

BULLETIN

of the

AMERICAN ROCK GARDEN SOCIETY

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No. 4

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ROCK GARDENING IN THE PROVINCE OF QUEBEC

F. CLEVELAND MORGAN, Montreal, Quebec

THIS SMALL property of ten acres is well situated on high ground overlooking the lake (Lake of Two Mountains) and when acquired was nicely sprinkled with trees of Ash, Elm, Oak, Birch and Butternut. An attractive feature was an old orchard of apple trees, and though neglected for many years, by feeding and pruning these were gradually brought back to a picturesque old age.

On the lake side, which faces west by north, the ground suddenly dips to the water, the bank broken at one point by a shallow gully. Here was the obvious site for a rock garden and here operations were begun.

Owing to annual spring floods, a difference of many feet in water levels takes place between May and September. This means that the lake shore has to be protected by a high wall carried well above the danger point. Before this was done, I had more than once agonized the night long, realizing that a rising wind meant cruel waves would tear out precious plants. However, it was possible to make a virtue out of a necessity and we built the wall so high that it created a tiny cupped valley the whole width of the lake front. By capping its margin with shrubbery, the illusion was further emphasized and a pleasant grass walk was laid at its bottom level. The aspect changes as we wander along this walk by variation in the type of planting and bank treatment. At one point it is cut back into rocky steps with a pool and stream at its base, while at another it is levelled off to create an open sunny area. Finally, at its end, we enter the gloom of a woodland with a culminating cliff of grey limestone over which rushes a stream to be lost in a bog below. This only happens, however, when a tap is turned on, for I must reveal that my garden is no vast estate, but a Lilliputian affair calling, therefore, for imagination and also for intensive cultivation so that no spare foot shall be overlooked.

Although situated in a limestone district, there is available nearby a plentiful supply of wood soil, some of which is extremely acid due to the presence of Pine and other evergreens. Gravel and coarse sand from the beach are close at hand, but perhaps the most valuable asset lies in the quantity of weathered limestone blocks to be found scattered over the countryside. These make excellent material for building a rock garden and have been largely used in its construction.

The climate around Montreal is one of extremes. Panting on a hot July day with the thermometer at the 100 degree mark makes it difficult to believe that by January one may be jittering with cold. By way of compensation, we generally have a good blanket of snow and therefore suffer less damage from alternate thawing and freezing than so often happens farther south. Spring, as elsewhere, may be early or late, but we generally count on Snowdrops appearing towards the end of March. April dawdles with alternate periods of hot sun and cold winds, but once started spring

rushes into summer with surprising speed. May and June are pleasant enough, but in July and August we may look for hot weather, often sprinkled with severe and violent storms.

Our autumn months are glorious, but towards the end of October we must count on snow flurries. This early warning is generally followed by a spell of lovely weather, known locally as Indian Summer. In November or December, we may be treated to ice storms and these, in spite of their undoubted beauty, should be numbered among the real horrors of the gardening world, doing untold damage to trees and shrubs. The relative dryness of our climate . . . is in itself a serious drawback to growing many alpiners, particularly those accustomed to damp days and cool nights. Owing to this factor, a richer soil with stone chips of sandstone or a peat moss mixture to retain all possible moisture would seem to be permissible. Nor do we regard drip from trees as a serious problem. In fact, dappled shade is often very desirable, and I have deliberately planted trees on the southern side of rock work to give this shaded condition. If the trees are at all close, I find it necessary to put in a protecting wall of concrete right down to hard pan to prevent roots from taking possession.

The main rock garden, as has been explained, is built on either side of a gully which leads down a steep bank to the lake shore. Here a good deal of stone has been used, forming a series of strong ledges which are carried across both sides of the gully and which terminate in bold tors. At the top of the bank, some of these tors protrude into the lawn, thus eliminating straight lines and pegging, as it were, the rock garden to the bank. This pegging is further emphasized by building moraines and screes as islands in the upper level of the lawn itself, making them appear as flat outcrops of stone. The rock garden is in many places screened from the lawn by clumps of shrubs or evergreens of the dwarfier, spreading sort, such as fine-leaved Spiraeas, Brier Roses, dwarf Apples (*Malus sargentii*) Japanese Yews, Junipers.

Where the bank sloped more gently, open spaces were cut showing occasional outcrops of rock. These areas are used for naturalizing spring bulbs, wild flowers and Colchicums. By way of contrast, I developed another portion into a woodland garden, cutting out only unessential trees and scrub. As this area touched the boundary of my property, I built up an end, as it were, by bending the bank around and supporting it with rock work. Over this splashes the tiny waterfall before mentioned and this finds its way through hummocks of moss and mounds of woodland plants to a terminating bog which is more or less open to the sun.

This woodland garden is largely given up to native plants—that is, natives of North America—for there are many beautiful southern and western species here. The shrubs consist of Shadbushes (*Amelanchier*), Azaleas, Mahonias, Kalmias and Viburnums, with clumps of native Roses in the sunnier spaces. There is a bank given over to ferns, of which we have many good varieties. Trilliums are naturalized everywhere, from the big native *Trillium grandiflorum* to the Californian *T. sessile*. The Virginia Cowslip (*Mertensia*) flowers in soft blue and pink sheets behind patches and clumps of *Uvularia*, Solomon's Seal, *Smilacina* and *Actaea*. In front of these are stretches of *Podophyllum* (including the pink *P. emodi* from Tibet), Dodecatheons, and the White Foamflower (*Tiarella*). Hummocks of *Cornus canadensis*, *Coptis*, Wintergreen, *Mitchella*, and other trailers serve as groundcovers. Among them grow colonies of Dog-tooth Violets, most species hailing from the west coast. From the south-eastern states come *Galax*, the lovely *Shortia galacifolia*. Fairywands

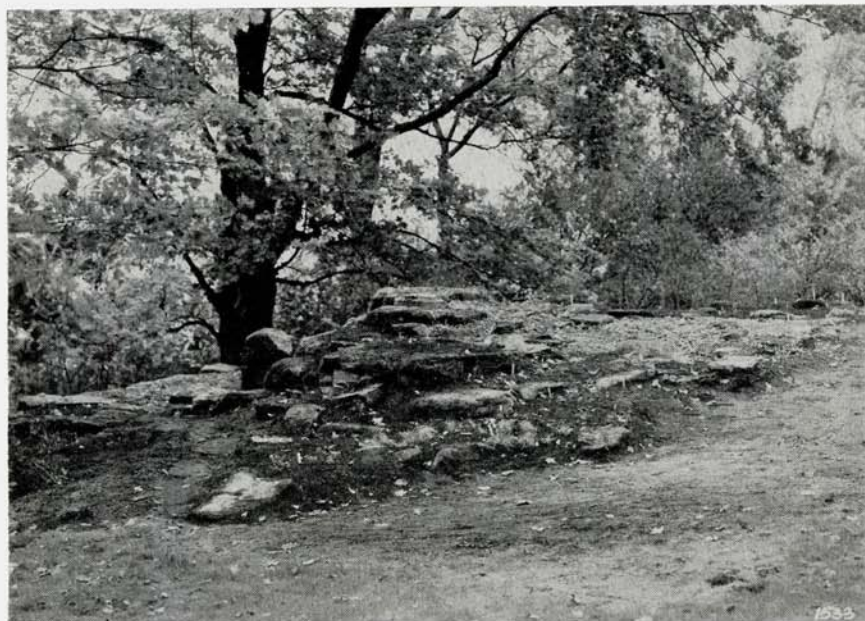
(*Chamaelirium*) and *Iris verna*. There are patches of *Orchis spectabilis*, *Habenaria orbiculata* with great round basal leaves, *Cypripedium arietinum* and *C. parviflorum*. In damper spots are *C. acaule* and *C. spectabile*, while in lucky years I can show colonies of *C. candidum* and *C. passerinum*. In the bog garden the big *Lobelias*, *cardinalis* and *syphilitica*, self sow freely as do the Snakeroots, *Cimicifuga racemosa* and *C. simplex*. Rodgersias are here in several species, their bronzy foliage making rich patches of color. Astilbes send up plummy heads varying in size from the big garden hybrids to the tiny Japanese *A. simplicifolia* which is naturalizing itself on the mossy ledges of the bank. The lovely Bloodroots, with



View from rock garden across the lake, Senneville, Montreal.

the really exquisite double form, are nearby companions. Wherever there is ground space, white Violets and Japanese Primroses spring up in hundreds. These are no great rarities, but satisfactory in their determination to survive. This quality is shared by some of the Anemones, notably the native *Anemone canadensis* and the European *A. sylvestris*. Exactly opposite in its behavior is our Mayflower, *Epigaea repens*. Its refusal to live if transplanted to our gardens is proverbial; yet in its native haunts it is apparently anything but fussy. I have seen it growing in deepest shade, half smothered by undergrowth. I have found it thriving and flowering freely on open hillsides. Mr. Robert Lemmon tells me that root disturbance is the cause of all the trouble, and that plants in pots grown from seed are much more satisfactory in every way. *Epigaea* is a real lime hater and demands a strictly acid soil. It is one of the comparatively small groups of plants whose whims must be seriously considered, as the great majority of plants appear to be relatively indifferent to soils. A much larger group in this climate is dependent on a proper degree of humidity for its welfare.

The question is often asked, "Is such a plant hardy?", and the answer is very often, "I don't yet know." Failure three or more times doesn't



The screes just before they were finished—from the lawn looking north.

finally settle the question. A healthy plant, happy in its surroundings, has obviously more chance to survive than a half-dead specimen planted in wrong soil and in an uncongenial spot. Some of these conditions can be met and overcome by a knowledge of how the plants grow at home, but others are not so easy of solution. The most difficult element to supply is humidity. It isn't that many of our western alpine die of cold when moved to the east. They die of dryness, and by this I do not mean lack of water at their roots only. They lack a certain cool humidity of the atmosphere which causes them to sulk and finally disappear. It is true that in their own districts they have periods of rest, but these must be relatively short and less severe.

I compare my own experience with that of Mrs. Robert Reford at Metis, on the Lower St. Lawrence. There, some 350 miles down the river in a climate appreciably colder and more northern in character, she is able to grow and grow freely, plants which merely exist with me. That this is due primarily to cooler nights and a more humid atmosphere would seem to be indisputable. She succeeds with such diverse plants as *Aquilegia juncunda*, *Meconopsis betonicifolia*, *Thalictrum dipterocarpum* and those species of western alpine with which I have had particular trouble, namely: *Lewisia*, species of *Phlox* and many woody *Penstemons*. I made an effort to meet this problem by building a series of terraced screes on the main bank facing north. There are three levels, each with its own type of miniature garden. The top of the bank was raised by building a ledge of rock about four feet above its natural height. This permitted me to construct a sunny scree which sloped gently south toward the lawn. Its depth was further increased by digging a pool-like depression which was lined with reinforced concrete to keep out tree roots. The usual succession of coarse rubble, turfs and gravel mixtures followed. A hidden tap enables one to sprinkle it at will. The next terrace is also a scree, but here the sun does not shine so strongly and much rock shade is

afforded from the ledges above. These ledges are specially contrived to tempt *Lewisia*s to linger longer than they are apt to do in my garden. Here also I have planted two seedling *Viola delphinantha* which finally germinated after two seasons of watchful waiting. In this second scree I have planted such things as *Iris setosa*, *I. gracilipes alba*, *I. lacustris*, *Primula mistassinica*, *Parnassia*, *Diapensia lapponica*, *Rhododendron lapponicum*, *Douglasia laevigata*, and such *Gentians* as *G. farreri*, *G. sino-ornata* and their hybrids. The acid lovers are mulched with pine needles and given periodic doses of aluminum sulphate to counteract effects of limy water. From this scree level we again drop about six feet, leaving a little cliff of weathered limestone which is kept damp by a film of oozing water. In this crevice I grow small ferns such as *Asplenium ebeneum*, *A. trichomanes* and the Walking-Fern (*Camptosorus*), together with *Corydalis* of the dwarfier sort. In the drier crannies *Ramondias* and *Haberleas* do exceedingly well, as do *Saxifraga fortunei* and species of the *Umbrosa* group. At the base of the cliff a deep bog was dug out and here in hummocks of mosses grow colonies of *Iris prismatica*, of our native Orchids, Pitcher Plants, small *Vacciniums*, *Empetrum nigrum*, and even little Sundews. Besides these local plants, such bog *Primulas* as *Primula florindae*, *P. chungensis* and *P. rosea* are grown, and in drier pockets *P. juliae*, *Wanda* and *P. sieboldii*, which in its white form is a very beautiful plant.

The whole of this lake bank faces west and north. From the west comes the prevailing summer wind, so that we have the advantage of a cooling breeze. In the winter time, however, when the north wind howls and the powdered snow drives in icy mists, this advantage is not so obvious. So I have contrived a spring garden on the south side of the house where there is more shelter and the snow lies deep and warm. This garden occupies a little knoll which is topped by a round stone tower—the home of white Fantail pigeons. By judicious cutting of open spaces and the free use of bulbs among the shrubberies, an effective early spring picture is obtained. This flowering is quickly followed up by others. Here grow many of the western *Erythroniums*, a few of the *Calochorti* (alas, none too persistent), *Fritillarias*, *Mertensias*, *Anemones* and many more. A magnificent native Thorn was rescued from a tangled copse and a pool built about it. Around its sides grow colonies of giant *Osmundas* and *Ostrich Ferns* with *Christmas Roses* in the foreground amid sweeps of *Confederate Violets*.

At the request of several of our members, and with permission of the Royal Horticultural Society, this article is reprinted in part from "Rock Gardens and Rock Plants,"—report of the conference held by the Royal Horticultural Society and the Alpine Garden Society, in London, in 1936. It will be continued in the next issue of The Bulletin.

DROUGHT-RESISTANT SUMMER BLOOMERS

MRS. H. P. MAGERS, Mountain Home, Arkansas

1947 BROUGHT ANOTHER trying summer to the rock garden, as well as all types of gardens. The heavy rains and cool weather continued far into late spring, followed too promptly by heat and drought, causing many of the spring-set, finer plants to shrivel up and disappear in spite of shading and what watering I was able to do with the sprinkling can. However, it showed up the sterling qualities of several new plants. By new, of course, I mean new to this garden.

Among the first were the Midget Sweet Williams. They were in most of the regular Sweet William colors and markings. They grew about six

inches high, in tight little stiff mounds with heads and flowerets the usual size of the garden variety, only sitting snugly over the hummocks until they were veritable piles of flowers for weeks. I tell you these Midget Sweet Williams are gorgeous—I doubt if any rock garden could have too many of them. If only they would bloom all season! When that is brought about, they will be the perfect garden plant. Of course, plants must be raised each year, as this mite of a Sweet William is a true biennial, dying after blooming.

The Baby Snapdragon, Magic Carpet, is another heat-resistant beauty. It is a six-inch plant that spreads to a foot or more in width and is covered with the loveliest of "Snaps," about two-thirds the size of the garden variety and in all the best colors. It bloomed and ripened its seed through the long drought, keeping bright and fresh looking when other plants were ruined. I think Magic Carpet would winter well in this locality, but where winters are too severe for it, it still may be enjoyed, for spring-sown seed will produce blooming plants by late spring or early summer. A striped worm had stripped some of the plants before I noticed them and thought them killed, as it was in the midst of the worst heat spell. However, they leafed out again and continued blooming until near Christmas, when we had our first killing freeze. This tiny Snapdragon is to be one of the "musts" for the rock garden, for it is truly a lovely, cheerful, willing, little plant.

Nierembergias have proved to be faithful bloomers all summer, with their cool lavender flowers spilling over a low rock at the edge of the path. They are very pretty and especially prized as their wealth of bloom is given royally during the slack flower season, when heat and drought cause many to rest. The plant covers about the same space as the "Baby Snaps," though slightly taller. The wide-open saucers of blue-lavender look upward and make a fine display. Nierembergias are never out of bloom until freezing weather.

The Alpine Flax, *Linum alpinum*, has very similar flowers, only of a little truer blue, which it waves about at the tips of delicate nine or ten-inch stems, clothed with fine bright green leaves. The flowers are gone with the warmth of each day's sun, but the delicacy of the plant alone makes it quite attractive, especially as it stays crisp and fresh during the most trying heat.

Though this type of material cannot be considered true rock garden plants, still it fills a very real need, especially in gardens here in the upper south, where a few weeks of summer drought is always a factor to be reckoned with. And these little plants do give color and charm to the study in green which our gardens would otherwise present.

PENSTEMON ARIDUS

CLARA W. REGAN, Butte, Montana

P*enstemon aridus* is a rare Beard-tongue that lives on the bare, dry hills of western Montana. It frequents the soils of broken-down lava flows or clings precariously to outcroppings of disintegrating granite rocks, always on a southerly slope where it can really soak up heat in the blistering days of summer.

In the former situation, the writer is always astonished and intrigued in very early spring (never at first glance recognizing it for what it is) by seeing the green spear-points of its dark leaves form small prickly cushions, which later develop into close rosettes of extremely narrow, stiff, spatulate leaves about one inch long. The midrib is so heavy that the

leaves are depressed in the center and fold forward so that the edges are parallel.

The panicles are on six-inch stems; the individual flowers are one-half inch long and about one-fourth inch across, of a dull purplish color in some forms, but in others a fine bright blue, with a splash of white on the upper portion of the lower lip. Its neat ground-hugging habits and compact form make it an ideal plant for a small scree or a miniature garden.

PENSTEMON ERIANTHERUS

CLAUDE W. BARR, Smithwick, South Dakota

ON THE GREAT PLAINS, vicissitudes of plant life are extreme and the fortuitous series of circumstances that bring to pass a great mass of display of a particular species may long await repetition. Through half a lifetime have I witnessed the enthralling blossoming of *Penstemon eriantherus*



Photo by Claude Barr

A field of *Penstemon eriantherus* in the Black Hills of South Dakota

on its favorite heavy, loamy clay. But it took the year by year thinning of the stand of prairie grasses of the dust-bowl period of the nineteen-thirties, plus a proportionately fair chance for the opportunist *Penstemon* to muster its forces, and this followed by a year or two of more than average rainfall, to bring about the wondrous field of bloom shown in the accompanying picture.

P. eriantherus, after all, seems to prefer a measure of competition and hardship, and then blooms a lovely warm lavender, lit with its large crested tongue of glowing gold. Its common stature is six to twelve inches, occasionally fourteen. The leaves are dark, thick and somewhat hairy, fitted to remain green through a dry and harsh winter. Its soil is well supplied with lime and potash, which may be requisites. But anything in the way of ease or rich living is a danger, bringing a lengthening of stems, a smudging of its fine color, and often a quick demise.

What of the sequence of the climactic field of the picture? In only a year or two with abundant moisture, the neighbor grasses had crowded in amazingly, bringing detrimental shading. And it is no trick at all for this *Penstemon* under stimulus to make a lush growth with many stalks of

blooms, set a heavy crop of seed, exhaust its moisture supply and fail, for there is always a dry period in any Plains summer. Moreover, since it is known that some very exacting plants, namely legumes not native to the heavy soil, can thrive in it with moderate moisture but perish with prolonged wet, it is probable that the usually adequate drainage may have fallen down at times for the *Penstemon*. Such a contingency may be met in the garden with scree. Now on that slope are to be found only scattered plants, while numbers would surely have carried on to the present, granted a continuing moderate dust-bowl.

PENSTEMON ALBIDUS

CLAUDE W. BARR
Smithwick, South Dakota

ONE WHO DELIGHTS in Farrar is dismayed to realize that in certain species, often American, he has not, unfortunately, met with the best representatives. From him, *Penstemon albidus* gained only a brief half line: "*P. albidus* is a dullness of no merit."

Truthfully, *P. albidus*, though not without attractive points, often has blackish throat lines, purple-black anthers and even at times a reddish green calyx, all showing through a not too definitely white corolla.

But at its best, how different, how wonderfully fresh and white and perfect a thing, as pictured below a certain chimney butte in the not-so-bad Pine Ridge, a portion of the South Dakota Badlands. Spikes are closely packed with large flowers, wide lobed, altogether admirable, and six to sixteen inches tall. Basal rosettes are more or less evergreen and have a certain effect of gloss, though rough to the touch.

P. albidus' preferred soil is a lean silt loam. In its native dry climate range, too heavy or too sandy soils are avoided, as it does not endure extreme drying out. In the garden, it is best suited in a similarly fine-textured loam, unquestionably well drained by the aid of gravel or chips and not rich.

As with the wide field of *P. eriantherus*, only occasional plants were to be hunted the past year below the chimney butte where vast numbers once stood. And in like manner, no doubt, have a few plants tided the species over trying periods, since *Penstemons* have dwelt on the Great Plains.



Photo by Claude Barr
Penstemon albidus

MONTANA CACTI

FRANK H. ROSE, Missoula, Montana

MONTANA HAS SOMETHING of a reputation for lonesome men and chilling blizzards. You may not be able to love either but must admire certain of their qualities. So it is with Montana Cacti. As with the men and weather, they are not softies. Thermometers may freeze and break but come spring, the Cacti will put out new growth and flowers. Unmindful of cold, sun, wind or drought, these uncomplaining frontiersmen rebel only when you serve them water.

Montana Cacti are few in number. Two *Opuntias* and two of the ball or pin-cushion type make up the list. Briefly, as become western biographies, they are:

Opuntia polyacantha, alias Prickly Pear, a flat leaf (stemmed) species with long reddish brown spines and short eager bristles. Its fine yellow flowers perch along the tops of stems to be followed later by greenish pears. The stiff spines give protection from all but fire and rodents, and as new stems are added and the old ones retained, eventually a sizeable patch is formed. The dirt roof of an old cabin is about right for culture.

Opuntia fragilis is smaller. It has short, rounded cylinders for stems joined end to end. The short uppermost one breaks off readily, often attaching itself to the clothing of a careless wanderer and suggesting the common name of Jump Cactus. The barbed spines and bristles are short but vicious. It duplicates in pale yellow the flowers of the larger *Opuntia*. While sometimes found with *O. polyacantha*, it often goes further into the mountains along sunny, rocky slopes, indicating that with drainage it will tolerate more rainfall.

Coryphantha vivipara, of the ball or pincushion type, with bright purple flowers and pale green fruits, arms each tubercle with three or four reddish brown spines surrounded by a dozen or more shorter white ones. It is at home in a blue grama sod; that is, in a good but dry soil. *Coryphanthas* are not as aggressive under civilization as are the *Opuntias*, so are no longer as abundant. As found, this one is usually single stemmed or two or three together, but may develop under favorable conditions into a considerable cluster.

Coryphantha missouriensis (*Neobesseya missouriensis*) is shy, often nearly hidden in the sandy soil it seems to prefer. It could be confused with the purple-flowered one above, but lacks the stiff central spines. Its soft white ones offer little protection, so it may find safety in shyness. In season, it circles its top with straw-colored flowers, not very conspicuous, which are replaced the following spring with brilliant red fruits—attractive to whatever bird or animal this Cactus depended upon for seed dispersal before seed catalogues were published.

Four species may not be adequate for an inventory, but if your wants are simple or your climate severe, a quite interesting desert can be had by choosing from these sub-zero hardy types.

FOUR NATIVE IRIS OF NORTHERN CALIFORNIA

MRS. OSCAR L. NELSON, Orick, California

NATIVE IRIS of northern California in a fifty mile radius of the Oregon border offer a challenge, both from the standpoint of classification and culture. I had grown them in my garden in Washington, but not under the conditions under which I have since found them in their native haunts. They are not widely known. There seems to be no established work on them and such a wide variation occurs along the coast as to indicate that, perhaps, many which are called "native Iris" are different entirely and not classified. Again crossing may be the answer—but lovely they are. *Iris tenax*, *chrysophylla* and *innominata* are hardy in a climate as low as 60 degrees below, if they have snow cover, for I have grown them. But here, they seem to want humidity and more water.

Iris chrysophylla with its leathery, semi-evergreen foliage is delightful, growing as it does along the road and under the open trees. It is loveliest in light shade where leafmold is added as a topping by nature. I have found it here in damp places and again in hard-packed roads. It

takes what comes, it seems, and never loses daintiness. I have found it in a pale blue, almost white, with deeper veining and just an occasional creamy one ribbed with sepia or violet. Its height is about six inches, with four for the bloom stalk. *I. chrysophylla* blooms from February to May.

Iris douglasiana or the Redwood Iris is a strong grower, eighteen inches high, and covers a range of colors, from white through blues, mauves and purplish tones. The bloom is large and carried above the abundant wide, deep green leaves and is flatter in shape than the others. A heavier feeder constantly replenished by falling leaves, *I. douglasiana* probably likes some acid. It comes easily from seed but is not a subject for confined areas. This is a lovely Iris.

Iris innominata, dainty and perky and often temperamental, offers quite a challenge. It resents spring division but doesn't mind late fall disturbances. It forms clumps, responding to leafmold and bonemeal. The foliage here is semi-deciduous; in northern gardens, where it is cold, the foliage is almost entirely deciduous. It must have drainage and yet, just



Iris tenax and *Primula cockburniana* in the Fl. Cleveland Morgan rock garden.

lately, I have found *I. innominata* growing on the face of a rock with *Trillium rivale* and *Pinguicula*, where the water pours down over it and stands in puddles around it. But, certainly, a summer baking is indicated there. It does prefer an open, sunny location. The leaves are grassy and leathery, and the blooms are of the richest orange-golden, veined with dark brown, or of pale blue to violet veined with deeper violet. *Iris innominata* is one of the choicest and worth any bother.

Iris tenax, a dainty elf-like subject, grows just about everywhere. It seems to be most attractive under very open shade. I found it close to the Oregon line in the Siskiyou's last spring, growing where water stood on it and mixed in a meadow of scattered Pines, with *Viola cuneata*, *Ceanothus* and *Dodecatheon*. It grew at the edge of a stream and under the trees with equal happiness. The color was predominately buff with brown

markings and the characteristic white patch with the golden spot on the falls. There were pale blues and deep purplish blues, too, and they danced through the meadow on their wiry six-inch stems, surrounded by their grassy foliage which was left over from the previous year. The new leaves were just coming through, for it was in early March that I found them. This meadow must bake in summer. The Klamath Indians make a fiber from this Iris for weaving into rope, with which to snare elk and deer. A rope the size of the small finger will hold a strong bullock—hence the name, *tenax*, or tenacious.

RAISING ROCK PLANTS FROM SEED

STUART BOOTHMAN, Maidenhead, England

THE MAIN reason why so many rock garden plants can be successfully raised from seed is that most are wild plants from some part of the world and, because of this, breed quite true to name. A few sorts, such as *Aquilegias*, need some degree of isolation lest they hybridize. In most cases, however, a distance of a few yards is sufficient to prevent cross fertilization.

Much has been written about sowing alpine seed immediately it is ripe. But this is not necessary and may, in some cases, be dangerous—the seed may germinate in the fall and the resulting seedlings be too frail to withstand the winter. I have lost many seedlings this way and now reserve early sowings only for *Primulas*, *Gentians* and those plants which ripen their seeds before the end of June (mid-July in cold regions). These include *Cyclamens*, *Narcissi*, *Hellebores*, *Pulsatillas* and *Kabschia Saxifrages*. The remainder, I sow in November or December and expect them to germinate in March or April. Seeds of bulbous plants may, however, delay their appearance until the natural growing season of the bulb. Thus *Daffodils*, if sown after August, may not peep through until the following August.

Whilst anticipating results, interest may be sustained by testing the theory that seeds of plants from dry, hot regions (parts of California, North Africa) germinate swiftly and that seeds of plants from high mountains (Pike's Peak, Matterhorn or the Himalayas) and most woodland plants are slow in appearance and usually await the lengthening days of spring.

Except for seeds known to be tender, cold conditions are more satisfactory than a warm greenhouse, for the alternating frost and thaw have a beneficial effect, especially on *Gentians*, *Androsaces* and high alpine *Campanulas*. A tall airy house is preferable to a close, airless house or frame. I arrange for a draught of air to pass over the pans, keeping the surface dry which prevents the seedlings from damping off and also prevents moss from growing and choking the wee seedlings.

Seeds are sown in shallow boxes or in pots about seven inches wide and three inches deep. A piece of perforated zinc covers the drainage hole to prevent worms from getting in. I use about half an inch of pebbles and fill to half an inch of the top with a compost (sterilized, of course) of two parts fine loam, two parts sharp sand and one part of peat moss. I sow the seed as thinly as possible and cover it, not with compost, but with the sharp sand to a depth of a quarter inch for fine seeds and more for larger seeds. This dressing also prevents damping off and moss.

Under cool, airy conditions few troubles need be expected. But I am always on the alert for thrips (nicotine or DDT is the remedy) and slugs. For the latter, a lamp and a pair of scissors provide ample punishment for their crime.

WESTERN WATER DABLERS

EDITH HARDIN ENGLISH, Seattle, Washington

FORTUNATE IS THE alpine enthusiast who has a thirst-quenching little stream to trickle through his rock garden. Such a feature makes possible the inclusion of many delightful and unusual plants which, in their native habitats, are wont to have their roots cooled and refreshed by an icy mountain rivulet.

The mere mention of a mountain rivulet calls to mind a lush meadow, high in the Olympics, where *Caltha leptosepala*, one of our white-flowered species of Cowslip, thickly sprinkles its blossoms along the grass-hidden course of a little stream. In fact, so fond is it of water that it actually grows in the stream bed. Upon close examination, the flowers are seen to resemble quite closely some of the Anemones, even to the soft blue backs of the sepals. Like so many members of the *Ranunculaceae*, they depend upon the sepals, rather than upon the insignificant petals, for their attractiveness. A second and equally desirable member of this genus, also found in the mountains of Washington, is *C. biflora*. These two-white flowered species may be distinguished by the fact that *C. leptosepala* has heart-shaped leaves that are longer than broad and *C. biflora* has kidney-shaped leaves broader than long.

Occasionally growing with these species of *Caltha*, we find the lovely *Trollius albiflorus*, or Globeflower, a plant that is worthy of recommendation for use in wet places because it stands up so firmly and displays its large white blossoms on such substantial stems. The fact that it is not common makes us appreciate its beauty all the more when we do find it.

The Primrose family offers us several water-loving plants in the genus *Dodecatheon*. It is a pleasing sight to see *D. dentatum*, a dainty, fairy-like, little Shooting Star, growing along a mountain brook, its ethereal blossoms reflected with intricate perfection in the quiet pools. As the name suggests, its leaves are noticeably toothed, and its flowers are pure white, normally, rather than being so by albinism which is a common occurrence within this group. In cultivation, *D. dentatum* thrives and produces an abundance of flowers if given shade and plenty of moisture.

Should we desire color, rather than white daintiness, it may be found in the robust, violet-rose blossoms of *Dodecatheon jeffreyi*. A number of strains of this species occurs within our region. However, for use along a rock garden stream, it is wisest to select those with short, stout stems. A novel relative is *D. tetrandrum* which has four petals in place of the usual five. Such true water-loving plants should not be confused with the arid land species of *Dodecatheon* that we find on the prairies and on the hills of eastern Washington. These are suitable for drier parts of the rock garden but they would not display any degree of contentment if planted with their feet in water.

Massed color effect along a water course may be obtained by planting *Mimulus lewisii*, the Pink Monkeyflower, which produces blossoms so

generously. In our Cascades, it forms billows of soft rose along streams and over the deltas adjoining lakes. In order to grow successfully in our gardens, it needs a place that will offer similar conditions. The flowers are somewhat like those of a Snapdragon. Long ago, Linnaeus thought he saw in these open-mouthed blossoms the grinning face of a buffoon. Thus, we have the generic name, *Mimulus*, meaning a little mimic. In turn, the countenance of the mimicking actor was likened unto the grimacing faces that we see at the zoo, and the unfortunate common name, Monkeyflower, was wished upon this showy and attractive plant.

Several colorful, golden-flowered species of *Mimulus* also are desirable. Discarding the tall, coarse, rank-growing kinds, we may choose such diminutive members of the group as *M. primuloides* which forms low, compact mats in the wet places, or *M. tilingii*, the Alpine Monkeyflower, which hangs its bright yellow blossoms directly over the water.

Two native members of the Saxifrage family are especially useful in places where larger, taller growth is needed. *Saxifraga arguta* is valued for its rich foliage, the leaves being of generous size, round and prominently toothed. The white flowers are small, but are formed in lacy sprays. A unique plant which grows well at the edge of pools or on the banks of streams is *Peltiphyllum peltatum*, a native of Oregon and California. As the name suggests, the handsome big leaves are formed as are those of the Nasturtium, in the peltate manner, that is, with the petiole attached to the center of the leaf. The entire plant has a reddish cast and the flowers, borne on stout, upright stalks, are rosy pink.

For amusement, as well as for attractive coloring, *Pedicularis groenlandica* var. *surrecta*, is heartily recommended. The finely divided, fern-like foliage is attractive in itself but the slender spikes of rose-colored flowers are even more so. Upon close examination, each flower is seen to resemble the head of a miniature pachyderm, complete with curled trunk and flopping ears, thus giving rise to the common name, Elephant-head. This, truly, is a case of pink elephant.

If the trickle through the rock garden is encouraged into talkativeness by a waterfall, we may be looking for a plant that grows happily among spray-washed rocks. A most suitable and desirable subject for this type of planting is found in *Romanzoffia sitchensis* which dabbles its leaves and blossoms, rather than its roots, in the water. This is a member of the *Hydrophyllaceae*, or Waterleaf family, with rounded leaves and delicate white flowers. It is the type of plant that suggests the thought of verdant coolness. To be most effective, it should be planted sparingly. In its natural habitat, it is found not in masses but rather occasionally, giving the jewel-like appearance of something precious placed in a simple but classical rock and waterfall setting. This scheme of simplicity for effectiveness, seen so often in nature, is worthy of our study and equally worthy of incorporation in our rock garden plantings.

ROCK GARDENING AT FERNGLEN

MABEL E. TURNER, Antrim, New Hampshire

THE FERNGLEN rock garden was started twenty years ago on an old abandoned farm in southern New Hampshire. The little old Cape Cod cottage was situated on a ledge, which sloped to the north, south and east with a large outcropping at the north. Large boulders of conglomerate rock made up the background, with an underplanting of blackberry bushes and weeds and occasional Sugar Maples and White Birches. Deep pockets of humus and leafmold, the accumulation of ages, made this the ideal spot for a rock garden.

The southern exposure was developed first and gradually, as the years have passed, it has grown to include the entire expanse of the rock strewn area. In the main, the rocks were left where nature placed them with only an occasional addition to stop the wash. To make it easier to get into the garden, rock steps were made and paths encircling the entire area. Underground water seeps down from springs higher up the hill, and a background of White Pine gives protection from blasts from the north. The garden is one thousand feet above sea level with a neutral to acid soil. So it would seem that conditions were ideal for growing most rock garden plants.

Plants have been selected which would grow best under the varying exposures and add the greatest beauty over the longest period of time. Today, from the time the snow melts in the spring until it covers the garden in the fall, there is beauty. Beginning with Drabas, Alyssums, Arabis and Aquilegias, each week sees new beauties added through the garden year.

Rock garden enthusiasts and garden members have come to the garden in greater and greater numbers for inspiration and help. Indeed, so

(continued on page 70)



Photo by Bernice B. Perry

Steps through part of the Fernglen rock garden.



THE AMERICAN ROCK GARDEN SOCIETY

TREASURER'S REPORT

May 1, 1947 to May 1, 1948

Balance on hand May 1, 1947	\$1,419.24
INCOME	
Dues	1,668.50
Bulletin	153.25
Binder	1.00
Meetings	171.50
Total Income	<u>\$3,413.49</u>
EXPENDITURES	
Bulletin	\$1,021.49
Salary	452.56
Postage	133.62
Stationery	53.50
Rent	55.00
Telephone and telegraph	9.93
Regional apportionments	42.00
Meetings	169.34
Seed Exchange	17.15
Insurance	5.75
Miscellaneous	61.35
Bank service charge	7.12
	<u>2,028.81</u>
Balance on hand May 1, 1948	\$1,384.68

MRS. GEORGE F. WILSON, *Treasurer.*

YOUR PARDON, PLEASE!

In spite of what was thought to be very careful proof reading of the May-June issue of the Bulletin, a number of typographical errors appear therein. We all know, of course, that Mr. and not Mrs. Harold Epstein was elected president of our society; that show-flowering should read slow-flowering; that wooly is correctly spelled woolly; that *Scutellaria* is the proper way to spell *Scuteclaria*; that *A. var. kurilensis* should be written in this manner and not as it appears on page 41. The editor sincerely trusts that these and other typographical errors did not too greatly mar the pleasure of reading the May-June issue, and she feels safe in saying the printers will watch her correction marks more closely hereafter.

SEED EXCHANGE: Mrs. L. D. Granger, director, announces she has received the following seed for distribution and will gladly mail same to members on request, accompanied by stamped, self-addressed envelope. Mrs. Granger's address is Warren, Mass.

From Mrs. Doretta Klaber, Quakertown, Pa., *Anemone pulsatilla*, *Antennaria dioica rosea*, *Draba armata (longirostra)*.

From Mr. B. O. Mulligan, Seattle, Wash., *Petrophytum (Spiraea) hendersoni*.

This department enjoyed a very successful year, as reported in the last issue of the Bulletin. Plan now to save your surplus seed for the Seed Exchange and send it to Mrs. Granger, so that we shall continue to have a goodly supply of seed for distribution among our members.

"DID YOU KNOW?"

That amber is the fossil resin from *Pinus succinifera*, an extinct species.

That the leaves of *Umbilicus spinosus*, *Sempervivum acuminatum*, and *Acanthophyllum*, as well as many grasses, Pines, and species of *Yucca*, are usually crowded thickly together and project from the center in all directions in a certain rigidity, terminating in a sharp spine, acicular (needle-shaped). These sharp spines or needle-like leaves are used as tools, utensils and as needles for many purposes.

That the ancient name for the field Daisy in England was Day's Eye, according to Ben Johnson, probably because it closes its petals at night.

That the garden snail travels at the rate of twelve feet per hour.

FLORENS DEBEVOISE, Greens Farms, Conn.

ROCK GARDENING AT FERNGLEN

(continued from page 68)

many questions and problems have been presented that it was decided to offer the facilities of Fernglen Workshop in the hopes of giving encouragement and help to any who might care to enroll. Problems in construction, propagation, planting and soil conditions are discussed. Many are interested in identification of species and varieties of alpine plants, and hybridization. Garden clubs are invited to hold their summer meetings at the Workshop and many have availed themselves of the opportunity. Mornings are given over to inspection of the garden, and the afternoons to lectures and demonstrations in the laboratory. Individual members may come for intensive study to any one or all the three two-week sessions of the Workshop.

Many hours of hard work have gone into the making of the garden, but they have been filled with happiness. The garden is not finished, for there are still many plants to be tested and much hybridizing to be done. To be able to share the twenty years of happy work with my garden friends is the greatest joy of all.

Miss Turner, who is the director of the Fernglen Workshop of Biology and Nature Study at Antrim, New Hampshire, has been a member of the American Rock Garden Society since 1937.

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Erigeron trifidus	Penstemon nitidus polyphyllus
Erigeron compositus	Penstemon caelestinus
Senecio canus	Douglasia montana
Delphinium bicolor	Cryptogramma acrostichoides

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