BULLETIN

of the

AMERICAN ROCK GARDEN SOCIETY

including

SAXIFLORA

Vol. 1 May-June 1943 No. 3

CONTENTS:-

Published by The American Rock Garden Society and entered in the U. S. Post Office at Plainfield, N. J., as third class matter.

DIRECTORATE

BULLETIN

Editor	Dr. Edgar T. Wherry	University Pennsylvania
Associate Editors	Mrs. G. Latta Clement	Asheville, N. C.
	Carl S. English, Jr.	Seattle, Wash.
	Montague Free	Brooklyn Botanic Garden
	Mrs. J. Norman Henry	Gladwyne, Pa.
Exchange Editor	Harold Epstein	Larchmont, N. Y.
Chairman Editorial Comm.	Mrs. C. I. DeBevoise	Greens Farms, Conn.
Publishing Agent	Arthur H. Osmun	Plainfield, N. J.

AMERICAN ROCK GARDEN SOCIETY

President	Walter D. Blair	Tarrytown, N. Y.
Vice Presidents	Mrs. C. I. DeBevoise	Greens Farms, Conn.
	Mrs. G. Latta Clement	Asheville, N. C.
	Dr. Louis H. Frechtling	Hamilton, Ohio
	Roland G. Gamwell	Bellingham, Washington
Secretary	Arthur H. Osmun	Plainfield, N. J.
Treasurer	Mrs. George F. Wilson	Easton, Pa.

DIRECTORS

Walter D. Blair	Tarrytown, N. Y.
Ira N. Gabrielson	Washington, D. C.
P. J. van Melle	Poughkeepsie, N. Y.
A. C. Pfander	Bronx, N. Y.
Mrs. J. M. Hodson	Greenwich, Conn.
Mrs. Clement S. Houghton	Chestnut Hill, Mass.
James G. Esson	Great Neck, L.I.
Mrs. C. I. DeBevoise	Greens Farms, Conn.
Marcel Le Piniec	Bergenfield, N. J.
Miss Virginia Stout	Short Hills, N. J.
Harold Epstein	Larchmont, N. Y.

REGIONAL CHAIRMEN

New England	George Graves	Newton, Mass.
Middle Atlantic	Harold Epstein	Larchmont, N. Y.
South Atlantic	Robert C. Moncure	Alexandria, Va.
North Central	Robert M. Senior	Cincinnati, Ohio
Rocky Mountain	Mrs. G. R. Marriage	Colorado Springs, Colo.
Washington	Burton J. Wheelon	Seattle, Wash.
Montana	Mrs. Warder I. Higgins	Butte, Mont.

Address all communications to the Home Office,
57 *Sandford Avenue, Plainfield, N. J.*

BULLETIN
of the
AMERICAN ROCK GARDEN SOCIETY

VOL. 1 May-June, 1943 No. 3

PLANTS OF THE NEW JERSEY PINE BARRENS

ELIZABETH C. WHITE

HOLDING down papers on my desk are two "rocks"; one is a white quartz pebble about the size of my fist, while the other looks like a triangular piece of peanut brittle that would fit loosely in a one pound candy box. It would profit only your dentist to bite into this brittle, for the "nuts" are quartz pebbles and the "molasses" a thin layer of iron stone. These are outstanding samples of the "rocks" of this Pine Barren country, much of which has, as basic soil, water-worn quartz varying in size from microscopic bits to the huge proportions of my desk pebble.

During the geological ages since the ocean rounded and sorted these bits of quartz into nicely graded sizes and deposited them here in gently rolling dunes, vegetation has been growing, especially in the hollows where it was wetter. Sphagnum moss, cranberry vines, leather-leaf, white-cedar, and other plants small and large, have grown and died and others have grown and died on top of them. They have rotted more or less but never quite completely. The acid vegetable remnants or peat have filled some of the deeper hollows to a depth of ten feet or more, grading out to bald, white sand areas on the knolls.

The acid leachings from this disintegrating vegetable matter have dissolved the iron from the soil immediately below and it has redeposited from eighteen inches to two or three feet below the original surface of the mineral earth. It thus happens that all through the New Jersey Pines the lower land, that on which peat has formed to a depth of six inches or more, is underlaid with a watertight layer of iron-stone, cementing together the sand and pebbles, thus making impervious bottoms for the shallow bowls or depressions in which we cultivate cranberries and blueberries.

When one develops a garden of Pine Barren plants in harmony with the native surroundings, as I have tried to do, visible rocks are incongruous. This does not, however, mean that Pine Barren plants would necessarily look out of place in a rock garden. As I lack experience in combining the two, it is most humbly that I venture to write of Pine Barren plants as worthy of the attention of skilled rock gardeners.

Were I to try to make an artificial home for these plants, my experiment would start with a watertight bottom for the pocket in the rocks. I would of course avoid cement and limestone, as those would tend to neutralize the acid of the soil; well-puddled clay would have to serve as filler. I would provide a good drainage outlet six inches to a foot above the watertight bottom, and fill the pocket with a mixture of quartz sand and acid peat to a depth of at least eight inches, and if practicable, to a foot or more above the drainage outlet. Oak leaves, rotted so far that one can see just a trace of their structure in casual examination of a handful, make an excellent peat, but there are other sources as good. Alkaline leafmold would be strictly excluded.

The peat and sand mixture should be of such texture as to be well aerated and yet retentive of moisture. Most of the Pine Barren plants are decidedly fussy as to the degree of aeration and moisture and their preferences vary. In my haphazard garden of these plants, without rocks, the place selected for any particular plant has frequently proved not to its liking. It has lingered for a year or two, produced a few seeds and then disappeared. Later I have often rejoiced to find vigorous seedlings of the plant a few feet from the selected spot where the texture of the soil was slightly different or there were a few inches more or less between the surface and the water table.

PLANTS OF THE SANDS

Perhaps the most lovable of all the Pine Barren plants is the Pixie (*Pyxidanthera barbulata*), frequently called Pixie-moss or even "Flowering Moss." It is really a woody shrub with evergreen leaves, but, unless struggling in the shade of larger shrubs, it grows no more than half an inch high. Its prostrate branches spread out on the surface of the ground. When young the plants are green stars flat on the earth with five or more slender branches one to two inches long. As the plant grows older it forms a mat, for all the world like a patch of starry moss neatly fringed with the out-reaching little branches. Under favorable conditions these mats reach a diameter of two feet and more.

Early in the spring each green star of the mossy surface develops in its center a pearly pink bud. These open into flat, five petaled, white flowers, a quarter of an inch in diameter, each just touching its neighbors. The flowers in the center of the mat open first and the buds grade down to tiny, pink pearls near the tips of the little trailers. When in full bloom and viewed from some distance Pixie looks like a dropped white handkerchief.

The most noticeable variation in individual Pixie plants is their winter color. A few stay really green, but the great majority turn a rich maroon or dubonnet. One winter I found a Pixie mat, perhaps ten inches in diameter, one half of which was bright green and the other a rich, dark red; evidently two seedlings growing close together—a lovely specimen for my garden. I dug it with a spade's depth of earth and moved it a half mile to similar soil where it promptly died, as has every fine specimen of Pixie I have tried to move. It looks so easy to move such a flat bit of "moss."

Some years ago with visions of being able to furnish plants on a conservation basis I tried propagating Pixie. Bits less than an inch in diameter were set in pots filled with a peat and sand mixture. The pots were put in a cold frame where they could be given the shade and moisture most cuttings need. They grew nicely. When the plants were well established and were turned out of the pot the reason for the difficulty in successfully moving wild clumps of Pixie became clear. The roots were matted at the surface of the pot and were as fine as spiders' web. They would be practically invisible unless thus matted, and easily broken by disturbance of the extremely sandy soil in which they grow. While Pixie is usually found where there is considerable moisture in the spring and after rains, it endures prolonged drought so well, growing in what looks like almost pure sand, that these spider-web roots must reach to a considerable depth in comparison to the height of the plant.

Sand-myrtle (*Leiophyllum buxifolium*) likes the same combination of sand, peat and moisture as does Pixie, and they are often found together.*

* Sand-myrtle also grows on the rocky "balds" in the North Carolina mountains, the chief source of commercial supply.

Not infrequently a mat of the latter serves as nurse for tiny seedlings of the former, which when they grow up will rob the Pixie of its sunshine. Sand-myrtle seldom reaches two to three feet in height except when competing with some other plants. It is most lovely when growing in groups in full sun, each plant from six inches to a foot in height. The shrubs vary in habit of growth; a few are leggy, others almost prostrate, while the majority are neatly rounded little bushes, dignity in miniature, with gray barked, hard, woody stems.

At the International Flower Show in New York one year I saw Sand-myrtle used in the garden about a toy house. It served as a rhododendron in perfect scale with the tiny building; with the same branching habit of the woody stems, clusters of white flowers in the same proportion to the plant, leaves of the same shape and similar texture, though less than half an inch long.

In spite of its hardwood dignity, the general impression of Sand-myrtle is of small, fluffy mounds. Even in winter the tiny leaves and bunches of tight little buds at the tip of each twig give an impression of fluffiness. The cold weather causes the plants to take on various shades of bronzy red and green. As spring advances the leaves gradually lose their bronze tones and the swelling flower buds show individual color for each plant: greenish white through many tints of pink to crimson. Even when the vari-tinted buds open to white flowers in May, the fluffy plants still display individual color, because of the comparatively long stamens with their highly colored anthers, ranging from yellow through bronze and reddish brown to dark red. After the petals have fallen the clusters of developing seed capsules are conspicuously bright and vari-colored. Not until July does the green of the new foliage furnish the dominant color note for these charming little shrubs. Sand-myrtle may occur as a weed in the higher and poorer parts of the New Jersey cranberry bogs. The leaves are about the same shape and size as those of cranberry vines and, as it bears no berries, the workers on the bogs frequently call it "He-cranberry".

The Turkey-beard (*Xerophyllum asphodeloides*), so called because the texture of its thread-like leaves reminded someone of the coarse tassel on a turkey gobbler's breast, is pleased with soil moist only at considerable depth. The great pompom a foot or more across of glaucous, blue-green, coarse grass-like leaves is evergreen and a very distinctive bit of vegetation. During May it sends up flower stalks two feet or more high, each crowned with a great head of small, creamy white flowers. These have a curious rank odor, not objectionable out-of-doors, but none too pleasant in the house.

The Broom-crowberry (*Corema conradii*) furnishes little color, for the flowers of the male plants are mere bunches of stamens which, when the plant is brushed with the hand, fairly smoke with pollen on the year's first warm days whether the warmth comes late in February or early in April. They give a faint, rosy glow to the plant for a few days. The tongue-like pistils of the female plants can be seen only with a magnifying glass. The value of *Corema* in an ornamental planting lies in the peculiar velvety quality given by its many, short, thread-like leaves thickly set on slender woody stems. It thrives best in sandy soil on the dry side.

What fun it would be to develop a garden with the help of rocks filled in with peaty sand, where the beauties and interesting details of these and

many other Pine Barren plants could be enjoyed without going down on one's knees. Someone will do it successfully after the war, but my hope of being able to furnish these plants on a conservation basis for such gardens has been quenched by advancing years, and by labor shortage.

PLANTS OF THE BOGS

By no means all of the interesting species of the Pine Barren region are sand-dwellers. The depressions already referred to, underlain by impervious iron-stone, remain perpetually moist, and become partially filled with acid, spongy, peat. Since many rock gardens include boggy areas, the plants native to such habitats merit discussion here also.

Cranberries, native to the Pine Barrens, are plants of delicate beauty. They grow with reluctance under conditions that please Pixie and Sand-myrtle, preferring peat and more moisture in summer. Cranberry vines produce long woody runners which can become too possessive in a small garden. From these runners grow short uprights four to six inches high which bear the flowers and fruit. The flower bud is formed in the autumn, a wee ball at the tip of the upright. As they develop in the spring, four to eight or more flowers from each wee ball, the buds first stand erect; later each slender stem bends so that the flower bud dangles. Tradition says that the name "cranberry" is a contraction of "crane berry" because at this "hook stage" the stem and flower bud resemble the head and neck of a crane. Each flower bud attains a length of a ¼-inch or more before the four white petals curl back much like those of Shooting Star or of Cyclamen. Cranberries bloom in June. The familiar, red berries ripen in September and are of most amazing size for so slender a plant.

A charming associate of cranberries in the Pine Barren bogs is *Lophiola americana*, an iris relative. The foliage is a bluish green, smooth and grass-like. The flower stalks reach a height of eight inches to a foot or so, terminating in a many branched head, up to two inches across. The upper part of the flower stalk, the buds and all their small stems are clothed with snow-white wool almost as dense as that on the dried specimens of edelweiss I have seen. In late May or early June open the tiny star shaped, furry, vivid orange yellow flowers, from which the common name "Goldcrest" is derived. The white seed heads are highly ornamental 'till battered by winter storms; upon the first hard freeze the whole plant becomes ghostly white.

Three lovely orchids fairly common here rejoice in soil of quality similar to that chosen by *Lophiola*. The Rose Pogonia, exhaling a delicate fragrance from its solitary pink flower on a six-inch stem, often grows in large colonies. Some of the plants thread sphagnum moss with their white roots and others perch upon mounds or ridges of moist, sandy earth. The Grass-pink (*Calopogon pulchellus*), from a bulb like a large fresh-water pearl, sends up a single leaf and a slender stem with six or more flowers like orchid-hued butterflies hovering a foot or more above the surface. The White Fringe-orchid (*Habenaria blephariglottis*), with a pair of pale green leaves, may send its flower stalk up eighteen inches or more, to display in late July a large cluster of the snowiest flowers imaginable.

Rock and bog gardeners who like to experiment in growing our native plants will certainly find much of interest in the New Jersey Pine Barrens.

DWARF WILD ROSES IN ROCK GARDENS

OUR native roses are often found growing in rocky places, and they would seem appropriate in any rock garden. But most species grow far too tall to be in scale with the usual rock plants, and the smallest eastern native, Carolina Rose (*Rosa carolina*), spreads too rapidly by its underground rootstocks. Are there any species of wild roses really dwarf and well-behaved in the rock garden?

The smallest North American native species is Desert Rose (*R. stellata*), found from west-Texas to Arizona. It is a spiny little shrub, gray of twig, more like a Gooseberry than a Rose in habit, with small solitary red-purple flowers in late May. Neither the typical variety nor the larger variety *mirifica* seem to thrive in captivity in New England; but they might succeed in warmer and dryer climates.

Scotch Rose (*R. spinosissima*), with its fern-like foliage, can be five feet or more tall, but some plants of it stay very dwarf, producing little single or double flowers in the various colors characteristic of roses in early June. As the plants like heat, sun, and poor soil, it might be worth while to breed a truly dwarf strain for rock plantings. The Eca Rose (*R. ecae*) is a similar plant, the tiny flower as bright yellow as a buttercup; but the true species is not yet in the trade.

The small forms of the China Rose, the now well known Roulett Roses (*R. chinensis minima*) are indeed tiny plants, and bloom throughout the season. They require, however, the best of culture to flower well.

Some years ago the so-called Baby or Fairy Roses were often grown in pots as house plants. They could be treated as annuals, being easily grown from seed. The plants are but a foot or so tall, with tiny flowers, single or double, white or pink, all season. Some of the kinds were hardy and long-lived, while other bloomed to death in one season. The original stock came from China, apparently representing an especially dwarf strain of *R. multiflora* (or a hybrid of this with the China Rose), thus a tiny half-sister of the modern Polyanthas. As seeds of this Baby Rose are now available, robust hardy seedlings may well be selected and propagated by cuttings for use in our rock gardens.—STEPHEN F. HAMBLIN.

WANTED

A copy of the 1938 Year Book of the American Rock Garden Society to complete our files.

Our Greatest Need

An Active Aggressive man who thoroughly believes in the mission of the American Rock Garden Society and is assiduous to its interests; who has a vision broad enough to encompass our entire field and some knowledge of remote organization with some spare time to devote to the spreading of the gospel of rock gardening as exemplified by the tenets of the A.R.G.S. Such a man can render an inestimable service to the Society as Chairman of a Membership Committee. There is in this country a vast number of potential members of our Society who only wait for the right man to bring the matter to them in the right way and that man is going to bring honor to himself and great benefit to the Society; we invite your correspondence on the subject with the Secretary.

KINNIKINNIK, A ROCK GARDEN EVERGREEN

Arctostaphylos uva-ursi, termed Bearberry in SPN., has probably various provincial names. The Indian "Kinnikinnik" seems the most individual and readily remembered; the plant meant much to the northern Indians, for it was their "tobacco."

The western variety is found wild at the edge of woods in the north, and at high altitudes farther south, often straying up almost to timberline. The eastern variety is found down to sea-level from Newfoundland to New Jersey. Its live glossy foliage unrolled in a flat green rug is a joy in the Rock Garden, interesting in itself and a good foil for gay flowers. The modest little pantie-leg pinkish flowers are pretty but not spectacular. It is when the berries turn scarlet in the Autumn that Kinnikinnik puts on its show of the year.

BY KATHLEEN MARRIAGE

The modest little pantie-leg pinkish flowers of *Arctostaphylos Uva-ursi* are pretty but not spectacular.

Descriptions of culture remind one of nine blind men describing an elephant. "Nowhere but in full sunshine will it live"; "It is best in shade"; and so on, till we're "moithered intirely" as Pat used to say.

Possibly the only condition it really insists on is very porous drainage. It is found in the dappled shade of Aspen groves, and it grows in full sunshine on slopes where its roots hit nothing but loose disintegrated granite nine to ten thousand feet up on Pike's Peak. Three thousand feet lower it does appreciate shade or semi-shade, and it will look happier for a little peatmoss at its toes and under its chin. Planted from pots or moved with a generous ball (just try to make a ball of gravel!) it transplants without complaint.—KATHLEEN MARRIAGE.

SAXIFLORA

PLATE 18

Phlox amoena

(*Polemoniaceae*)

Published by the

AMERICAN ROCK GARDEN SOCIETY

Plainfield, New Jersey

June 1, 1943

Phlox amoena Sims

BY EDGAR T. WHERRY

Phlox procumbens Lehmann
(*"Phlox amoena" Hort.*)

PHLOX AMOENA SIMS and PHLOX AMOENA HORT

CHALICE PHLOX and CAMPION PHLOX

WHILE there is general agreement that technical plant names should be used in the same sense by professional botanists and by horticulturists, it is a common experience that once a name not accepted by the botanist gets into the nursery trade, correcting it is a matter of the greatest difficulty. An example of this situation is furnished by the two Phloxes pictured on the opposite page. The upper figure shows the species named *Phlox amoena* by Sims in 1810; he described the plant so fully, and accompanied his description by such an excellent colored plate that there can not be the slightest doubt as to the species involved: it is a woodland wild flower of the southeastern United States, ranging from southern Kentucky to northern Florida. The new "common name" herewith proposed for it refers to the cup-like group of bracts below its flower cluster.

The lower figure represents the plant which is sold under the name "Phlox amoena" by many dealers. Study of its features shows that it is not a species at all, but a hybrid, one parent being Moss Phlox, *P. subulata*, the other Creeping Phlox, *P. stolonifera*. It was first described by Lehmann in 1828, and assigned the name *Phlox procumbens;* according to the rule of priority this name is the only one to which it is rightfully entitled. A colored plate published by Sweet in 1830 confirmed the application of the technical name. For it the new common name Campion Phlox is suggested.

These two Phloxes differ in treatment required and effects produced. *P. procumbens* thrives on dry gravelly soil in the open, and the flowers practically hide the foliage, yielding sheets of brilliant purple just as those of *P. subulata* are fading away. If much crowded or shaded it soon dies out.

Phlox amoena Sims grows better in acid soil with pine or oak-leaf litter, intermingled with small shrubs, especially ericads. It does not make sheets of color, its flowers being produced in spaced clusters; they vary from purple to pink, white, and even lavender-blue.

Propagation of both can be carried out by layering stems or by rooting cuttings in sand. The hybrid produces no viable seed, but the native species, the real *P. amoena*, occasionally ripens a few. These should not be allowed to dry out, but be planted promptly; they may yield blooming-size plants in two years.

Phlox amoena Sims is a subevergreen perennial up to 15 inches high, with a few stems bearing elliptic-oblong leaves at well-spaced nodes. Rater late in spring each vigorous erect stem bears a tight cluster of flowers surrounded by a cup-like group of bracts. Its upper herbage is pubescent with coarse lustrous wholly glandless hairs. The corolla-limb is about $\frac{5}{8}$ inch across, with rounded or acutish lobe-tips. The stamens lie deep within the tube, and the 3 styles, only $\frac{1}{16}$ inch long, are united about $\frac{1}{3}$ their length.

Phlox procumbens Lehmann is lower and more compact, bearing numerous stems with leaves varying from linear-elliptic to spatulate. In mid-spring each stem bears several well-spaced flowers, subtended by small scattered bracts. Its upper herbage is pubescent with fine gland-tipped hairs. The corolla is similar in size to the preceding, but the lobes are shallowly notched. Some of the stamens reach the tube-orifice, and the 3 styles are $\frac{1}{2}$ inch long and united nearly to the tip.

EDGAR T. WHERRY.

Phlox amoena Sims

Phlox pilosa? Walter, Flora Caroliniana: 96, 1788. Not *P. pilosa* L.
Phlox pilosa Michaux, Flora Boreali-Americana 1: 144, 1803. Not *P. pilosa* L.
Phlox amoena Sims in Curtis' Botanical Magazine 32: pl. 1308, 1810.
Phlox pilosa amoena [var.] Pursh, Flora America Septentrionalis 1: 150, 1814.
Phlox pilosa walteri [var.?] Gray, Manual of Botany, ed. 2: 331, 1856.
Phlox walteri Chapman, Flora Southern States: 339, 1860.
Phlox procumbens Gray, Manual Botany, ed. 5: 372, 1868; not *P. procumbens* Lehm.
Phlox involucrata Nuttall ex Gray, Proc. Amer. Acad. Arts Sci. 8: 251, 1870.
Phlox amoena walteri [var.] Wherry, Bartonia No. 12: 53, 1930.

Phlox procumbens Lehmann

Phlox procumbens Lehmann, Index Seminum Hort. Hamburg : 7, 1828.
Phlox subulata latifolia [Beta] Bentham in DC. Prodromus 9: 306, 1845.
Phlox verna Hort. ex. Vilmorin Fleurs Pleine Terre, ed. 2: 682, 1866.
Phlox amoena Hort. in many dealers' catalogs; not *P. amoena* Sims.

THE LEWISIAS*

CARL PURDY

AT ITS type locality as well as at Waldo, *Lewisia finchii* has light green broadly spatulate leaves and usually not over 12 flowers in the panicle. It is the largest and broadest-leaved member of the series under discussion. *L. howellii* is definitely smaller, and Mrs. Nye reports finding a really dwarf form; although its leaves are different, the panicle is of the same size. The form of *L. cotyledon* commonly cultivated in rock gardens comes from near the southern limit of the series, and has moderately broad dark green leaves, but also only 12 flowers in its panicle. The plant described as *L. purdyi*, classed by some botanists as a variety of *L. cotyledon*, had a well-rounded top and unusually short, broad leaves; this form is now lost.

One of the odd things about this remarkable group of plants is the existence of so many forms allied to *L. finchii* in their large size and broad leaves, but differing in various details. In some the leaves may be dark green, or tinted red; and in certain localities the panicle may contain 20 or even 40 flowers. It is these multi-flowered forms which have developed so amazingly in English gardens. I had thought that an individual which produced 125 flowers was a great find; but cultivated plants with as many as 600 flowers have been exhibited there.

BY FLORENS DE BEVOISE

The eminent Oregon botanist, Thomas Howell, was commemorated by the naming of one of the species he discovered *Lewisia howellii*. It belongs to the series having a central band of deeper coloring running down the petals. The dominant color of this species is most often deep rose, but may tend toward apricot.

One endemic remains to be mentioned, *L. shastaensis* or *L. cotyledon* var. *shastaensis*. This is developed along somewhat divergent lines, having the small narrowly spatulate leaves of *L. howellii* without however showing any bronzing or crisping. And its flowers are rather uniformly white with reddish bands down the petals.

I have said little of color in these related forms because, while in any one locality there is a prevailing color, it does not necessarily exclude others. Thus *L. howellii* is most often deep rose with darker banding, but may tend toward apricot. The latter hue is almost always shown by *L. finchii*, but other colorings are occasional. The usual garden form of *L. cotyledon* has a deep rose color.

---

* Continued from volume 1, No. 2, page 42. Under discussion at the close of the previous instalment of the article was a group of evergreen species of *Lewisia* remarkable in the existence of numerous intergradational forms.

Several of the forms belonging in this series have been picked out as worthy of special names, at least for horticultural purposes, even though not botanically acceptable. There is one which seems adequately distinct, known as *Lewisia heckneri*. This has a leaf character not shared with others,—the broadly spatulate medium green leaves are margined with stiff slender hairs, each terminating in a little knob. It also has a definite and apparently constant flower color, a clear and lovely rose pink. There is no band on the petals, making its flowers seem to me the prettiest of all.

A close relative of the last has recently been introduced under the name *L. heckneri* var. *elegans*. In this the leaves lack the marginal hairs and are undulate margined as in *L. howelli;* the flowers are especially fine. It is the most southerly form of all, and there is reason to believe that a chain of intermediates exists between it and *L. finchii*.

MISCELLANEOUS SPECIES.—In the treatment of the Portulaca Family in the North American Flora, Volume 21, part 4, the late P. A. Rydberg placed most of the evergreen species above discussed under *Oreobroma*. In addition to those here treated, he listed *O. aridorum*, *O. bernardinum*, *O. exarticulatum*, *O. longipetalum*, and *O. minimum*. Under *Lewisia* he added *L. disorata* from the Yosemite region, peculiar in having but two sepals; and *L. minor*, a small edition of *L. rediviva*. More recently an attractive little species from Oregon has been described by Carl S. English Jr. as *L. rupicola*. I am satisfied that there are more species, in both groups, awaiting classification and naming.

CULTURE OF THE LEWISIAS

It will be readily seen from what I have written as to the habitats of the species that no one way of growing will suit all of them. Indeed, some of the deciduous species require opposite treatment to that preferred by the evergreen ones.

The deciduous *L. pygmaea*, *L. nevadensis*, and their allies grow at rather high elevations where there is a lot of snow; they are rooted in depressions filled with rich soil mingled with grit. When the snow is melting they are very wet, but later become bone dry and then go into dormancy. On the other hand, *L. rediviva*, *L. yosemitensis*, and *L. kelloggii* are found in well-drained places. The lighter snows of their levels melt away more rapidly, so that their period of wetness is shorter, and the dry season which they require even more is longer. All of these species are found growing in full sunlight.

The evergreen species grow among rocks and in perfectly drained places. Their soil is usually a more or less gritty silt-like loam, and owing to their situation it is practically impossible for moisture to stand about their crowns. At the same time, they are native to a region of heavy snows and liberal rains, so must be well watered during winter and spring. However, long before their flowering period the snows have melted and the rains become infrequent, and after blooming they may have 6 months of complete drought. Since *L. columbiana*, in both its typical and rosea forms, grows where heavy rains occur well into summer, its forms adapt themselves to garden conditions the most readily of all the species.

As to acidity vs. alkalinity, the soils in which the Lewisias are native show no consistency. I have seen fine plants growing in leaf mold from fir trees, which must have been acid in character; but my garden experience is that they do well in soils that are essentially neutral, and do not respond appreciably to additions of either acidic or limy materials.

Coming to question of sun vs. shade, the majority of species, especially the evergreens, grow on north-facing slopes or are otherwise more or less shaded. Here in my garden, where the mid-summer heat at times goes above 100°, they do much better in moderate shade. By progressively thinning out protecting trees, I have found the best results from an amount of shade such as that which would be yielded by an ordinary lath house.

I have succeeded in growing fine healthy plants in a number of soil combinations, although I must admit that I have not obtained as fine bloom as have other growers. Two mixtures which have given satisfaction are: a good loam mixed with ⅓ pea gravel and ⅕ peat moss; and a woodland soil, porous and rich in leaf mold, with ¼ compost added. In heavy soils peat moss may help to give the necessary drainage.

My very best results have been secured by building a rock wall, with about a 1: 2 slope. Back of this was placed one of the above mixtures, the roots of the plants being laid in as the wall was built. This resulted in absolute drainage and a guarantee that no water could stand at the crowns. Yet there are queer contradictions; for I have planted Lewisias on earth terraces with earth walls behind, where in winter the frost worked down through the loose dirt and the leaf-litter, covering the crowns, yet no injury seemed to occur.

As to hardiness, the plants can certainly endure severe cold with no cover—for how could there be cover on a cliff face? In my garden one winter they sustained 8° above zero without injury; although that same winter the growers around Portland, Oregon, suffered serious losses. Very likely the degree of ripening has much to do with this; for here, the long dry summer brings the plants into winter fully hardened and dormant. A covering of branches or coarse grass may be desirable in severe climates.

In mild winters I have had some losses, especially of *L. tweedyi*, from fungus attack. In general, the high altitude species do not thrive well at our low altitude. However, it is easy to grow *L. brachycalyx*—even though it comes from fully 8000 feet altitude—in a silty loam, not manured, with moderate watering. Eastern states rock gardeners may have difficulty in keeping the plants dry enough during the summer; but in view of their attractiveness, it is worth while for everyone to make an earnest effort to grow one or more Lewisias.

In response to requests, the following statement of editorial policy in respect to plant naming is offered:

Plants should be designated by common names in general use, if any; when such names must be coined, they may well be made descriptive. Hyphens should be used when called for by the ordinary rules of English spelling. To make clear what plant is under discussion, a technical designation is to be added; underlined in manuscript, this will be printed in italics. It will in general consist of a genus epithet, capitalized, and a species epithet, preferably uncapitalized. When a given species epithet is in use for two different plants, then the name of the author of the combination, or an abbreviation thereof, must be added to make clear which usage is intended.

Illustrations of the need for authors' names are furnished by Saxiflora plates 17 and 18. In further reference to No. 17, I am informed that there is in the nursery trade a plant designated "Coreopsis auriculata nana." The last term of this trinomial is not listed in Hortus II or S. P. N. ed. 2, so evidently has no official standing. The horticultural-variety epithet "nana," from the greek for low or dwarf, is superfluous, since the original *C. auriculata* answers this description.—E.T.W.

THE PINE POOL AT "TUMBLING WATERS"

THE Pine Pool at "Tumbling Waters" is the second of a series of pools that catch a natural stream, fed by a spring, as it descends a steep hillside in a wood. The pools are connected by cascades and waterfalls where the stream passes thru and over rocky ledges. Below the Pine Pool where the fall is sheerest the ledges arrange themselves in a glen like formation and farther on, where the slope is less precipitous, large boulders were deposited in the Glacial Era as a terminal moraine. Between them with many changes of direction the water flows till it slackens in quiet stretches between primrose-covered banks.

BY GOTTSCHO-SCHLEISHER

Visible in the photograph of the Pine Pool are:

Left foreground: Dwarf White Spruce, *Picea glauca conica;* Northern Lady-fern, *Athyrium angustum;* Balsam Azalea, *Rhododendron indicum balsaminaeflorum;* Woodland Phlox, *Phlox divaricata;* Cushion Saxifrage, *Saxifraga caespitosa* and a hybrid mossy Saxifrage, H. S. Stokes; and Alpine Forget-me-not, *Myosotis alpestris* Royal Blue.

Right foreground: Bulblet Fern, *Cystopteris bulbifera;* Northern Beech-fern, *Phegopteris polypodioides* of Gray's Manual; White Crested Iris, *Iris cristata alba* and White Slender Iris, *I. gracilipes* Alba; Triplet Stonecrop, *Sedum ternatum;* Creeping Bluets, *Houstonia serpyllifolia;* and more Alpine Forget-me-not.

Middle distance, left: Swiss Pine, *Pinus mugo;* Spring Heath, *Erica carnea;* Rose Daphne, *Daphne cneorum;* Azalea, Lovett hybrid, *Rhododendron indicum* J. T. Lovett; Roof Iris, *Iris tectorum,* and a hybrid Dwarf Iris, *I. pumila* Fairy; and Cream Violet, *Viola striata.*

Middle distance, right: Southeastern Cliff-fern, *Woodsia obtusa;* Wilson Lilac Phlox, *Phlox lilacina* G. F. Wilson; hybrid mossy Saxifrage, Mrs. T. Piper; Bluets, *Houstonia coerulea;* and more hybrid Azalea and Crested Iris.—WALTER D. BLAIR, Tarrytown, New York.

CURRENT LITERATURE

While not in any sense a rock garden guide, a recent book on woody plants from the standpoint of the small-scale garden deserves notice here.* It represents a skilful and helpful appraisal of some 400 shrubs and small trees as to their usefulness on properties too small for landscaping, but deserving more beautification than they usually get. Data given as to hardiness refer to Rehder's horticultural climatic zones V and VI.

Some of the species listed can be used directly in the rock garden, while many others may prove useful in background planting. Ample warning is furnished, too, as to shrubs whose suckering habits make them unsafe. Indeed, the book furnishes a refreshing contrast to the usual catalog of nursery stock, in which everything, no matter how undesirable, is given words of praise. Here we get eminently just characterization, of species, often phrased in picturesque language. Where can one find, for example, a more apt description of *Catalpa bignonioides nana* than that on page 187: "This hideous little tree, top-grafted on 6-foot broomsticks, continues, alas, to be widely planted." On the other hand, we learn on page 111 that *Kolkwitzia amabilis* has a profusion of flowers "mostly in a melting pale pink with enough yellow in the throat to save it from insipidness. With this goes the softest, gray-green of foliage that never looks out of place anywhere . . . "—E. T. W.

* Shrubs and Trees for the Small Place, by P. J. Van Melle. 298 pages, including a novel Score-chart. Charles Scribners Sons, New York. March, 1943. Price $2.50.

AMERICAN ROCK GARDEN SOCIETY AFFAIRS

The Annual meeting and election of the American Rock Garden Society was held at the New York Botanical Garden on Wednesday, May 19, 1943. Walter D. Blair, President, presiding. Twenty-five were present. The minutes of the last regular meeting of the Board of Directors, April 20, 1943 were read and approved.

The President made his annual report on the state of the Society, covering the activities and progress of the year in his inimitable way.

The Treasurer's report showed a healthy condition in our financial status. The Secretary's report was read and approved.

Mr. Robert M. Senior, Chairman of the North Central group reported in person. Mr. Harold Epstein, Chairman of the Middle Atlantic group reported on a very active and interesting year's activities in his district. Dr. Edgar T. Wherry, Editor, reported for the Bulletin.

Report of Mrs. Alma M. Higgins, Chairman of the Montana group was read by the President. Telegrams from Mrs. Clement S. Houghton and Mrs. Kathleen Marriage were read.

The following officers were elected:

Directors until 1946
Mrs. Clement S. Houghton
Mrs. J. M. Hodson
Marcel Le Piniec

Vice Presidents for 1943-44
Mrs. C. I. DeBevoise
Mrs. G. Latta Clement
Dr. Louis H. Frechtling
Mr. Roland G. Gamwell

Secretary ..... Arthur H. Osmun
Treasurer ..... Mrs. George F. Wilson

It was voted that:

Beginning at the Annual Meeting in May 1944 the term of office of the Secretary, Treasurer and Vice-Presidents be made two years to coincide with that of the President.

It was voted that:

The Board be empowered to change and define the Regional Groups to facilitate more efficient and satisfactory contacts between the groups and our ever increasing membership, and if necessary to increase the number of groups.

It was voted that:

The Secretary be empowered to incorporate the Society.

After the annual meeting an hour was devoted to luncheon and social intercourse; the afternoon was spent among the beauties of the Thompson Memorial Rock Garden.

A NEW FLORAL EMBLEM

Some years ago the Columbine (*Aquilegia*) was chosen as an emblem for this Society, and a cut of this plant has appeared at the head of our page in the Gardener's Chronicle of America. In order to ascertain whether this selection meets the approval of our present membership, the Board of Directors, at the meeting of April 20th, proposed the publication of this note in the Bulletin.

It has been suggested that instead of a genus, we should select an individual species; the Alpine Garden Society of Great Britain has adopted *Gentiana acaulis* for its emblem. The question has also been raised whether we should not take a plant especially characteristic of North America instead of *Aquilegia*, which ranges throughout the northern hemisphere: Bailey's Hortus II lists about 15 species from Asia, 10 from Europe, and only 12 from North America.

OUR FAR FLUNG FAMILY

BY ALMA M. HIGGINS

MONTANA SHOWS THE WAY

The Montana Group, ably led by Mrs. W. I. Higgins, Chairman are surely making themselves and the Society known to their section of the country by various means; the above exhibit was on display for over a month in the window of the Chamber of Commerce of Butte, Montana; it is composed of two Rock Gardens, one a model and the other showing how it should not be done; this kind of publicity helps to make the public rock garden conscious and does much to help build up the Society. We heartily recommend both this project and the spirit behind it to the other Groups of the Society.

The April meeting of the Washington unit was held at the home of Mr. and Mrs. Henry Bittman. Mr. Paul L. Miller, a Mt. Rainier enthusiast, showed his colored slides on "The Flora of Mt. Rainier." The pictures showed the alpines and flowers taken at the various elevations from timber line to the summit of Mt. Rainier.

Robert E. Tindall, *Sec.-Treas.*

Montreal, Canada

Congratulations on your decision to publish your own Bulletin devoted exclusively to Rock Gardening.

Henry Teuscher
Curator of the Montreal
Botanical Gardens.

New York

I think the Bulletin is splendid; I have read the first two issues with great interest and shall certainly want a permanent file of the publication; I believe that all serious gardeners will treasure it.

Walter E. Thwing
Publisher of The HOME GARDEN