

TWENTY-FIFTH ANNIVERSARY

1934 - 1959

BULLETIN
of the
AMERICAN
ROCK GARDEN SOCIETY

Vol. 17

APRIL, 1959

No. 2

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C. R. Worth, Editor

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OUR SILVER ANNIVERSARY

WHEN, TWENTY-FIVE YEARS AGO, several hundred rock garden enthusiasts gathered in New York City to establish the American Rock Garden Society, we were young in experience, filled with enthusiasm, and hopeful of success with eritrichium and androsace. Of the original members, but forty remain with us; some fell by the wayside, but many beloved names and faces are now but memories.

The years between have, we hope, made us wiser and more skillful gardeners. But they have also revealed to us the vast extent of plant lore beyond the grasp of any one mortal, the futility of horticultural dogmatism, and the need to pass on our scanty and empirical knowledge to those who, younger, may profit from our slender achievements and approach more closely the goal to which we have striven.

The rich flora of our own country remains, as yet, a largely unworked source of treasures. We tried them in our early days and found that they presented problems too great for our inexperience. Now, with maturity, we can more reasonably hope for success.

Yet, with the years, the old sources of supply have gradually disappeared, and so too have many of the plants themselves, victims of the spread of civilization. Today one cannot send an order and expect to receive a carefully nurtured garden-grown specimen of a plant from our high mountains. One must seek it oneself in the wilds, hoping that the sheep and the bulldozer have spared it.

So it has seemed fitting that these pages, during our anniversary year, should pay tribute to our native flora as it grows in woodland, on desert, on cliffs and on high screes. So vast is the country, and so varied the plants and the conditions under which they grow, that it is impossible to examine all the panorama in detail: we must choose favorite spots here and there, and hope that from these an overall picture may be formed. This time we bring a glimpse of the eastern part of the country; in succeeding numbers we shall look at the Pacific Northwest, Alaska, California, and the Rockies and Great Basin, in the hope that those of you who have never seen them may envision their beauties, and that those who have been there may relive moments of ecstasy.

GREETINGS FROM THE PRESIDENT

HAROLD EPSTEIN, *Larchmont, N. Y.*

THE AMERICAN ROCK GARDEN SOCIETY, having just completed its twenty-fifth year, has cause for reminiscing and evaluating. While the Society's present membership of about 800 has more than doubled in the last dozen years, it is still a comparatively small 'specialized' society. The diverse and increasing interest in horticulture in the U.S. has brought forth a most extraordinary collection of so called 'specialized' societies, in most cases, the specific interest being in one genus of plants. Each of the following is represented by a distinct organization, — African Violet (one of the largest groups), Begonia, Camellia, Dahlia, Delphinium, Fern, Fuchsia, Gloxinia, Iris, Orchid, Penstemon, Peony, Primrose, Rhododendron, Rose (perhaps the largest), Bromeliad, Cactus and Succulent, Chrysanthemum, Hemerocallis, Holly, Lily and several others.

The American Rock Garden Society has also been grouped with these various organizations as of 'specialized' interest. This classification has always seemed amusing and most inappropriate for it is difficult to conceive of a horticultural interest that is less specialized. Actually, the keen rock gardener straddles almost all of these plant families, for there are species in each genus which are appropriate for the most avid rock plant collector. Consequently, the persevering and experienced rock gardener must become a skillful horticulturist.

This Society is proud to include in its membership some of this country's (as well as foreign) prominent plantsmen, both amateur and professional. Actually, the value of membership has increased over the years, particularly since our dues structure is identical with that instituted at the organization in 1934.

During these past several years, with costs of everything spiralling, much consideration has been given to the eventual need for a nominal increase in dues, but as long as our budgets have been balanced, action has been deferred. Of course, the solution has been partially the result of the gradual but ever increasing membership.

The Society's major contacts with its members are still primarily through its quarterly *Bulletin* and the continuously expanding Seed Exchange. This availability of choice and uncommon seeds should be recognized by more members, for one of the great thrills is germinating seeds and watching their eventual growth to maturity and flower.

The advantage of personal contact between individuals with similar interests is evident in the very successful periodic functions in Seattle, New York and Boston, where large groups of members are centered. Unfortunately, with the spread of our membership over so large an area other group activities have proven difficult. But with the ever-increasing interest and memberships, local groups are encouraged to arrange meetings or other functions, even with a small nucleus.

There is one disturbing element in the subject of availability of rock plants. That is, the decreasing number of prominent nurseries that cater to the rock garden. In perusing the advertisements of nurseries, and suppliers of choice plant materials in the early numbers of the *Bulletin*, it is depressing to note that about half of the sources listed are now out of business. This is in great contrast to the vast quantity of plants still available from the many nurseries in Great Britain. Various plans have been discussed for overcoming this deficiency here, and at the last annual symposium in New York, much conversation revolved about the subject of introducing, growing and distributing worthwhile subjects

into the gardens of members. If there are any additional thoughts or suggestions on this subject, please convey them to the officers.

It would be remiss at this time not to mention the arduous task of obtaining sufficient editorial material for the *Bulletin*. The work of our editor, Dr. Carleton Worth, is a continuous challenge and at times it must be very discouraging. It is necessary to again solicit your stories of plant exploration, your experiences with plants, not only your successes but also your failures—for the exchange of ideas is always instructive. Please help in producing a mutually informative Quarterly.

Our expanding Seed Exchange requires an enormous expenditure of time and effort. Recognition must be given to Bernard Harkness for his very skillful management and the high standards he maintained in operating the Exchange for five years. He has been succeeded by Dr. A. R. Kruckeberg of Seattle and his group of assistants there, who are now completing their second year's operation of the Exchange. This last list, which has a record number of contributors, certainly will be difficult to equal in future years.

As a final note in these ramblings.—A toast to our most efficient secretary, Edgar L. Totten, who in his retirement, has devoted so much of his time and energies to this Society. This idea of a permanent secretary is the answer to the woes of so many societies with revolving officers, particularly if the encumbent has the efficiency and devotion of Edgar L. Totten. He has done a wonderful job for the society and has unburdened the other officers of many of their duties. Good health and fortune to him!

PRESENT MEMBERS WHO JOINED THE SOCIETY DURING THE YEAR 1934

Mrs. Elliott Averett	Mrs. Oliver W. Means
Mr. Kurt Baasch	Mr. Arthur H. Osmun
Miss Elizabeth Ball	Miss Clara A. Pfeiffer
Mrs. Walter Beck	Rancho Santa Ana Bot. Garden
Mrs. Anson S. Blake	Mr. L. N. Roberson
Mrs. M. C. Boody	Mr. J. A. Schuurman
Miss Dorcas Brigham	Mr. Robert M. Senior
Mrs. Grace F. Butcher	Mr. Fletcher Steele
Mrs. Wallace Campbell	Mr. J. N. Stirnkorb
Mr. H. F. Du Pont	Mr. Clarence D. Sutcliffe
Dr. Ralph A. Fenton	Mr. J. R. Swan
Mrs. M. J. Fitzpatrick	Mrs. H. D. Thomas
Mrs. M. J. Fox	Mrs. E. H. Thompkins
Dr. Ira N. Gabrielson	Mrs. R. Marshall Truitt
Mr. Stephen F. Hamblin	Mr. Ernest Walter
Mrs. Dorothy E. Hansell	Dr. Edgar T. Wherry
Mr. Clarence L. Hay	Dr. Orland E. White
Mrs. W. H. Haydon	Dr. George B. Wilbur
Mrs. Harry Hayward	Mrs. G. F. Wilson
Mrs. J. B. Johnson	Dr. Carleton R. Worth

LOOKING BACKWARDS

DOROTHY EBEL HANSELL, *New Providence, N. J.*

THE AMERICAN ROCK GARDEN SOCIETY was launched with much fanfare on March 21, 1934, at the Hotel Commodore, New York City, in the presence of two hundred fifty rock garden enthusiasts. This meeting received nation-wide publicity, as might be expected, for it was graced by notables of the horticultural world. Sir Frederick and Lady Moore, of Glasnevin, Ireland, were guests of honor, and Richardson Wright, "in his ever joyous vein, reminded his audience that since no christening was complete without a godmother, he would name Lady Moore godmother of the Society."

E. L. D. Seymour presided; Dr. E. C. Merrill, director of The New York Botanical Garden, and Dr. C. Stuart Gager, director of the Brooklyn Botanic Garden, pledged the support of their respective institutions and invited the Society to make use of their facilities. William N. Craig and Alfred C. Hottes were other speakers, and Robert Lemmon explained the purposes of the proposed organization and read the Constitution and By-Laws.

Mr. Lemmon was a member of the organization committee which had met frequently at the Hotel Commodore during the fall and winter of 1933-34. The other members were Mrs. Agnes Selkirk Clark, Mrs. C. I. DeBevoise, T. H. Everett, Montague Free, Mrs. Clement S. Houghton, Marcel Le Piniec, Mrs. Charles H. Stout, and the writer.

Mr. Free was elected president, Mr. Lemmon treasurer, and the writer secretary and editor of the official organ of the Society, *Gardeners' Chronicle of America*.

The first annual meeting of the American Rock Garden Society, "described as a powerful undertaking and one likely to have a far-reaching effect in horticulture on the North American continent," was held at the Brooklyn Botanic Garden on May 22, 1934. Among the committees appointed were the Editorial Advisory (Mr. Lemmon, Mr. Everett, Mr. Free) and Nomenclature (Dr. Edgar T. Wherry, Prof. E. I. Wilde, Carl English and P. J. Van Melle). From the work of these two committees and with the aid of E. J. Alexander of The New York Botanical Garden and the financial assistance of Mrs. Houghton, Mrs. DeBevoise, Mrs. Stout, Mrs. Geoffrey Whitney, Walter Beck, Walter D. Blair, Mrs. J. M. Hodson, and others, the series "Saxiflora" was initiated. The first eight of these plant studies appeared in 1939, another eight in 1940 and again in 1941; thereafter several were incorporated in the *Bulletin* during 1943, 1945, and 1946.

The second annual meeting and first exhibition took place in Fleischmann's Garden, Cincinnati, Ohio, on May 16-18, 1935. The Cincinnati members, under the guidance of Robert L. Senior, and with the cooperation of the Rock Garden Society of Ohio and J. J. Grullemans of Mentor, Ohio, handled the arrangements for the meeting, exhibition, and tour of the gardens.

The gold medal of the Society (designed by Mrs. Garrett Smith and the first medal donated by Mrs. F. T. Fisher), the Chronicle Cup, the medal donated by Mrs. Stout, and the silver cigarette case donated by Mrs. Houghton were awards for the four classes at the first exhibition.

In 1936 Mrs. Houghton was elected president, and not only during her four years in office, but until her death, she was one of the Society's most loyal and generous supporters. Walter Blair, when succeeding her at the annual meeting in Greenwich, Conn., in 1940, said, "For four years the American Rock

Garden Society has been fortunate to have for its president Mrs. Clement S. Houghton, for she engenders admiration and affection for herself and enthusiasm for the work she directs. . . . Our Society is grateful for the able assiduity of the retiring president, who has flitted between Boston and New York, as if New York were a near suburb of Boston, and has en route made botanical poems to our delectation in which she has rhymed *Ampelopsis* with *Meconopsis*—or was it something else?"

The third annual meeting was held in Horticultural Hall, Boston, May 1 and 2, 1936, in conjunction with the Daffodil Show of the Massachusetts Horticultural Society. Members brought rock garden and alpine plants in pots and trays, and participated in a lecture-discussion meeting, luncheon, and tour of rock gardens in the vicinity. The writer had quite a talk with—no, it would be more correct to say that she listened while Mr. Craig talked about miniature daffodils.

In these formative years, local meetings were growing in number in other sections of the country, regional groups were being organized, and the first of the North Atlantic Region Meetings (later this was divided into the New England and the Middle Atlantic Regions) was held in Boston on October 16, 1936.

The luncheon-meetings in New York City during the week of the International Flower Show became an important annual event, with horticultural celebrities as honored guests. At the luncheon on March 18, 1937, Lord Aberconway, then president of the Royal Horticultural Society, F. Cleveland Morgan of Montreal, and Frederic Leubuscher of Essex Fells, N. J., were the guests of honor and the speakers. Mr. Leubuscher was presented with the Society's gold medal for his rock garden at the International Flower Show.

At this affair in subsequent years, Lester Rowntree of Carmel, Cal., Alice Chauncey of London and New York, Roland Gamwell of Bellingham, Wash., Dr. Ira N. Gabrielson of Washington, D.C., Mrs. G. R. Marriage of Colorado Springs, Col., Mrs. J. Norman Henry of Gladwyn, Pa., T. H. Everett, and Dr. Edgar T. Wherry shared their knowledge of plants and gardens with their fellow rock gardeners.

A very successful rock garden exhibition was staged at the American Museum of Natural History, May 14-16, 1937. When it became evident that the guards at the Museum were not kindly disposed to undue activity, Kurt Baasch, the show chairman, the writer's husband, and her brother, Jay A. Ebel, found themselves exercising muscular power they were not aware they possessed. At the end of a hectic opening day, a weary but elated quartet sought sustenance in a neighboring coffee shop—the exhibition was truly a success.

The fourth annual meeting occurred on the first day of this exhibition, with officials of the Horticultural Society of New York, who had been instrumental in getting the exhibition under way, entertained at luncheon. Arrangements were made at that time to include classes for rock garden plant material at the monthly meetings of the Horticultural Society, and to offer to local groups as a reward for local shows the bronze medal of the American Rock Garden Society. Mrs. Stout was largely responsible for this medal: she furnished the design and also contributed one hundred dollars toward the cost of the die.

At the fifth annual meeting, also held in New York City (in the Museum and Administration Building of The New York Botanical Garden), followed by a visit to the Thompson Memorial Rock Garden there and to the rock garden of Mr. and Mrs. Walter D. Blair in Tarrytown, N. Y., Mrs. Houghton reported on the "Seed Exchange in its experimental stage," hardly anticipating that it would attain its present proportions. She also reported on the educational exhibit at the Boston Spring Show: examples of a good and a poor rock garden, set up by the New England members. More than twenty thousand leaflets were

distributed describing the gardens and explaining the fundamentals of good rock garden design. This educational exhibit cost \$725; a goodly share of the cost was defrayed by contributions.

The rock gardens at the spring flower shows in Boston, New York and Philadelphia were judged during the years 1936-39 by Montague Free, Marcel Le Piniec, Clarence Hay, Dr. Hugh Findlay, James G. Esson, Robert L. Senior, Mrs. Louise B. Wilder, James G. Esson, P. J. van Melle, Mrs. Houghton, the writer, and others. Several years the writer went from one show to another; Mr. Pfander did this in 1941, Mr. van Melle in 1942. This careful judging was for the Society's gold medal. Zenon Schreiber's garden at the New York show in 1939, which was awarded the gold medal, was purchased by Mrs. Suydam Cutting "under the persuasive influence of Mrs. Harold I. Pratt" and presented to Gardens on Parade at the World's Fair in honor of Kingdon Ward, under the sponsorship of the American Rock Garden Society.

In 1939 the annual meeting was held at the Hotel Warwick, Philadelphia, on May 9 and 10, with a dinner followed by Dr. Wherry's talk on native plants the first evening and a tour of the rock gardens of Mrs. C. A. Warden, Richard T. Lloyd, Richard Haughton and Dr. George Woodward the second day. Ann Wertsner (now Mrs. Harry Wood) kept everyone stepping lively to cover the area on scheduled time—her whistle summoned loiterers.

The next year the annual meeting was held at the Pickwick Arms, Greenwich, Conn., on May 20 and 21, with visits to rock gardens the second day, including that of Mrs. J. M. Hodson where a box lunch was given.

In March, 1941, at the Twenty-second National Flower and Garden Show, held that year in Seattle, Wash., the Washington Unit "constructed a creditable rock garden planted with an interesting collection of suitable material."

The Society took to the Pocono Mountains for its annual meeting in 1941. The meeting, preceded by a dinner, was held at Buck Hill on the evening of May 27, and the following day was spent in Richard C. Harlow's rock garden at La Anna, which he and Don Richardson had built. Members will remember walking on *Ajuga reptans* used under the trees instead of grass and cut with a lawn mower; the blue flowers were sacrificed to a large extent, but the foliage did make a compact ground cover. Elizabeth Lawrence came all the way from North Carolina, and at the end of the day, before we headed homeward, Ann Wertsner entertained Miss Lawrence, Dorothy Jenkins, Alice Dustan, Jay Ebel and the writer at her "hide-away" in the Poconos.

A year later, in May, 1942, the members gathered at the estate of Clarence McK. Lewis at Sterlington, N. Y., for the ninth annual meeting. In spite of the turbulent times and gas rationing, the writer recalls that quite a number of members made their way to "Skylands" to bask in the gracious hospitality of Mr. Lewis and Mrs. Fitzpatrick and to feast their eyes on the remarkable collections of plants in the many and varied gardens, high among the Ramapos. At the business session in the spacious drawing room, the writer tendered her resignation as secretary and editor, effective that September, at which time Arthur H. Osmun took over the duties.

In April 1943 the *Gardeners' Chronicle* ceased to be the Society's official organ; the articles on rock gardening which had been published in its pages, the material published in the Yearbooks of 1939-41, and the plant studies ("Saxiflora") were incorporated in the *Bulletin of the American Rock Garden Society*. Vol. 1, no. 1, January-February 1943, was the Yearbook for 1942-43. Dr. Edgar T. Wherry accepted the editorship and held that post through Vol. 5, no. 6. During the year 1947 the writer assisted Dr. Wherry and became editor with Vol. 6, no. 1, also returning to the secretaryship. Then, having become editor of

the *Journal of The New York Botanical Garden* in June 1950, later editor of its *Garden Journal*, she found it too strenuous to continue editing the *Bulletin*. However, she continued as corresponding secretary, with Mrs. Mary F. Johnson as financial secretary, Mrs. Ida Thomas as recording secretary, until in 1955 Edgar L. Totten took over the duties of all three. G. G. Nearing took up the editor's blue pencil with Vol. 9, no. 1, and carried on until Dr. Carleton Worth's name appeared as editor of Vol. 12, no. 4. *The Bulletin*, originally bimonthly, became a quarterly in 1952.

In the meantime, Mr. Blair was followed in the office of president by Dr. Ira N. Gabrielson; then Harold Epstein picked up the gavel and has conducted the affairs of the Society in a vigorous manner since the annual meeting at the home of Mrs. J. M. Hodson, Greenwich, Conn., in May, 1948. The writer assumes that the majority of the present members are familiar with the accomplishments and activities of the American Rock Garden Society during the past ten years, as well as with its memorable visits to the gardens of Mr. Epstein in Larchmont, N. Y., Leonard J. Buck in Far Hills, N. J., Mrs. J. Norman Henry in Gladwyne, Pa., Mrs. Houghton in Chestnut Hill, Mass., and others. If not, this is a story for another time, as the word limit for this assignment has already been exceeded.

REMINISCENCES OF A CHARTER MEMBER

ROBERT M. SENIOR, *Cincinnati, Ohio*

BEFORE STARTING TO WRITE these "reminiscences," I looked up some early correspondence with members of our Society, letters from Mrs. Houghton, Mrs. DeBevoise, Mrs. Stout, Mr. Blair, Mrs. Marriage, Mrs. Regan, and others. So many of those who were active in the early days of our Society have died that I often wonder how many of our charter members are living. Possibly at one of our annual meetings we ought to have a reunion of this dwindling group.

It was in the fall of 1953 that I received an invitation to attend a meeting at the Hotel Commodore in New York to form a rock garden society. I must confess that my memory is a bit hazy in regard to that first meeting. I remember that some of us gave short talks, and I believe that a committee was appointed to draft a constitution and by-laws. But is was not until the following spring that the American Rock Garden Society was formally launched; and of course we all know that Mr. Free was chosen to be our first president, and Mrs. Hansell our first secretary.

Shortly after the Society was formed, we received an invitation from the Rock Garden Society of Ohio to hold our annual meeting in Cincinnati, and this offer was accepted. This was the only time our organization has met west of the Alleghenies. At this point it may be of some interest to say a word about the Ohio society. It was started in 1929, and is the oldest rock garden society in the United States, and I believe in the world: several months later the Alpine Garden Society of Great Britain was formed. At first the Ohio society attracted a large number of members in both this country and Europe, but after our Society was started, the membership of the Ohio organization diminished, and today it includes only people from southwestern Ohio. At any rate, at our Cincinnati meeting, three large rock gardens had been built, and there was a large display of rock plants, held in a building in one of the city parks. A number of our members from fairly distant places sent plants. Among those who forwarded some,

I remember those of Mrs. Houghton and Mrs. De Bevoise. Mr. Borsch even sent some plants from Oregon, and among these were *Gentiana acaulis* in full bloom. This was the first time I had ever seen this magnificent species.

Speaking of *Gentiana acaulis* reminds me of the beautiful garden of Mr. and Mrs. Walter D. Blair at Tarrytown, which we once visited while attending an annual meeting in New York. There, in a fairly well shaded location below a pine tree, was a group of *Gentiana acaulis* in full bloom—in fact the finest collection of these plants that I have ever seen in this country. Mrs. Blair once wrote an article in the *Bulletin* in which she explained how she had originally dug out the soil to a depth of eighteen inches, put in six inches of old, well rotted manure, and then filled in with a mixture of leafmold, sand and peat. Below these gentians, the ground sloped away for a considerable distance, and over the shaded hillside, the brook tumbled down between primroses, mertensias, and other moisture loving plants.

Mrs. Houghton was an expert gardener, and many years ago, when paying her a visit, I was delighted to see such well grown, healthy plants. In my mind's eye there still dwell pictures of her interesting rock plants, but strange to say, the one that most attracted me was not a rock plant at all, but a beautiful peony with a dreadful name, *P. mlkosiewitschii*. The large single flowers were of a rich sulphur color, with not a blemish on them. Incidentally, I wonder why we see this delightful plant so seldom.

One year Mrs. DeBevoise invited us to hold an annual meeting at her seaside home at Greens Farms, Connecticut. She was also an expert gardener, and at one time was in the rock plant nursery business. On several occasions she and I exchanged plants.

Possibly the finest collection of unusual rock plants that I have ever seen in this country was at the garden of Mr. Richard Harlow, in the Pocono Mountains. The members of our Society who took this excursion probably will always remember this experience. Oddly enough, one planting of sempervivums particularly caught my attention. On a level piece of ground Mr. Harlow had arranged a veritable mosaic of these plants; light green ones were bunched, practically touching these were brown ones, followed by gray-leaved ones, and many other "Hen-and-Chickens" of varying shades of color.

Whereas throughout the years the interest in rock gardening on the north Atlantic seaboard, and in the Pacific Northwest, has been growing steadily, it seems to me that in the Ohio Valley and in the central states generally, the growth in interest has not been so marked. I can remember some local people who in the late 1920's and early 1930's started rock gardening enthusiastically, but who later either gave it up or confined themselves to raising such old standbys as prostrate veronicas, yellow alyssums, and the creeping phloxes. There may be a reason for this, in that for the average gardener in this section, raising such temperamental plants as *Campanula morettiana* or *Ramonda myconi* is almost an impossibility. When one gets a few hot summer days, with the thermometer registering 95° to 100° in the shade, and possibly 90° at night, the high alpiners usually perish. I am reminded of a story that I once heard, of an Englishman who on a hot summer day addressed the members of a local garden club. Mopping his brow, he began his talk by saying, "You ladies must be Spartans to garden in this climate."

Despite these handicaps we old rock gardeners never seem to give up. We raise new plants, always hoping that Fortune may favor us; and if we bring the plants to fruition, we experience a quiet sense of satisfaction. If, in addition, the plant is a beautiful one, there is also an aesthetic appeal. Some of our most delightful hours are spent in this way.

ON EASTERN CLIFFS

JAMES E. MITCHELL, *Barre, Vermont*

Mr. Mitchell, a charter member of the Society, has long been known as a leading authority on the mountain plants of the Northeast; he has offered many of them in the fascinating catalog put out by his nursery, which increasing years have forced him to abandon, greatly to the regret of gardeners.

He most generously placed the manuscript of his as yet unpublished book, "On Eastern Cliffs," at the disposal of the editor. Because of space limitations, only a few selected episodes are presented here, and even in these it has been necessary occasionally to condense, or even to paraphrase, transitional passages, although every effort has been made to retain the atmosphere of the original. Even so, the fascinating accounts of several Vermont peaks, Mt. Katahdin, and the Gaspé cliffs have been omitted. If our readers wish, and if Mr. Mitchell is willing, it may be possible to continue his account in future numbers; or better still, perhaps Mr. Mitchell may be persuaded to publish his work in its entirety.

THE LONG TRAIL

THE celebrated Long Trail is a blazed trail through the wilderness, beginning at Williamstown, Mass., and extending over the highest peaks of the Green Mountains to the Canadian line in the town of North Troy, Vt. Numerous lodges for the shelter of the hiker have been built every ten or fifteen miles throughout its 261 mile course. While only an occasional hiker tramps its entire length, every year sees hundreds of mountain lovers jumping, sliding, and scrambling over from ten to one hundred miles of this trail, breathing the pure mountain air, quenching their thirst at cool mountain springs, and thrilling at the sight of some of the loveliest scenery in all New England.

The southern part of the trail, from the Massachusetts line north for a hundred miles, is also part of the celebrated Appalachian Trail, which stretches 2100 miles from Mt. Katahdin in Maine to Mt. Oglethorpe in Georgia. Going north, the Appalachian Trail leaves the Long Trail at Sherburne Pass and strikes east to Hanover, N. H., and thence on through the White Mountains.

After leaving the Massachusetts line, for the first fifteen or twenty miles the trail passes over mountains which are only about 2500 ft. high, but it soon climbs above 3000 ft., and at Glastenbury Mountain it is well over 3700 ft., passing over a score of peaks above 3000 ft. before the Canadian line is reached.

The trail is generally a narrow path cut through the wilderness. When it gets above the tree-line its course is marked by splashes of paint on the rocks and by an occasional arrow sign. When above 3000 ft. but below the tree line, the forest is stunted and the ground is usually covered with the loveliest carpet of bright green mosses; except for tiny patches found in a few swamps, its like is never seen in the lowlands.

Along this trail much of the plant growth consists of the common species found in any New England forest or wild pasture, but two of the highest peaks, Mt. Mansfield and Camel's Hump, have a flora distinctly alpine and very interesting to the rock gardener, while Smuggler's Notch, through which the trail passes, is a veritable paradise for the plant hunter, having a flora which, if we except Lake Willoughby's mountains, is not found elsewhere in the eastern states.

It is rather remarkable that the southern third of the trail, while very beautiful, sometimes heroically so, is not especially notable from a botanical standpoint. Even Killington Peak, 4241 ft. high., only about two hundred feet lower than Mt. Mansfield, has a much poorer flora than either Mansfield or Camel's Hump. From a botanical standpoint, the first really interesting mountain, going north, is Mt. Horrid. Undoubtedly, the most interesting part of the trail is that from Mt. Horrid to Smuggler's Notch. Not only will the rock gardener find much to interest him in these beautiful mountains, but the botanist who is not interested in the cultural values of the plants will find scores of rare species beside the Long Trail, while the nature lover will see not only the beautiful flowers, trees and shrubs, but many animals and birds.

CAMEL'S HUMP AND MOUNT MANSFIELD

Camel's Hump Mountain, situated about ten miles from Waterbury, Vermont, has an altitude of 4,083 ft., only 310 ft. lower than Mt. Mansfield, and from many parts of the state where both mountains can be seen at the same time, has the appearance of being the higher of the two.

While the Long Trail crosses directly over this mountain, most hikers climb it by taking the Regular Trail or the Alpine Trail from Couching Lion Farm at its base in the town of Duxbury. To reach these trails by car, one should inquire in Waterbury for Winooski Street, which leads south from Main Street, crosses the river, and then, turning at right angles, proceeds down the river about four miles to the little settlement of North Duxbury. Here the road turns sharply to the left and goes along for three miles up to the base of the mountain, where it ends abruptly at Couching Lion Farm, famous as the home of Dr. Will S. Monroe, whose untiring efforts, more than those of any other man, have made possible the central stretch of the Long Trail. His memory will be honored by future generations of hikers as they climb over this ridge south of Camel's Hump, which is known as the Monroe Skyline, a fitting memorial to a real mountain lover.

Many members of the American Fern Society, the Vermont Botanical Society, the Appalachian Club, the Torrey Botanical Club and other organizations can attest to the hospitality of Dr. Monroe, who often entertained from thirty to fifty of these scientific friends for days at a time. He made a fine parking place just off the road, where one can safely leave a car and, taking a trail opposite the parking place, circle the farm buildings and proceed up the mountain.

The trail formerly went up between the farm buildings, and several years ago I discovered, about one hundred yards from the buildings and a few yards off the trail, a patch of the rare white fireweed (*Epilobium angustifolium album*), a pretty plant for our wild gardens, exceedingly rare. At the time that I found it, I wrote that as it is a spreader and that as there were thousands of plants in the half-acre patch, it could be collected freely, as it would spread faster than it could be dug. I removed about fifty plants and then watched that patch disappear, not by the digging of men, but by the encroachment of ostrich fern and brush. I saw it gradually strangled to death until finally, about five years from the time I had discovered it growing in thousands, I found two small anaemic plants left, mighty sickly looking. I dug them and took them home where they became happy and increased. I am quite sure that I am the only person who ever dug a plant from this group, and give these details to show how ruthless is Nature in her destructive moods.

Along the trail up to the huts, the flora is much the same as that elsewhere beside the Long Trail, but we have scarcely reached the huts when a change begins. Indeed, for a quarter-mile before we reached the huts, the trees had been

showing the effect of the high altitude by their dwarfer and more contorted forms. By the time the huts are reached this tendency toward dwarfness has increased until few trees are more than ten feet tall, while a hundred yards beyond the huts the spruces and firs, many over a half-century old, are only four to six feet high.

The trail here is steep, and as we are peeping around under the dwarf trees, we suddenly see in the dense shade a fine sheet of *Empetrum nigrum*. It has made a mat about three feet in diameter and falls gently over a portion of the bare mountain rock. Its fine evergreen foliage makes it a beautiful plant, and when covered with the oval bluish-black fruit, it is an alpine worth trying in our gardens. This plant, so plentiful in the White Mountains, on Mt. Katahdin, and in spots in eastern Maine, should not be disturbed here, for it is a rarity in the Green Mountains, and has been found in only two or three places in the state of Vermont.

This difficult plant does not need the mountain air, as is shown by the fact that it grows at sea level along the Gaspé North Shore, while a stray colony has been found on the eastern tip of Long Island. It should be taken up with a good quantity of the mountain soil clinging to its roots, to preserve as much as possible those mysterious elements about which science knows practically nothing, but whose existence in the soil is unquestionably necessary for the growth or even the existence of this and many other difficult American alpine. Plant this mass of roots and black mountain grit in a soil composed of three parts ground acid peat and one part pure sand and give the plants shade from the noonday sun; a northern exposure and a wet moraine are preferable.

A little farther up the trail, the evergreens suddenly cease; there are here no dwarf spruce or fir mats a few inches high, clinging to the rocks, such as we see on Mt. Washington. When they have decreased to about two feet in height, they suddenly give way to masses of *Vaccinium pennsylvanicum* and its narrow-leaved variety *angustifolium*, mixed together with that real alpine, *V. uliginosum*. An occasional clump of *Vaccinium vitis-idaea minor* can be found above the tree-line, but it is not plentiful and should not be disturbed. We have scarcely passed the last of the stunted firs when *Arenaria groenlandica* shows her cheerful flowers everywhere in sun and partial shade. So abundant is this plant that even the average hiker, who generally sees nothing, notices it and asks its name. The answer is "mountain sandwort," because this English name may possibly be remembered, while the Latin one would mean nothing to the average hiker.

All along the trail grows the Labrador tea (*Ledum groenlandicum*), here dwarf and good. Selecting a few of these dwarf specimens, I place them in my collecting bag. This is surely a hardy plant.

The south side of the "Hump" is an abrupt perpendicular face several hundred feet straight down, yet, as with most perpendicular cliffs, a good mountain climber has no trouble in finding a way along the face. One day in July, while working along the face of this cliff, I found a very dwarf form of Cutler's goldenrod (*Solidago cutleri*) and clinging to the cliffs, the only *Salix uva-ursi* ever found on this mountain. The foliage of this willow was very different from that of *S. uva-ursi* as found on Mt. Washington, but good botanists have pronounced it the same species.

Mt. Mansfield, the highest point in Vermont, has much the same alpine flora as Camel's Hump, only more of it. During the past few years this mountain has become well known, not only to the summer tourist, but also as one of New England's most famous skiing resorts in winter.

Unlike Camel's Hump, which is a sharp, isolated peak, Mt. Mansfield is a high long ridge; from many distant parts of the state, the whole ridge has the



Sedum roseum on Mt. Horrid, Vermont

James E. Mitchell

appearance of a human face, with a very long space between the nose and chin, looking straight up to the sky. The Forehead is on the south end of the ridge; the Nose is sharp and distinct, while the chin at the north end of the mountain is the highest part. On the upper lip at the base of the Nose is a very nice little hotel, the Mansfield House, whose charges are very moderate.

The usual way to reach Mt. Mansfield by motor is to go up or down the Winooski valley over Route 2, a cement highway, to the pretty little village of Waterbury. Here we turn sharply north and drive twelve miles over Route 100 to the village of Stowe, where we leave the cement road and, turning west, proceed over the good gravel road which crosses through Smuggler's Notch. Two miles short of the Notch we come to the Toll Road, where, if we wish to go to the top the easy way, we turn left, stop to pay \$3.00 toll for the car, and drive the three miles to the hotel. This road, like the Mt. Washington Toll Road, is corporation-owned and is kept in good repair.

If, however, your party is composed of real mountain climbers, you will drive about a mile ahead and stop your car at a roadside parking place and walk a quarter mile down to Bingham's Falls, not after plants but to see the lovely falls; do not stop with seeing the upper falls only, but after standing on the bridge and enjoying the upper falls, go on down a marked path about fifty yards and gaze on the pretty lower falls—then back to the car and onward for a half mile to Barnes Camp.

Here you may park your car (they will charge you a quarter) or you may do as the writer, being a true Vermonter, always does: drive fifty yards farther, leaving the car beside the road (thus saving a quarter!) and dive into the bushes on the left side of the road, and strike the Long Trail to Taft Lodge about fifty feet from the public highway. The Long Trail formerly came out here, anyway.

There are several other trails up the mountain, but this one, known as the Barnes Camp Trail, is the best, because the easiest, to go up; it is the poorest, because it lacks scenic attraction, to come down. As we are going up, this is our trail. The climb to Taft Lodge is by easy grades and about three miles long. There is little chance to see anything but woods and the common flowers of northern New England forests. After about three miles, the trees become slightly stunted and we know we are near Taft Lodge, a large log cabin with an attendant, kept by the Green Mountain Club. Here, the wayfarer can obtain food and lodging, and here the hiker can go to the edge of the cliff, find a rustic seat, and rest and enjoy the wide sweep of landscape before him.

After a rest, the climber goes up the trail back of the lodge, which immediately becomes steeper, while the Chin towers a thousand feet above. Another quarter mile and we are at the signpost at the base of the Chin, which points us to the Lake-of-the-Clouds, to the Adam's Apple, and up over the Chin. If we take half an hour to explore the Adam's Apple we shall find most of the plants which we shall later find on the Chin. However today we are climbing the Chin, and right here is our first real climbing, where we shall have to use our hands to assist our feet. A half mile of this, and we stand on the Chin, Vermont's highest peak.

All over the Chin above the tree-line, the prevailing shrubs are the three alpine blueberries, *Vaccinium caespitosum*, *V. uliginosum*, and *V. pennsylvanicum* var. *angustifolium*; the last of these is now being labelled *V. angustifolium* by some botanists, notably the Harvard group. All of these are good dwarf shrubs for the acid soil rock garden. Here, on the highest point among the alpine grasses, are several mats of *Diapensia lapponica*. This is the only station of this plant in the Green Mountains, and it should not be touched, although it is probable that it will be destroyed by the feet of heedless non-botanical mountain climbers, but those of us who know the plant should try to preserve it.

Of course, *Arenaria groenlandica* and *Potentilla tridentata* are everywhere, and a little searching will locate Cutler's goldenrod, *Solidago cutleri*, but it is not common here, nor is the alpine willow, *Salix uva-ursi*. The very rare fern, *Dryopteris fragrans* (*Aspidium fragrans* of Gray's Manual) formerly grew on this mountain, but professional botanists have uprooted the last known plants here and CONSERVED them by placing them in their hay cabinets, which they euphoniously call herbariums.

On the Lip, the long narrow part of the crest between the Nose and the Chin, are several large tracts of the lovely *Vaccinium vitis-idaea*, in as good form as the best White Mountain one, and far better than the form found by the writer on the knife edge in Smuggler's Notch, only about a half-mile away in a straight line.

When you descend, I implore you, on arriving at Taft Lodge, not to go down the Long Trail to Barnes Camp, but rather to take the Hell Brook Trail to the Big Spring, and then back along the highway a half mile to your car. There is little difference in the distance travelled, but a great difference in the scenery.

SMUGGLER'S NOTCH

Smuggler's Notch is probably the most celebrated scenic attraction in the Green Mountains of Vermont, mountains noted for their beauty and visited by thousands of tourists every summer. What is of more direct concern to us, the cliffs in this Notch are the habitat of one of the most interesting floras to be found in New England.

The usual route to Smuggler's Notch is by way of the pretty village of Stowe. In the center of the village, called the "Gateway to Mt. Mansfield," we

turn west from the cement and proceed over a very good, well-marked gravel highway. After three miles of easy grade the road crosses Rocky River and immediately begins to climb. Our road, good for a gravel one, proceeds straight ahead to Smuggler's Notch, a deep gorge with a general direction of north and south, breaking into the Green Mountains at that range's highest point. In this section the Green Mountains run southwest to northeast, so that the gorge cuts it in a diagonal direction. On the west side the Notch is lined by the precipitous cliffs of the lower part of Mt. Mansfield, while on the east rise for 2000 ft., almost as precipitously, the sides of Mt. Sterling and Madonna Peak. Through the bottom of this deep gorge the state of Vermont maintains a fine road over which thousands of motorists ride each summer.

The scenery through the Notch is of great beauty and grandeur. The points of interest to the average visitor are the "Big Spring," the "Elephant's Head," the "Hunter and his Dog," all on the east side of the highway, and the "Caves" on the west side. The cliffs on both sides are from 300 ft. to a quarter-mile back from the road, and on these cliffs and in their fissures grows a remarkable flora of great interest to a rock gardener. Many thousands of delighted tourists from all over the world pass through Smuggler's Notch every summer, but very few of them ever dream that on the towering cliffs on either hand grow some of the rarest and most beautiful plants found in America.

As a result of many botanizing trips made into the Notch, I have learned that, while both sides of the Notch abound in rare alpine, there are more species, and more plants of each species, at the base of the tallest cliffs on the west side than in any other spot of equal size elsewhere in the Notch. Therefore when, on a clear, hot July morning, the writer led a small group of amateur botanists on a collecting trip, we drove our cars to the highest point of the highway, and where the road began to descend to the north, found ample parking space on the east side of the road. Leaving the cars here, we walked back a little, and facing the cliffs to the west, we could see several places where great sections of the cliffs had broken away and huge masses of rocks had tumbled and flowed like a river down the mountainside. To the largest of these debris rivers we made our way.

The base of the cliffs and top of the debris were about a quarter of a mile ahead, a quarter mile of hard climbing through thick brush, over boulders, and through gullies and ravines with no marked trail. It took forty-five minutes of the hardest kind of work to negotiate that quarter-mile. On leaving the road our attention was at once arrested by the profusion of ferns of all the more common varieties, and we soon found beautiful Braun's holly fern (*Polystichum brauni*); indeed, it was in the Notch that Pursch, the German botanist, first found it a century ago. Another good rock garden fern, the rock polypody (*Polypodium virginianum*), grows in masses on shaded boulders all through the Notch; an easy plant to grow in dense shade, it is very abundant near the highway but is not plentiful on the high cliffs. The rocks over and around which we scramble are covered with large healthy plants of *Saxifraga virginensis* in full bloom. This, the common saxifrage, is an excellent plant for our rock gardens if given a moist location in light shade.

As we laboriously proceed through what soon becomes a dense tangle of shrubs, we begin to see the mountain form of the fancy fern, *Dryopteris spinulosa dilatata*, a most beautiful species, which improves in width and lace-like appearance as we go higher. Violets in a half dozen species, including *V. canadensis* in full bloom, are on every hand.

Bearing slightly to the left, in order that we may keep directly opposite the "Elephant's Head," after about forty minutes we emerge from the taller



Primula laurentiana at Mt. St. Pierre

James E. Mitchell

growth and see, about fifty yards ahead, the rock debris which is our goal. The instant we leave the shade of the tall trees, we must keep our eyes open for we are approaching the home of the mountain saxifrages. As the trees give way to low shrubs, off to the right we notice a wet ledge rising just above the brush, and as we hasten to it, we see our first Scotch bluebell (*Campanula rotundifolia*) waving its first bells of the season on long graceful stems. About the best and easiest of the campanulas, it encircles the globe in the northern hemisphere, and while it varies much in its wide range, it is always a fine alpine.

As we approach the ledge we discover that sterling little rock fern, the rusty woodsia (*Woodsia ilvensis*), a little five-inch gem that should be in every garden. It will grow in sun or light shade and stands drought remarkably well.

Knowing that I can always find a place for it and for another Scotch bluebell, I am sliding a couple of each, well protected with moss, into my collecting bag, when "Oh, what is this? Just look at this?" I hear one of my young companions cry. She had just passed by me and is perhaps ten feet beyond, kneeling down among the shrubs and gazing at a plant, rare indeed, among the rocks. It is *Castilleja pallida*, but, like all the castillejas (and there are scores of beautiful species in the West), it has the taint of parasitism; I doubt that any of the genus is worthy of a gardener's attention. The shrubs have decreased, there are more of the broken rocks and, as we look toward the cliffs, we are gazing over a river of boulders and small disintegrating stones hurled from the cliffs a thousand feet above by the action of frost and ice. This stone river is about two hundred yards long, up to the base of the cliffs, with the largest pieces lowest down. As we get nearer the cliffs, the stone disintegrates and in part turns to soil, with here and there the solid bedrock showing through, while under and through this rocky debris, throughout the growing season, there filters a steady flow of water coming from the drip of the cliffs above—a natural moraine. The lower part of the section up which we are climbing contains few plants, as the fresh flow of rock over it every spring kills any that may try to get a foothold here, but on the sides and under the shelter of projecting ledges are many alpiners, and, as we look toward the cliffs, we see off to the right a wide space covered with vegetation and abloom with color. There the conformation of the ledges has turned the spring flow of tumbling rocks to the side; a gravelly soil, from nothing up to a foot deep, has formed. This, with the steady drip of water from above filtering through, furnishes the ideal moraine for the treasures we find there, and teaches, better than any book, how to make a moraine in our rock gardens.

While yet in the thin shrubbery just below the open moraine, we find on a damp ledge that fine white flowered alpine, *Draba arabisans*, which gets its specific name from the similarity in shape of its foliage to that of the arabis. In the wild, it is a thin, straggling plant, but in cultivation in full sun it is a close tuft of green foliage covered in spring with white arabis-like flowers; unlike the arabis, it never becomes straggly nor crowds out other plants. I first brought it into cultivation as an experiment, but it is now recognized as one of the best white-flowered drabas.

We have scarcely begun to climb the open moraine and are yet among the large boulders when we find, growing out between them, two very rare and almost unknown alpiners, *Hedysarum boreale* and *Astragalus blakei*, very closely related members of the great pea family and very much alike. The principal distinction between the two genera is the seed pods: that of *Hedysarum*, by constriction of the pod, is divided crosswise into two to eight sections, each containing one seed; that of *Astragalus* has no cross sections, but in some species may be divided into two chambers lengthwise by the intrusion of the dorsal or ventral sutures (front or back seams). These two species, found also at Lake Willoughby, Vt., are of about equal size, from twelve to eighteen inches high in the wild, but because of their long tap roots, only small plants can be moved, and these seldom grow over ten inches high in our gardens. The flowers are pea-shaped, bright red in the hedysarum and varying from white to blue in the astragalus. The upper sides of the leaves of both are a glossy green, but the lower sides are quite distinct and give a means of identification when there are no flowers or seeds. The underside of the leaf of *Hedysarum boreale* is glossy and is a slightly different shade of green from the upper side, while the underside of the leaf of *Astragalus blakei* is gray. After a little search we find some mature seed of the hedysarum which we collect. None of the astragalus seeds is ripe as early as this date and it is a mistake to dig any of the wild plants because of their long tap roots.

The seed should be planted outdoors immediately, as the action of frost seems a necessity for germination of the seeds of these alpine plants.

By this time our entire party is scattered along the rocky moraine, and one of them finds, out in the open sun, a small plant of the rare *Saxifraga aizoides*. As we ascend the cliffs we find, on the parts that are dripping wet, lovely sheets of this saxifrage, sometimes two feet across and three long, just now beginning to bloom. Its foliage is quite moss-like, very dark green and never over an inch high. The flowers, on one inch stems, are a nice clear yellow with orange or red stamens, which give the flowers a deep orange color-effect. This rare saxifrage is seldom seen in cultivation in America, but it can be successfully grown in a wet moraine shaded from the noonday sun.

All over the moraine and on the cliffs where not too dry, we find the sterling *Saxifraga oppositifolia* creeping over the rocks, with foliage not over a half-inch high; it too can be found here in large green mats a foot or more wide and as much long. At this date, mid-July, its blooms have long faded; but if you should come here in the middle of May, as I have done, you would find it in full bloom, great red to purple blooms on two to four inch stems. At that date you would also find snow in the shaded spots here, and one May day I had the pleasure of seeing a fine sheet of this saxifrage in full bloom, hanging from a rock shelf within a foot of a fifteen-inch icicle. This is not a difficult plant on a moraine in shade, or in a moist spot facing north, and is not a difficult plant to gather in the wild. We shall meet it again at Lake Willoughby, Vt., but nowhere else until we reach the shores of the Gulf of St. Lawrence; the White Mountains of New Hampshire and the Adirondacks of New York know it not.

Here too we find an arenaria, mistaken by most of the younger members of our party for *A. groenlandica*, but I am able to identify it as *A. verna* var. *propinqua*, a much smaller plant and a true perennial. Also, *A. groenlandica* is an acid soil plant plentiful on Mt. Mansfield, but never seen by me in Smuggler's Notch. By this time someone in the party has found the silver encrusted saxifrage, *S. aizoon*, at this late date in full bloom, its airy spray of cream-colored flowers rising six to ten inches above the beautiful rosettes. It grows singly and in bunches well up under the shade of overhanging shrubs, its rosettes forming silvery sheets several feet across. It is one of the easiest and best of the saxifrages for the rock garden. The great English writer, Reginald Farrer, says that it is a sun lover and that in the Alps the finest plants are on acid granitic formations while the plants on limestone are much inferior. This may be true in the Alps of Europe, but it is not true in America. Here it is never found on granitic formations, but always on lime-bearing rocks, and the finest plants are always in more or less shade.

Here and there on the sides of the moraine, and higher up on the part protected from the spring deluge of rocks, we find that splendid rock garden shrub, *Potentilla fruticosa*. It is here found singly, in clusters of a few, and also in patches twenty-five feet or more across. It is grey-leaved, has yellow roses which are from one inch to one and a half across, and blooms all summer. Plants of this shrub grown from European seed, and native plants from farm pastures in western Vermont, may reach three to four feet in height, but this mountain strain grows from twelve to eighteen inches high and plants brought down into my garden have stayed dwarf. I have, therefore, called this Smuggler's Notch strain *P. fruticosa* var. *montana* (of the mountains). I regard it as one of the best and easiest of rock garden shrubs, which will grow anywhere if a little lime is scattered about its roots.

The "Botanist's Paradise" is directly opposite the "Elephant's Head," an enormous mass of projecting rock on the opposite cliffs. I had botanized those

cliffs, and as the group sat eating our lunch, I explained that the flora on those opposite cliffs was much the same as on our side, but that I had found there one species that had never been found elsewhere in the Notch. On one of my numerous trips I had discovered, on a high knife-edge just south of the "Elephant's Head," a large patch of *Vaccinium vitis-idaea minor*. This acid-soil plant seemed out of place on that limestone cliff, but its presence could be explained easily. To this high knife-edge of solid rock no lime-charged water could come up from below, so that all the water plants there received came from the sky and was absorbed by the foot-thick covering of humus built up by thousands of generations of plants, while all excess of rain water ran down the steep sides, taking any surface lime with it. The layer of humus was highly acid although it rested on a limerock foundation, and being acid, was a fine home for the vaccinium.

As we ate our lunch we could see growing in the solid mountain wall, only a few feet away, a neat little plant with two oval-shaped leaves about an inch long, from which rose a two to three inch stem bearing a single purple flower much like an inverted violet. This is *Pinguicula vulgaris*, very rare in New England, but appearing on the Gaspé Peninsula in eastern Canada. It dies down in the fall to a little bulb-like root, not a quarter-inch in diameter, which I have discovered is considered a great delicacy by field mice in my rock garden. Perhaps not as large as *Pinguicula grandiflora*, a native of Ireland, it is a good and interesting alpine. After luncheon, we tried the right side of the moraine, which is protected from the stone flow and is covered with vegetation. Here one member found, among a tangle of *Potentilla fruticosa*, a few plants of *Gentiana amarella*, a very rare plant of much interest to the strictly botanical members of the party, but, as it is an annual, of little interest to the rock gardener.

All were greatly interested in a little fern we found here, tucked back into the rock crevices completely away from the sun's rays, that rare and dainty gem, the green spleenwort (*Asplenium viride*) said by Gray to be widely distributed but rare. It is the most difficult fern I have yet tried to grow. It is scarcely three inches high and always grows on lime-containing rocks, generally in the fissures and always in deep shade. One of the party found another alpine fern even smaller than the green spleenwort; it was the dainty alpine woodsia (*Woodsia alpina*). Off among the large boulders we found that rock-inhabiting clematis, *C. verticillaris*, with its large blue flowers. This beautiful flower grows, in small numbers, over many of the lime-containing ledges in Vermont. It varies much in color and can be found in shades of pink, blue and purple. It grows slowly under cultivation and makes a good rock garden plant.

Near the base of the high cliffs just north of "Botanist's Paradise," we discovered a real fernery. Here in about one hundred feet of cliff we found green spleenwort, rusty woodsia, alpine woodsia, and hundreds of maidenhair spleenwort, the last none too common on these cliffs. *Asplenium trichomanes* has no superior as a rock garden fern. It is graceful and pretty and easy to grow in light shade; no gardener should have trouble with it. It has much the same appearance as a large green spleenwort, but the stipe (leaf-stem) is black while the stipe of the green spleenwort is green. However, there is no similarity in ease of culture of these two species. Maidenhair spleenwort is one of the easiest ferns to grow, while green spleenwort is one of the most difficult, and of course a much rarer fern.

Scattered all over the place were thousands of plants of the rare *Erigeron hyssopifolius*, a six-inch daisy with grass-like foliage and light pink to lavender flowers. It is inclined to be straggly here in the mountains, but when brought down to our gardens, becomes a dense tuft of foliage and blooms much more

profusely than in the mountains. While not a showy plant, it is better than many of our European rock plants and will, apparently, grow anywhere.

When all these plants had been collected and we had searched in vain for *Draba stylaris*, a white flowered species that the great botanist, Pringle, had found here half a century earlier, tired but happy we began our descent to where our cars were parked beside the highway. As we began the homeward drive, the setting sun was disappearing behind the mountain ridges and someone said "It is the end of a perfect day."

THE WHITE MOUNTAINS

Situated in northern New Hampshire and extending into western Maine is that group of granitic mountains known collectively as the White Mountains. For many years considered the highest peaks east of the Mississippi River, they are now known to be about four hundred feet lower than the Mt. Mitchell Range in North Carolina, and probably are also surpassed by one or more peaks of the Torngat Mts. in northern Labrador. They are a group of real mountains of many peaks, yet they cover a space only about thirty-five miles square. They are quite distinct from the backbone of the main Appalachian system, which is, unquestionably, represented in New England by the Green Mountains of Vermont.

The White Mountains are divided into several distinct ranges by deep depressions which cut through the mountains in a general north and south direction. Through these valleys has been constructed a very good system of public roads over which roll thousands of cars from every state in the Union, bringing thousands of vacationists to this great playground every year.

The largest and most important of these mountain ranges is known as the Presidential Range, from the fact that its highest peaks were named after our early presidents. Mt. Washington, the highest of these, towers almost a mile and a quarter above sea level (6284 ft., to be exact), yet its crest can be reached by several different trails and, easier yet, by the celebrated "Cog-wheel Railroad," which climbs the western side of the mountain, while the equally famous "Toll Road" furnishes an excellent gravel road for automobiles up its eastern slope.

For many years botanists have known that a unique flora grows on these mountains, quite unlike the flora of the surrounding country, and, with few exceptions, not met again until it is found 160 miles northeast on Mt. Katahdin, then skipping 200 miles, it turns up in the Shickshock Mts. of the Gaspé Peninsula, and also in Newfoundland, the coast of Labrador, and western Greenland.

There are many places in these mountains famous for the abundance of these alpine plants. The Alpine Garden, Tuckerman Ravine and King Ravine are but three of the scores of places where many rare plants can be found, yet many people drive up the Toll Road or go up the Cog-Wheel Railroad to the top of Mt. Washington, get out and look around and see nothing but *Arenaria groenlandica*. This is truly a pretty plant, but is short-lived in our gardens, and therefore useless to us. I have heard several persons say that there are few flowers on Mt. Washington, yet I know of spots containing several acres where it is scarcely possible to take three steps without treading on some rare mountain gem. I gathered one little clump about six inches square which contained a plant of *Diapensia lapponica*, a *Loiseleuria procumbens*, a *Salix uva-ursi* and a *Potentilla tridentata* all mingled together in one little group. There is, of course, little chance for vegetation other than lichens on the tops of the higher White Mountain peaks: the extreme upper sections are composed of great heaps of enormous angular boulders with practically no soil anywhere in which a plant could grow.

UP THE TOLL ROAD

The Mt. Washington Toll Road is a remarkable piece of engineering. It is eight miles long and rises a mile in that distance. There is not a dip nor even a level place in the eight miles, but a steady steep grade which any modern car can negotiate in second gear. It can be driven in high gear by some cars, but at this date most cars that have tried it have had to be stopped and cooled off before reaching the summit.

The road is owned by a private corporation, and a gang of men with trucks is kept busy all summer keeping it in repair. The toll charge is \$5.00 for the car and its driver, and \$1.00 for each additional passenger. While this charge is pretty stiff, it is well worth the price to any person who enjoys the heroically magnificent in scenery. Probably nowhere in eastern America does an automobile road pass through such stupendous scenery. The famed Storm King Highway along the Hudson, said to be the costliest road, per foot, in existence, is a pretty cowpath in comparison. When you ride on it, you exclaim, "What pretty scenery," but when on this Toll Road you have passed the Half-Way House and emerged from the woods and taken your first hairpin turn right on the brink of the Great Gulf, and you look over the low stone wall that separates you from a thousand foot drop, you do not say "How pretty!" In fact, you probably don't utter a word, for there is a stifling feeling in your throat and your heart almost stands still.

On an August day, my son Earl, A. F. Emberley of Ayers Cliff, Quebec, and I, being experienced plant hunters, did not go to the top because we were after real botanical finds and they are seldom found on wind-swept peaks. Shortly after passing the Half-Way House we began to see plants of *Vaccinium vitis-idaea minor* and a dwarf form of *Ledum groenlandicum*, but knowing of better hunting grounds, we did not stop to look over these excellent plants. Above the Half-Way House some of the mileposts had disappeared, but we proceeded about a mile and a half farther on, until after making a second sharp hairpin turn, we came to the spot where the Nelson Crag trail comes out onto the Toll Road. This trail proceeds along the road about fifty yards and then goes up the face of Nelson Crag. Here on the right side was a place into which we could back the truck and keep out of the traffic, while on the opposite side of the road was a water tub fed from a never-failing mountain spring with ice-cold water, clear and sparkling. Best of all, this spot proved to be the center of a real alpine garden not marked on the maps—nearly two and a half miles below the summit, it is one of the best alpine plant stations in the White Mountains.

Our contour map showed us to be at approximately 5000 ft. altitude, or between 1200 and 1300 feet below the summit which we could plainly see from this point. The mountain flattened out and here was a spot of about five acres that, while not level, in comparison with the Great Gulf below and Nelson Crag above, appeared like a great undulating mountain park, from which the north side descended rapidly into the Great Gulf, one of the largest ravines—or glacial cirques, as they are called by the geologists—in the White Mountains.

The east and west boundaries of our natural rock garden were the winding Toll Road, while on the west it terminated in a narrow swale, and across the swale a growth of low shrubs. In these five acres or so there were literally hundreds of thousands of low Arctic plants. It was simply impossible to walk without treading on hundreds of them. Here we found *Loiseleuria procumbens* and *Diapensia lapponica* by the thousands. Here too were great masses of that dwarf arctic willow, *Salix uva-ursi*, creeping along over the rocks, never more than four inches high. This is an easy plant to grow almost everywhere and is a

real plant for our rock gardens. The *loiseleuria* is also a tiny shrub, never over two inches high; large plants may cover a square foot but most of them have scarcely a fourth of that expanse. It has beautiful pink flowers in July and is known in Europe, where it is also native, as mountain azalea, although it is not really an azalea at all. You must give this and other plants found here a highly acid soil. When you dig one of these plants you notice at once the jet black soil, plainly composed of nothing but the disintegrating granitic rock and the humus from the decay of untold generations of these mountain plants. The careless observer is apt to confuse the plants of *Loiseleuria procumbens* and *Diapensia lapponica*, as each forms low evergreen cushions, but the more careful one sees a great difference in the foliage, although when a cushion is found with the two growing together it is a little difficult to distinguish them.

About twenty-five feet from where we parked our truck was a low perpendicular ledge, not over six feet high, draped with great mats of *Empetrum nigrum* loaded with its oblong black fruits fully one inch long and half an inch in diameter, the largest and finest fruit I have ever seen on this plant. This ledge faced north so that the *empetrum* received little direct sunlight; where this plant is found at lower elevations, as in the Green Mountains, it is invariably in more or less shade. When we bring it down to our gardens, we must give it rather heavy shade; it is a difficult plant in cultivation, but it *can* be grown.

Here, too we found thousands of *Rhododendron lapponicum* in mats from one inch square to a fine one that Emberley gathered, which was practically circular and fully two feet across. He found this in a depression where there was plenty of soil, and was able to get it with a big ball of earth on its roots. I told him that he probably could not make such a big plant live, but I saw it in full bloom in his garden the following spring. This is the true *R. lapponicum* and has been made the type species of a section of the genus found in all boreal sections of the Northern Hemisphere. There appear to be scores of species in this section, and from all accounts, our representative is the poorest of them all and the most difficult to grow.

Scattered all over this mountain garden, which we named Nelson Crag Garden, were thousands of clumps of *Arenaria groenlandica* of a somewhat different type from those in the Green Mountains. All around us we saw plenty of *Vaccinium vitis-idaea minor* in its best form, now covered with berries just turning to bright red. The low dense growth makes the White Mountain form the best that I have found anywhere. With its beautiful glossy dark green foliage, lovely pink flowers in late June, and its bright red berries in the fall and early winter, this can be considered one of our finest native alpines. Take up the plant with plenty of soil and set it out in a soil stuffed with peat and you should have no trouble with it. Another *vaccinium* which grows all over these mountains is *V. uliginosum*, a dwarf blueberry with bluish-green foliage and good-tasting fruits. This too does well if taken up with plenty of the mountain soil on its roots, and then planted in a soil full of acid peat.

On the west side of our garden, the mountain had been hollowed out and the wash from the rocks above had deposited a clayey soil. Fed from below by hidden mountain springs, it formed a damp swaley place twelve to twenty feet wide and a hundred feet long. Here in this damp soil grew thousands of *Kalmia polifolia*, the pale laurel, about a foot high, with many of the plants still covered with their relatively large, deep pink blooms. This beautiful mountain form is a great improvement over that growing in the lowland swamps of the north.

On the edge of this mountain swale, we found many clumps of *Geum peckii* in full bloom, some in the clay of the swale and others in the black mountain soil. This *geum* grows about six inches high and has golden yellow flowers

an inch or more across. It is a fine plant here in the mountains, but must be planted in rich damp soil in partial shade in our gardens, for if planted in full sun it grows very slowly. It is really worth taking pains with and is a rare plant found nowhere outside the White Mountains.

The next day we tried the left side of the road. As I have mentioned, the Nelson Crag Trail comes up the mountain, and into the Toll Road exactly opposite our camping place. Exploration of both sides of the trail below the Toll Road showed that for nearly a quarter-mile below the road, the trail led through a fine alpine plant region covering many acres; the comparatively easy grades made it a fine place to gather plants.

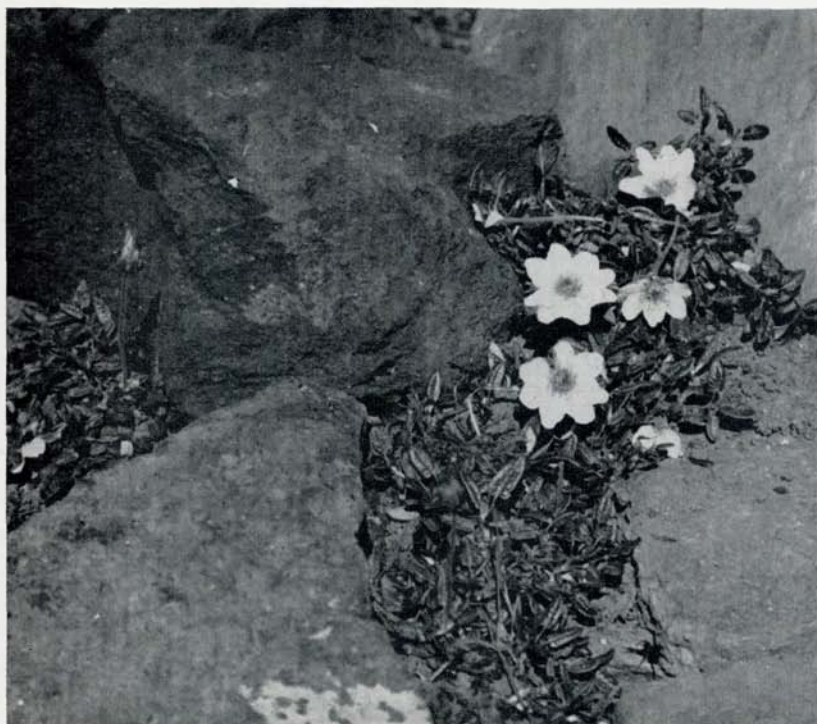
Loiseleuria procumbens, *Rhododendron lapponicum*, *diapensia*, *Potentilla tridentata* and *arenaria* were here found in thousands, and here too we noticed that some of the *empetrum* appeared to have red berries. Our first impression was that the Berries were not mature and had not reached the black or ripe stage, but a little close observation showed that the berries were not so long and that the foliage was somewhat different. I placed it as *E. nigrum* var. *purpureum*, which is considered to be a distinct species by some botanists and is named by them *E. purpureum*; it is a much rarer plant than *E. nigrum*.

Here too, within twenty feet of the trail, we found that rare alpine, *Arctostaphylos alpina*, which has little resemblance to the common bearberry, *A. uva-ursi*. Its leaves are much broader than those of the bearberry, of an entirely different shade of green, so wrinkled by the prominent veins as to appear corrugated; when the fruit is ripe its color is jet black. Unlike the common bearberry, this species is not evergreen but sheds its leaves in October. It is not a difficult plant in our gardens. While we found plenty of it here, it is distinctly a local plant; while there are probably more than a hundred stations of it in the White Mountains, as the stations are not large, few plant hunters have ever found them.

Here also, we found several plants of the dwarf birch, *Betula glandulosa*, creeping over the rocks. I thought this a nice dwarf shrub until later in the day, when I had climbed up over Nelson Crag and had come out on the Toll House Road near the spot where the Six Husbands Trail crosses it, about a mile above where our truck was parked. Close to this trail I found a score or more plants of *B. glandulosa* var. *rotundifolia*, a much smaller shrub than the type; its round leaves not over a half-inch across, and its creeping habit, gave it much the appearance of our common partridge berry, *Mitchella repens*. I consider it a fine alpine shrub and an exceedingly rare one.

All over this section of the mountain, in more or less shady places, we found the alpine clubmoss, *Lycopodium selago*. This is a true alpine and is found above the treeline on most of our northern mountains. It grows in little tufts about three inches high and is the only clubmoss that I would think of bringing into my garden. I find it easy to grow in shade.

By the time I had filled my collecting bag and had started packing the plants in wet sphagnum moss obtained from the swampy place below the spring, it was noon. The other two members of the party soon returned, and as we sat down to lunch, we discussed the advisability of attacking Huntington Ravine in the afternoon. The terrain directly between us and the ravine had many large spots of scrub black spruce from one to six feet high. This dwarf scrub growth was very dense, and while the more dwarf would bear our weight and could be walked over easily, where the growth reaches three or more feet this was impossible, and these taller spots had to be avoided. We decided to skirt around the base of Nelson Crag, keeping up above the scrub growth until we were on the south side of the Crag, from which point it would be less than a hundred yards



James E. Mitchell

Dryas integrifolia on Castellated Cliffs, Percé

to the ravine. Carrying out this idea, we were soon on the edge of the ravine and working our way down its side.

Huntington Ravine is one of the large glacial cirques so numerous in the White Mountains; while not as large as the Great Gulf or Oakes Gulf, nor as deep as Tuckerman's Ravine, it is indeed a great trough cut into the side of Mt. Washington, and like all these has a small stream of water, formed from the dripping cliffs above, flowing over the floor; and like all the other cirques, its wet cliffs and rocky floor support an interesting flora.

While my two companions went down to the floor of the ravine, I went down about halfway and then at that level began moving along the side. This kept me among the dripping rocks, but necessitated many a retreat and another advance at a higher or lower level. I kept moving along, however, and was soon rewarded by finding in a damp, densely shaded spot a clump of several hundred plants of *Phyllodoce caerulea*, of all sizes from little one inch seedlings to old plants six inches tall. Many of these older plants were in full bloom, the flowers resembling little light blue tubs, relatively large for such small plants. *Phyllodoce caerulea* is closely related to the European heaths, and might well be called American blue heather. It is a fine plant for moist, shaded spots in our rock gardens. It is not really a rare plant on the Presidential Range, but may be found on any of the damp headlands of all the gulfs and ravines here—but of course nobody except the real plant hunter ever sees it. You cannot sit in a car and gather it: it takes a little physical exertion, and 90 % of American tourists are not long on physical exertion.

I was to have one disappointment, however: I could not find anywhere on these damp cliffs even a single plant of that other heath, *Cassiope hypnoides*, but did find it at a later date on the damp walls of King Ravine, ten miles northwest of Huntington Ravine.

My two companions had found the floor of the ravine very interesting. Their best find was several plants of *Arnica mollis* in full bloom. The plants were about ten inches high with the stems surmounted by yellow daisies about two inches across. This has been considered a difficult plant, but if it is planted in full sun on a wet moraine, no trouble will be experienced.

By the time my companions below had finished working the floor, I had worked around to the head of the ravine, and signalled to them that I was going up over the headwall to the top and then to the truck. On arriving at the top, I found myself close to the Six Husbands Trail. I spent some time examining wet ledges on both sides of this trail, and found stations of *Phyllodoce caerulea* on each side, but no *cassiope*.

The Six Husbands Trail, coming up out of the Great Gulf and crossing the Toll Road near the six mile marker, goes straight south for two miles to the Alpine Garden, located southeast of the summit. This section of the mountain is comparatively level and is covered mostly with alpine grasses and sedges. Here and there are spots, sometimes fifty feet across, in which there are few grasses, but where *diapensia*, *Rhododendron lapponicum* and *Salix uva-ursi* abound. It was noticeable that in this section there was no *loiseleuria*, which was so plentiful below the base of Nelson Crag.

If we should follow the Six Husbands Trail over to the Alpine Garden we should find the same plants there, but not so plentiful, as at the Nelson Crag Garden. In one of the open spots near this trail, mixed with the *rhododendron* and *Salix uva-ursi*, I found several mounds about a foot across that at first glance appeared to be *diapensia*. Noticing a difference, I examined them closely and found that I had discovered *Silene acaulis* var. *exscapa*. In what manner this variety differs from the type, which I have been growing for many years, I am unable to say. The type plant, *S. acaulis*, is easy anywhere in full sun. The variety has been found in many parts of the Presidential Range, but only in small lots and, as a whole, may be called rare.

My collecting bag was now full and heavy, and I was getting weary, so turning with a regretful sigh, I went on down the Toll Road to the truck at Nelson Crag Garden. My two companions soon came in; a light lunch, ten minutes to pack up, and we were gliding down the mountain in low gear to save our brakes. We all agreed that it had been a memorable trip.

(To be continued)

CLARENCE McK. LEWIS

Word has been received of the death of Clarence McK. Lewis, a charter member of the Society and long a regular attendant at its meetings. He was for many years a trustee of the New York Botanical Garden, and well known in horticultural circles. His estate, Skylands, in the Ramapos of northern New Jersey, was a show-place rich in extensive plantings of rare and unusual species, as well as of groups that had especially aroused Mr. Lewis' interest, among them willows and the common chicory. He had a keen eye for choice plants, and was unsparing in his use of them.

ROCK PLANTS OF THE MIDDLE ATLANTIC STATES

EDGAR T. WHERRY, *Philadelphia, Pennsylvania*

THIS ARTICLE covers some thirty-five species little known but worthy of use in rock gardens, native chiefly to the southern half of the area covered in the 8th edition of Gray's Manual of Botany. The sequence and technical nomenclature follow that work. Habitats and ranges are added to suggest cultural practices. Many species, however, are winter-hardy well north of their natural haunts, especially if planted in heat-absorbing dark soil; and those from cool mountain heights can often withstand lowland summers if whitish heat-reflecting soil is furnished.

Lily-leaf sedge, *Cymophyllus fraseri*. Rosettes of evergreen inch-wide strap-shaped leaves send up in spring long-stalked knobs of pearly florets, tipped by a moplet of stamens. Subacid humus in partial shade, high mountains of South Carolina to Pennsylvania.

Grass spiderwort, *Tradescantia rosea* var. *graminea*. Unlike the coarse, floppy garden spiderworts, this is a well-behaved little gem. Every morning through the summer its neat tufts of grassy foliage are bedecked with tiny three-sided flowers of bright rose hue. Subacid gravel in sunny spots, north Florida to Virginia.

Prairie-star onion, *Allium stellatum*. Producing globes of lavender stars late in the growing season, this species does not become weedy, unlike its earlier relative, *A. cernuum*. Sunny prairie loam, Texas to Saskatchewan— a wide range of climatic conditions.

White bead-lily, *Clintonia umbellata*. Although its leaves are rather coarse, it bears in spring attractive umbels of speckled white six-pointed stars followed by black berries. Subacid humus, partial shade, mountains of Georgia to western New York.

Rosy bells, *Streptopus roseus*. The habit is that of a Solomon-seal, but the flowers are charming pink. The Appalachian variety, differing from the New England one in having the kinky flower-stalks glabrous, can stand warmer summers. Acid humus in partial shade, mountains, Georgia to Pennsylvania.

Snow trillium, *Trillium nivale* (ignore Standardized Plant Names). This is a cute little dwarf, whose snowy flowers open before the winter snows have fully melted. Dry neutral gravel, partial shade, Kentucky to Minnesota.

Mottled wild-ginger, *Asarum shuttleworthii*. The leaves of this and several other wild-gingers listed in Gray's Manual are heart-shaped, glossy, and at least in selected clones beautifully colored. Subacid humus in partial shade, mountains of Georgia to West Virginia.

Appalachian sulphur-flower, *Eriogonum allenii*. The one northeastern member of the Buckwheat Family deserving a place in the rock garden is a rather massive plant, with oblong leaves dark green above and brown-woolly beneath, producing for a long period in late summer profuse light yellow buckwheaty flowers. Dry gravel, full sun, shale-barrens of Virginia and West Virginia.

Silverling, *Paronychia argyrocoma*. This makes cute little mats of silky leaves, with negligible flowers in bracts of purest silver. Acid humus pockets in granite or sandstone, full sun, mountains of Georgia to West Virginia. The related though dissimilar shale starling, *Paronychia virginica*, has needle-leaves and pale yellow stars from late summer to frost.

Woodland starwort, *Stellaria pubera*. This native chickweed, with dark green leaves setting off the white ten-point stars in late spring, is sometimes a

bit too rampant. Slightly acid humus, partial shade, north Florida to New Jersey and Illinois.

Many-rayed anemone, *Anemone caroliniana*. This is a showy spring flower with numerous sepals of white, pink, or lavender-blue hue. Chiefly in subacid soil in full sun, north Florida to North Carolina and out over the prairies.

Spring larkspur, *Delphinium tricorne*. A lovely larkspur, it has pinkish to violet-blue flowers in six inch to one foot racemes early in the season. Neutral loam of alluvial woods or shaded limestone ledges, Georgia to western Pennsylvania, out to Oklahoma and Minnesota.

Celandine poppy, *Stylophorum diphyllum*. A must for every shady rock garden, though a bit tall and inclined to seed too freely, it has pale green strikingly cut leaves, and two-inch golden poppies all through spring. Neutral loam, partial shade, southwestern Virginia to Missouri and up to the Great Lakes.

Lavender bitter-cress, *Cardamine douglassii*. This has charming delicate-hued cress flowers in earliest spring. Neutral loam, partial shade, Virginia to Missouri and to southernmost Canada.

Rock twist, *Draba ramosissima*. Not showy, but curious, it makes festoons of intertwining stems, with profuse tiny white cress flowers in spring, followed by spiralled seed-pods. Limestone ledges, full sun, Tennessee to Maryland.

Appalachian stonecrop, *Sedum telephioides*. Related to the garden live-forever, it differs in its glaucous, bronze-margined leaves and pinkish flowers in late summer. Acid or rarely neutral gravel, mountains of Georgia to western New York.

Marbled alum-root, *Heuchera pubescens* (and *H. longiflora*). The flowers are of no consequence, but the leaves are strikingly mottled gray-green and bronze, and are especially colorful in winter. Limestone ledges and neutral loam, partial shade, the showiest clones in westernmost Virginia and North Carolina.

Sharp-lobe alum-root, *Heuchera villosa*. The leaves are rather coarse yet attractively lobed, green or bronzy, and the plant is notable for the profusion of tiny white flowers in late summer. Subacid humus, mountains of Georgia to West Virginia.

Dwarf spirea, *Spiraea corymbosa*. This miniature spirea has flat-topped clusters of pinkish flowers in summer. Subacid gravel, partial shade, mountains of Georgia to Pennsylvania.

Mountain-spurge, *Pachysandra procumbens*. Related to, but more attractive than, the Japanese pachysandra (*P. terminalis*) so widely used as a ground cover, the American species spreads only slowly, so is safe in a rock garden; the leaves, at least in clones from the northern part of its range, are evergreen and bronzy-mottled in winter, and the flowers arising from the rootstocks in earliest spring are a delicate pink. Neutral loam, considerable shade, northern Florida to Kentucky.

Appalachian violet, *Viola appalachensis*. While rock gardeners try various native violets— and often kill acid-requiring ones like *V. pedata* by planting in limy soil— attention is here called to a newly discovered one in the mountains of West Virginia and southwestern Pennsylvania. It is the tiniest of the genus in our region, only a couple of inches high, and spreads by runners into neat little mats. It thrives in subacid loam, in partial shade.

Pepper-and-salt, *Erigenia bulbosa*. The common name of this diminutive member of the Carrot Family refers to the way the blackish red anthers speckle the tiny white petals. Another common name (in books) is harbinger-of-spring, which indicates why it is being recommended for the rock garden: it comes up very early, often while snow is still on the ground. Neutral loam, partial shade, Alabama to New York and Minnesota.

Jewel shooting-star, *Dodecatheon amethystinum*. A veritable rock garden jewel, this is dwarfer and earlier-blooming than the well-known shooting-star (*D. meadia*). Its petal-color is deeper, as indicated by the species epithet. After the seed is ripe the foliage withers away, so care must be taken not to dig up the dormant root later on. Limestone ledges, partial shade, Pennsylvania to Missouri and Wisconsin.

Narrow-leaf blue-star, *Amsonia ciliata*. This is a well-behaved member of the Dogbane Family, with grass-like foliage and lovely pale blue stars in late spring. Subacid gravel, full sun, Georgia and North Carolina to Texas and Missouri.

Eastern puccoon, *Lithospermum canescens*. The spiralled groups of lustrous yellow trumpets produced by this species in spring are so attractive that one wonders why it is so little grown in our rock gardens. In the books there is listed a relative, *L. carolinense*, said to have larger and deeper hued flowers, but it seems to be rare and hard to come by. Neutral gravel, partial shade, Georgia to Texas and southern Canada.

Midland monarda, *Monarda russelliana*. Most members of the Mint Family spread too rapidly to be safely planted in the small rock garden, but three which do not may here be noted. The above-named monarda—call it beebalm or horse-mint if preferred—is dwarf for the genus, scarcely two feet high, and has the merit of producing its purple-dotted lavender flowers in spring. Neutral or somewhat acid gravel, partial shade, Alabama to Texas and southern Illinois.

Glade-mint, *Conradina verticillata*. This rare shrublet has attractive lavender flowers in spring. Limestone glades, partial shade, Kentucky and Tennessee.

Rock-mint or American dittany, *Cunila origanoides*. Herbaceous but bushy, it has neat foliage and a profusion of minute purplish flowers in autumn. On frosty mornings following early winter rains, it produces striking ice-ribbons from the old stems. Subacid gravel, partial shade, Florida to Texas and southern New York.

Fairy bluebell, *Campanula divaricata* (or *C. flexuosa*). Rock gardeners who are partial to diminutive flowers (though on rather tall plants) will certainly wish to grow this plant with its cute little bells and their projecting clappers, produced over a long period in summer. Subacid gravel, open sun, mountains of Georgia to Maryland and Kentucky.

Broad-leaf golden-aster, *Chrysopsis mariana*. All the golden-asters are worthy of a place in the rock garden, since they do not spread like so many composites. The one above-named has flower-heads an inch across and is easy to grow in acid gravel or loam, and full sun; its native range is from Florida to Texas and southeastern New York.

Golden-star, *Chrysogonum virginianum*. In this species the one to one and a half inch heads have only five rays, so that they resemble five-petalled flowers. It is a low-growing woodland plant, spreading into mats by runners. There are many variations, some clones remaining only a few inches high, others reaching a foot; some bloom only in spring, although many continue through the growing season. Neutral to moderately acid humus-rich loam, partial shade, Florida to Louisiana and southern Pennsylvania.

Oblong-leaf aster, *Aster oblongifolius*. While a number of native asters are suitable for the rock garden, one which is too little known is listed here. It forms large bushy clumps or festoons and produces an extraordinary profusion of blue-rayed heads comparatively late in autumn. Neutral gravel, open sun, Alabama to central Pennsylvania and far out over the prairies.

Ear-leafed coreopsis, *Coreopsis auriculata*. The rock garden merits of this

species have been indicated in early numbers of the *Bulletin*. It has the advantage of blooming late in spring, after much early spring bloom is past. Slightly acid loam, partial shade, Gulf states to Virginia.

Barbara's-buttons, *Marshallia grandiflora*. This is one of the rayless composites, but its copious long disk-florets make up lovely pink heads in early summer, borne on long stems above the basal leaf rosettes. Damp, moderately acid gravel, in the open, mountains of North Carolina and Pennsylvania.

Lace-leaf groundsel, *Senecio millefolium*. While several of our species of *Senecio* are used to some extent in the rock garden, this southern one deserves to be better known. Its leaves are dissected in a delicate lacy pattern, and the flowers are cute little yellow daisies. Full sun, acid humus pockets in granite ledges, mountains, South Carolina to Virginia.

A HILLSIDE IN ARKANSAS

EDITH BESTARD, *Eureka Springs, Arkansas*

FOR ANYONE who loves wild flowers, the month of March in Arkansas ushers in a season of pure delight. I speak of Northwest Arkansas, where my home town, Eureka Springs, is located; since this is the mountainous part of the state, the flora may differ somewhat from that of the south, while spring arrives a bit later but is worth waiting for.

To a rock garden enthusiast, this region is Paradise, for it is really just one vast rock garden. To enumerate and describe all the flowers that paint our hills with beauty, from early spring to late fall, would result in a large volume, but I want to tell about one particular hill which I have "staked out" as my own sequestered rock garden by right of discovery, for I do believe that all the wildlings native to this part of Arkansas have established happy lodging there.

I discovered this hill six years ago, when I was just beginning the publication of my garden monthly, "Ozark Gardens," and wanted to find the location of plants about which I could write later. I had not lived here long, and had no idea where to find the plants I had in mind, but aimless wandering in woods and fields has always been my greatest delight, so I started out.

Hills were all around me, of course, but suddenly here was this one, thrusting upward through the towering pines to shoulder high above its companions. On one side, near the summit, was a castle wall with forbidding battlements; around the base curved a boulder-strewn canyon, where a spring-fed stream dampened the floor and walls till they were velvety with moss.

This was a warm day in late February, but I had seen no flowers except the spidery golden blossoms of witch hazel. Now, I suddenly became conscious of something like lavender-tinted foam billowing over a ledge above my head: *Phlox subulata*, the first I had ever seen! It was trailing everywhere up the hillside, its shallow roots barely anchored in the loose shale.

I found no other flowers that day, but something even better came to light along the slopes of the canyon— rugged limestone rocks covered with dense colonies of walking fern (*Camptosaurus rhizophyllus*), another plant that I had never seen before. This grows only in dense shade, on limestone rocks where the atmosphere is humid, so it is not too commonly found.

The *Phlox subulata* was apparently opening the wildflower season, for things happened fast from then on. The sunny slopes which were protected from the cold winds were suddenly frosty with the crisp, perky bells of the delightful troutlily (*Erythronium*), windflowers (*Anemone quinquefolia*) and dainty spring

beauties (*Claytonia virginica*), amid which the tannish, tightly curled fronds of the Christmas fern were pushing upward through the leaf carpet.

By then I could hardly stay away from my king-size rock garden, and visited it at every opportunity, being greeted each time by new members of the wildflower clan. Patches of blue at the base of venerable pines turned out to be clumps of *Hepatica triloba*, their slender-stemmed blossoms held erect over rosettes of furry new leaves. There is a white variety also, with some of its flowers lilac-tinged.

The yellow troutlily (*Erythronium americanum*) colonizes along the banks of streams; I have never found it on the high slopes. In fact, all the erythroniums prefer deep soil, their bulbs being so far below the surface that one must have a pick to dig them, but they transplant well.

Bloodroot (*Sanguinaria canadensis*) and trilliums arrive at almost the same time— bloodroot a bit the earlier— and like the rich leafmold that accumulates at the base of the hill. The trillium here is the mahogany-flowered one, *T. recurvatum*, and it grows in abundance.

The first sunny days of March bring out great sheets of rosy verbenas on the dry, rocky hillsides. We have the blue verbenas, also, but I think the difference in color results from the soil, for they never grow together in the same locale. Wild hyacinths like the same growing conditions, along with two sedums that cover the rocks in some places, a yellow-flowered one and a white-flowered.

Then, one warm day in late March or early April, one is suddenly walking on carpets of blue, for the violets are here! From the moment the first Johnny-jump-up appears until the last birdsfoot violet has faded, they clothe the hills in beauty. The birdsfoot (*Viola pedata*), both the two-toned and the all-blue, grow so thickly in the fallen needles under the pine trees that one can scarcely step without crushing some lovely pansy faces. They require acid soil, provided by the pine needles, and it is useless to transplant them to non-acid soil.

Yellow violets nestle in the grass along streams, and one finds patches of white and variegated violets. The blue of the violets blends with that of *Phlox divaricata*, which also prefers the woody soil nearer the base of the cliff, and the sky-blue Jacob's ladder (*Polemonium*) higher up. Variation is afforded by the dainty rose-pink of wild sweet Williams (*Phlox maculata*), the paler pink of wild geraniums (*G. maculatum*), and the vivid gold of buttercups (*Ranunculus*); by now, also five or six varieties of ferns have uncurled their fronds for a lacy background.

I am not well versed in the nomenclature of ferns. Besides the Christmas fern (*Polystichum acrostichoides*) and a variety with long, slender fronds, we have the maidenhair (*Adiantum*), a variety with triangular fronds, evergreen polypodiums, and fluffy types growing in both rock and soil.

I shall never forget the day I found the wild iris. I had been digging wild honeysuckle, halfway up the hill, where it clammers in full sun over low shrubs, being apparently rooted in pure rock, and was carrying the plants down to the coolness of the canyon, when a drift of lavender flowers appeared at my feet. They were exquisitely dainty and orchid-like (in fact, we call them "Arkansas orchids"), but their miniature iris leaves identified them. The species is *I. cristata*, and they grow thickly in semi-shade on rock shelves or on the hillsides, their rhizomes running amidst the loose rocks, sometimes almost on the surface, so that digging them is merely a matter of moving rocks until the whole root system is exposed.

The month of May brings to a climax the loveliness of my rugged rock garden. Shooting stars (*Dodecatheon meadia*) rear their dainty heads in great

numbers along rocky ledges in part shade; wild lupines, both the yellow and the blue varieties, dot the hillsides where the soil is leaner, their tall spikes bending with the weight of the pea-like blossoms; wild delphiniums, intensely blue, lift slender spires along the trail at the bottom of the hill; what has appeared to be clumps of grass over one whole side of the hill suddenly throws up branched stems of dainty blue, six-petalled blossoms, revealing itself to be blue-eyed grass (*Sisyrinchium angustifolium*), making pleasing contrast with the fiery orange of yellow puccoon (*Lithospermum canescens*), or the intensely scarlet fire pinks (*Silene virginica*), blazing along ledges of dry, sandy soil.

The huge heart-shaped leaves of wild ginger, in shadier, rich-soiled places, conceal queer dark red blossoms; newly ordained Jacks-in-the-pulpit (*Arisaema triphyllum*) hold revivals where rich moist soil has accumulated along the banks of the stream, while almost in the stream itself, great clumps of golden ragwort (*Senecio aureus*) seem like patches of sunlight in the shade.

The frowning battlements near the summit of the hill are softened suddenly by great sheaves of columbine, in tints of pink and yellow and cream, like a distance-softened reflection of a large patch of rose-colored rudbeckias far below. How these last-named found lodging here is a mystery; ordinarily they are found at the edge of meadows or along the highways.

Many vines clamber over the low shrubs that cling to the steeply rising base of the cliff, and some of these adorn themselves with flowers in May. The prettiest is one that the natives call "cobaea vine," but it is, I believe, a clematis, probably *C. viorna*. It has pitcher-shaped bells, shading from purple to white, with the sepal tips recurved.

As late spring merges into summer, the pastels of the early wild flowers give way to bolder colors, as if to defy the now blazing heat of the sun. I call these brave denizens of my rock garden my "gallant goldens," for they are nearly all in shades of yellow: black-eyed Susans, yellow coneflowers, coreopsis, sneezeweeds, St. Johnsworts, evening primroses, butter-yellow moth mullein, partridge peas, and the flaming gold butterfly weed (*Asclepias tuberosa*) which tourists always try—unsuccessfully—to dig, when they see it along the highway.

A few lighter tints are visible among the summer wildflowers, namely the white field daisies, blue and white spiderworts, the intricate, lavender blossoms of the lovely passion vine, the purple-hearted white trumpets of the wild sweet potato, the shaggy lavender heads of monarda and the puffy lavender ones of thistles, and the clear blue of chicory. In very late summer, along the base of the cliff where spring water seeps constantly, the bluest of the blues appears—*Lobelia syphilitica*, admirably complemented by the pastels of the wild asters, which now appear in drifts all over the fields and woodlands. The dainty white ones known as "snow asters" make my hill look as though frost had covered it.

When the black gums, oaks, hard maples, sumacs, sassafras, dogwoods, and hickories paint the hills in every tone of scarlet, crimson, russet, and gold, I climb one evening to the summit of my rock garden for a last farewell until the return of spring. The air is keen and sweet at this elevation, and vegetation is sparse. Twilight winds croon through the stunted oaks and cedars, and there are no flowers save the brave, starry aster blooms. But there are great sweeps of dried bracken; the leathery fronds, in soft tones of tan and brown, would delight the arrangers of winter bouquets.

A feeling of great peace and serenity comes with the gathering twilight. Quietly and unassumingly each wild flower in my rock garden, having fulfilled its part in Nature's great plan, is entering into its well-earned rest, to reappear, fresh and lovely, in its appointed season.

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