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AMERICAN ROCK GARDEN SOCIETY BULLETIN

Albert M. Sutton, Editor

VOL. 28 January, 1970 No. 1

THE LAKE REGION OF THE SOUTHERN ALPS

NINO ARIETTI, *Brescia, Italy* and OSCAR FERVIDI, *Monza, Italy*

Northern Italy is characterized by a wide plain, the "Padania," that, with its 46,000 square kilometers, constitutes the largest plain of Southern Europe.

It may be likened to a large, flat triangle, lightly sloping down from west eastward, its shortest side delimited by the Adriatic Sea, and major ones converging toward the far sources of the river Po, that sinuously runs along it about in the middle. This triangle is closed north and westward by the great barrier of Alps, southward by the ridge-line of the Apennines which meet along the border in the concave low of the Maritime Alps.

GENESIS OF THE SOUTHALPINE LAKES

During the Pliocene, when—at the beginning of the Neozoic era—the last orogenic tremors were giving form and continuity to the Alps and Apennines, the "Padania" was nothing but the wide, low, and warm gulf of an Adriatic Sea much larger than the present one.

But in the Pleistocene, some million years ago, began the event which was to change the aspect of the whole Middle Europe, morphologically and as to its biological order; the glacial era. Four times (the phases, intervalled by recessions, known by the names of Gunz, Mindel, Riss, and Würm) alpine glaciers overflowed toward the plain, digging in pre-existing tectonic folds and widening their borders, as to form a succession of valleys perpendicular to the Alps. The mass of erosion materials, subsequently transported and spread through thaw waters, slowly filled up the Padan gulf, transforming it into the present plain.

But along the festoon of alpine bows, where the valleys opened out, pressure of ice had excavated the land to far below sea level, while eroded material had been moved forward and deposited in three or four morainic arches. The basins resulting therefrom were filled by water, and so originated the deep blue Southalpine lakes of that country; rightly praised for the mildness of its climate and the opulence of its vegetation, called Insubria for the name of a Celtic tribe which formerly inhabited it.

They are, from west eastward: Lake Maggiore or Verban, lake of Lugano or Ceresio, lake of Como or Lario, lake of Iseo or Sebino, lake of Garda or

Benaco. They total a volume of about 140 cubic kilometers of water, a figure which gives some measure of its mitigating influence on the climate of neighboring regions, in addition to favorable exposures to the sun, and to sheltering from the cold northern winds by the high mountain shield.

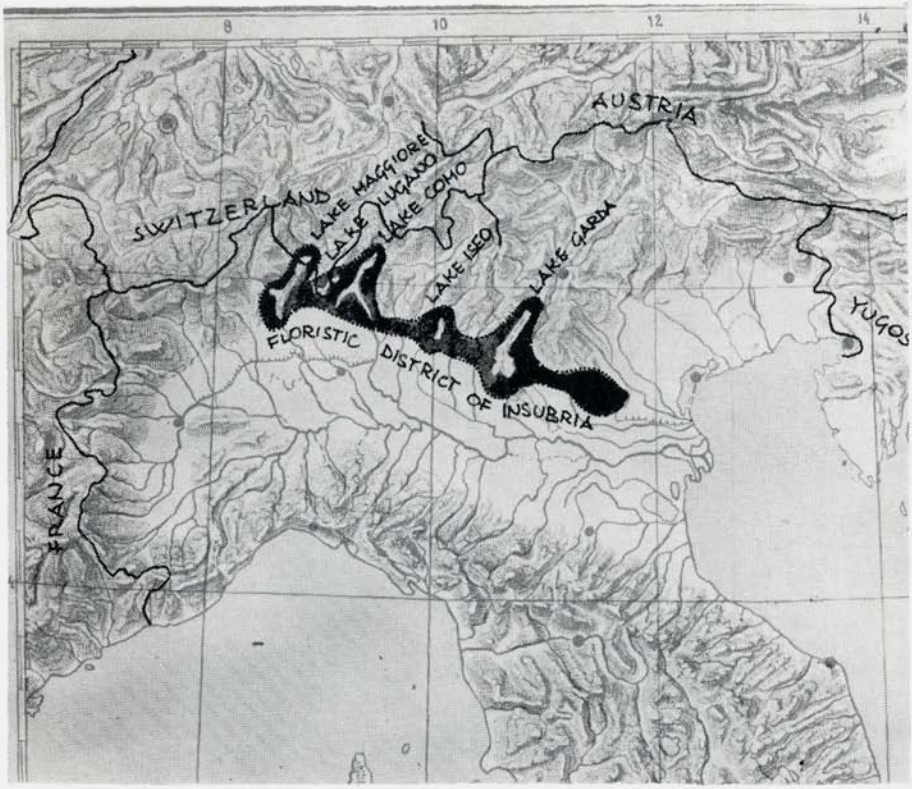
THE LANDSCAPE OF INSUBRIA

One who comes to the Southalpine lakes from Mediterranean lands has the sensation of seeing repeated here their own climatic character and vegetative appearance. The visitor coming from the north is inclined to believe them to be the forerunner of the warm Riviera, not far away. The variety of forms, the brightness of the sky, the wealth of colors, the play of perspectives favored by the wings of a complex orography, impart to the landscape a peculiar character, episodic in particulars, yet unitary in the whole of its aspects; above all in those of vegetation, which constitute its most expressive frame. We can find in this frame a large representation of species typical of the Mediterranean maquis, here isolated at the foot of the calcareous Southern Alps and without connection with the sea. For this common Mediterranean mark, phytogeographs now indicate the belt of the Southalpine lakes with the term "Floristic district of Insubria."

In this climatic and floristic unity some nuances may be observed in the appearances of parks and gardens increasing the natural amenity of the shores. The western lakes (Maggiore, Lugano, and Como) have a temperate, warm climate with higher spring rains favorable to the luxuriant growth of exotic bright-leaved evergreens: Magnolias, Laurels, Rhododendrons, and Azaleas. Natural woods get a mesophile character, and in them predominate *Castanea sativa, Taxus baccata, Ilex aquifolium,* and *Laburnum anagyroides* among a multitude of trees, shrubs, and herbaceous plants with the Mediterranean mark. In the eastern side, on the contrary, the climate tends to be warmly dry with less rain. In fact, only around Garda Lake the Mediterranean flora affirms itself with the holm-oak *(Quercus ilex)* covering the rocky cliffs of the high lake; with the evergreen foliage of a local autochthonous race of *Laurus nobilis*; with the aromatic bushes of *Rosmarinus officinalis,* and the yellow bloom of *Spartium junceum,* joined by *Rhamnus elaternus, Celtis australis, Cercis siliquastrum.* Among cultivated plants prevail the sober, silver-haired *Olea europea,* and the landscape is given a singular character by the white pillar succession of old citrus orchards where *Citrus limonia, C. medica,* and *C. sinensis* have been extensively cultivated, whereas bitter *Citrus bigaradia* is still being planted along the avenues for beauty, and bears fruit. In the gardens of broadleaved plants prevail the *Cupressus,* the Mediterranean *Pinus, Musa, Phoenix, Yucca,* together with other exotic plants of hot, dry climates, which often spread spontaneously like *Agave americana* and *Ficus stipulata.*

THE INSUBRIC ENDEMITES

Richness of species and variety of associations characterize, as already said, the spontaneous Flora of Insubria, and justify the evocation it exerts both on the visitor and on the scholar. But another reason for fascination and interest is given by the presence of a wide number of endemic species, their origin going back to the ancient Flora of Cenozoio. The calcareous



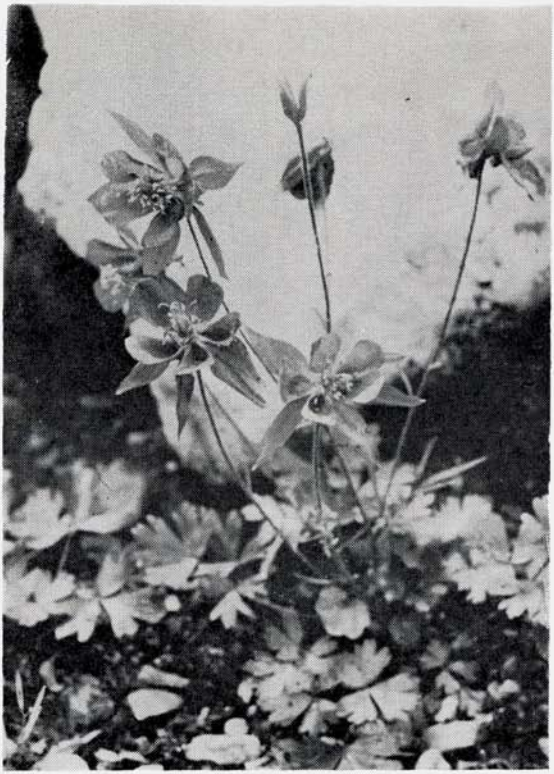
Map showing the Floristic District of Insubria

Southern Alps, in fact, and particularly the dolomitic chains, during the glacial era were a unique "area of shelter."

The aridity of rocky cliffs always caused conditions of life particularly hard for the vegetation so that in the hard struggle for existence the fittest species gained the upper hand, or those having a high degree of adaptability, which allowed them to establish themselves on such barren seats.

The steepness of recesses, often sheltered on their upper part by rocky juts, protected them from ice flow. And there the old species, already adapted to rocky life, could survive geological and climatic vicissitudes our mind can hardly imagine. The glacial paroxysm subsided, the surviving species could sometimes occupy lower likely suitable places. But, as if they had exhausted their strength during the millenarian fight and isolation, they lost their capacity to spread, to reproduce out of their hidden recesses. Once modified to their new environmental conditions, isolated from other primitive races, they gave birth to new species with defined and narrow areas, called neoendemisms. These constitute, with the former, the paleo-endemisms, the true gems giving to a flora significance and nobleness.

Insubric endemisms are many, and mostly they appear in the calcareous-dolomitic formations from the eastern shore of the lake of Como to the lake of Garda. The bed of the river Adige sharply separates them from the area of eastern Southalpine endemisms showing different character, and are



Aquilegia thalictrifolia Oscar Fervidi

more related with floristic elements diffused from the Black Sea toward the Adriatic shores.

ENDEMISMS FOR THE ROCK GARDEN

A mere enumeration of plants endemic to Insubria would have neither meaning nor interest without a brief description of character and habitat, which are often quite singular, varying from species to species but that would require a diffuse treatment, not compatible with the limits of simple informative writing.

We shall rather mention some species which, for the beautiful appearance of their bloom, could be as well cultivated in rock gardens, increasing their charm and botanical interest.

In nature these species are lime-loving, but from our experience we can state that in cultivation—where effects of competition are less felt—a neutral soil constituted by blocks of clayey-calcareous tufa having a pH around 6-7 does the best. All endemic species are hardy perennials.

Lets begin with a *Caryophyllaceae, Silene elisabethae* (*Melandrium elisabethae*), having large, lobate petals of a wonderful purple-rose, a small stem and leaf rosette. It studs here and there the dolomitic debris of the Prealps, between the lake of Como and Mount Baldo, on the eastern side of the lake of Garda. It is easily grown from seeds, with the same cautions and cares as with other hardy plants of the same genus, e.g. *Silene pendula.*

Small and lovely, somewhat like a miniature pansy, tufty and copiously flowering is the bright, shining, and violet-petaled *Viola dubyana*. It shares with the preceding one both area and soil preferences, and it is as easy to propagate by seeds as are more common garden violets.

Quite interesting also is a Columbine (*Ranunculaceae*); which, unlike others already known of the same genus, is dwarf and has very lobed, sticky leaves and caerulean, short-spurred flowers. It is *Aquilegia thalictrifolia,* a neoendemism evolved from the Southalpine stock of *Aquilegia einseleana*. It is dispersed in many tiny areas in the Oriental Alps, from the "Friuli" (i.e. "Forum Julii," the region northerly of Udine) to the mountains around the lake of Garda. In the wild it prefers the cracks of dolomitic rocks, sheltered in their upper part by natural roofs of rock, in "water shade," but in cultivation this need is not felt, and the plant grows lively, provided there is some calcium available. It is sown as soon as the seeds are ripe, in June-July, and in the following year it blooms.

Three primroses compete for beauty. Best known is *Primula auricula,* since with that name are often offered for sale its hybrids, mostly with *P. viscosa* (but botanically their true name would be *Primula* X *pubescens*). This latter has large fleshy leaves in a basal rosette, mealy, and on a naked scape an umbel of yellow-throated, polychrome-edged flowers. The true form, which in two varieties adorns here and there the alpine dolomitic rocks from Giura to the Carpathians, has much more fleshy and mealy, white-margined leaves and delicately scented flowers of a beautiful bright lemon-yellow.

The other two species, somewhat similar but with much tinier non-fleshy leaves, have a smaller scape and their flower umbel is of a bright purple red. They are *Primula spectabilis,* with shining green, sticky leaves, with many translucent dots, and *Primula glaucescens*. The former from eastern Mount Grappa pushes westward as far as the mounts between the lake of Garda and the lake of Iseo. Here its area overlaps for some space with the area of *Primula glaucescens*. This has sea-green, non-sticky leaves, with a marked light margin, while the flowers are violet-red; it is a strictly "insubric" endemism, present westerly to the lake of Como, always on calcareous-dolomitic soil. The ease of hybridization has given birth, around the area overlapping, to many forms already fixed in their character. These three primroses are easily grown from seeds. At the beginning of autumn they are sown like any other primroses, and after the first year of vegetation the plants can be easily propagated by division.

Among the *Campanulaceae* has to be mentioned the rare *Phyteuma comosum,* irregularly spread along the Southern Alps, always on dolomite, westward to Moncenisio, eastward to the Julian Alps. Growing almost always on rock slits, in July and August it sends out from rock cracks a large corymb of odd-shaped sessile flowers, like little, light-colored wineskins, prolonged in slender blue beaks. Unfortunately it is difficult to grow, since the seeds, after some days of freezing, have to be put directly into fissures of rain-sheltered rocks (best if tufa) with a good degree of internal moisture.

Easier to grow are two bellflowers. *Campanula elatinoides,* a neoendemism strictly related with a group of rock-loving species distributed around the perimeter of the Adriatic Sea, with cottony leaves, bears long

Phyteuma comosum Oscar Fervidi

spikes of blue-violet, star-shaped flowers. It adorns, between the lake of Como and the river Chiese, vertical calcareous rocks, mostly of dolomite, not exposed to rain. The other bellflower, *Campanula raineri,* is prostrate and creeping, and has large, solitary, pale blue flowers. It is a relic of Cenozoic times, and its area is somewhat parallel to the one of the preceding [illegible], but higher in the Alps, since *C. raineri* is a more altitude-loving species.

Both species can be grown from seeds which are collected in September. Sowing season (at least in Italy) is the beginning of February. Seeds are put in neutral, well drained soil, in flat boxes which are then exposed to cold. As soon as seeds have germinated, the boxes are retired in a cold greenhouse and watered sparingly. Then for transplanting in the open, a site sheltered from the noon sun should be chosen, best of all if in crevices of tufa. When the plants have taken roots, watering may be gradually stopped. Sometimes bloom occurs in July-August of the same year, more often in the following year.

A large, wonderful yellow daisy, with a rigid stalk and wide coriaceous leaves, *Buphthalmum speciosissimum (Telekia speciosissima)* adorns dolomitic cliffs, sharing its area with *Campanula elatinoides,* which it often accompanies. It is related to *Buphthalmum speciosum,* spread from the Carpathians along the Balkans to Asia Minor, but differs considerably from it. Ripe achenes can be collected between September and October, and they can be sown immediately in flat boxes, which during the first year should be

sheltered in a cold greenhouse. The plant may be then easily propagated by stock division, caring for the presence of buds on the root.

Many beautiful endemic species could also be remembered. For example, *Daphne petraea,* a little tufted bush which in spring is covered with tiny rose flowers sweetly clove and vanilla-scented; *Veronica bonarota* (*Paederota bonarota*), a rare and strange veronica, with dense, deep blue inflorescences emerging from rock crevices in June. Also could be mentioned the many *Saxifraga,* among them the true gems of the Alps, large cushions covered, between spring and summer, by the bloom of a myriad white star-shaped corals. These cushions are made by thick rosettes of succulent, imbricate leaves, prickly in the lime-loving, rare *Saxifraga vandellii,* unarmed in the still rarer *Saxifraga tombeanensis* growing only on the dolomitic rocks of the mountains surrounding the northern part of Garda Lake. But, as already said in speaking of the genesis of the endemism, they are species which in the long struggle for survival have lost almost completely the capability of reproducing by seeds outside their small specific seats. This can also be said of many other Saxifragas, as the almost-impossible-to-grow *Saxifraga arachnoidea* with incredibly hairy, silvery leaves; as *Saxifraga petraea,* and many others. The only way could be sometimes to make scions of woody parts for the Daphnes, or, for the Saxifragas, letting the tiny basal rosettes make roots. But, these cultural practices are not so easy, especially when there is the Atlantic Ocean to be got over.

Let us rather end with a last designation of a plant to know. Among

Daphne petraea Oscar Fervidi

Cyperaceae, few garden plants are known other then *Cyperus papyrus,* from which ancient Egyptians made the papyri to hand on to our times their literary and historic inheritance. We can add *Carex baldensis,* modest but pretty, and of no less distinguished descent, being a paleoendemism. It is the only sedge which is insect-pollinated. It has a showy white spike, involucred by one sharp horizontal bract and supported by a rigid culm without leaves, rising from a tuft of narrow, lanceolate, hanging, bluish-green leaves. It is a typical species of the southern calcareous Alps, and it is spread on an area going from the river Adige to the lake of Como. It is easy to grow from seeds which ripen around July.

So we end this short review, which though very incomplete, we hope has been something useful in outlining some features of Insubria and of its rare, unique flora.

THE CHALLENGE OF THE HARDY CYPRIPEDIUMS

SHIRLEY B. HARRY, *Roswell, Georgia*

(Editor's Note)—This article is reprinted from the January-March, 1969, issue of *The Mid-American,* a publication of the Mid-America Orchid Congress, with the permission of the author, Miss Shirley B. Harry and the magazine's editor, Mr. Kenard A. Johnston, of Harper Woods, Michigan.

My interest in growing the hardy Cypripediums began before I had even observed the real thing. I had seen pictures; and more important, I had read that they were difficult to grow in the Atlanta area; and that *C. acaule* was impossible. This was just the challenge I needed and I was determined to succeed no matter how long it took.

My first plants were obtained in early spring from a wildflower nursery. I ordered three *C. acaule* and three *C. pubescens.* They were very carefully planted with plenty of peat moss and all six came up, lived for a season and disappeared. I ordered more and began to look for plants in mountain areas where logging was going on and on the property of friends and relatives who gave me permission to dig. One of my best *C. pubescens* specimens was found in woods constantly trampled by my father's ponies.

Since my "garden" is in reality a pine-wooded slope there was little I could do to permanently change the soil pH without hurting the trees. All that could be done was to add peat, sand, and water when needed. It was strictly a trial and error proposition. Most of the *C. pubescens* that I have planted since my first experiment have thrived and bloomed profusely—one clump had fifteen blooms this past May. The few plants that have been lost got too much shade from other wildflowers and certain greedy ferns. These seem to prefer open shade and they don't mind the acid soil as I had been told they would.

I am not yet sure that I have the problem with *C. acaule* solved, but I do have a group of thirteen plants that have multiplied and bloomed quite well for six years. In spite of our extremely hot, dry summer every plant has set crown buds for next year.

In collecting Cypripediums it doesn't seem to matter whether soil is left on the plants or not as long as they don't dry out. I use plastic sandwich bags to transport them and have kept plants for as long as three days with a handful of damp moss thrown in. I plant both *C. acaule* and *C. pubescens* in holes large enough to accommodate roots without crowding and I replace most of the soil with finely shredded peat mixed with two cups of well-decomposed pine duff. When planting the *C. pubescens* I add a handful or two of sand. I plant the roots at ground level and fill in around the crown so that it is on top of a mound about two inches high. Then the whole plant is covered with an inch of peat and sand. The planting is heavily mulched with pine straw which is renewed as needed.

I have finally come to the conclusion that insufficient drainage was the major reason for my losses of *C. acaule,* and I haven't lost a plant since I began planting on steep sites. The sloping ground at the base of large pine trees seems to suit them best. They respond to more shade than *C. pubescens* but neither will stand much crowding. I shade my plants with maiden hair fern (*Adiantum*) or woodferns (*Dryopteris*) planted far enough away so that they shade without competing.

I have often been tempted, but so far have never used, any fertilizer on my Cypripediums. We are lucky to have city water that is not alkaline, and I water liberally when the weather is dry. This seems to be the only requirement besides periodic renewal of the mulch.

The blooms of the hardy Cypripediums last for many days as do those of their less hardy cousins. Weather is, of course, an important factor in determining how long they remain fresh. Also, fertilized blooms fade twice as fast as unfertilized ones. The average life of my blossoms has been from a week to ten days—a few *C. acaule* blooms have lasted for two weeks. *C. acaule* blooms in early to mid-April here and the flowers are uniform in size, measuring roughly three inches in length. They are carried singly on stems five to six inches long. Their deep rose color never seems to vary. *C. pubescens* exhibits more variety in size, color, and time of bloom. Some of the more precocious plants begin to bloom in late April, while the late ones flower in mid-May. Most stems bear two or three blooms and are several inches taller than *C. acaule*. The largest blossoms are over two inches long and have petals that vary from green through shades of brown. My smallest bloom is only one inch in length and the petals are dark brown and extremely long and twisted. I have never seen another like it. The pouches vary in color from creamy yellow to deep lemon shades.

Fifty to seventy-five percent of the *C. pubescens* can be depended upon to set seed, but I have only two *C. acaule* that have produced seed pods. Both plants have set seed for the past three years. So far I have not produced any Cypripedium seedlings, but I am still trying.

NOT A "CROSS" BUT AN "X"—In this issue, under Plants to Know and Grow is a short paragraph on *Ascyrum hypericoides.* As an afterthought, Mr. Chambers, the author, wishes the readers to know that "the four petals have a rather unique characteristic of forming an "X" rather than a cross."

THE ROCK GARDEN AT NIGHT

WILLIAM RAWSON, *Los Gatos, California*

How many members visit their gardens at night? There are good reasons to do so, both practical and aesthetic. The warmth of spring awakens the small plants from their winter dormancy. The warmth also awakens the many bugs and other pests. Roaming around the garden with a flashlight will reveal the newly hatched snails, slugs, sow bugs, et al., and bait and sprays can be applied before these pests get out of hand. I have found that an early and vigorous attack on snails and slugs has resulted in less grief over damaged plants when blooming time comes around.

I had always considered sow bugs to be quaint and harmless creatures until my nightly flashlight revealed them chewing the petals of flowers. I wondered why *Arenaria montana* always had peculiar notches in the petals. Sow bugs spend the day hiding under rocks and carpeting plants.

Earwigs are more or less a local problem since they do not appear everywhere. They are a long beetle-like bug with a pincher tail. These pests also eat flower petals and are controlled by bait. One can almost hear them munching on flowers during a spring evening. They seem to be especially fond of the Cruciferae.

So much for the unpleasant but practical side of nightly garden visits. There is great beauty to be experienced in the rock garden at night. Of course, many plants, gentians for example, close their flowers at night. There are also many others that remain open after dark, and a few, like the evening primrose, that open their flowers at night.

The scent of flowers is always more noticeable at night. If you have a patch of Cheddar pink, *Dianthus gratianopolitanus,* or some of its kin, you will notice their lovely scent in the evening air. The little *Dianthus arenarius* is another sweet-scented pink even though you must kneel to appreciate it. While you are on your knees, sniff the lovely fragrance of *Primula auricula,* the wild yellow "bear's ears" from the central European mountains.

It is wise to plant scented ground cover plants in the paths of the rock garden. The thymes are the most often used. My own paths are planted with chamomile (*Anthemis nobilis*) and its pungent scent is very noticeable when trod upon at night. *Mentha requienii* is another good plant for rock garden paths. This smallest of mints needs more shade and moisture than the thymes and chamomile but has a nice peppermint odor. All of these carpeters need attention when they spread from the paths into the rock garden. Several times during the summer I must cut back the chamomile with a shovel. Like other rock garden tasks, the effort is very worth while.

I mentioned the evening primroses as plants that bloom at night. I had one other plant whose night flowering habit was a complete surprise to me. Several years ago, my neighbor invited me to his cabin in the Sierra. We had rowed his boat across a small mountain lake and packed our supplies along trails and up a hill to get to his cabin at about 6500 feet elevation. All around it was a natural rock garden. The granite cliffs contained crevice

plants in abundance. *Heuchera rubescens,* a small greenish white member of this genus, was plentiful. *Pellaea breweri* and other dwarf ferns grew from the many cracks in the rock. I noticed that even the smallest crack contained very rich soil. *Penstemon newberryi* was still blooming with its red trumpets in late August. Some of the granite was fractured into rows of blocks like the dinosaur teeth often seen in how-to-do-it rock garden books. Among the boulders were Pussy Paws, *Spraguea umbellata,* a pretty mat-forming plant with four inch high umbels of pink flowers. Most noticeable, however, were the many plants of *Phlox douglasii.* Seedlings were everywhere but I could not find any of the mature plants in bloom so late in the season. I dug one of the seedlings to take home.

Phlox, that neglected American genus (there were only six listed in the last ARGS seed list out of some forty or so species listed in *Hortus II*) had always been a favorite in our garden. When next spring came the plant grew and developed many buds. I could tell by the swelling buds that they would open very soon. Imagine my shock at finding them all closed the next day. I could tell that they had been open. The same thing occurred the following day. That night I came out to the rock garden with my flashlight. There, in the beam's light, was my phlox in full bloom with lovely white flowers. The plant continued to bloom only at night and I eventually discarded it. Now, I wish I had it back.

(Editor's Note)—Dr. Edgar T. Wherry, who has made a life-long study of *Phlox,* has found that none of its species are night-blooming. He, therefore, wishes to call attention to the superficially similar *Leptodactylon pungens,* the behavior of which fits the above description.

* * * * *

NO SIGNATURE ! ! ! Recently, you received information in the mail concerning Harold Epstein's projected Northwest tour which in timing brackets the dates of the Annual Meeting in Seattle and allows for attendance there. The proposed itinerary—meet at Portland, Oregon on July 17, then by bus to the Oregon Coast and on to Crater Lake, Mt. Hood, Paradise Valley on Mt. Rainier and then to Seattle for the meeting. After that, to the Olympics, British Columbia and back to Seattle for disbanding; seventeen days, or more, if wanted.

A questionnaire card was enclosed with the information which you were asked to fill out and return to Harold in the self-addressed envelope provided so that he would know the extent of interest among members in the tour. The response was enthusiastic and the returned cards were numerous. Harold, besides being gratified, was given needed information which enabled him to move forward with plans for the tour. However, some 30 per cent of the cards were unsigned, and though many were indicative of a lively interest, the issue is clouded for Harold as he can not send these non-signers further information. He suggests that if you were one of those failing to sign, would you please notify him of your interest in the tour. If you can not remember whether you signed or not, play safe and notify him of your interest at once.

PLANTS TO KNOW AND GROW

James R. Baggett

BELLIUM MINUTUM

A short acquaintance with this little daisy has assured that it will be planted in many sunny spots in my garden. Apparently not difficult to grow, and having several fine qualities, such as small size, neatness, and a long season of bloom, I consider it to be a fine small rock garden plant and certainly the best small daisy I have grown. The plant forms a dense mat of rosettes of spoon-shaped leaves. My clumps, with a fairly generous supply of water and some fertilizer, spread from 3 inches to about 10 inches wide in a year. The depth of the mound in the center is about 1½ inches, but the peripheral rosettes are only ½ inch high, and the leaf and petiole together only ⅝ inch long. Under more severe conditions it is much more limited in size and annual spread.

The little daisies, which are actually heads of tiny individual flowers, or florets, as is typical of the Composite family, usually have 13 ray florets, each with its conspicious united corolla or "petal." These are white with a pink stripe on the reverse. The center consists of many yellow disc florets. The ⅝-inch flower heads are carried singly on scapes 2-2½ inches long in great numbers for at least six weeks, starting here in western Oregon about May 1. Flowering is reduced later in the summer, but there are usually a few in evidence, even in October as this is being written.

Propagation of *Bellium minutum* is simple by division, since the rosettes develop good root systems as they are formed on short runners. Pieces or clumps can be pulled off and started in a new spot in the garden,

Close up of *Bellium minutum* James R. Baggett

or established first in bands or pots. Seed may also be used. Choose a sunny place with well-drained soil.

A close relative described in horticultural literature, *Bellium bellidioides* is apparently slightly larger, but very similar. Mention of either *B. bellidioides* or *B. minutum,* or both, was found in about 20 rock garden books or other references, such as gardening encyclopedias. In some cases both of these species were described as annuals. Some authors, however, reported *B. bellidioides* to be an annual and *B. minutum* to be a perennial. Sheltered sites are recommended in most of the books which mention these species. There have been no problems with *B. minutum* here with temperatures of 10 degrees F, with or without snow cover.

One possible fault of this little native of Greece and the Levant is the closing of the flowers in the cool of the evening when rock gardens are the most enjoyable. However, this is an evil shared by a number of otherwise choice plants, and can be overlooked in consideration of its continuous neatness and long flowering season.

JAMES R. BAGGETT, *Corvallis, Oregon*

POLYGALA CALCAREA

I do not remember seeing much, if anything, about *Polygala calcarea* in the *Bulletin,* but it seems to me a very worthwhile plant for our gardens. I suggest that you read what Anna N. Griffith has to say about this plant in *Collins Guide to Alpines* which ends by saying that it appreciates a chalky soil, but is inclined to flower itself to death.

My plant came to me as a tiny bit, which I was doubtful of being able to grow. In five years it has grown to one foot across and is still spreading, under conditions not really right for it. It has bloomed the past four years, and certainly, so far, has not lived up to the statement that it flowers itself to death.

My plant is at the top of a rise of about two feet and has had compost and crushed oyster shells put around it each year. Its wealth of bloom in May (blue with a purple tinge) has been most satisfactory, and this year, for the first time, it has set a few seeds.

My plant gets no more than four to six hours of sun at most and certainly performs in an admirable manner. It has never been protected except with a light covering of fir boughs (which have not been available every year) and last year just had a covering of excelsior, and it outdid itself this spring. All who see it have liked it very much, and it seems to be going on in spite of the wealth of blossom.

It is hardy enough, since it has withstood five years of our difficult winters, with sometimes 50 degrees one day and zero the next with strong northwest winds, and no snow on the ground. I think in any area with plenty of continual snow cover, it should do very well, as it surely has with our wet snow, turning to rain followed by freezing weather. Perhaps more of our members might like to try this plant as it seems to have a great many of the things that go to make a good rock garden plant.

DOROTHY H. STANLEY, *Bar Harbor, Maine*

TRILLIUM CHLOROPETALUM AND *VIOLA WALTERI*

Several articles in the July, 1969 *Bulletin* brought back memories of pleasant experiences during my half-century of native plant study:

TRILLIUM FRAGRANCE—This feature is not referred to in either of the articles on these plants. In the east, our paler hued species have delicate scents, while our red ones range from merely musky through the wet dog aroma of *T. erectum* to the carrion stench of *T. viride.* One day in early spring I visited the pass above Canyonville, in southwestern Oregon because, of course, it was the place where *Phlox adsurgens* had been discovered, and saw a swamp gay with the yellow banners of *Lysichiton americanum.* Wishing to find out if the sap of this really smelled like that of our eastern *Symplocarpus,* I approached it, and most unexpectedly found the air filled with a delightful rose-like fragrance. This proved to arise from an extensive colony of *Trillium,* the flower hue of which was well characterized by the species epithet, *chloropetalum.* (Yes, the *Lysichiton* sap is odorous)!

A FAVORITE VIOLET—During early travels in the Southeast, I was fascinated by the way the foliage of *Viola walteri* is covered with minute

white hairs, so that when touched by a beam of light, the whole plant seems to glow. For a long time, however, I did not find it in any situation which would suggest that it might be winter hardy in northern gardens. Then one day I was looking for rock ferns in a Shenandoah valley limestone ravine in Botetourt County, Virginia (which *is* subject to winter frost) and there in the gravel were some violet leaves with that unmistakable "glow." But, as time passed, there was a threat: the road near which it grew was announced as a candidate for widening to an interstate highway! Being unable to get there myself, I explained the situation to my friends, John and Marie Wurdack, who have a rock garden in Beltsville, Maryland (near D. C.) and are enthusiastic collectors, and they went out. They found that by good fortune the road was widened northward—whereas the violets grew on the south—so they were able to collect plants. As the species is stoloniferous and so readily propagated, it can now be distributed to other rock gardeners.

DR. EDGAR T. WHERRY, *Philadelphia, Pa.*

ASCYRUM HYPERICOIDES

I would like to take up the cause of a native American plant which to the best of my knowledge has been completely ignored by the ARGS, as well as by plant dealers, although I would be glad to be corrected. In the sandy soil of New Jersey, Delaware, and Maryland, and I do not know where else, you will find clumps of foliage, ideal for rock gardening, which have rather odd 4-petaled, yellow flowers for a large part of the summer. The new foliage is quite distinctive, being of a rather frosty aquamarine color. It grows easily and sets its own seed. This attractive plant is St. Andrew's Cross, *Ascyrum hypericoides*. It is usually described in wildflower compendia as being taller than any of the plants I have seen. In my garden it does not grow more than three or four inches high. I took four plants to a recent sale, two of which remained unsold. *Ascyrum hypericoides* deserves a better fate than that.

PALMER S. CHAMBERS, *Guilford, Conn.*

A ROOTING FORMULA FROM ITALY—Dr. Oscar Fervidi, whose article on the alpines of Northern Italy appears elsewhere in this issue, has given us a formula for encouraging root growth of cuttings. He writes as follows:

"As a chemist, I should like to point out to ARGS members a small formula for a rooting aid. It is simple, not too expensive, and it has given excellent results:

Mix: 1 g. Indole-3-Acetic Acid
1 g. Indole-3-Butyric Acid
1000 g. Talc

"Mix thoroughly, store in dark, cool, dry place. Plunge cuttings in the powder before putting them in the rooting medium. Dusted on roots before transplanting, the mixture promotes rootlet development. These chemicals may be obtained from the better chemical dealers. Truly, it works!"

JUST FOR FUN

SALLIE D. ALLEN, *Seattle, Wash.*

At the Friends of the University of Washington Arboretum plant sale, the last week of September, we introduced replicas of old English stone troughs in my department, the 'Collector's Corner.' They were designed and constructed by one of our Northwest members, Robert C. Putnam. They do, indeed, closely resemble those that have become so popular in Great Britain for growing small and difficult alpines. These troughs are extremely heavy and sturdy with walls two or more inches thick and they possess that old, hand-hewn quality.

All of the seven sizes that were displayed (some planted) were very appealing, but the one that completely charmed me was the smallest rectangular one with the outside dimensions of 11″ × 19″ and 6″ in height. This one I could not live without. Due to pressing garden projects and other equally time-consuming activities, I had not found the time to get down to the fun of working with this precious trough, though my thoughts were often filled with plans of how to proceed, types of plant material, etc. Also still unattended to were little pots of new plant acquisitions, either too small ever to hold their own in the rock garden, or too immature to plant out.

It wasn't until a gloomy, soggy Sunday in November, when it was too wet and blustery to work out in the garden, and too uninspiring to become involved in household chores, that the right time presented itself to initiate this delightful project.

To begin with, the drainage hole and the bottom of the trough were covered with small pieces of broken clay pots to a depth of about an inch. To this a layer of coarse leaf mold was added. The natural soil here, a marvelous dark sandy loam was used with the addition of a small amount of bone meal and Soildusto and pressed down firmly.

A miniature garden of this type needs, of course, a bit of a rocky outcrop. This, at first, presented a problem as the rock which was available here was rather nondescript for what I had in mind. Then I remembered a piece of rugged, rust-colored volcanic rock I had picked up along a back road on a trip last year to northern California. Upon our return home I had just dropped it in the garden as I had no specific use for it then. It had been exposed to all the elements this past year; the color had toned down and in some of the deeper crevices I found tiny tufts of dark green moss. The rock, about 7″ long and 4″ across at its widest point, seemed to have a natural breaking point well off center, so with the aid of a hammer and screw driver, with careful maneuvering I was able to break it right where I wanted. This enabled me to plant the two pieces of rock at a gentle angle to provide two little pockets of soil, that when planted gave the illusion of two little plants growing out of a crack in a single rock.

This is where the fun really begins—the selection and planting of plant material. It must be realized that the prime concern in this selection was not

necessarily ecological compatibility, but rather placing together a group of rare little, slow-growing plants which might have difficulty holding their own in a large rock garden or even being seen there. More important was the combining of interesting leaf patterns, habits of growth, form, and proper scale. It might be added that this was definitely an experimental garden of only the dwarfest of plant material.

In the crack formed by the joining of the two pieces of rock was planted an extremely dwarf form of *Celmisia sessiliflora,* with linear leaves less than ½" long, forming dense silver rosettes resembling a saxifrage. The entire plant, made up of a dozen or so rosettes is an irregular clump 2" across at its widest point. This little white-flowered New Zealand daisy has never bloomed in the three years that I have had it.

At the opposite side of the rock is the precious *Saxifraga* 'Irvingii' that I have had for two years in a pot sunk in the rock garden. The dense, congested little bun, gray-green in color, has very large, soft pink flowers on a ½" scape. It is an amazingly beautiful plant in flower, foliage and habit.

In one of the natural deep crevices in the rock, I pressed in a bit of soil and planted what has just recently come to me under the name of *Sedum leibergii,* the entire plant possibly as large as my thumbnail. This is undoubtedly one of the smallest Sedums I have ever seen, and extremely slow growing, I am told. The rosettes are in color a blending of soft green, buff, and red and the flowers are reported to be yellow.

Against the part of the rock that is the highest point above the soil, roughly 1½", is planted *Tofieldia pusilla.* In foliage it resembles an Iris (it belongs to the *Liliaceae*), with linear leaves but an inch long. The creamy white flowers form a dense cluster like a miniature bottle-brush on a scape an inch long. It was in a clump of soil of a collected *Rhododendron lapponicum* sent to me from Fairbanks, Alaska about three years ago. The Tofieldia was in bloom when the plant arrived, but it has not flowered since, nor has it grown very much.

Among new acquisitions is, without doubt, the smallest, most slender Hebe imaginable, *Hebe propinqua nana.* It is an inch high and as wide, with a much-branched, open habit. *H. propinqua* itself is of the whipcord group, however, the leaves are not so closely adpressed as in most of the other whipcords. It will be interesting to learn just what this little gem will do, just how large it will grow, and whether it is as fast growing as most of the other Hebe species. It was planted in my miniature garden in front of one of the high points of the rocky outcrop.

Another new jewel added to the landscape is *Ranunculus alpestris* var. *traunfellneri* with white flowers about ¾" across. The buttercup-type leaves are in scale with other plants, but give a different form and leaf shape. It grows close to the ground and this blooming-sized plant is an inch across.

Completely new to me is *Lewisia rediviva* var. *minor* which at this point in no way resembles the species in foliage. The ½" long leaves are somewhat flattened, forming an attractive rosette, much lighter green than in the more

familiar species. The plant was collected from a mountain top in California and identified by a well-known botanist there. The flowers, which I have seen only in a colored slide, are difficult to describe. It lacks the perfect symmetry of the typical *L. rediviva,* having a puffy look almost as if it had too many petals. This, too, is planted close to the rock, and around the crown to about an inch in depth I used small bits of darkish pumice that I brought back from Mt. St. Helens a year ago. I guess, 'once a collector, always a collector' whether it's plants, pumice, a piece of rock or wood, anything that might be utilized some day, some way.

Toward one edge, so that eventually it will creep over the edge and down the side of the trough, is the smallest of Penstemons, *P. davidsonii* var. *serpyllifolius*. The ½" long leaves are very close-growing, and it branches frequently. It is not nearly as free-flowering as one would like, but its occasional large purple flowers are very attractive.

Away from the rock is not more than a rooted tuft of *Pyxidanthera barbulata,* a description of which, I am sure, is unnecessary as it has been well described in the *Bulletin*. Not too distant is *Dianthus microlepis,* one of the sweetest jewels of the plant kingdom. It forms a congested, deep green bun, and the soft pink flower, about ⅝" across, appears on a short scape just above the foliage. I am told that it is very slow growing.

To the far corner of the trough is my one tiny plant of *Dacridium laxifolium,* described as the world's smallest conifer. It does, indeed, live up to its reputation for slowness of growth, as this two-year-old plant, received as a rooted cutting, has branches just 2" long, having added but ½" in this length of time. Its juvenile foliage is needle-like, spreading from the branches, but with maturity becomes overlapping. Small as this plant is, last spring I found one cone, just barely visible to the naked eye. Since its native habitat is the alpine areas of New Zealand, it is understandable that it came through our miserably cold, snowy, and I might add *long,* winter of '68-69. It has until now been in a pot sunk in the ground with absolutely no protection.

The last two plants selected are seemingly incongruous as they are members of the *Ericaceae*. They were included because of their miniature form, the color and texture of foliage, and to break the regular line between the soil and the inside edge of the trough. The first is a microform of *Vaccinium vitus-idea minus,* whose largest leaf is ¼" long. It grows completely prostrate, is extremely slow growing and the new foliage has, so far, not enlarged. The source of this plant is the same *Rhododendron lapponicum* clump from Alaska. I might as well confess that the Rhododendron gave up about six months after it arrived, as has every other *R. lapponicum* that I have ever had the opportunity of trying.

The second member of the *Ericaceae* is a dwarf form of *Gaultheria hispidula*. The plant, about the size of a silver dollar, is much branched, with leaves ⅛" long. It came from Minnesota, among a group of typical-sized plants of *G. hispidula,* which itself is one of the smallest of the genus. It has very small, white, bell-shaped flowers, only noticeable if you happened to lift up one of the prostrate branches at the right time in the spring. The

large, egg-shaped, white fruits that follow are visible because they somehow push the tiny leaves aside. It will be interesting to see if this little fellow remains dwarf.

I have read that usually this type of garden is mulched with stone chips, however this did not seem appropriate for mine. Not all of these plants require such sharp drainage on top of what is already well-drained soil. The pumice chips run across the planting in an irregular winding manner, affecting only the plants that need them, resulting in an informal landscape that was much more pleasing to me.

I had intended using a new little plant, *Saxifraga stribrnyi,* but somehow the form of it does not blend well with the others. I may still use it as I have not yet found another home for it. I have felt that one thing I needed was some sort of fern growing out from the base of the rock, but even my *Asplenium trichomanes incisum* is too large as the fronds are 3″ long. Perhaps *A. viride,* which I am trying to raise from spore, might be effective.

Also, I have thought that since the rocky outcrop is placed off center in the trough, I might need some sort of "tree" for balance. At the moment, I cannot think of a dwarf, slow-growing conifer that would be open enough in habit, nor a miniature tree with small enough leaves. This will take some time, thought, and study.

When and if the plants bloom, I may find that the plant material is completely wrong and unappealing. There is the possiblity that some may not live, or some plants become too invasive, or lose their present dwarf quality. Whatever happens, I will report it at a later date. I can see, however, the advantage of container planting in the ability to control the environment, and the reason why this form of gardening can get in one's blood. Putting together my tiny experimental garden was very time-consuming, but it was just plain fun!

AN OPPORTUNITY TO HELP—In the April (1969) *Bulletin,* Mr. George H. Pride of the Arnold Arboretum made it known that ARGS members could help the noteworthy projects of the Arboretum by sending in herbarium specimens of plants grown in rock gardens and by sending seeds and living plants that are unusual and rare to be incorporated in the newly established rock garden at the Case Estates of the Arboretum. Some months have elapsed since the April *Bulletin* reached the members and when Mr. Pride was asked to comment on the results, he replied, "The response to the notice in the *Bulletin* has been fair. We have had a goodly number of plants sent or brought to the Case Estates for the small rock garden we are working on; and there have been a limited number of replies to the request for herbarium materials, mostly from the Northwest. These things take time to work out and I have hopes of getting some excellent material from these sources. I know that any further publicity you can give to our proposal will be greatly appreciated and probably bring in more replies."

To have a part in helping one of the great Arboreta of our country should be reward enough. If you have not already done so, send seeds, plants and herbarium specimens to Mr. George H. Pride, Associate Horticulturist, Arnold Arboretum of Harvard University, The Arborway, Jamaica Plain, Mass. 02130.

"SCROGGIN ON THE SCREE"

IAN J. TWEEDY, *New Zealand*

(Editor's Note)—The following article is reprinted, with permission, from the *Bulletin* of the Canterbury Alpine Garden Society, a comparatively new organization which is a New Zealand counterpart of our own ARGS. Mr. Tweedy's home address is not known so "New Zealand" will have to suffice. This article was made available through the good offices of Mr. James Le Comte, an ARGS member from Ashburton, New Zealand, and Mr. Richard W. Redfield, our secretary.

Toward the end of 1966, Jim Le Comte, who is one of our country members, was able to arrange for a small party to make a trip into the country behind Lees Valley, and I was very pleased to be asked to join this expedition. Jim had spent a good deal of time in this area back in his deer-stalking days, but at that time he had no great interest in the plants with with the country abounds. In later years he had made a few solo plant-hunting trips, but was keen to have somebody with a greater knowledge of our native alpines to accompany him on this occasion. He sought the assistance of Dr. Lucy Moore of the Botany Division D.S.I.R. who not only agreed to come but brought her assistant, Miss Jean Clarke. From my point of view I could not have wished for anything better, for here I was invited to spend a week end of plant hunting with Jim, who knows the area so well, and two knowledgeable botanists.

The trip was planned for the week end before Christmas and we left Christchurch after lunch on Saturday and an hour later turned on to the Lees Valley road which winds above the Ashley River for twelve miles before it emerges on the Lees Valley plain.

After travelling this road for a few miles, we stopped at a small creek and browsed along its banks where we found two of our grassy-leaved lilies, *Dianella intermedia* and *Arthropodium candidum,* both in bud. This road had numerous water courses and we spent some time in several of these small gullies where a number of interesting plants can be found. In one of these spots we saw four species of terrestrial orchids (three Thelymitras and one Chiloglottis) all in flower. At the halfway bridge there is an interesting wet bank of considerable height which was dotted all over with an Epilobium. The large white flowers showed strongly against the rock face darkened by the dripping water and by ferns. *Parahebe lyallii* and another Epilobium with small but bright pink flowers also shared this bank.

On through the bush-clad second part of the road and then we arrived at the homestead of Mr. Maurice Harper where we had the use of the shearer's quarters for the night. After tea, we were joined by Mr. and Mrs. Harper and spent a very happy evening talking plants and learning of life in Lees Valley over cups of coffee.

Sunday dawned fine—I know for a fact that it did for Jim shook me out of my sleeping bag shortly after four a.m.—and after breakfast we set off across the flat tussock floor of the valley and on up a track alongside the Whistler River until we ran out of track at about 2,800 feet. Here we

left the Landrover and, loaded with lunch, cameras, and collecting kits, set out up the long pull through a delightful hillside dotted with Euphrasias, Forsteras and *Ourisia caespitosa* among the Hebes, Celmisias, and Gaultherias. At about nine o'clock we emerged on the top of the ridge which gave a wonderful view in every direction, even under our feet where the small tufts of *Claytonia australasica* and slender *Hebe lycopodioides* grew.

It was at about this stage that Dr. Moore and Miss Clarke both produced from their packs containers of a mystical mixture which they called "scroggin." This was new to both Jim and me, but after being assured that it was non-toxic, non-injurious, and non-explosive, we agreed to sample some. This mixture of dried fruit, nuts, preserved ginger, and chocolate tasted really "out of this world" especially after a long climb and an early breakfast.

We were now on a long spur which ultimately leads to the top of Mt. Pember (about 6,000 ft.) and what a variety of alpine plants we found there. As we moved along the ridge we passed from alpine meadow to an area of rocky outcrops and on over a steep wet tussock slope to a large sweep of scree. This led up to a wide expanse of fell field astride the top of the spur. A range of situation like this was naturally suited to a wide selection of our alpines. On the alpine meadow were *Myosotis australis* in bud, *Hebe pinguifolia* and *H. tetrasticha,* and several Celmisias. Further on at the rock outcrops we encountered an abundance of *Raoulia eximia* and *R. mammilaris* together with *Helichrysum selago,* and *Anisotome pilifera.* On the eastern side of this rocky ridge we found a spot sheltered from the strong northwesterly wind where we could have our lunch.

When we moved on we climbed across a wet tussock slope where we found another six Celmisias, *Astelia petriei, Pratia angulata, Raoulia grandiflora, Aciphylla monroi,* and a Myosotis.

This tussock slope led us on to a large area of scree which yielded an exciting array of scree plants—in fact almost the complete list of such plants that one could hope to find on a scree slope. In this area we noted *Stellaria roughii, Cotula atrata* var. *dendyi, Lobelia roughii, Phyllachne colensoi, Cotula pyrethrifolia, Leucogenes grandiceps, Epilobium pycnostachyum, Craspedia incana,* and *Ranunculus haastii.* The last named was in full flower and after finding a number of these dotted across the scree we came across a truly magnificent specimen showing seven perfect blooms. Out came the cameras and a considerable amount of film was shot off before we felt that we had covered the situation. The fact that good slides were obtained was mainly due to the efforts of other members of the party who suffered considerably by lying and crouching on the rough scree to provide shelter for both photographer and subject as both were waving about in the—by now —very strong wind.

As we approached the top the scree gave way to more stable fell field which formed a most inhospitable home for *Anisotome carnosula, Pygmaea pulvinaris, Haastia recurva, Hebe epacridea,* and *Notothlaspi rosulatum.* It was a source of wonderment to see how happy these plants were in this very exposed situation. We were now above 5,000 feet and no doubt snow gives protection for many months of the year, but the heat and wind must be very hard on them in summer.

Along the tops we tramped to another outcrop of rocks which were covered with thousands of plants of *Raoulia eximia* and *R. mammilaris*. We discovered one plant of *R. eximia* which measured 14 feet 6 inches by 3 feet 6 inches and this seemed a fitting climax to our trek. We were running out of time, running out of "scroggin" and our ridge dropped down to a difficult razorback devoid of plant life, so it was time for home. After arriving back at the Landrover almost twelve hours after leaving it we had a meal and motored back to Christchurch.

On the trip we recorded over sixty species, specimens of some forty odd being collected by Dr. Moore and Miss Clarke for further study at the Botany Division because little recording of the flora of that locality had been made.

I suppose I should conclude by saying that a great time was had by all but, while I know that Jim and I enjoyed the trip immensely, I cannot claim to speak for the ladies, for, on reflection, I realize that they must have been very tired from the long, windy tramp and the incessant questions. If they were, they were too ladylike to spoil our pleasure by showing it.

PLANT HUNTING IN MONGHOLIA

ING. VLADIMIR VASAK, *Pruhonice, Czechoslovakia*

2. Chenteian Alpines—Part II

With the coming of first light on the morning of September 7, I packed all my simple kit and started up the slope. I was very pleased in the hope that I had finished all my troubles with the difficult way through the shrubby formations of the lower slopes and the crossings of the ice-like stream of Tereldz. When I was finally on the ridge, I saw my error; I stood on quite another face of the mountain—on the east, and the peak of Asralt smiled at me from afar and across the valley of the Tereldz.

So I started through an old burned larch forest, where under each step lichens—various Cladonia—crunched as though I were walking on candies. On one northern slope where the ground was dotted with clumps of grass, my feet began to slip as they would had the surface of the ground been soaped. It was here that I met my first islets of eternally frozen ground which is present in the Chentei. Here I found only one specimen, a primrose in fruit, probably *Primula nivalis* Pall. This was the first time I saw this plant, all others seen on this morning I had noticed before.

My way led through low formations of shrubby birches in the valley—*Betula fruticosa* Pall. and *Betula gmelini* Bunge, even numerous species of *Salix* were present. I progressed by the paths of roes and harts, which were tortuous; the animals have made these paths in looking for the easiest way to the river and to their pasture. At one spot I saw the trace of a wolf. Then I had to break through the shrubs without any path and the way was far more difficult, each branch restraining me. Finally I saw again the top of the mysterious Asralt. The river Tereldz had changed here to a rough, swelling stream, full of rocks and large stones which had been spilled there by glaciers ages ago. Over these rocks and boulders I leaped that afternoon

until I was on the ridge leading to Asralt. Here I met a pair of Siberian roes and some cranes which were quite tame. The roes seemed more robust than the European ones and their antlers were much larger.

I came to a small lake, about an acre in size, at the foot of a glacier. It was here that the Tereldz River had its source and the water was very clear. Near this lake was the limit of trees. Here were twisted and dwarfed forms of Siberian Swiss stone pines, some very similar to the allied and shrubby *Pinus pumila* (Pall.) Regel. But all these tree-shrubs are only dwarfed forms of *Pinus sibirica* (Rehd.) Mayr.

I did not climb up to the top of Asralt this day. I was very tired from breaking through the shrubs and climbing through the Chenteian rough wild. I found one place for camping and started to look about the neighborhood, especially that nearest the foot of the Asralt massif. Here were growing three very pretty specimens of *Saussurea baicalensis* (Adams) Robins on the scree with sparse grass among abundant lichens. They were pronouncedly solitary plants with unbranched stems and with from 10-20 large, bluish violet flower heads. Its synonym, *S. pycnocephala* Ledeb. well illustrates the first glance of its inflorescence.

From the plants of the steppes I found here fertile specimens of *Schizonepeta multifida* (L.) Briq.—even it is well characterized by its synonym *Nepeta lavandulacea* L. F.

There was one very nice spot among the grassy and stony fields on a slope. It was like a fairy tale garden. All around this spot were evidences of night freezes, common here often at the beginning of September, but here in this small space was a very pretty dwarf *Betula rotundifolia* Spach. with quite vivid green leaflets. This tiny shrub is the Monghol-Altain form of *Betula nana* L. All flowers of herbaceous plants here were of vivid color; possibly here was a source of warmer air from the depth of the ground. In full bloom there was a very nice small *Campanula dasyantha* M. B., to 5 cm high. It inhabits a part of Mongholia and Siberia. Reginald Farrer writes of it: ". . . one of the most desirable of the whole race."

Not rare here was *Antennaria dioica* (L.) Gartn., while another plant was quite new for Mongholia. It was the minute *Gnaphalium supinum* L., a 3-5 cm high, silvery plant, which was supposed to have its eastern limits some 1000 km to the west. The nearest collections, documented by herbarized specimens of this plant, came from Altai in URSS. It seems possible that *G. supinum* will be discovered in other mountainous areas of Siberia.

This small plant usually inhabits places at high elevations, where the eyes of botanists are very, very tired and the tiny clumps of gray leaves can be easily overlooked.

Another plant that was rare to me was *Juniperus pseudosabina* F. et M., allied to *Juniperus sabina* L. which lives in more southern areas. *J. pseudosabina* is smaller, more compact, and in my opinion, more decorative and much more suitable for our rock gardens than *J. sabina*. In my small "fairy tale garden" were growing two miniature willows; *Salix berberidifolia* Pall., the firm, densely branched shrublet with distinctly toothed leaves which are leathery and to 1 cm long, as though it were some dwarf evergreen Berberis.

Salix divaricata Pall. here was up to 20 cm high. It is closely related to *Salix arbuscula* L. In flower here was a nice low Erigeron, slightly resembling, by its purplish violet marginal rays, a Bellis. Very distinct, and I should say eye-catching, were green, dense clumps of *Lycopodium alpinum* L., which in Mongholia is present only in Chentei. I discussed this plant with a Mongholian hunter in whose home we spent one night on the return from Chentei. He asked for more information about this plant saying that it is a very much appreciated delicacy—of bears. He said that these shaggies have destroyed nearly all its localities. I must not forget to mention finding the nice and small yellow-flowered *Ranunculus altaicus* Laxm.

But came the evening and I had to return to my improvised camp. I was very tired, so tired that I did not eat my dinner. By a large fire of pine trunks and roots I was soon asleep only to be awakened at midnight by my hunger.

On the morning of September 9th, I was up before daybreak and in good condition. After two and a half hours I had reached the much desired top of Asralt Chairchan. There I found, built up from stones, two "obo," the sacred small pyramids into which the Mongholians put their prayers written on bands of cloth. It seems that it is the practice in their religion to let the wind do their praying for them by moving the small prayer banners. Both these small pyramids of stones were helpful in my orientation as the top of Asralt was covered by clouds and I could not see more than three to four meters ahead. While on the ridges a strong wind had been blowing, on the top there was silence. Only the mountain skylark flew from stone to stone, wondering, no doubt, what a man was doing there. Even on the mountain's top were present small islets of vegetation among bizarrely arranged stones and rocks.

On this high place was growing a small Draba, similar to *Draba aizoides* L., but smaller. In the same place I found an unidentified Oxytropis, which because of the shape of its fruit must have been a member of section Orobia (Bunge) Aschers. et Graebner. On this same ridge, close to bands of eternal snow, which was dominated by very strong and cool winds, I saw small leaflets of *Salix nummularia* Anders. Its small branchlets were all underground, there being protected from the unsuitable weather; the leaflets were depressed in small crevices. This small Salix was to my joy, fertile and now several of these little plants grow in Czechoslovakia as guests from this very little visited corner of the world.

In one moister place among stones were several plants of *Sibbaldia procumbens* L., which is a true alpine, but not showy, in flower resembling an Alchemilla, but with Potentilla-like ternate leaves. Here I met one specimen of *Dryas oxydonta* Juz. (*Dryas octopetala* L. var. *oxydonta* (Juz.) Hulten). It differs from our *D. octopetala,* among other details, by having, not leathery, but thin, paper-like leaves whose surface is not glossy, but dull. Other plants I had seen previously in the Gobian Altai and in the Gurvan Sajchan Mts. I found here. They were *Rhodiola quadrifida* (Pall.) Fisch. et Mey., *Corbresia bellardii* (Akk.) Degl., *Limonium flexuosum* (L.) Kuntze. (You may read more about these in the *Journal* of the Scottish Rock Garden Club). In sheltered places was *Polygonum viviparum* L., which could be. with its white inflorescences, a good decorating element in rock gardens.

One unusually nice alpine that I must not forget is *Eritrichium rupestre* Bunge, in Mongholian called "basaga." It is a small, cushion-like, grayish green plant with the usual forget-me-not flowers. It is a lime-lover and grows here on southern slopes on spots that are perfectly drained. It is to be seen on nearly all Mongholian mountains. Another very nice plant that I found in crevices under Asralt's top was the high alpine *Saussurea schanginiana* (Wydl.) Fisch., with a 10-20 cm long, firm stem which supports only one 3-4 cm broad composite flower of deep violet color. Its leaves are linear and alternate. *S. schanginiana* is the Asiatic counterpart of the European *S. pygmaea* (Jacq.) Spr.

When I saw the first groups of *Rhododendron aureum* Georgi (*R. chrysanthemum* Pall.) not far from the small snow fields, I stood surprised, although my time was very limited. It is fascinating to know that at this altitude, where it seems only the smallest and hardiest alpines can survive, evergreen shrubs with relatively large leaves are at home. Although these Rhododendrons were not in bloom, they were very pretty. I was sorry that their seeds had not yet ripened and though I took some home they proved unviable. This beautiful Rhododendron is widespread in all the high mountains in Northern Asia; it even grows in Japan. In 1967 I was most happy to have been able to collect some seeds of these shrubs growing not far from Lake Baikal on the slopes of Chamar Daban.

On my way down from the top, I found the best plant of the Chenteian Mountains in a scree beneath Asralt. It was *Gentiana altaica* Pall. (*G. grandiflora* Laxm.) growing in moister spots of the ancient scree. It makes not large, but dense clumps of narrow leaves, with large, to 6 cm long, rich blue flowers. By Malysev (1965) its blooming period is in the spring, in May and June; by *Flora of URSS*, it is from June to August. I have found my flowering plants in September, and there were even buds present. Neither flowers nor buds had been damaged by night freezes. This lovely and very desirable Gentiana is widespread from Altai, all over all central Asiatic mountains, to Mongholia and to the mountains in the Dauric floristic area. I brought home some living plants which flowered in 1967, but their flowers were not such as in the wild. I hope that next year, when the plants have become better established and acclimated, that they will show us their flowers in full elegance.

In 1967, I brought some herbarized specimens of this Gentiana to my friend, zoologist and alpinist, J. Sterba. I obtained them from Mount Delger Chan in the mountains called Chordil Sardak, not far from Lake Chubsu-gul in Northern Mongholia. The flowers are truly 6 cm long, and even dried on an herbarium sheet they are a clear, striking blue. To travel again to Mongholia for this flower alone would be worth while.

Before noon, I started my return. After two hours I broke through formations of dwarf birches, and springing from stone to stone in the rough valley of the Tereldz I came to the river whose waters were often not seen under the great masses of boulders. Then I found a path, not used for a long time, which led me down in a friendly way. Now I collected less and

ran more, resting five minutes in every hour; my rucksack, full of plants and seeds, was heavy. At three p.m., I still hoped that I would be at our camp by evening where awaited my friends. But the way was not as easy as I supposed and from time to time I lost my path and had to break through shrubs again. Some of the fords over the river took much time and my rucksack became heavier and heavier.

Evening came and again I had to look for a suitable spot to spend the night. Here I made a mistake. I went on too long and was forced to camp where the true night found me. So on my last night, though there was a good quantity of dry branches for my fire, I was not well protected from the wind. After dark, it began to blow harder and I had not been able to fully dry my clothes by the camp fire. *I felt very strong cool—the water a few feet from fire changed to ice, my hands warmed on one side by fire were frozen from the other. But I was too tired—and because of it from time to time I slept for a few minutes—and at the morning I felt over it all well rested.*

All the shrubs' branches, even the grass, was pruinose in the morning frost, and I was very happy that the first ford over the Tereldz came at 9:20 A.M. when it was a little warmer. By the way I had collected from time to time some nice plants of *Astragalus alpinus* L., *Oxytropis ampullata* (Pall.) Pers., *Hedysarum alpinum* L., and some others, with seeds. I placed these last collected plants in a polyethylene packet which I carried in my hand as I did not wish to stop long enough to repack my ruck-sack. This packet was torn from my hand by the river Tereldz. I will tell you how it happened. About noon I finally saw the familiar place on the riverside where were camped my friends and our car. But, as usual, a man in haste will do something wrong. So I was hastening to stand on the far river bank with my friends and to assure them that nothing had happened to me. I looked for a last ford over the Tereldz and finally I saw the trunk of a larch at a suitable spot which could be used as a hand rail where the river was the strongest.

I was about to climb up on this larch trunk and on to the river bank, when at the last moment the stream tripped up my feet and I with my rucksack, except for my head, was in ice water. While I was in this involuntary bath and striving to get out, the rushing water snatched my polyethylene bag with its contents of plant gems and seeds which I had collected that day, September 10, from my hand. I was not in too good a situation and I moved very carefully so as not to disengage the tree trunk with all its branches from the bank. It would not be a good mixture; an angry stream, large stones, other tree trunks with sharp branches sticking out from the river bank, my own larch trunk afloat and me and my heavy rucksack struggling in the water!

But all came out well. Some moisture got into my exposure meter, but after drying out it worked well; both my camera and films were without damage having been packed in polyethylene packets. However, I was quite wet when I came to our camp. But my friends and I were glad to be together again. I arranged the plants between papers for herbarizing, dried my-

self and all seeds in the sunshine. After eating, I enjoyed an excellent sleep in our common tent.

The next day, September 11, I spent mostly with the program of my Mongholian friends who wished to collect a reserve of nuts from the Siberian Swiss stone pines for the winter. On a stony mountain slope, among low shrublets of *Juniperus sibirica* Burgsd. (*Juniperus nana* Willd.) with needle-like leaves 8-11 mm long, I saw one unusual specimen with very short, only 3-4 mm long needles. It was very decorative, more in the habit of *Juniperus pseudosabina* F. et M. This was a sterile plant and I could not collect seeds. I took several branches for the herbarium but made a mistake in not taking cuttings. It could be a very valuable Juniper for alpine culture. Should I return to Mongholia, it is possible that I could find this lovely shrublet again as I remember well the locality.

Another fine plant from this trip, though a bit tall for the small rock garden, was *Adenophora lilifolia* (L.) Bess. var. *lamarckii* Pop., with broad and toothed leaves and with a rich raceme of nice, pale blue flowers. It has a thick tap root, usually to 10 cm long. In Mongholian this plant is called "choncho ceceg," a bell-shaped flower. The Mongholians call only the most eye-catching flowers, "ceceg."

That day I helped my friends collect pine cones and that night visited the marquee of a herdsman who seemed much interested in hunting. He told us how carefully the bears climb the pines to knock down the cones; each branch is carefully examined, the bears having in mind their own not small weight. The nuts from the cones are for them their main component of food as it helps fatten them for the winter.

In this hospitable marquee we saw the preparing of "dzamba," roasted flour. It was made in a kettle over a slow fire, then cooled and placed in packets. For the mountain traveler or hunter it is a semi-finished article which, when mixed with tea or milk and butter, in a few minutes is edible.

My last day in Chentei, September 12th, I found a nice purplish red *Dianthus superbus* L. var. *rubicundus* Ser., and *Dianthus versicolor* Fisch., not as high but deeper in color though the flowers are smaller and less fimbriate. Around the river Gacurt were interesting plant associations with abundance of flowering plants. There was even one which I had not previously collected anywhere in the Chentei before—*Cirsium esculentum* (Sievers) C.A.M., allied to the European *Cirsium acaule* Scop., with edible fleshy caudex.

The slopes, inhabited by *Lilium tenuifolium* Fisch., must in the flowering period be a magnificent sight. In the wild this plant usually has but one flower, though I found one plant with four. But in the better conditions of culture it produces numerous blossoms. In the Ulaan Baator area it is collected as a decorative plant, and is often used as food as its white bulbs are edible both fresh and boiled. The yellow bulbs of *Lilium martagon* L. are also eaten.

Other nice plants found on my last day on Chentei were *Goniolimon*

speciosum (L.) Boiss., *Aster biennis* Ledeb., a very nice silvery *Oxytropis myriophylla* (Pall.) D.C., *O. pumila* Fisch., *Scabiosa fischeri* D.C., *Trifolium lupinaster* L., and *Veronica incana* L. These plants are not rare even in the mountain steppes on Bogd Ula Mountains, south of Ulaan Baator, and I hope to bring you more details of them in a future article.

The Chenteian Mountains are so rich in unusual plants that I could visit their ridges and valleys all summer long and not get tired. It is possible each day to find something new and interesting. These lovely mountains are unpeopled. The last visitors on the highest Asralt Chairchan before me had been the three young Mongholian alpinists in 1963, and after that for three years no one had set foot there.

I end this account, as in the last paragraph on the alpines of the Gobian Altai, by stating my desire to return again, this time to the Chentei for another week in which to study and collect the lovely alpines.

Literature:

Junatov A. A. Osnovnyje certy rostitelnogo pokrova Mongolskoj narodnoj respubliki. 1950.

Malysev L. I. Vysokogornaja flora vostocnogo Sajana. 1965

Larin I. V. et al. Kormovyje rastenija senokosov i pastbisc SSSR. Vol. I, 1950.

Popov M. G. Flora srednej Sibiri. Vol. II. 1959

Hanelt P. Davazamc S. Beitrag zr Kentnis der Flora der Mongholischen Volksrepiblik, insbesondere des Gobi-Altai-, des Transaltai—und Alasan Gobi Bezirks. In Feddes Repertorium, Band 70, Heft 1-3, 1965.

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REQUESTS BY MEMBERS—WHERE ARE THEY?—Some time ago a feature under this heading was started in the *Bulletin*. A clearing-house was there established wherein members could make known their desires for rock garden plants, seeds, cuttings, books, slides, information, etc., in the hope that some member would find it possible to supply what was requested. For a time, this service was well utilized. Then requests tapered off until now not a single request has been received for inclusion in the current *Bulletin*. Why? Is it possible that our members have everything that they want; that their gardens are finished and complete; that their desire for information is now non-existent because they already know all they need to know? Certainly, these are not the cases. Or was it because the response was negative? Perhaps! Maybe the dearth of requests is but a temporary thing brought on by this being the non-active part of the gardening year. But, it is in the winter that gardening plans for the coming year are being made and as spring approaches, so will quicken the desire for new plants, new ideas, further information. It may be then that our members will be asking Sallie D. Allen, 18540 26th Ave. N. E., Seattle, Wash. 98155 to make their requests known in the *Bulletin* under "Requests by Members."

AN EXCITING HYBRID PINK AND OTHER NOVELTIES

LEONARD J. UTTAL, *Roanoke, Virginia*

The genus *Silene* is justly popular in the rock garden, at least those showy species known as moss-campions and wild pinks. Others, as certain native campions, are welcome in the woods garden, while several, usually called catchflies because of their sticky stems (actually universal in the genus), are rejected as weeds. They are especially troublesome in grain fields.

Two native wild pinks of eastern North America are very attractive and are frequently tried. The Fire-pink is very common in deciduous woods, clearings and roadsides, a handsome wildflower all enthusiasts learn about early in the game. The five strap-shaped, cleft, deep red to crimson petals, ¾ to 1″ long, make vivid stars on rather weak stems, which are 8 to 20″ high. Naturally when you see it you want it, but it seldom succeeds in the garden. It is a short-lived perennial which seems to insist on the woodland duff soil, and burns out in the sun. Its scientific name is *Silene virginica.*

The eastern Wild-pink, which occurs in three minor varieties, is a much more compact plant, which grows in a variety of dry habitats. It has a tap root, and if it is carefully dug out, and favored after transplanting, the chances are good that it can be coaxed into surviving. It is very variable, varying from deep pink to white, with broad to narrow petals, and the best sorts are excellent in the rock garden. *Silene caroliniana* is its scientific name.

Now, let's combine these two, selecting the best of the parents. Color changes to a clear, deep cerise, the trusses are heavy, the plants taller than *S. caroliniana,* but sturdier than *S. virginica;* a rock plant of the first order. It would probably have to be propagated by cuttings, for I have seen many natural segregates, many fine, but inferior to the straight F_1. It is a real survivor.

How do you get this plant? Well, I did not make the cross. I discovered it at a place in Virginia where dry rocks (habitat of *S. caroliniana*) formed a massive monolith in the usual oak-hickory woods where *S. virginica* grows, I suppose the bees made the hybrids. This must happen very rarely in these species, because, as far as I know, it has only been reported once before, in Missouri (Steyemark, *Flora of Missouri*, 1963). Therefore, if this plant has excited your curiosity, you will have to recreate it by artificial hybridization. We have some plants growing in a greenhouse right now, regretfully none for distribution, but they are so choice that I hope someone takes up the challenge.

A few other novelties have come my way in Virginia over the last year. One is the white-flowered form of *Lobelia siphilitica.* Normally, a rather dull purple-blue, it enjoys some popularity in wild gardens because of its dense spikes, and it is good in wet soils. The white plant is startlingly different. It is vigorous, and the spike is so brilliantly white that it gleams like a candle.

Just last week I found a white sport of the wild bleeding heart, *Dicentra eximia,* itself, in its normal pink, popular in rock gardens and general gardens alike. The horticultural variety called 'Bountiful,' offered at no mean prices, puzzles me. It seems no better to me than any of the several selections of wild bleeding heart, when they grow in a shale-loam detritus.

On the top of 4,000 foot Poor Mountain, site of our local television and police broadcast towers, *Phlox ovata* really grows luxuriantly and is brilliant in the sun. The plants are normally pink, but I have found one that was lavender, which I am propagating now. In the actinic rays of the mountain top the lavender was silky and clear. I hope that it doesn't dull out downstairs.

MOUNT WASHINGTON

(Editor's Note)—Ninety-three years is a long time, even for our spry rock gardeners, but it is as a moment in the life of a mountain. Following are two short articles on the same subject—the ascent of Mt. Washington. The first one, written by Robert B. Clark, of Rochester, N. Y., tells of the ascent by ARGS members in late June, 1969 as a feature of the Annual Meeting of the Society held at North Conway, New Hampshire. The second account relates an ascent of the same mountain in July, 1876—ninety-three years ago, just eleven years after the end of the Civil War. This account was written by Mrs. A. J. Aikens, wife of Andrew Jackson Aikens who was the founder of the Evening Wisconsin in which the article was published. The Evening Wisconsin later became the Milwaukee Journal. Mrs. Aikens tells of the ascent of the mountain she made with two children, sisters, one of whom became the mother of Mrs. Clarence E. Larsen, a member of the Northwest Region of the ARGS. It is to her that we are indebted for this charming article. No changes of any kind have been made in the text, no additions, no deletions, and no attempt has been made to give botanical names to the plants mentioned. Had you been reading a copy of that Evening Wisconsin printed in 1876, nearly one hundred years ago, this second article is what you might have read.

MOUNT WASHINGTON'S ROCK GARDEN

ROBERT B. CLARK, *Rochester, New York*

The assault of the American Rock Garden Society on New Hampshire's tempestuous Mount Washington began from the Appalachian Mountain Club's Pinkham Notch Lodge, elevation 2,000 feet, at 9 A.M. Thursday, June 12th, with a ramble through the summer-shaded woods filled with wild flowers and bird song. Patches here and there of bluebead lily, *Clintonia borealis* (Ait.) Raf., painted trillium, *Trillium undulatum* Willd., and the hobblebush, *Viburnum alnifolium* Marsh., added notes of gaiety. As the path rose ever so gradually, the roar of Cutler River was heard through the trees. At a bend we came upon a heavy plank bridge spanning the rushing torrent only a few

feet beneath us. Presently we reached Crystal Cascade splashing over an ancient volcanic vent into a narrow basin only to tumble again into a pool while upsweeping its refreshing breeze to our overlook platform. The day was warm and humid, though cloudless.

But we must haste along to Hermit Lake at the mouth of Tuckerman Ravine in company with alpine skiers bent on enjoying the shrinking snowfield beneath Tuckerman's east-facing rim. Through breaks in the canopy we caught glimpses of snow patches high above us, until at one pause we were deceived by a quartzite boulder which in the shade of the boreal forest appeared to be the first patch of snow. Soon, however, the deception became reality as the trail bridged the Cutler River at 3,000 feet. And at 3,800 feet a slushy snowfield remnant crossed the trail for 100 feet or more. The 1968-69 winter brought a record snowfall of 318 inches to Mount Washington, and a late spring failed to remove it before the summer solstice.

Noontime found us at "Howard Johnson's", as the Hermit Lake shelter is familiarly known. Words fail to describe the majesty of the towering cirque to the west with Lion Head to the north and Boott Spur's crenelated ridges enfolding it from the south. Bright sunshine illuminated the gigantic bowl. Zephyrs played across the floor, while hikers arriving, loitering, lunching would set out again refreshed. Skiers were seen high up the talus slope of the headwall, ants amid this grandeur.

Our party bushwhacked up the Boott Spur Link over snowfield, under

ARGS members on Mt. Washington — June 1969

Robert B. Clark

broken spruce and fir trees, scampered up boulders to the elfin forest, pausing frequently for breath and relief to the hard-working heart. In the distance, across the gulf, the "ants" pursued their industry. Below lay Hermit Lake and shelter with its industry. But from the shoulder-high branches nearby came the plaintive notes of the white-throated sparrow, *Zonotrichia albicollis* Gmelin, and the murmuring trill of the junco, *Junco hyemalis* L., lifting our spirits immeasurably.

As we emerged from the dwarfed vegetation at 4,400 feet we came upon the cushioned Diapensia, *Diapensia lapponica* L., in bloom and the purple Lapland rosebay, *Rhododendron lapponicum* (L.) Wahlenb., cradled between the rocks and ledges. And oh! what is this dainty, bell-shaped pink flower tucked into a flat cushion of tiny leaves, its buds round and red? Yes, of course, it is the alpine azalea, *Loiseleuria procumbens* (L.) Desv. How tiny, how attractive! At this season of longest daylight hours the tundra has come alive. Snow blankets are gone but a few days or weeks, leaving fluid moisture to bathe the barren soils and the cool air. Flower buds, long dormant, are stimulated and here are we to testify at this brief recurring moment.

Greenish, lichen-covered rocks of Boott Spur at 5,500 feet were the saddle of our trail. Thereafter we plodded across the sweeping Bigelow Lawn on the Davis Path with Washington's cone a mile to the right in the haze. This enormous expanse of rock and sedge is shorn by constant wind. Red spruce, or he-balsam, *Picea rubens* Sarg., centuries old, creep mat-like over shallow depressions. The seedlings would take root in the lee of a low flat boulder. When its leading shoot would peek over the sheltering rock or above the windswept snow the terminal bud would yield to lateral buds thereby consigning these normally conical trees to an existence of utter humility—generations of men unborn when this plant was young now walk upon it as on a carpet.

By midafternoon we reached the 5,200 foot crest of Camel Trail to find the shiny roof of the AMC Lakes-of-the-Clouds hut 200 feet below us to the west. Soon we were joined by the delegation who had taken the limousine to the summit and had descended some 1,200 feet by way of the Crawford Path.

After an hour's rest, our strength renewed, we set out to explore the col above Oakes Gulf a few hundred yards south of the hut. Here we found in starry profusion alpine plants in Nature's own rock garden. Here in full bloom was the yellow-flowered, exceedingly rare endemic, Robbin's cinquefoil, *Potentilla robbinsiana* Oakes, a tufted plant growing atop a series of terraces. These terraces of stone rings and stone stripes arose from extreme freezing and thawing during glacial periods. Open ground consisting principally of rock chips and ground where low shrubs grow occupies about equal areas. This garden is subject to deep freezing, strong winds, and very thin, if any, snow cover. The plant community is miniature in stature though extending for several acres over the barren landscape.

A brief list of blooming plants includes: thread-like rush, *Juncus filiformis* L., bearberry willow, *Salix uva-ursi* Pursh, roundleaf dwarf birch, *Betula glandulosa* Michx. var. *rotundifolia* (Spach) Regel, and the sparsely-flowered dwarf bilberry, *Vaccinium caespitosum* Michx. Diapensia, Lapland rosebay, and alpine azalea have already been mentioned. Present, but not seen in bloom were: moss campion, *Silene acaulis* L., mountain sandwort, *Arenaria*

groenlandica (Retz.) Spreng., three-toothed cinquefoil, *Potentilla tridentata* Alt., alpine avens, *Geum peckii* Pursh, crowberry, *Empetrum eamesii* Fern. and Wieg., bunchberry, *Cornus canadensis* L., Labrador tea, *Ledum groenlandicum* Oeder, bog laurel, *Kalmia polifolia* Wang., *Phyllodoce caerulea* (L.,) Bab., *Cassiope hypnoides* (L.) Bigel., several species of *Vaccinium*, and Faxon's bluet, *Houstonia caerulea* L. var. *faxonorum* Pease and Moore.

Friday morning after revisiting the rock garden for photographing our darlings in better light, we separated into two parties, one heading for the Alpine Garden above Lion Head en route to the Auto Road, the other party descended via Bott Spur Trail to Pinkham Notch.

ASCENT OF MT. WASHINGTON

MRS. A. J. AIKENS

Here we are at the tip top of creation. The thermometer reads 46 degrees, and the wind is moderate for these exalted arrangements—25 miles per hour. The railroad now runs up and around and to the summit of Mount Washington. The first continuous passenger train from any of the large cities, to this point, runs on Monday before this letter will reach you.

We started from the Crawford House at seven in a six instead of a four-in-hand coach, preferring to be tipped over in style, if at all. The coach was well filled, A and S riding upon top. The driver with a whist to his stout fine looking bays, on Wise and Pete! on Weasel and Priest! on John and Pomp! started off with a greater dash than ever did St. Nicholas himself. There were five other coaches going in the same direction. The roads were fine, and nothing suggestive of danger seen on the route. As we met other coaches, we turned close to the side of the narrow road, waiting for them to pass, exchanging salutations, and looking for familiar faces among the occupants. On we go, past babbling brooks and gorges cut in granite rocks, through which the water leaps in cascades, and, as it smooths its wrinkles out below, we can see the trout dashing in the crystal water. Spruce and hemlock and fir, birch and maple, sweep the coach on either hand. Whortleberry and raspberry fringe the roadside, and white elder blossoms and coral berries brighten the green of the foliage. The scarlet bunchberry peeped out from amid the brake and the fern, and this was the last plant blossoming before we left vegetation behind.

We alight from the coach and look with curious eyes upon the diminutive bright engine, and the queer, little car which takes us up the awful, inclined plane. There are two engines and two cars which stand ready. We enter, the seats are all tipped back, with braces for our feet, so that we shall not tip forward upon our noses. As we ascend with a jog, jog, jog, clatter, clatter, we are hung in the air at an angle of 40 degrees, and we ascend 13½ inches to the yard. We are told that it is perfectly safe, and the machinery—a simple contrivance of cog-wheel and tram-way between the rails and ratchet, and other apparatus for instant holding of the whole train sounds

secure; but when we put our heads out of the car, as every body does, and see ourselves upon a high trestle work, which they term Jacob's ladder, and look down the inclined plane hundreds of feet from the valley, and look upward hundreds of feet to the top, "we feel, we feel, we feel."

We jump out quickly, breathe more freely, and look about us. Granite boulders tumbled one upon another, mica, slate, feldspar, crown the summit. The Alpine daisy a small, white, delicately pencilled blossom, is found on the very top. Thin, yellow green moss alone scums the rock. The people scatter like sheep, all about to make the most of the two hours time before returning. All take a look at first, then gather specimens, buy views and illustrated papers, and proceed to the well-furnished writing-room, and pen a brief letter—eighteen were writing at one time.

"I stand and look afar." A white hazy line in the glowing east reveals the broad ocean—a whiter speck shows the ship standing out to sea. To the north of this the blue lakes of Maine, and sweeping farther around the beautiful, soft velvet-crowned summits of the Green Mountains are seen. Far, far down below us lie sweet peaceful valleys, with purple lakes and white villages, with here and there threads of silver gleaming in and out, revealing Tennyson's brook. The rushing train does not seem to move, so distanced is it. At our feet lie bold peaks that vainly aspire to reach the height of this proud summit. Down their sides in broken ravines waters sparkle, and one unflinching snow drift faces the summer sun. The earth is God's footstool. Jehovah made this solemn silence, these majestic peaks, the index of His omnipotence and omnipresence. They fill us with sublime awe, their rocky fastnesses pervade us with the fear of mysteries. The soft shadows from floating clouds that skim over the valley, bending the silky grain, creeping swiftly up the long sloping mountain sides, whisper of His ever dispensing grace, and those thousand delicate tints, softly blending in the sunlight, speak in clear notes, which command our fervent gratitude, of His constant and fervent mercies.

Freedom, liberty, patriotism, religion, is the soul of mountains; no wonder then that from New England the spirit has gone forth, which has imbued the representative men and women of our nation.

OMNIUM-GATHERUM

The 24th American Horticultural Congress was held in Philadelphia in mid-September, and there the Society's Silver Medal was awarded to the Friends of the University of Washington Arboretum as a result of an exhibit of Ericaceous plants staged in Seattle in connection with the Eleventh International Botanical Congress held there in late August. Many ARGS members helped in making the exhibit a success. Mrs. Dorothy Brauss, a member of both the ARGS and the "Friends," and General Chairman in charge of the exhibit, was in Philadelphia to attend the Horticultural Congress, and accepted the Silver Medal on behalf of the "Friends." The citation follows:

"The American Horticultural Society, through its Board of Directors, presents this citation to the Friends of the University of Washington Arboretum for the excellence of their staged exhibit of plants of the family *Ericaceae* at the Eleventh International Botanical Congress.

"This remarkable collection of more than 350 heath relatives consititutes an outstanding achievement in horticultural education and in the opinion of the Committee of Judges merits the Silver Medal of the American Horticultural Society."

The second part of "Engleria" by Hans Honcik will appear in the April *Bulletin* and will begin with these words, "The species and varieties of this noble genus have been introduced (*Bulletin* of October, 1969). Herewith may I acquaint you with the hybrids of this Saxifrage group."

In the *Bulletin Board* accompanying the latest *Bulletin* you will have read about the 1970 Annual Meeting of the ARGS to be held in Seattle on July 24-25-26. There will be much more publicity as plans develop, both in the *Bulletin* and its satellite, the *Bulletin Board*. Special notices will undoubtedly be mailed out at a later date, and much information concerning the meeting will be exchanged through personal correspondence between members. A special effort will be made to expedite the printing of the July *Bulletin* so that it may reach members early in July before they start their journeys to Seattle.

Many members who attend the meeting will participate in the various trips being planned into the mountains for the days preceding and immediately following the meeting. Already planned is the trip to Mt. Rainier for the last day of the meeting (Sunday, July 26). The destination will be Burroughs Mountain, a part of Mt. Rainier. By bus and by automobile our members and guests will roll over perfect highways through fine scenery to Yakima Park, elevation some 6400 feet. This park is situated on the north side of Mt. Rainier where the blossoming flowers come latest into bloom and linger longest. Let us hope that on that important day the mountain (Rainier) will be at its scintillating best in bright sunshine and not hiding behind its veil of impenetrable clouds in bashfulness occasioned by so many notable visitors.

The full effect of the mountain is felt when one disembarks at Yakima Park. There Rainier looms, across the deep canyon of the White River, almost, it seems, close enough to touch—vast, majestic, beautiful, and to many emotionally inspiring almost to the intensity of religious fervor.

When finally one is able to turn his back on the mountain and look in the other direction, he sees a series of gentle flower-flecked slopes reaching up to several sharp peaks known as the Sourdoughs. There are short trails leading to each peak. But these trails will not be for our visitors. The main attraction will be the ascent of Burroughs Mountain which is within easy hiking distance.

To those who cannot, or do not care for the strenuousness of the long trail, there are several very short and gentle trails that keep one close to the vicinity of the parked cars, yet afford an opportunity to get acquainted with many of the mid-elevation flowers. Should one do no more than sit and contemplate the mountain in its changing aspects, he will find himself well rewarded, especially if there is the added attraction of light and shifting clouds that enhance the view of the great peak. This changing pattern of revelation and obscurement may be likened to visual music as ice and snow, sunshine, cloud, and blue sky romp through their rhythmic fluctuations.

There are several steep pitches in the trail to Burroughs but mostly it is just walking that is required. The trail follows one shore of Frozen Lake where one may see on the far side a snowfield that breaks at water's edge to set afloat small icebergs in the open water where heaven's blue is reflected. There is never a lack of botanical interest as one progresses along the trail. The pace is slow due to the many stops to examine the trailside plants and to photograph them. There may be marmots to be seen, and their shrill whistle is one of the characteristic sounds that always thrill visitors in this usually silent place. Even there may be a glimpse of a mountain goat on some distant crag. One should never visit Mt. Rainier without bringing binoculars.

All too soon one arrives at the top of the last steep pitch and one is atop Burroughs at 7149 feet, which from then on is a long, fairly flat ridge of varying width leading directly to the ice-encrusted northern flanks of Mt. Rainier itself. On Burroughs one is above timberline. Legend has it that in the days before the white man's coming the Indians used to make their camp on the wide, nearly flat top of Burroughs at certain times of the year. This is hard to believe when one considers that to the Indians of the region Mt. Rainier was "The Mountain that was God"—something quite holy and not to be approached too closely, even in reverence.

If the complicated weather conditions between now and next July are such that our timing of the flower unfolding on Burroughs proves correct there should be an abundance of flowers there and on the trail leading to it; enough to keep the interest of our visitors at a high pitch. It is thought that a check list of the plant species possible to see on this short expedition would be appreciated by our members. Such check lists have been made for use on field trips taken by members of the Northwest Region in the past and have proven quite useful. It is possible that check lists for Burroughs will be available when July rolls around. There will be one with your name on it, but you will have to come to Seattle to get it.

Before and after the meeting there will be other trips available. More about them later. Some will be one-day trips, others will be longer. Do the names Olympic Mountains, Cascades, and Wenatchee Mountains mean anything to you? After your visit here they will mean a lot more to you and pleasurably so. Start planning now to come if you have not already done so.

EXCERPTS from a letter written by Betty Jane Hayward, of Scarborough, Maine, to Alice Hills Baylor, Johnson, Vermont, on the occasion of being notified that she was to receive an Award at the 1969 Annual Meeting: "I am so grateful to be honored by the American Rock Garden Society. Rock gardening has brought so much happiness, and has changed my life and it has 'kept me young at heart.'

"I feel so fortunate when I remember all the contacts in the early days, of being a charter member and meeting our first president, Montague Free; conversing with Sir William Wright Smith, Curator of the Edinburgh Botanic Gardens; talking to Cleveland Morgan about the wonderful garden he had created in Montreal. Mrs. Clement S. Houghton was my dear friend and I was often a guest in her lovely house in Chestnut Hill, Mass. Also, I was signally favored when Dorothy Hansell called me from Princeton, N. J. in the early 1950's or thereabouts, asking if I would serve as one of the vice-presidents. From then on until last year I was kept on the Executive Board.

"I remember when Dr. Manton Copeland came to me asking if I would try to organize a Maine Unit. He had become New England Regional Director, and we soon had a fine and pleasant organization that continued for many years, holding monthly meetings. Through those years I gladly served as secretary. It finally dissolved when some of our good members passed away and it became difficult to keep the group together. We do have many members throughout Maine, however."

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