dr. Edgar T. Wherry gave a splendid talk on native plants desirable for the rock garden. This rounds out a year with the North Atlantic Group.—D.E.H.

ANNUAL MEETING, MAY 24, 1947

Members of the Society will be welcomed by Gen. and Mrs. C. I. DeBevoise to "Cronamere," Greens Farms, Conn., on May 24 for the annual meeting. The program tentatively calls for a short business session at noon, box luncheon (each member bring his own, please; coffee and dessert will be served) and the afternoon spent in viewing the attractive rock garden with its wealth of plant material.

Train leaves Grand Central Station, New York City, at 10:30 A.M., and it is planned to have several cars waiting at Westport, Conn., to convey members to Greens Farms. Train leaves Westport for New York City at 3:45 and 4:50 P.M.

If you drive, follow the Boston Post Road to Westport, turning on Compo Road and going south to the railroad bridge; then turn left and follow the short route right to the entrance of "Cronamere."

SEED EXCHANGE

From Elmer C. Baldwin, Syracuse, N. Y.: Arabis albida rosea, Asclepias tuberosa, Delphinium cardinale, Heuchera sanguinea hybrida, Hunnemania fumariaefolia, Hypericum patulum henryi, Lavendula officinalis, Ligularia clivorum, Linaria cymbalaria, Lobelia cardinalis, Myosotis alpestris rosea, Penstemon digitalis, Symphyandra hofmannii alba, Valeriana mixed, Vinca rosea.

From E. L. Totten, Ho-ho-kus, N. J.: Asclepias tuberosa, Aster spectabilis, Liatris graminifolia.

From Miss Jean Ireland, Sebastopel, California: Alyssum saxatile citrinum, Penstemon heterophyllus.

From Mrs. E. M. Babb, Portland, Me.: Penstemon albidus, brandegei, cobaea, corymbosus, glaber, grandiflorus, grandiflorus albus, murrayanus, menziesii, palmeri. Also a shrubby mixture, which includes several good ones.

From Robert M. Senior, Cincinnati, Ohio: Campanula pelia (Greece), the subject of Mr. Senior's article in the January-February 1947 issue of the Bulletin.

Your request for seed should be directed to Mrs. L. D. Granger, 28 Bayview Avenue, New Rochelle, N. Y., accompanied by a stamped, self-addressed envelope.

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