

BULLETIN

of the

AMERICAN ROCK GARDEN SOCIETY

including

SAXIFLORA

Vol. 4

September-October, 1946

No. 5

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SOME ALASKA WILD FLOWERS

MAXCINE WILLIAMS, Juneau, Alaska

ALMOST two hundred and five years ago Georg Wilhelm Steller, naturalist, made the first botanical collection in the newly discovered land of Alaska. And Vitis Bering, Captain of the expedition, only allowed him six hours ashore after that long and dangerous voyage! What a terrific disappointment! What a sense of great loss must have been Steller's! But despite this restriction he managed to collect one hundred and forty-one species from this new land in that short time.

Since his time the collecting and studying of Alaska's flora has progressed slowly, with usually great time gaps between collections. But all the information so far, with very few exceptions, has been published in scientific papers and the layman of today is almost as ignorant of Alaska's flora as was Steller when he set foot on Kayak Island in July of 1741.

Alaska's flora may be roughly divided into three climatic types, because of the great distances covered. The wet, heavily timbered coastal strip, from Southeastern Alaska to the east side of Cook Inlet, is occupied mostly by Sitka Spruce (*Picea sitchensis*), Western Hemlock (*Tsuga heterophylla*) and Alaska Yellow-cedar (*Chamaecyparis nootkatensis*). Above timberline, in this strip, however, true arctic-alpine conditions prevail, somewhat similar to those of the shores of Bering Sea. In the southern end of the strip, around Ketchikan, the winters are mild with little or no snow on the ground at sea level all winter. As you go northward the snow cover is progressively heavier and stays on longer. The Prince William Sound area of this strip has some very heavy snowfall that lasts all winter.

The second type would be the higher Interior river valley and plateau country, with light rainfall and almost continuous sunshine in the summer and long cold winters with complete snow protection. The forests are composed mostly of White Spruce (*Picea glauca*), Black Spruce (*P. mariana*) and Paper Birch (*Betula papyrifera* var. *alaskana*). The high mountains of this region have arctic-alpine conditions and a most interesting meeting of eastern and western species. For some plants of the Rocky mountains and some from Asiatic hills can be found mingling together.

The third type is the Coastal strip extending from the Alaska Peninsula out through the Aleutians and up the Bering Sea region to and including the Arctic coast. This is the treeless area, with only small alders or willows in scattered localities. The Bering Sea section has fairly sunny summers and moderate snowfall that stays on all winter. The Aleutians and Alaska Peninsula are more like the first zone except that they have no forests. The flora of the Aleutians comprises a blend of some plants from southeastern Alaska, some from Siberia, some from Bering Sea region and a few species that are indigenous. The Aleutians usually have a wet summer, as disgruntled ex-G.I.'s can feelingly testify, and a snow-cover all winter.

But no hard and fast rule can be made as to just where you can find such and such a plant, as zones of vegetation due to altitude are not nearly so clearly defined as they are in the States. You can find some arctic-alpine plants growing at sea level almost anywhere in Alaska, and yet you could look in vain for some plant that normally you would expect to see in such and such a location. Alaska is full of surprises!

Most Alaska plants like and need plenty of water. Even the alpiners, especially in southeastern Alaska and the Aleutians, get an excess of water, although drainage soon carries it away. So to make our plants happy in rock gardens, provide a never-failing supply of water, and shade on the hottest days.

Some of our finest alpiners are of the Saxifrage genus. The "Dotted Saxifrages" are two cushion type plants bearing many cream to yellow colored flowers with orange or brick red dots. Flower-stems are one to three inches tall with small stem-leaves often colored red. They look much alike; however, *S. tricuspidata* has basal leaves with three sharp spine-tipped points and its flowers are paler; *S. bronchialis* var. *funstonii* has only one sharp spine-tipped point to the basal leaves and its flowers are usually a deeper yellow. These are found from sea level to the rocky knolls above timberline and widespread throughout the territory.

Red Moss or French Knot Moss (*S. oppositifolia*) is a very early-blooming plant found on rocky cliffs from sea level to above timberline. Its tiny leaves are densely crowded, opposite and rather fleshy and the single rose-magenta flowers are borne on the ends of the stems. It makes a neat cushion, usually, but is sometimes marred by winter damage.

Saxifraga bronchialis var. *funstonii* has yellow petals
sprinkled with brick-red dots.

BY MAXCINE WILLIAMS



A lovely deep yellow saxifrage of the Rocky mountains that grows abundantly in the Bering Sea region is *S. flagellaris*. This prostrate plant has runners like strawberries and the blossoms are very large for the size of the plant. Its basal rosette-leaves are spine-tipped and the flower stems are hairy. Another buttercup-yellow saxifrage (*S. serpyllifolia*) of the Aleutians and Bering Sea area with a huge blossom, is a tiny thing one or two inches tall. This may only be because of the arctic conditions under which it grows, however. *S. hirculus* is a similar yellow flowered plant with broad basal leaves, linear stem leaves, and red woolly hairs on the stems; it grows up to five inches tall.

Some of the taller saxifrages that are good in our gardens are: *S. punctata* with long-stemmed basal round scalloped leaves about one inch broad, and tall naked flower stems (12"—18") with many small white flowers in a loose airy cluster; *S. rivularis*, from three to seven inches tall, basal leaves five lobed, flowers white on naked slightly hairy stems. There are also closely related species or varieties of the above two, found in various parts of the territory. No doubt still other species will prove desirable rock garden plants when our flora is better known. Thus far 29 species of Saxifrages have been reported in the territory.

Looking much like saxifrages, but no near relative, are Mist Maids. Two species are found here with only minor differences, *Romanzoffia sitchensis* and *R. unalaskensis*, their specific names telling you where they were first found. They are coastal plants and as their common name indicates love the wet weather. The leaves are basal, rather long stemmed, round and scalloped, while the flower stem is from three to six inches tall

White flowers with yellow centers are borne by the Mist Maids.
This one is *Romanzoffia sitchensis*.

BY MAXCINE WILLIAMS



with a few, white, five petalled, terminal flowers having a yellow center. Leaf and flower stems are often dull reddish purple as is the underside of the leaves. These most charming plants make nice solid clumps in the garden, bloom a long time, and enjoy a wet rock wall.

Pixy Eyes (*Primula cuneifolia* var. *saxifragifolia*) are alpine jewels of the coastal mountains from around Juneau to the Bering Sea. The basal, wedge-shaped, toothed leaves, about one inch long, hug the ground; and the rose-magenta flowers, with the yellow "eye," are seemingly without stems when they first come up in the spring. But before the first flower in the terminal cluster fades, the stem begins to grow and reaches a height of two inches by seeding time. Later in the summer they seem to have more stem when they first come up. There is a white form on Attu Island and perhaps elsewhere. The above description applies to the plants found on the bare knolls at Juneau; when they grow in grass, as is more usual to the westward, the stems are longer, up to five inches. Pixy Eyes bloom very early and continue over a long period.



BY MAXCINE WILLIAMS

A dweller on the mountain tops is *Campanula lasiocarpa*.
Corolla-lobes light blue with darker central stripe.

Another dweller on the mountain tops is *Campanula lasiocarpa*, the Alpine Bluebell. The plant consists of a basal cluster of leaves, $\frac{1}{2}$ to 2 inches long, a single stem which varies in height from seemingly zero to three inches, surmounted by a huge blue bell at least one inch long and having a wide open throat $1\frac{1}{2}$ inches across. Down each petal from the tip is a darker stripe of blue. (Actually we have few really blue flowers as they mostly have more or less of a hint of lavender in them.)

Polemonium pulcherimum is usually found festooning some cliff or happily sitting in the stone chips at the cliff's base. Its light lavender-blue flowers, with the yellow center, are borne profusely on long stems above the gray green pinnate leaves. There is a pure white form that I know of, growing with the blue, in one locality in southeastern Alaska. This comes into bloom at Juneau in the later part of May or first of June. In local gardens it makes nice big clumps and blooms for nearly a month.

Giving an effect of deep moss as it creeps over rock or scree, the Alaska Spirea (*Luetkea pectinata*) is equally at home in our rock gardens. The "mossy" look comes from the thin, light bright green leaves that are closely whorled on the short erect tips of running stems. The leaves are deeply cut and resemble little outstretched hands, or maybe stag horns. The cream colored flowers are borne in a terminal raceme on two to four inch leafy stems. The basal foliage and stem leaves often become red or red-tipped and make a most attractive picture.

Of most value as a ground cover under evergreen, or in a shady place, is the lovely, ferny-leaved Gold-thread (*Coptis asplenifolia*). Its evergreen, dark, shiny leaves are tri-pinnate, basal, on long slender stems, while the odd greenish-yellow flowers come up very early on naked, erect, two to six inch stems with usually two flowers to each stem.

Some of our native poppies should prove interesting. There is a small pale pink species found only around Seward on the Kenai Peninsula, *Papaver alboroseum*. It is reportedly common on Kamtschatca Peninsula



BY MAXCINE WILLIAMS

Originally found at Juneau was *Ranunculus cooleyae*, an early blooming dwarf buttercup with sweet fragrance.

in Siberia. The Bering Sea has two lovely deep yellow poppies, *P. macounii* and *P. alaskanum*, both somewhat like *P. nudicaule*. A peach colored species and a white one with pink border have been reported.

For those who love orchids we have a lovely endemic, *Orchis aristata*, found from Prince William Sound out through the Aleutians, where in some places it is almost as common as the grass! The leafy, single thick stalk is from six to eighteen inches tall; the leaves are broadly linear and the flowers, borne in a terminal raceme, vary from almost cream white to deep dark rose. Those who have seen this orchid say it is a beauty.

Originally found at Juneau by Miss Grace E. Cooley in 1891, was *Ranunculus cooleyae*, a very early-blooming dwarf buttercup with strap-shaped petals and a sweet fragrance most attractive to the early insects. It blooms about the same time as the purple crocus in the garden, and makes a pleasing combination. This species is ordinarily found above timberline.

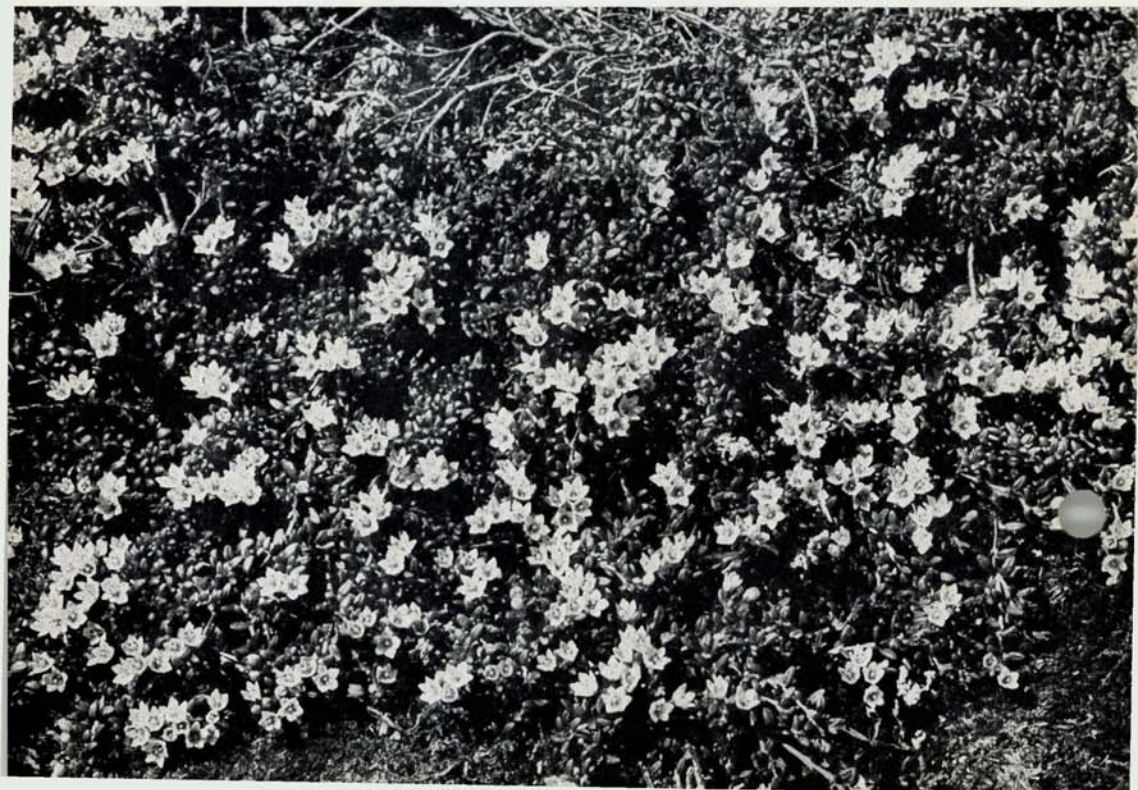
Under arctic skies is a lovely Anemone that the G. I.'s in the Aleutians called a narcissus! This is understandable, for the flower's name is *Anemone narcissiflora*, because the white sepals have the beautiful sheen of narcissus petals. It is not always so beautiful in the garden as in its wild state, for it may lose that lovely sheen. A large plant, twelve to twenty-four inches tall, growing in clumps, the white flowers borne in clusters of three, usually, with a collar of leaves subtending the inflorescence. The whole plant is more or less silvery-hairy and the farther north it gets the more "wool" it puts on. This is a coastal species found from southeastern Alaska to the Arctic ocean, and is divided into several sub-species in the far north. It blooms in early summer and usually lasts about two weeks. A low-growing, yellow-flowered Anemone that looks very much like a buttercup, is *A. richardsonii*. Blooms very early and is soon gone. A lovely low growing white Anemone with blue-purple backed sepals (*A. parviflora*) promises to prove a real garden find. It is common all over Alaska.

Prostrate Azalea (*Loiseleuria procumbens*) has proven at home in Alaska gardens, given poor soil and a place to spread. This ground-hugging shrub has tiny evergreen leaves less than $\frac{1}{4}$ inch long and bright pink open chalicees about one-fourth inch across. This species is found on the seemingly bare knolls around Juneau, but to the westward it grows with other ericaceous plants on exposed slopes.

There are many, many others I could tell you about such as *Sedum integrifolium*, *Sieversia calthifolium*, *Geranium erianthum*, the Pyrolas, the Dodecatheons, *Gentiana platypetala*, *Parnassia fimbriata* and *Potentilla villosa*. But the descriptive notes presented will give you some idea of a few of our plants, which may like your rock garden.

Prostrate Azalea, *Loiseleuria procumbens*, has tiny evergreen leaves and bright pink open chalicees.

BY MAXCINE WILLIAMS



MIDLAND NATIVES FOR ROCK GARDENS

HAROLD ALBRECHT, Belle Plaine, Minn.

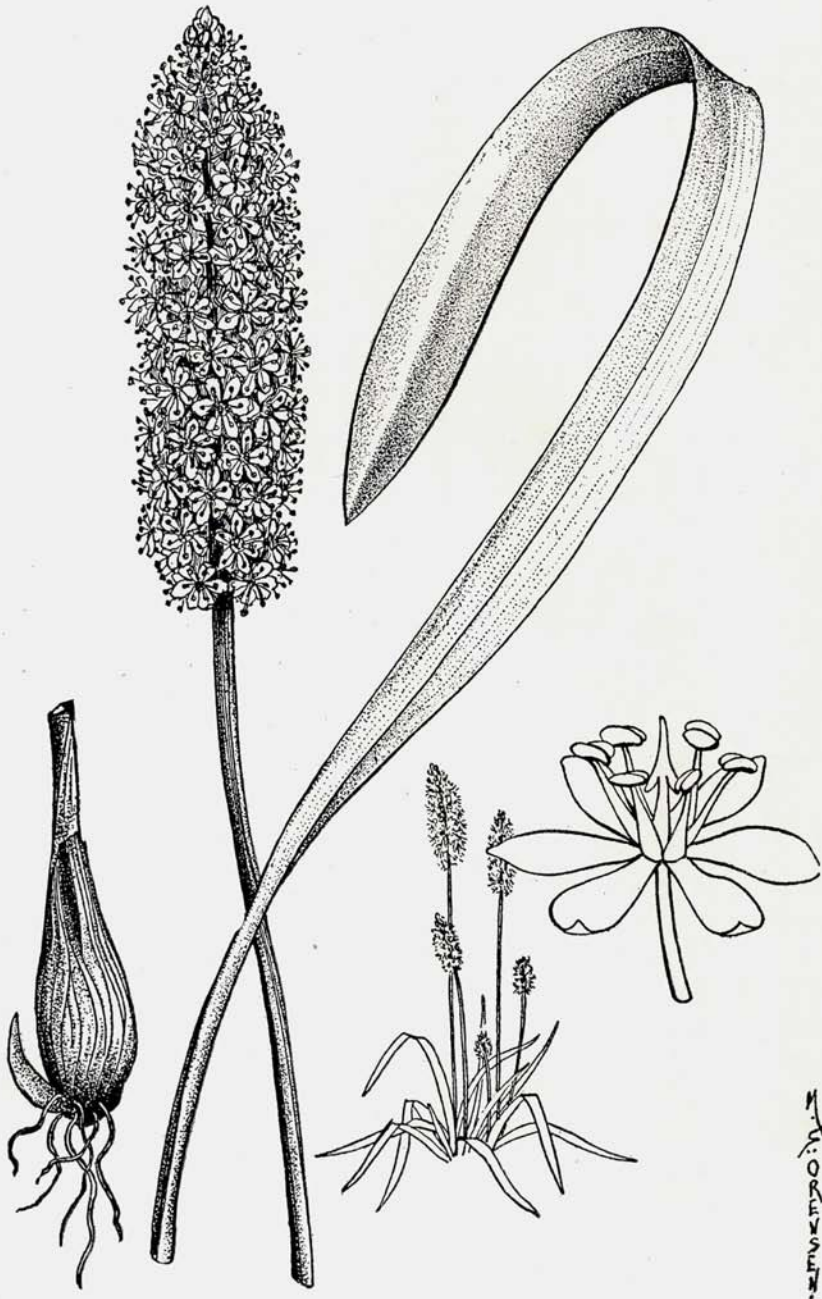
THERE are hosts of beautiful plants to be had from the dealers, but for those of us who like to experiment, there are many species growing wild on rocky or grassy hillsides of the north-midland states which are well worth trying.

One of the choicest things I know in this line is the Many-rayed Anemone—named *A. caroliniana* because originally discovered in North Carolina, although its chief range is further west. It thrives on the tip-top slope of one of my garden hills. There, in the springtime, from the greenery of its earth-close leaves, arise lovely round blooms. They range in coloring from white to delicate lavender and to a fairly strong bluish hue. Here, atop my hill, they make a gay island of flowers, tumbled over by bees, neat and trim, respecting the rights of other plants, quarreling with none. These frail yet sturdy blossoms have a choice perfume, one you may sniff to the very depths of their goodness, and still find sweet. Then, after the flowers have turned to seed, the leafage dies away, to come forth green again in the Fall. On the surface of their plot I have strewn brown rusty bits of rock and cinnamon-colored “rotten-stones” which are found here in dry creek beds. The effect is attractive, and compensates for the lack of summer greenery. The underground system of this species is a small corn. Plant these generously, and you will never regret having an oasis of this hardy beauty in your rock garden.

Next I would mention the Squaw-weed, to which botanists have appended the somewhat harsh-sounding appellation of *Senecio pauperculus* var. *balsamitae*. To me the leaves are especially appealing,—they are bright green above and surprisingly purple beneath. In late February or early March, after the winter's snows have melted, this gay purple hue yields a warm surprise to eyes hungry for a sight of a bit of Nature's color. Later the plants flower in a little burst of yellow and brown daisies, each one gaily alight. Like the Anemone, they are low growing and home-abiding. They should be given lean soil, sharp drainage, and plentiful sunshine.

By way of contrast there grows nearby a little rug of the silvery-leaved Ladies'-tobacco, a species of *Antennaria*, perhaps *A. plantaginifolia*. Its herbage is as pure Rogers, or new-minted coinage, as you prefer to fancy. This plant may tend to ramp a bit, although its ground-hugging stems are easily controlled with a pair of shears. In early spring it bears fluffy tufts of grayish flower-heads, not so much in themselves, yet excellent in overall effect. Everyone admires this silver carpet.

A special favorite of mine is the Silky Puccoon, *Lithospermum canescens*. It delights in lean sandy soil, and usually remains small-waisted, although sometimes spreads into a goodly circle. But you will not complain at this,—rather you'll thank your stars, when you see the lustrous orange fire of the blossoms. And their odor, too,—for choicest vanilla seems to have been poured into their gleaming throats. Because of its rather tall habit, this lovely native should be planted behind lower-growing species. How curious it seems that so few dealers ever offer this charming plant, or for that matter, other midland natives suitable for rock gardening.



Scilla sinensis

Originally published as Plate 8 on December 31, 1938

SCILLA SINENSIS

THIS SPECIES occurs in Japan, and is said to be common in the vicinity of Canton, China, whence it extends along the coast of China, and northward to Peiping, as well as in Szechuan Province.

Scilla japonica Baker must be included in the synonymy of *S. sinensis* Merrill. The two names are founded, respectively, upon *Ornithogalum japonicum* Thunberg and *O. sinense* Loureiro. Type specimens of Thunberg's and Loureiro's plants, preserved, respectively, in Uppsala and in the Paris Museum, reveal no specific difference. While Thunberg's specific name, *japonica*, is the older, it is not tenable, today, in the genus *Scilla*, because Thunberg, himself, applied the binomial *Scilla japonica*, in 1794, to a different plant, now known as *Heloniopsis japonica* Maximowicz.

From available herbarium material, as well as from illustrations, it appears that the species varies much in stature, ranging from about four inches in height (above the ground) to two feet. Also, the shape of the raceme varies from cylindrical to conical.

While squills are commonly thought of as bearing brilliantly blue flowers in earliest spring, our plant is one of a number of interesting, late summer-flowering species with rose-colored flowers. In *S. sinensis* they are small and numerous, crowded into a dense raceme like a bright rose bottle-brush, on erect stalks, somewhat over a foot high in our garden.

This species is little known, and not often found in gardens; yet of the easiest culture, completely hardy, and disposed to thrive wherever squills will grow, that is, in fairly rich, well-drained, loamy soil and in a situation at least partly open to the sun in the flowering season, but protected from acute drying-out in summer. Such a situation is often afforded by the foreground of a shrub border. We have found it a decidedly worthwhile and interesting plant in our Poughkeepsie garden, where it thrives lustily, increasing both from offsets and from self-sown seed, in a spot which receives only a few hours of sunlight on late summer days. It appears to require a minimum of attention.

We have transplanted bulbs of this squill successfully in late fall and early spring, and, at times, even during their growing stage.

Each of the white, narrowly oval bulbs, to one and a half inches in length, produces, unless crowded, several offsets each year. These offsets will grow to half their mature size in one year, and often flower in their second summer.

The foliage appears above ground in May. It is similar to that of the snowdrops. The leaves are linear, more or less channelled, strongly ribbed on the lower side, five to six inches long, dark green, and rather hard to the touch. This early leaf-growth dies down toward mid-summer. Then, after a brief rest period, the scapes begin to poke up, accompanied by a second growth of leaves. These later leaves are mostly a lighter green and somewhat softer-textured than the earlier, and grow to the same length, which about equals the length of the scape at the time when the flowers begin to open. There are mostly two, less often one or three leaves from each bulb, and one flowering stalk.

The erect scape continues to stretch in length from the time when the first flowers open, throughout the flowering and seed-bearing stage, from an original length of five or six inches to an eventual length of up to two feet (mostly less). The scape is cylindrical, strongly ribbed, green, but paler up in the raceme.

The flowers, opening about September 1, are arranged in a dense cylindrical raceme (in our plants), which is originally about two inches long but stretches eventually to perhaps twice that length. It is mostly not over three-quarters of an inch wide. There are up to forty or fifty flowers in a raceme. The thread-thin pedicels are held in a semi-erect position, each one subtended by a small, linear, membranous bract. In the average of our plants, the raceme is somewhat less dense than in the accompanying drawing.

The closed buds are top-shaped, with a blunt base, and green-tipped. This green cap is formed by bright green tips, showing on both surfaces of the floral segments, which are, otherwise, bright rose on both sides, obovate-lanceolate, blunt-tipped and widely spreading to reflexed.

The fleshy filaments, inserted at the base of the segments, taper gradually upward from a thickened base. They are deep lilac in the upper half and carry yellow anthers.

The prominent, dome-shaped, lilac-colored ovary tapers off into a dark-tipped style which does not protrude beyond the stamens. The style is about as long as the ovary; the stigma is a mere point. The ovary develops into a green capsule consisting of three bulging, one-seeded cells.

The entire plant is without odor or fragrance.—P. J. VAN MELLE

- Ornithogalum japonicum* Thunberg, Fl. Jap., 137. 1784.
Ornithogalum sinense Loureiro, Fl. Cochinch., 206. 1790.
Dracaena alliaria an herbarium name, by Loureiro, appearing on his type specimen.
Barnardia scilloides Lindley, Bot. Reg. plate 1029. 1826.
Barnardia japonica Roemer & Schultes, Syst. 7: 555. 1829.
Scilla chinensis Benthham, Flora Hongk., 373. 1861.
Scilla japonica Baker, Journ. Linn. Soc. 233. 1873. Not Thunberg.
Scilla scilloides Druce, Rept. Bot. Soc. & Exch. Club Brit. Isles, 2nd Suppl. 1917.
Scilla sinensis Merrill, Philipp. Jour. Sci. 15: 229. 1919.
Scilla Thunbergii Miyabe & Kudo, Sapporo Nat. Hist. Soc. Trans. 8: 3. 1921.

BOTANIZING ON LOVELAND PASS

CLAIRE NORTON, Laporte, Colorado

ROOSEVELT HIGHWAY, U. S. 6, crosses the Continental Divide by way of Loveland Pass in the Central Colorado Rockies, at an elevation of 11,992 feet, leaving behind the last straggling timberline growth within only a few yards of the summit. On either side alpine tundra and rocky outcrop stretch still further skyward, gradually on the east to the top of Mt. Sniktau, more precipitously on the west to the craggy, unnamed peak at the head of Loveland Basin.

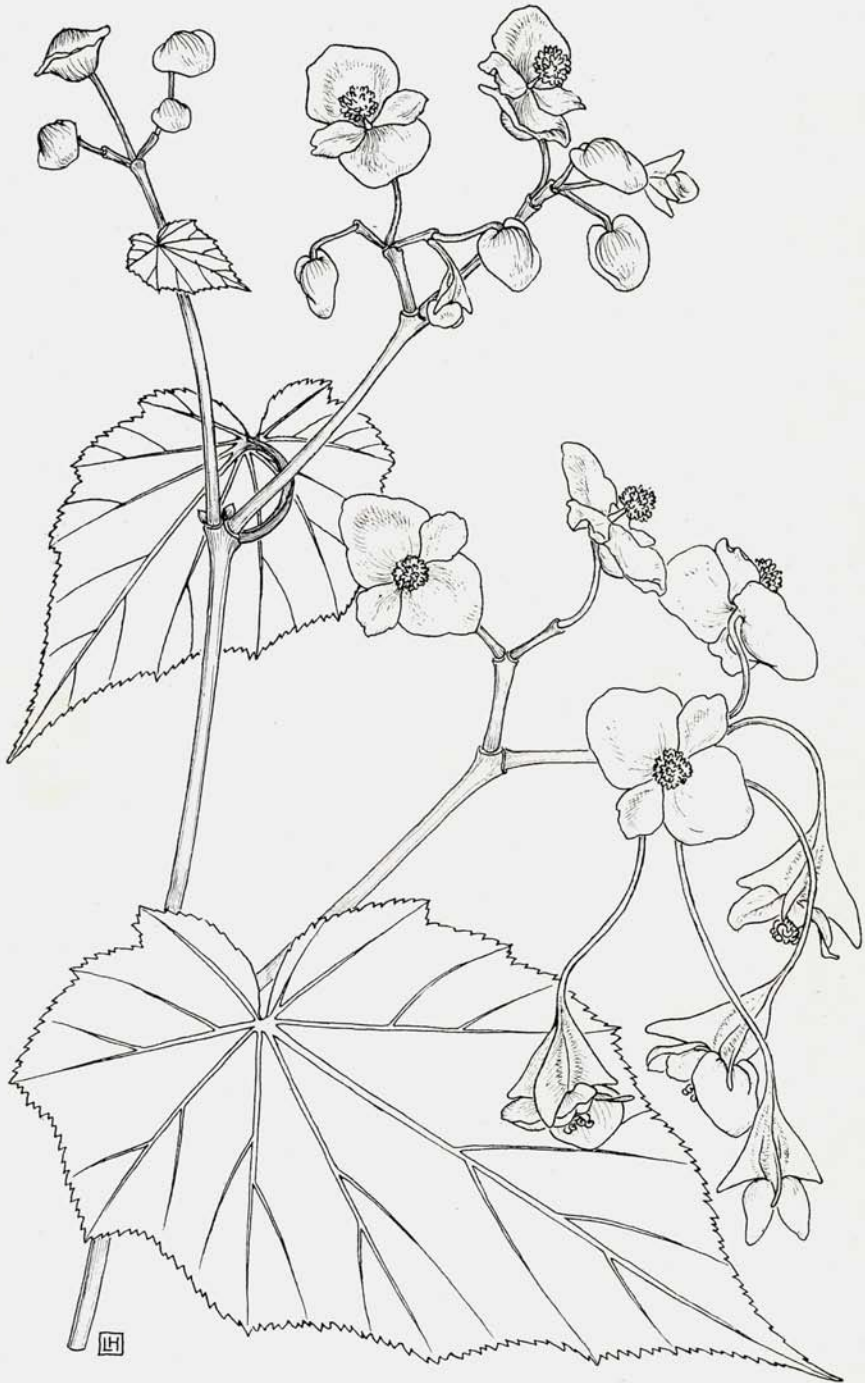
Loveland Pass, since its opening not many years ago, has been a mecca for the alpine botanist. It is readily accessible by auto, and once there, presents a varied and altogether delightful flora for study, a flora which has not yet given way markedly before the invasion of man.

A tunnel is now being built to carry Roosevelt Highway through the mountain under, rather than over, the Pass. What will then become of the road is debatable, but there is the possibility it will be abandoned to join, as a page out of the past, with the old stage road from Denver to Leadville, the faint tracks of which can still be followed by the eye steeply downward from the present crossing.

Then perhaps the Alpine Forget-me-not, *Eritrichium argenteum*, (or *elongatum* var. *argenteum*) here at its loveliest in blue and in white, will nestle again in the rocks at the edge of the roadbed. Grasses of the tundra will spread year by year to cover the scars left by the great power shovels and bulldozers. In their wake will follow the Alpine Avens, *Geum* (*Sieversia*) *turbinatum*, crowding down from the slopes above with thrifty clumps of fern-like foliage, lending the vividness of their leaves in the fall and the sunny yellow of their flowers during the all too short days of summer. Here, too, will come the Sun Gods, *Actinea* (*Rydbergia*) *grandiflora*, giants in this land of dwarfs, and the Woolly Actinella, *A. lanata*, a first cousin which bundles its leaves in coats of densest wool. And the ground-hugging Senecio, *Oreoxis* and *Draba* will associate full well with *Sibbaldia procumbens*, a strawberry-relative with tiny flowers of greenish-yellow. Where snow lies long in the depressions, once again the Adonis Buttercup, *Ranunculus adoneus*, will bloom, following the receding snowline, a cheery fellow in brightest butter-yellow.

To vary the color scheme, and to waft its fragrance in this rarified atmosphere, *Smelowskia americana*, Alpine Candytuft, will slip in among the tufts of grass. White also are the flowers of *Chionophila jamesii*, *Lloydia serotina*, *Thlaspi glaucum* and *Polygonum* (*Bistorta*) *viviparum*. Neat and quaint is the Alpine Gentian, *Gentiana romanzovi*. Grey is the foliage of Alpine Sage, *Artemisia scopulorum*; violet-blue the bloom of *Erigeron uniflorus*.

The Arenarias, *A. sajanensis* and *A. verna* var. *pubescens* (*aequicaulis*), will grow in any nook and cranny where they can find a toehold, spreading out their tufts of shiny green foliage to form mats up to several inches across. Of similar growth and preferences, but a true shrub, is the Whitlow-wort, *Paronychia pulvinata*, with inconspicuous greenish flowers.



The bright pink flowered Hardy Begonia, *B. evansiana*.

Where rocky debris makes the going hard, the Alpine Phloxes, both white with grey-green foliage, *P. caespitosa* and *P. condensata*, yellow *Sedum stenopetalum*, the Alpine Clovers, *Trifolium dasyphyllum* and *T. nanum*, and deep rose Moss Campion, *Silene acaulis*, will make themselves at home. To contrast with these will come the Sky Pilots, *Polemonium viscosum*, choosing the higher rockier positions to display to advantage their striking blue trumpets borne above musky-scented foliage. The alpine Mertensias, *M. alpina* with green leafage, *M. bakeri* var. *osterhoutii* with grey, like a similar situation.

Shy Fairy Primrose, *Primula angustifolia*, will find again a north-facing station under overhanging rocks, where wind blown soil particles come to lodge. Here, too, will grow the Hen-and-Chicks Saxifrage, *Saxifraga flagellaris*, and back in the deep fissures, the Nodding Saxifrage, *S. cernua*, the Rockbrake, *Cryptogramma acrostichoides*, and that true pioneer of the heights, the Alpine Sorrel, *Oxyria digyna*. Bolder are the Golden Saxifrage, *S. chrysantha* and the Snowball Saxifrage, *S. rhomboidea*, competing with *Festuca* and *Trisetum* grasses where the tundra approaches the rocky outcrop.

Left to their own devices, the embryo streams at the timberline will break their man-devised bonds to cut their way across the roadbed. From above and from below will come a variety of flowering gems with a taste for conditions that are moist, or even wet, the Elkslip, *Caltha leptosepala* (*rotundifolia*), Globeflower, *Trollius albiflorus*, Parry's Primrose, *Primula parryi*, Mertensias, the alpine Willows, *Salix petrophila* and *S. saximontana*, *Epilobium latifolium*, *Sedum integrifolium* and *S. rhodanthum*, and the decorative Sedges.

For these plants of the above-timberline world on Loveland Pass are versatile. They have come to be what they are and where they are because of their adaptability to their environment. A road is not too great an obstacle for them to overcome.

BEGONIA EVANSIANA

THE hardy Begonia, *B. evansiana* appears to be perfectly hardy at Montreal, having wintered outdoors here at the Botanical Garden for five years. It is grown under high lath shade in rather heavy leafmold. In our rather strongly alkaline soil conditions, leafmold does not remain fibrous very long, but this Begonia does not seem to mind heavy soil.

A light mulch of leaves applied in fall and removed in spring is the only winter protection which has been given. Usually we are favored here with a fairly good snow cover which lasts all winter; but strong frosts, approaching zero, with very little snow on the ground are not uncommon during the later part of November or early December. Even these have not been fatal to *Begonia evansiana*.

Increase is very slow. It appears that most of the young bulbs perish and that only a few of the strongest survive. Plants set out singly between other low growing, shade loving perennials seem to succeed better than larger groups planted by themselves. The shelter supplied by the leaves of the other plants may be significant. Our plants usually flower at the end of August or in early September.—H. TEUSCHER.

EPILOBIUM LATIFOLIUM

THERE is something about the magenta-crimson of the fireweeds that give me a very special "lift." When in the mountains in summer we come to a swale or wide ledge completely occupied by the stalwart ranks of the common tall Fireweed, *Epilobium angustifolium*, I always feel like making a "joyful noise" if I only could! The Dwarf Fireweed, *Epilobium latifolium*, has this same strong, lovely color, slightly dimmed by a wash of silver; furthermore, it is muted by glaucous leaves. This plant is of course much more suited to rock gardens because of its much lower stature. The individual flowers are fewer and larger than those of its sister species.

Epilobium latifolium is an almost impossible plant to collect, having its main tap root far down in gravel and impossible to excavate therefrom. It also likes to set itself apart on islands out of reach of the river shores. The most heavenly planting I ever saw was on the gravelly banks of the Kicking Horse River where drifts and crowds of it alternated with great patches of *Dryas drummondii*. It is not uncommon in the mountains of the north in both Europe and America.

In earlier times I kept *Epilobium obcordatum*, a third member of the group, for several years. An unusually wet winter killed it, but I think now that perhaps that could have been prevented by laying a flat stone over the whole thing during the severe weather. It likes to feel traveling water far down at its roots, but this must move past its crown at a brisk pace. This is a more caespitose plant, the branches not exceeding 6 inches and the herbage is glaucous. The large crimson flowers are set at the ends of branches and in the axils of the upper leaves. This I saw at its best in the Siskiyou Mountains, coming up through great mounds of extremely coarse gravel, and blooming gloriously.—ELSE M. FRYE.

THE SMALL-ROCK GARDEN

WHILE there is a general tendency to omit hyphens between words when this does not result in ambiguity—and we accordingly prefer rock garden to rock-garden—there are times when the hyphen is necessary to make the meaning clear. This is evident in a note which appeared in the American Botanist, vol. 52, p. 38, April 1946: the title being The Small-rock Garden. For as the anonymous writer—evidently Editor Clute—points out, "gardens constructed entirely of minute particles of stone or sand have been almost entirely neglected. They cost practically nothing to construct, depend neither upon good soil nor fertilizers, and will take care of a considerable number of handsome plants that are not likely to thrive elsewhere in the garden."

A member of the small-rock plant clan is discussed on page 33 of the same journal under the heading "One of our rarest plants." The reference is to *Actinea herbacea*, an attractive little composite, with solitary yellow flower-heads on stalks 6 to 10 inches high surmounting a rosette of narrow prostrate leaves. This species has been reported (not always under the same technical names) from northeastern Illinois, northwestern Ohio, and southwestern Ontario. Mr. Clute furnishes the welcome information that although supposedly exterminated in the last two regions, it is still to be found along a quarter mile of gravelly roadside south of Joliet, Illinois. It should be propagated for distribution to those of us who perforce must limit our activities to small-rock gardening.—E.T.W.

ROCK GARDEN QUIZ

Ques.: Please mention a few Western plants suitable for Eastern rock gardens.

Ans.: *Oenothera caespitosa*, *Oxytropis lambertii*, *Oxytropis halleri*, *Parosela enneandra*, *Penstemon humilis*, *Penstemon procerus*, *Penstemon rupicola*, *Phacelia sericea*, *Tetranneuris stenophylla*, *Townsendia exscapa*, *Viorna scottii*, *Malvastrum coccineum*, *Lewisia*, *Eriophyllum caespitosum*, *Dodecatheons*, *Chrysopsis villosa prostrata*, *Actinea herbacea*.

Ques.: What is the culture for Ramondas?

Ans.: Semi-shade and planted on a sloping surface facing north in soil containing humus, sand and acid soil. Ramondas may be propagated by seed or leaves pulled off near the root and placed in the cutting frame in a mixture of sand and peat.

Ques.: How may I propagate *Anemone pulsatilla*?

Ans.: By seeds, root cuttings, or careful division.

Ques.: Has *Lithospermum prostratum* proven hardy in New England?

Ans.: It is not reliably hardy in the East, but will often come through the winter under a covering of salt hay, or in a cold frame. It requires a neutral soil containing sand and good drainage. It resents lime and peat.

Ques.: What is the best situation for the early spring flowering *Orobis vernus*?

Ans.: Partial shade in a compost containing peat moss and sand.

Ques.: When should Primulas be divided?

Ans.: The latter part of July.

Ques.: Please mention which *Hypericums* are suitable for rock gardens.

Ans.: *Hypericum olympicum*, *H. reptans*, and *H. repens* are trailers with fine brilliant yellow flowers. *H. tomentosum*, an early spring bloomer, is also an excellent trailer, but its downy foliage resents too much moisture. *H. coris* is probably the finest jewel of the race.

Ques.: What is the right time to cut back *Helianthemums*, *Daphne Cneorum*, *Aethionemas* and *Campanulas*?

Ans.: The first three should be cut back in July to promote good growth. *Campanulas* should be cut back immediately after bloom unless seeds are desired.

HAVE YOU VOTED?

It was hoped that we would be able to announce the result of the vote on our Floral Emblem; to date only 17% of the cards sent out have been returned; hunt up your card at once and send in your vote so that we can begin the necessary preparations for designing our emblem.

MAJESTIC, massive and spectacular is the garden of Leonard J. Buck in Far Hills, N. J.

In a wide dell of oaks, where shoulders of fissured and seamed trap rock break the surface of the forest Mr. Buck has made of these outcrops three rock gardens that are connected by plantings of flowers and ferns. In places the forest has been opened to the sky to allow a flickering sunlight to fall on the groupings of countless common and rare plants.

Phlox ovata, *P. vivid*, *Iris gracilipes*, *I. cristata*, *I. verna*, mosses, ferns and sempervivums adorn the cliffs; there are rare forms of hедера, saxifrages, primroses and many other species and there are in the garden more than three hundred varieties of rock plants.

In the valley below the cliffs wide bands of *Primula polyanthus* and *japonica* make stretches of satisfying colors between the outcrops and along the stream; there are carpets of partridge berry, gaultheria, shortia and galax; the tops of the crags are mantled with Polypody, *Erica carnea*, Azaleas which make skillful transition between the rock plants and the flora of the forest.

Seen at a slight distance nature alone seems to tenant these austere cliffs; approached more closely every ledge and seam and cranny is jeweled and encrusted with rare and exciting plants that are grouped for color, forms and rythmic patterns; here is consummate art in the choice and spacing of plants; here are perfection and intricacy of detail; here is delight; here is serene beauty.—WALTER D. BLAIR.

In the garden of Vice-President Leonard J. Buck, Far Hills, New Jersey.

BY GOTTSCHO-SHLEISNER



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