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Bulletin of the American Rock Garden Society



Small Columbines For The Rock Garden

CLARA W. REGAN
Butte, Montana

Drawings by Laura Louise Foster, Falls Village, Connecticut

To begin at the very beginning of my interest in the small columbines takes me back to a day in Glacier National Park in the year 1921. I was, at the time, astride a sagacious quadruped (known to his friends as Whitey, because he was gray, with freckles, no doubt), riding up a series of narrow, steep switchbacks on a mountainside. I had come to a pinpointed turn in the trail, overhanging nothing but atmosphere, and Whitey, with his admirable sense of responsibility, had bunched his four feet together and was slowly but surely swinging the rear part of his chassis over the yawning abyss. And that very instant, my interest in the dwarf columbines began. My agonized gaze had fallen upon a beautiful small blue flower on the bank above me. Even in that moment of stress, I knew it

to be one of the rare jewels of the flower world. It was the almost legendary *Aquilegia jonesii*, then known in only a few herbaria and, of course, quite unknown to me by name; since that day, somewhat domesticated, though never too tractable in gardens.

It was more than fifteen years after the foregoing incident before this plant, which practically grows on my doorstep, came to live in my garden. In the intervening time, however, several aquilegias from foreign lands had become well established, and I can only think it was the wise guidance of Providence that led me to begin with the hardy, easy and beautiful *Aquilegia flabellata*, an encouraging start in a venture that has led rather far afield.

This plant from Japan is furnished

with pale green, glaucous leaves and above them hang, in early spring, short, broad, almost globular flowers. In the light of their waxen perfection, these flowers look like the artificial ones found under glass domes on mid-Victorian tables. Often a suffusion of palest lavender spreads over the sepals; otherwise, the blooms are of a delicious creamy white. The form, *A. flabellata nana*, raised recently from seed, is not nearly so pretty in flower nor is it more dwarf in stature.

Aquilegia faurei and *A. akitensis* (now *A. flabellata* var. *pumila*) came from seed personally collected by a Japanese gardener in the mountains of his country. The first is a most comfortable and delightful plant not over six inches, and often bearing blooms when only two inches in height. It is a small dome, in very early spring, of fine, dark, overlapping leaves; and when hung with the glaucous, purplish blue, pendant buds — which it produces with the utmost profusion — looks like an overloaded little plum tree. The flowers are broad and campanulate, dark blue, but the cup is cream-tipped. *A. akitensis* is slightly taller, more open in growth, graceful in appearance, with a brighter flower and has its foliage curiously marked with pink in springtime. *A. a.* var. *kurilensis* differs from the type in being one-half as tall, with a more compact flower and lacking the pink leaf markings.

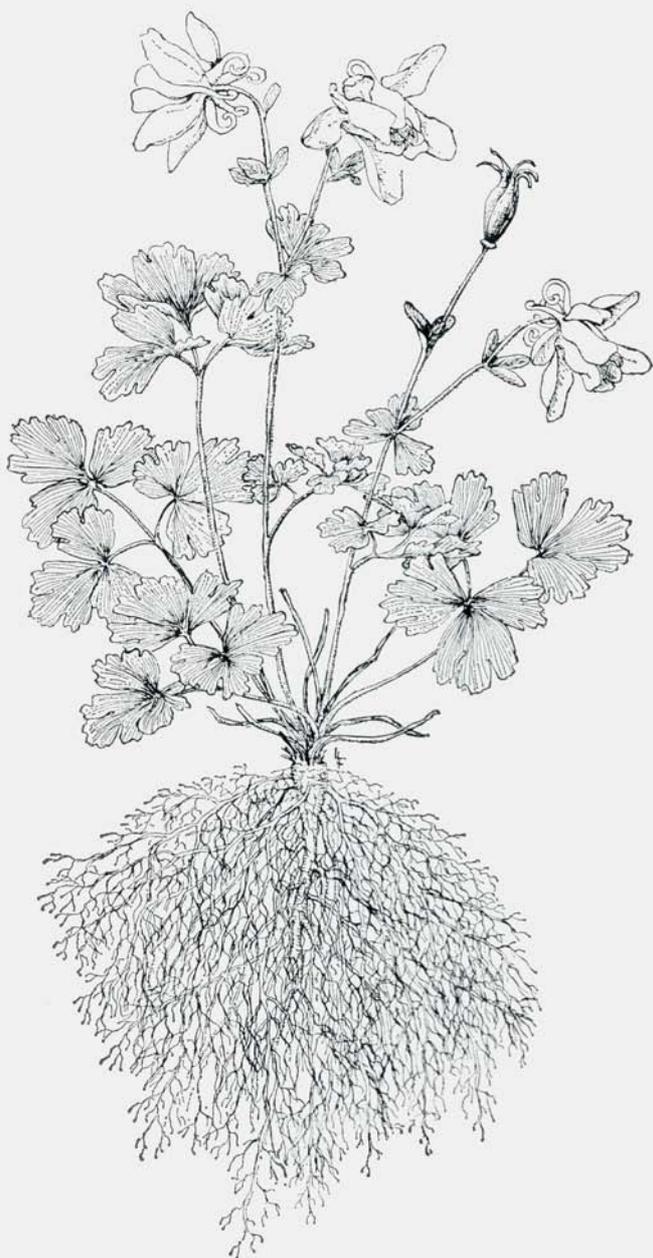
The last of the small *Aquilegias*, native to lands that rim the cold north Pacific, and a newcomer to my garden, is *A. sachaliensis*. It is a very beautiful thing. Not even *A. flabellata* can outdo it in broadness of beam nor shortness of flower. The campanulate blossom is a very vivid blue for a columbine. The petals have a quarter inch border of warm, rich yellow.

These four Asiatics are certainly "sisters under the skin", having similar habits of growth, a certain leaf appear-

ance that stamps them as related species and, very noticeably, a firm, heavy-textured, satiny flower. They are as good as they are beautiful; amiable under all conditions, free-blooming and so incredibly long-lived that they become veritable Methuselahs of the rock garden. My first plant of *A. flabellata*, purchased from a nursery, died last year at the ripe old age of sixteen years. My original plants of *A. faurei* and *A. akitensis*, raised from seed twelve years ago, are still with me.

Against that pretty creature, *A. ecalcarata* (now *Semiaquilegia ecalcarata*), I had a violent prejudice for some years, owing to its repellent description by nurserymen. Curiosity finally got the better of bias; I purchased a plant and at once fell a slave to its quaintness and charm. No plant is more subdued in coloring and less flaunting of its personality, yet it attracts the notice of everyone. The leaves are lacy and a somber, dark green, enhanced by a line of crimson on the edge of each leaflet. They are arranged in a sparse huddle at the base of the flowering stem. These are dark maroon, four to six inches tall, and the flower a warm claret throughout; nothing "dingy" about it, and certainly nothing remotely resembling "chocolate". The blossoms, small and delicately made, swing out from the main stem on thin, curving, graceful pedicels, and being quite spurless, resemble little lanterns swaying in the breeze.

This plant is a native not only of Japan, but of the Asiatic mainland as well, extending into the borders of Tibet. No treatment comes amiss in its cultivation and it adds to its good qualities by producing true seed, something that *Columbines*, as a race, are not too particular about. Perhaps this is because it is not a true *Aquilegia*; some botanists place it in a genus of its own and call it *Semiaquilegia adoxioides* (now *S. ecal-*



Aquilegia flabellata nana alba

carata).

So far the Asian columbines seem only too eager to please, but the next on my list has no such idea. It is *A. jucunda* (*glandulosa*), a celebrated Siberian beauty about which so much is said and yet is so seldom seen true in gardens. It has been described as the most sumptuous of its race and I can find no better word for it. It is a highly individualized plant. The sepals are sapphire-blue, widely flaring and starlike; the cup is creamy white, broad and shallow, and deep down in the heart of the flower the base of the petals is again deep blue. A tuft of golden stamens sets off this lovely flower. It is attached to the eight to ten inch stem vertically so that the flower faces outward and looks its admirers straight in the eye. To the casual glance, *A. jucunda* is spurless, but looking closely one sees tiny spurs, very short and rolled up like a snail shell, mere appendages to the petals. The leaves are small and lacy and quite profuse.

I have dwelt in some detail on identifying points of this beautiful and distinct plant because, unfortunately, seed has been sent out under the name of *A. glandulosa* (*jucunda*) which is not *A. glandulosa* at all, nor anywhere near it. But if you have a columbine that is affixed to its stem like a jonquil and reminds you of a blue jonquil with a white cup, then you have the real article.

Its culture is not at all easy, as has been said. It does not like a peaty, leaf-mold soil. In this respect, I can do no better than quote a noted English grower, Mr. Clarence Elliott, who says he has great success with it in "a rather stiff, yellow loam." My own original plant did not bloom for years, nor was it noticeably robust. Never one to be deterred from bold measures when orthodoxy does not seem to pay, I gave my plant, one fall, a dose of old plaster and followed up the next spring with a generous meas-

ure of stable manure. This did the trick. It not only bloomed, but set uncontaminated seed from which my present planting has come. (Mr. Elliott says to his knowledge it always sets true seed.) The seedlings, when a year old, were put into a raised bed of loam and limestone chips. Each season, they are given a trifle of superphosphate (worked into the soil) and every second year an application of barnyard fertilizer. *A. jucunda* is a very fussy plant and bitterly resents disturbance. The seedlings should be set out when very young and then left forever alone.

I cannot heap such high praise upon the two Spanish members of the clan, *AA. discolor* and *pyrenaica*. The former lays a wreath of fine leaves upon the ground and from its center arises a straight stem, four to six inches high, bearing one to three flowers of bluish white. It is rather impermanent. *A. pyrenaica* has the same scant foliage and attenuated habit, but the flower is a very somber dark blue. This Spanish gloom is somewhat alleviated by a bunch of really nice yellow-orange stamens. It is much longer lived than its paler sister and is one of the last rock garden columbines to bloom, thus giving a three months' season from mid-April, with the advent of *A. jonesii*, to mid-July, with the end of *A. pyrenaica*. Both of these Spaniards seem curiously lacking in what it takes and can put up no competition with the voluptuous charm of the orientals.

America may be short of the wide diversity of campanulas that Europe knows; of the colorful gentians and the glowing dianthi; but in the matter of aquilegias, it need not take a back seat for any other continent. There are at the moment (1948) four charming dwarf Americans in cultivation, with the promise of others as exciting to follow. What is more they are as different, one from another, as plants can be that belong to

the same genus. Three of them are aquilegias gone mad in their desire to be different so that, looking at them with the gardener's eye, one is not sure until they bloom, that they are aquilegias at all.

They are natives of the Rocky Mountains, outlying spurs and isolated mountain groups of the west, where they are found on high ridges and lofty screes of limestone or sandstone. Many other species, not so well suited to rock garden culture, are found in canyons and middle to low elevations. Botanists say that many have a close relationship to either *A. coerulea* or *A. canadensis*. If so, they show remarkable variations in leaf and flower and, odd as it may seem, certain local and restricted areas (if you don't mind a hundred or two hundred miles either way) are the home of a certain columbine. So, in my mind, I always associate *A. saximontana* with Colorado; *A. jonesii* with Montana; *AA. rubicunda* (now *A. elegantula* var. *rubicunda*) and *scopulorum* with Utah; and *A. laramiensis* with Wyoming, of course. Not to say that some do not step over the state lines occasionally, but the states mentioned seem to be the center of distribution for these species.

A. saximontana alone of these keeps to the traditional lines and is unmistakably a tiny, tidy columbine of great charm. The small blue and white flowers hide shyly under the huddle of fine leaves at blooming time. It lives in crevices in my rock garden, where it looks entirely at home and presents no difficulties of cultivation.

A. jonesii, in nature, makes its home in limestone screes at or near timber line. It is a very tiny plant, the most lilliputian of its race, as far as I have seen them. The leaflets are so fine and so close upon the stem that it looks like some curled, stripling parsley just starting out in life. In the case of *A. jonesii*

— or just plain “Jonesy”, as it has been affectionately known to us for years — the color is a most delightful blue-green and velvety in texture, owing to the presence of fine, soft hairs. In the heart of the wee tuft, a bud forms as soon as the leaves emerge in spring and opens as a large blue flower, with one-half inch spur, borne upright on a one and a half inch stem. There are never many flowers even on a mature plant, three on one plant is as many as “Jonesy” has ever obliged with. In the course of five or six years, it may become quite a fat little plant, say an inch across and all of an inch high, building up on last year's leaf bases, but it never does more than this, always saving some of its tufts for blooming next year or even the year after.



Aquilegia jonesii

The two aquilegias from Utah go to unprecedented lengths in their eccentricities. *A. scopulorum* sends up many stems from the root and with the leaflets crowded upon them, makes little mounds of herbage much like *A. faurei*. But instead of being dark green, the leaflets are ashy grey, very lovely in themselves, and quite un-aquilegia-like. The blossoms come in multitudes and are very large for the diminutive plant. The sepals are pale blue; the petal cup so flattened out that it is no longer a cup but a saucer. The petals are white. Most of the family are content with a shaving brush of sta-

mens, but *A. scopulorum* has a solid ring of them in its center of a very pale yellow. But the really amazing thing about it are the spurs. They are two to two and a half inches long — by actual measurement — and stick straight out. When you consider that the stems are not more than six inches high, the plant not more than four inches across, that there may be from twenty to thirty flowers open at once and each has five spurs, you will agree with me that the sight of *A. scopulorum* in full bloom is really something! It is so pert, so wide awake, that I always smile at it as I go by.

If ever a name gave a false impression of a plant, that name is *A. rubicunda*. Misled by the word "rubicund", I expected a hearty, rollicking soul, red or rosy at the very least. So it was somewhat disappointing, after a three-year wait, to see what I did when *A. rubicunda* finally deigned to bloom. It was a very genteel performance. A stiff, gaunt stem arose above the leaves, rigidly uncompromising, bearing two or three tiny flowers of the most ladylike delicacy. The sepals, three-quarters of an inch long, are very pale at the tips, shading darker as they near the petals. The inch-long spur is very slender; it is a still deeper pink. The petals are palest buff, forming a

straight-sided little cup, one-half inch high and as much across, from which protrudes a long tuft of stamens of the same color. The coloring is very harmonious; the pink is a true pink, quite untouched by what the horror-seekers call "a touch of magenta". The leaves, ascending on long petioles from the root, stand erect and the leaflets, unlike those of the other small Americans, are very widely spaced on the stems. They are light green, thick and waxy, and so glossy that they seem to reflect the sunlight; also very stiff and rigid, as are the eight-inch stem that bears the flowers. While *A. rubicunda* will never add gaiety nor glory to the rock garden, yet it is a most interesting species, just because it is so different.

Of *A. laramiensis* I cannot say anything from personal experience. It is said to have greenish white sepals and white petals, and so gives us a dwarf in white, or will when it is in more general cultivation. There are even whisperings going about of a very tiny red *Aquilegia* hidden in the mountains of the southwest. Now, won't some enterprising collector find a wee yellow to complete the score? Surely, there must be one in the Rocky Mountains.

*This article and the two that follow are reprinted from the
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NEW COLORS IN *AQUILEGIA SCOPULORUM*

The publication of a photograph of an all-too-lush plant of *Aquilegia scopulorum* under the name of *A. jonesii* has led to an inordinate demand for the latter species, a delight in the wild, but in the garden extremely slow-flowering, short-lived, and generally perverse, even refusing to germinate in less than a year or two.

Aquilegia scopulorum, on the other

hand, is spectacular, flowers very freely, accepts a wide variety of soil conditions, and self-sows, though none of its babies has been true, in spite of its flowering at a time when no other *Aquilegia* is in bloom. Its one fault, in gardens, is that instead of remaining a mite of three inches, over which the breath-takenly lovely, long-spurred flowers float, it usually grows to a foot, flowers in great

quantity, and provokes the greatest enthusiasm from those who have not seen its elfin beauty on the high screes of Utah and Nevada.

The flowers of Utah plants are almost always of a soft blue-lavender, with cream to yellow "cup", though rarely there is a flower of uniform deep blue. Last summer, in two limestone ranges of Nevada, I encountered the color variants of this species which Clokey has called *A.s. ssp. perplexans*. There is actually no variation in the habit of the plants of one range from those of the type in central Utah, but in the other mountains the plants had sought refuge from drought on the shady side of a limestone

canyon, and there grew to a foot in height. Only a few plants were able to bloom because of an abnormally dry season, but their color range was dazzling; rich purples, clear yellows, pure pinks and even brilliant reds. Later, at the station of the type species in Utah, I was astonished to find a large tuft bearing flowers of clear rose, with cream centers. Four crowns were carefully removed and all have established themselves in the sand bed. These, with a few plants and some doubtfully mature seed of *ssp. perplexans*, give hope that in a year or two it may be possible to enjoy the full color range of the most gorgeous of all dwarf columbines.

—Dr. C. R. Worth, Ithaca, N.Y.

AQUILEGIA SAXIMONTANA IN CONNECTICUT

Aquilegias are easy from seed, but the choicer dwarfs frequently try our patience with their wayward manners, shriveling away to a ghost during a muggy spell in summer. Even the easier border columbines are notoriously short-lived. But a hint from the behavior of our eastern *Aquilegia canadensis*, as it thrives in the meager crevice of a ledge, suggested a similar treatment for the western *Aquilegia saximontana*.

Grown from seed and potted up with

extreme care as to drainage, the plants were set when still very small. A crevice-like opening was sought, where a flat stone butted up to a more erect one on the south side to cast shadow on the plants during the hotter part of the day. Here, with a good supply of rich leaf-mold at the roots and plenty of grit about the crown, the plants have flourished and hung out their short-stemmed bells in scant but exciting fashion.

—H. Lincoln Foster, Norfolk, Conn.



Aquilegia saximontana

THE BLUE COLUMBINE ITCH

ROY DAVIDSON
Seattle, Washington

Good blue flowers are everybody's favourites, and so are the harlequin stars of the columbines. Put them together and what have you got? A bad disease, that's what!

The European *Aquilegia vulgaris* was undoubtedly the first of these to come into cultivation, and it is to be found pictured in all the old garden publications, often in the multi-petaled form. We then recall the sensation of the "Mrs. Scott Elliott long-spurred hybrids", poised so ethereally on their stalks. Occasional among them was a blue, and these were most prized. Wild-flower enthusiasts grew the Colorado Blue Columbine, *A. caerulea*, and following Dr. Carl Worth's Rocky Mountain searchings, we marvelled at the variation to be found there, and came to know some of the dwarf sorts, many of them blue, but in the main difficult to grow.

We tried *A. jonesii*, the up-turned blue one, and even without its flower we loved it for the bluish foliage holding a pearled dewdrop. By happenstance and in a roundabout manner, a seedling plant of an unknown blue columbine came to us; it too was a delightful bluish-leaved miniature plant, and it grew thriftily, flowered freely, and gave much seed, and the seedlings appeared to be duplicates. When the old plant had grown to a sizeable crown, it was lifted, divided into five, and all grew along readily; it was an "easy doer"!

In trying to puzzle out the identity of this charmer, which certainly by its stability seems to be a good species, I have turned a lot of the leaves of botany, yet without conclusion. It forms a little mounded bluish glaucous plant about three to four inches across, and the flow-

ers, blue all over, top three-inch stems, sometimes with a second flower, but usually solitary. The medium short spurs not hooked at the ends present that very pleasant nodding, but not hanging poise.

After the research, I seem addicted all over again. I secured and grew a number of both American and European columbines in the process, but none seems to be it. "It" in the garden named "Blue-Berry", for the seed had come from Mrs. A. C. U. Berry's garden, I had been informed. Among the Europeans I flowered *alpina*, a very much condensed version of *vulgaris*, with short, hooked spur; *pyrenaica*, similar and yet smaller, stems naked (scapose), the spur unhooked; *discolor*, like a bitoned *pyrenaica*, from Spain, and delightful; *aragonensis*, in effect a smaller glabrous *pyrenaica* from the eastern end of the Pyrenees; *bertolonii*, also similar to *pyrenaica*, but with pilose underleaf, from Italy's Appenines; and *glandulosa*, pastel blue and creamy white of great delicacy, a mini-miniature. I read of others that seem similar, some from the east end of the Alps.

The American blue columbines mostly relate to *A. caerulea* (long-spurred); *scopulorum* is like a miniature of it (also long-spurred); *saximontana*, however, is short-spurred, and *jonesii*, with its up-turned flower, is sort of in-between; Munz in his monograph relates it to the Asian members because of a total lack of staminodes. The natural variation of established taxa is perplexing, even to spurless forms in many species having been accorded recognition. *Munz has reduced a very great number of those described to synonymy. Their separations seem to be more nearly geographical than

morphological in their "distinction".

Nearly all the known species are diploids which have not yet reached the sophistication of genetic isolation from one another, as is well known to gardeners, so that the "pure" of any of them is to be retained only through isolation. Perhaps it is not really important, the background of "Blue-Berry"; it certainly cannot be, in the opinion of *Clausen, Keck and Heisey, who held that the results of their cytological studies "lead to the conclusion that *Aquilegia* is one huge

cenospecies composed of only a few ecotypes, (and that) probably most of the recognized taxonomic species) are merely morphologically distinguishable ecotypes or sub-species".

Nevertheless "Blue-Berry" remains the prize of them all here, probably the result of the mating of *saximontana* and some unknown European miniature, the epitome of what a dwarf columbine should be. How it perpetuates itself through seed is a mystery . . . its offspring now are into the fifth generation.

*Munz Monograph of the Genus *Aquilegia* — Gentes Herbarium VII, I; 1946.
Clausen, Keck & Heisey, Carnegie Report, 1945.

Reprinted with permission from the Scottish Rock Garden Club Bulletin, Vol. XV, No. 1

A DWARF *AQUILEGIA* HYBRID

TREVOR COLE

Ottawa Research Station, Agriculture Canada, Ottawa, Ontario

As a result of the article on *Aquilegias* that I wrote for the Bulletin in 1971 (Vol. 29, No. 1), I received from a member of the Alpine Garden Club of British Columbia, a few seeds of *A. jonesii* which had been collected on the Big Horn Mountain.

These seeds were sown on March 11 of that year and kept at about 18°C (65°F) in a greenhouse for about one month but there was no immediate germination. The pot with seeds was then watered thoroughly, allowed to drain, enclosed in a plastic bag and placed in cold storage at 4°C (40°F). It was brought out of cold storage approximately every three months, kept in the greenhouse for three months and returned to the cold storage room. Germination eventually occurred on November 14, 1972, some twenty months later. Three seedlings were produced which, when large enough to handle, were potted into soil in individual 8 cm. (3 inch) pots. One of these

seedlings did not recover, but the other two established well and were grown overwinter in a cool greenhouse at about 16°C (60°F) where they flowered during the late winter but did not set seed despite artificial pollination. By the spring of 1973 the two remaining plants had grown well and were planted outside in a well drained scree-type mix with a mulch of crushed stone round the plants and were located in a small rock garden area which contained other rare or difficult plants. The only other columbine present was *A. saximontana*, about 2 m. (6 feet) away. As the plants had already flowered that spring in the greenhouse it was not until the summer of '74 that flowers appeared again, although no seed was set. In 1975 flowers were again produced and this time four seed capsules developed, which ripened and were collected in August.

This seed was sown on January 12, 1976 and on March 5 the seed germi-

nated readily and about forty seedlings were pricked out into a flat. As these seedlings grew it became obvious that there were two different forms of plants present, both small, but one much more dwarf than the other and with the typical crinkled blue green foliage of *A. jonesii*. I came to the conclusion that, while I had not noticed *A. saximontana* in flower at the same time as *A. jonesii*, this must have been the case. Thus the plants now growing were natural hybrids between these two species.

In the spring of 1976 the plants were set out in a nursery area and allowed to

grow on. Most of the forty plants were typical in growth to *A. saximontana* but about five plants were almost characteristic *A. jonesii* in appearance. All overwintered with very little loss and bloomed profusely in the summer of 1977. As there were no other *Aquilegia*s growing in that immediate area, (the closest were at least three hundred and thirty feet away) it is unlikely cross pollination with another species occurred. Seed was collected in quite large amounts and sent to the ARGS seed exchange listed as *A. jonesii* x *saximontana*, where I understand it was very popular.

Clematis Texensis

A further note on germinating the seed of *Clematis texensis* from Pam Harper of Seaford, Virginia. She writes that her friend, Anne Harvey, who grows this clematis in Canada, sowed fresh seed in November in three clay bulb pans, treating them as follows and with the results indicated.

All pans were treated with Benomyl, covered with plastic and checked periodically to make sure they were not drying out.

Pan #1 was placed in the cold frame. It did not germinate at all and on inspection in late spring it was found that every seed appeared to have disintegrated.

Pan #2 was left on the basement potting table where the temperature was around 60 to 67°F. Only eight seedlings germinated, and those considerably later than the seed in Pan #3, which was set on top of the furnace in the basement, where it was not hot, just nice and warm, and *dark*. Signs of growth appeared in late March/early April at which time the pan was put under lights at a temperature between 60 and 67°F. Twenty-four seedlings were pricked out the end of April, and thirty-six by the end of May.

Mrs. Harvey also planted some seed in a cottage cheese container and put it on the kitchen window sill, facing east, with a plastic bag over them. These seeds germinated quite well. Mrs. Harvey reported, and at about the same time as those in Pan #3 on top of the furnace.

NOT ALL PLANTSMEN ARE MEN

MARY GIBSON HENRY

Part II

JOSEPHINE deN. HENRY
Gladwyne, Pennsylvania

Shortly after my mother's initial collecting journeys southward, the family visited Jasper National Park in 1930 and there learned of the so-called "Tropical Valley" in northern British Columbia at about 59° north just south of the Liard River. It was said that the ground never froze in winter in this particular region. The following winter my parents pored over the scant information available, and my father appealed to his old schoolmate, Sir Henry Thornton, then head of the Canadian National Railways, for assistance. This resulted in the recommendation of a topographer's release from the Canadian Topographic Services to record what they called "exploratory mapping." With the arrival of June of 1931 we boarded a westbound train with masses of equipment, such as sleeping bags, fishing rods, rifles, pistols and cameras. Upon arrival at Edmonton, we indulged in a few last minute necessities before taking the northbound train for Pouce Coupe, the end of the rails near the Peace River. I well remember the fabulous masses of *Cypripedium parviflorum* near Slave Lake.

Eventually we reached the Peace River and were mightily impressed with the great banks cut into the earth by the river over eons of time. Perhaps we were more thrilled, however, by the network of trails, left by the erstwhile resident wood buffalo, still scarring the pale north cliffs above the seething, beige, silt-laden water. An excitement filled us as we drew into camp at twilight long past

midnight. After naps we looked over our outfit of fifty-six horses, two mules and seven men. We loaded our mounts with our respective equipment prior to heading northward into unmapped and relatively unknown terrain or, as we called it, "off the map."

My mother immediately began collecting herbarium specimens. Her horse was hung with saddlebags for her plant press, trowel, camera and rifle. The rest of us hung fewer trappings from our mounts. Our first stop for lunch was in a meadow gloriously blue with *Polemonium coeruleum acutiflorum* topping the lush grass. This flower is absolutely beautiful without any further embellishment, but when sprinkled with a hoary frost early in the morning as the sun spreads over the meadow it is an incredible sight. From this point on we were enchanted with the flowers bearing tints of blue, which is all too scarce a hue in nature — the *Delphinium scopulorum glaucum* in varying rich, sparkling shades of violet, *Aconitum delphinifolium* of a deep smoky purple, and the exquisite gentian blue little *Penstemon procerus* with pinkish-purple tubes reducing the impact of the blue. As we continued to higher country the flowers changed to an *Erigeron*, *Oxytropis saximontana* of a pale sulfur tint, *Dryas drummondii*, and *D. integrifolia* and *Cypripedium passerinum* with white sacs recalling to mind the lowly mothball, and the still more blue *Lupinus arcticus*. We saw, too, *Potentilla uniflora*, *Corydalis pauciflora* and *Papaver rad-*

icatum of seemingly too great a delicacy to withstand so exposed a habitat. Another blue beauty higher up was *Polemonium lanatum* with its skunky odor, but the beauty more than compensated for this defect — after all, it was not necessary to sniff the flower.

The first trip included all the family, but the subsequent trips in 1932, 1933 and 1935 consisted of my mother and myself plus our outfit. On every trek we brought back herbarium specimens and, of course, many selected living treasures, hoping to induce them to contribute some of their beauty to our place. Each plant that was dug was carefully potted in a tin can previously washed and punched with holes before placing some river gravel in the bottom. These were carried in panniers on a selected easy-gaited horse. Every night the plants were removed and spread out in order to breathe some fresh air. It was indeed amazing how many of these plants travelled as happily as they did all the way to Philadelphia. Unfortunately, most of them died in a comparatively short time in our climate. I well remember one pretty little anemone so geared for the short northern summers that it rushed into flower, died back and made three attempts to bloom all in one summer, finally succumbing to complete exhaustion. We still have a few plants which have managed to live on here happily — *Opuntia frigida*, *Monarda mollis* v. *menthaefolia* and *Artemisia frigida* plus three small shrubs — *Amelanchier florida*, *Cornus stolonifera* and a dwarf *Populus* species, all from no farther north than the northern slopes of the Peace River. Of the blooming plants a few proved to be new, and some were named for my mother — *Castilleja henryae* and *Braya henryae*. Each was perfect in its own habitat but, alas, we cannot make them flourish here.

Naturally these journeys were not supposed to be easy, and they required a

certain amount of stamina on our part as well as on that of the horses. On occasions we were so cold that we were unable to strike a match and once instituted a race to see who could first manage a light to start a fire. One morning it was a mere twelve degrees in the tent, and another time while on a fly camp we were so wet that it was necessary to climb into our sleeping bags clad in our chilly, soggy clothing. Had we not done so, the clothes would have been completely rigid with frost and impossible to separate in order to dress in the morning. Another time the sleet froze upon our faces, and the ice could be lifted in sheets from the skin.

There were a few spills, oddly enough caused by the failure of our mounts. My mother's horse caught a leg in a fissure opened by a rainstorm in an earth slide, and both of them went down but suffered no damage. Another time my horse caught the back of her hind shoe on a rock beneath the muskeg. I managed to kick both feet free of the stirrups before she gave a great heave. This catapulted me over her head, enabling me to complete three somersaults before landing gently on my shoulder and rolling to a sitting position.

Another accident occurred when we lost a raftload of supplies. The cook, with some concern, had loaded only what he termed "luxuries" for the trial voyage, and this loss necessitated my hunting almost every evening to obtain meat to replenish our impoverished larder. My mother, too, fished more than usual to add to our supplies.

Upon returning home after these western voyages, she continued collecting but in the southeastern part of our country. These trips beckoned as an outlet after the sudden death of my father in October of 1938. One of the few times that I joined her was almost immediately after his death, and the most outstanding plant



Mrs. Henry and her daughter, Josephine, preparing for a day's collecting. —K. F. McCusker photo

we found was a gentian. Mother remarked, "Bear in mind there might be an albino or even a pink one." As we walked about a rather open and sandy area studded with blue open-faced *Gentiana autumnalis* among the tall slender pines, there was one glorious pink star shining between us! We had this plant for about thirty years, but in our latitude it flowered so late that there was scarcely sufficient daylight to enable the blossoms to open. Should a thin cloud pass the sun, it would immediately wind to a close.

The huge massif of Baltimore gneiss crowning our highest elevation had interested my mother as a potential site for a rock garden for some time. It was not until some months after my father's death that she wished to immerse herself in such a vast task. She decided to make this a wholly American rock garden. The task was a monstrous one because there were only a few large rocks peeping through the honeysuckle, blackberries and sassafras. As the clearing was begun in the lower center, the rich leafy soil was removed for two reasons: first, to lower the level so as to expose more of each rock and make them appear larger and, second, to replace what detritus and overly rich soil had been removed with the mix more suitable for the flora she planned to welcome. She began the transfer of her seedlings as the area was cleared bit by bit and the new soil medium readied.

She obtained some plants of *Leiophyllum* and *Manfreda virginica* and added her own *Artemisia frigida* from the Peace River and *Artemisia stelleriana* from Bic, Quebec, Canada. The site in which this was found has long since washed out to sea. Soon *Silene virginica* and *S. pennsylvanicum* were set out along with a young collection of liatris species which later were much used by Dr. Lulu Gaiser for her book. Of course, there

were some plants from Claude Barr, such as a pink variety of *Clematis scottii* and species of phlox collected by him to her order for form and color. From this point on there were periods of color throughout the year. In spring there were the exquisite superior color variants of her *Phlox nivalis*, especially *P. nivalis* 'Gladwyne' which was lost during World War II. It was not until perusing Anna Griffith's book *Rock Garden Plants* that I learned it was still extant in Great Britain. I wrote to Harold Hillier for a plant which he obtained from Valerie Finnis, so we owe her a debt of gratitude.

Soon after the phlox followed the blossoming of *Amsonia ciliata* and *A. ludovicianum*. Of the former there were three forms, *A. ciliata v. ciliata*, *A. ciliata v. tenuifolia* and *A. ciliata v. texana*. Of all our amsonia, one white *A. ciliata* is outstanding with pale peach-pink buds. For contrast there were the deep violet-blue spikes of *Baptisia australis* grown from seed sent by Dr. E. J. Palmer. Indeed, these baptisia are glorious until you wish to remove one. We had too many, and I tried to drive a hole alongside the root in order to pour boiling water into the aperture but to no avail. They are STRONG!

Later the penstemon in their vast diversity of color trimmed the rocky mass. Certainly, they must possess the widest range of color in any genus, the purest blues, the most vivid reds and even good yellows. There are also a number of species of yucca. The lovely pink form of *Y. angustifolia* has outdone itself offering as many as thirty-four spikes of the perfect "dirty" pink to contrast with its glaucous bayonets. We also have a beautiful light green species sent by Carroll Wood when he was stationed in Ft. Sill, Oklahoma, with his comment that "It was the only good thing about Ft. Sill." By late summer the glorious sulfur pillows of *Eriogonum allenii* lighten and

brighten the rocky conglomerate. Dr. Wherry provided this eriogonum with the comment, "You cannot possibly grow this, but I thought you should give it a try." This lovely addition flowers for better than two months and, as the color wanes, the golden bronze of the finely shredded *Amsonia ciliata* leaves in their varieties gilds the scene with soft mounds well into December.

Because of the size of the rocks and the area covered some shrubs were used in an uncommon combination. *Ungladias speciosa*, a native of Texas cliffs, supplies long stalks of rich pink blossoms along the naked wood early in the year. *Viburnum obovatum*, *Bumelia tenax* and *Halesia parviflora* have become too large and are being reduced in size by drastic pruning. A number of evergreen rhododendron offer puffs of pink in season as well as some green throughout the year. *Rhododendron minus*, *R. chapmani*, *R. carolinianum* and *R. catawbiense* 'Glass Variety' are very choice creatures. The deciduous rhododendrons are color variants of *R. atlanticum*, one being a pink and another a chamois yellow. Nearby are yellow selections of *R. alabamense* and one is even a hose-in-hose in a light creamy yellow. Lower down the slope are *R. bakeri* and *R. flameum* (*R. speciosum*) and some *Lilium michiganense* and more yucca species. Later in mid-July *Elliottia racemosa* sends heavenly white bottle brushes skyward entrancing a variety and quantity of bees. Even at that there is remarkably poor fertilization. A few vines sprawl and an albino *Wisteria frutescens* festoons a great boulder. The less vigorous *Clematis texana* dangles among some rocks, and another trailing clematis in the Viorna group creeps into a *Rhododendron minus*. *Lonicera flava*, a most desirable and beautiful vine, flops over a huge boulder.

At one time myriads of penstemon flourished among these great boulders.

Many were grown from the seed which was shaken from the packets upon Dr. Pennell's herbarium sheets. He was always thrilled that some of his Philadelphia friends might see the great beauty of his specialty. I remember some stunning members of this family — *Penstemon murrayanus* was the most outstanding with gorgeous red tubular blossoms, *P. unilateralis*, *P. cobaea* with its glistening, moist glands, *P. grandiflora*, *P. palmeri* and that most dainty of all, *P. dissectus* from Georgia.

Through all these years my mother had become very closely associated with many botanists and plantsmen, in particular Dr. Francis Pennell, Curator of Botany at the Academy of Natural Sciences and Dr. Edgar T. Wherry, so well known to all ARGS members. She was also in close contact with personalities in the north at the Arnold Arboretum such as William H. Judd and Dr. Hugh Raup. Farther south was Dr. John K. Small at the New York Botanical Garden, and still farther south Dr. Roland Totten at the University of North Carolina, Chapel Hill. In the Mid-West Dr. Edgar Anderson, Director of the Missouri Botanic Garden, that bubbling enthusiast, was a frequent contact, plus a host of others scattered throughout our country. She could not have had better mentors. They not only offered information and suggestions as to what and where to collect but brought and sent my mother choice plants and seeds from their travels.

These men urged her to collect herbarium material for the record and for a better means of identification of her finds. Each sortie provoked more questions as to what variety or species she had collected, and she often found that the known range of many species had been extended. It is due to these men that she learned to document her finds and that much of what is growing here is for the most part documented. She was



Mrs. Henry in her rock garden.

—Evening Bulletin photo

meticulous in placing pertinent data upon her seed packets, all of which she later transferred to the labels. Her diaries, however, were far too brief and do not mention all the specimens she obtained on her jaunts.

Unfortunately, the enormous effort of clearing this rock garden site was never completed in my mother's lifetime; it was not until the spring of 1976 that the northern slope was stripped of sumac, poison ivy, sassafras, sweet fern and blackberries.

As the years piled up my mother turned more and more to the shrubs for several reasons: they were easier to care for and more permanent; it became increasingly clear that her eyesight was failing and her alpine treasures required more care than she could give them, though these little beauties had always been such a great joy to her for such a

long period of time.

There is a vast quantity of correspondence at the Henry Foundation for Botanical Research to attest to her avid search and desire to grow members of our relatively unknown flora. Among those who assisted greatly were Carl Purdy, Rose Collom in New Mexico, D. H. Snowberger of Idaho and Claude Barr of South Dakota. Prior to her concentration on native Americana, she corresponded with such luminaries as Charles Sargent and "Chinese" Wilson. There were many fascinating visitors from far lands at our home and included among them were Correvon and Rock.

When in Europe my mother sought out old map shops and gradually acquired a number of maps of long ago. In this way she could retrace some of the old trade routes presumably used by early travelers. She would then mentally superim-

pose the old roads upon present day maps in order to follow and collect along the routes of earlier explorers.

When she found that the plants from sources near the Atlantic Ocean suffered during our winters, she decided to collect further inland where the land was less tempered by that great body of water. In the late twenties and early thirties she tried many tender plants from California, but these unhesitatingly complained and died very quickly. She countered by seeking the same species farther east and north and at higher elevations in hopes that they would prove more hardy.

With the ever increasing number of plants living successfully in her trial garden, in fact in an overcrowded state, many were awaiting transplanting. She thought that the best place to set out these southern finds was below our drive, and so this area was cleared and the new residents tucked in comfortably. It became known as the Southern Garden and is situated in the southern extremity of the property where there is some protection from the winds, though during the still of the night it is considerably colder than the higher land. It was not long before specimens from Mississippi and Louisiana joined the throng.

Gradually my mother extended her activities westward and did considerable work in Texas, New Mexico and Arizona. From these undertakings we have *Garrya lindheimeri*, *Fraxinus cuspidata*, *Holodiscus dumosa*, *Berberis swaseyi*, *B. haematocarpa*, *Styrax platanifolia*, *S. platanifolia v. stellata* and three plants of a new species of *styrax* which have been described but cannot be named until the locality where it was originally found is known.

For her new favorites from the southwest an area was created in the Southern Garden which she called "the desert". In effect it was another rock garden inasmuch as the new area lay between and

among boulders with a gravelly mixture of soil some thirty inches deep. Here she planted clematis of undertermined species, one nearly black and the other a pure vibrant ruby. Their blooming periods overlap somewhat, and the combination is a joy. *Choisya dumosa* lived there for a while and bloomed one season. Perhaps the most interesting occupant is the *Agave havardiana*. I well remember the time my mother tucked it into the bed and remarked, "Wouldn't it be a joke if this lives and blooms? I will not live to see it but you may". A few years after her death we noticed one day a tip of what looked for all the world like a giant asparagus stalk filling the center of the great rosette. The spear soon emerged and grew at a tremendous rate before opening into a candelabra inflorescence supporting what appeared to be upfacing yellow scrubbing brushes. The final height was four meters and forty centimeters (about thirteen and a half feet.) This covered a period beginning in May and continuing into June of 1972 when the weakened stalk toppled. The stem was laid under the barn porch, which permitted the ripening of seed. The "desert" is a special spot and is covered with plastic each winter, not necessarily to temper the climate, but rather to reduce the impact of our wet winters.

Another section of the property is wooded and boasts a small trickle of water for most of the year. Here my mother gradually made a beautiful collection of trillium feel comfortable. From this time on it has become the "Trillium Garden". There are forms of *T. erectum*, *luteum*, *lanceolatum*, *sessile*, *catesbaei*, *vaseyi*, *discolor*, *decumbens* and that wee bit of perfection, *T. nivalis*. Two of these trillium have the most beautifully marked leaves that truly sparkle when the sun briefly spotlights them. *Shortia galacifolia*, *Delphinium tricorne* and *Cimicifuga racemosa* grow naturally here so

there was only the addition of *C. americana* and *C. rubifolia* to extend the flowering of this family into another month of the calendar. The creamy spikes of *Cymophylla fraseri* are a delight here, and one of the loveliest of all our woodlanders, that exquisite white, maroon spotted flower, *Disporum maculatum*. Many other shade lovers prove their worth in their own turn.

Our entire property was planted to give the impression that the material is growing without an invitation. I vividly remember one lady, impeccably dressed, looking around and then, in some dismay, inquiring, "Just where is the garden?" My mother replied, "You are standing in it."

The mere fact that a plant was rare was not reason enough to devote time and effort to either collect or grow it. Whatever my mother brought home had to be a superior creature either as to color, shape of petals, size of flower or foliage or some other attribute. At times her finds varied so from the type that Carroll Wood commented, "I have always had to stop and think what your mother was seeking when trying to identify the plants she collected because she was never satisfied with the typical."

At the present we still have plants growing in the rock garden from the Peace River in British Columbia, the Gaspe, south to north central Florida, westward to southern Texas, New Mexico and Arizona and odd spots in between. On her innumerable travels she found some great plants in their native habitats, but perhaps the two which gave her the greatest pleasure were the finding of *Lilium iridollae* and *Chamaecyparis henryae*, a tree achieving a height of about thirty metres. The largest of these

has been recently designated a tree to be saved.

By the time 1949 arrived it had become apparent that this superb and unique collection must be continued so that students in botany and those interested could study and enjoy these rarities so happily accommodated. Therefore, my mother proceeded to set aside a fund to institute The Henry Foundation for Botanical Research. Her four children gave the sixteen acres upon which the collection grows and later made a further gift of more than six acres. Some fifteen acres plus the house and barn were added by the writer, so now the total is nearly thirty-eight acres.

She was fortunate to be in good enough health to collect to the end, which was her desire. She had hoped to "die with her boots on," and this wish was almost gratified because she died while on a collecting trip. She became ill in Wilmington, North Carolina, and died after a few days of confinement in a hospital on April 16, 1967.

During her lifetime she received numerous awards for her work, some of which are: The William L. Schaeffer Medal — The Pennsylvania Horticultural Society; The Florens DeBevoise Medal — The Garden Club of America; The Mungo Park Medal — The Royal Scottish Geographical Society; The Herbert Medal for her work with Amaryllids; A Commemorative Medal — Sesquicentenario de fundacao do Jardim Botânico; The Silver Medal — The Massachusetts Horticultural Society for an exhibit of *Lilium philadelphicum* in color varieties. She was also a Distinguished Daughter of Pennsylvania, and the Canadian Government named a mountain, Mt. Mary Henry, in her honor.

ANGYO — GO IN PEACE

BARRY YINGER

Chungchong Namdo, Korea

As I become a more or less regular passenger on the train from Tokyo Station north to Saitama Prefecture, I become absorbed in the poetry of the names along the way. Some translate easily into images: *Kanda* — sacred fields. *Akihabara* — plain of autumn leaves. Then a puzzler: *Akabane*. Red feather? Then my eyes notice the sun climbing in the east and my mind speeds back in time to see white-translucent wings exploding through a pre-industrial sunrise, and I understand. All beautiful images, juxtaposed now with stained concrete, as ironic and saddening as the fanciful bucolic names of contemporary American subdivisions, names that remain only as embarrassed memorials to what was obliterated along the way. But soon I can leave this embarrassment behind. My destination is separated from downtown Tokyo by more than twenty miles and forty minutes, and it bears a name that does not yet deceive. It is *Angyo* — go in peace.

I squeeze out of the train at Nishi-Kawaguchi Station and dodge through the morning crowds to the exit. I emerge in the station plaza to confront a field of bicycles, automobiles, and taxicabs attended by wheeling flocks of schoolboys in identical blackbird uniforms. This visual chaos is suddenly muted by a display of plants for sale at curbside. Here in the clean penetrating cold of late winter, gardens in shallow rectangular pots are stages for an imminent performance of the birth of spring. The stages are simply furnished: angled *Prunus mume* with turgid

white buds, seedlings of *Nandina*, rouged from the winter cold, and pines as freshly green as the moss carpet under them. The performers, lacking a curtain, are about to emerge through the moss — troupes of *Adonis* so shiny-yellow that their heads seem to have been buttered to ease their emergence.

Aesthetically recharged, I settle into a patient queue being methodically inhaled into a conveyor line of spotless taxicabs. My turn soon comes, and I find myself in a taxi driven by a young man, who in his white shirt and tie, looks like bank clerks used to look. Only his immaculate white driving gloves betray him. I tell him my destination, a friend's nursery well-hidden in Angyo's maze of roads that aren't quite roads, and prepare to offer my use-worn map, but this time I am surprised to hear him say that he knows precisely where it is. There is no chance to doubt him — we have already lunged into the traffic — and I become an involuntary participant in a surrealist exercise as my driver absorbs himself in trying to determine how many automobiles can occupy the same space at the same time.

We leave the congestion near the station behind us and settle into a slightly less frantic pattern, dusting the hubcaps of trucks with one fender and disciplining roadside vegetation with the other. Somewhat less absorbed now in highway acrobatics, my driver initiates a conversation, an act of some courage for a Japanese unfamiliar with foreigners. He soon understands my interest in Angyo's plants and nurseries

and says proudly, if a little sadly, that he is a nurseryman in Angyo. As we talk I begin to understand that his pride is the pride of Angyo, and his sadness is the sadness of Angyo.

As we wind closer to my destination my driver shuts off the meter and asks me if I won't stop to meet his family. I agree, and soon we are negotiating a narrow twisted driveway, dodging mounds clothed with carefully trained pines and glossy clouds of clipped Japanese Holly. These mounds all but hide a small house that is nevertheless a reflection of many of the pleasing qualities of Japanese residential architecture. My host enters the house alone and announces my arrival, and as I unlace my boots outside, the house begins to vibrate gently with hushed but frantic preparations for this visit from outer space.

Inside the typically unheated house we are numbed by the January chill, and my new friend and I huddle on *tatami* mats at the quilt-draped table which encloses a small gas heater, the only non-human source of heat in the room, sliding our legs under the draped quilt to warm ourselves up to the waist. My friend's wife appears promptly with tea, no doubt sent ahead by her mother-in-law much as canaries are lowered into mine shafts to detect poisonous gases. Soon after my friend's wife returns intact to the kitchen curiosity overwhelms embarrassment, and mother and father join us.

Formalities pass both ways, and I am not surprised to hear that I am the first foreign visitor to this house. For lack of any other common topic we talk about the nursery business. There is little good news, and I recall the melancholy I sensed earlier in the taxi. Business is not good, especially for those nurseries that produce highly trained plants that demand a serious

personal commitment from the owner, or expensive cultivars of plants that are slow to grow and propagate. Furthermore, the pressure of suburban Tokyo is pressing ever harder on those property owners in Angyo who can barely make a living.

I understand the conversation but the impact is lost: trying to fully appreciate the demise of Japanese horticulture surrounded here by Angyo's excessive horticultural richness is as difficult as trying to recreate the gut impact of starvation in the Sahel over luncheon at Maxim's. I know, of course, that in the world of horticulture nothing is eternal. Suburban Angyo lives as a nursery district only because its urban predecessor perished in a fire that incinerated all of Toyko in 1657. I know too that there have been bad times before — years of wartime austerity and postwar destitution not least among them — but Angyo's nurserymen adjusted and waited out those hard times, and Angyo survived. But that was before the deep penetration of American culture and values into Japanese society, and before mother Tokyo, giver of life to Angyo, turned on her spawn and poised herself to take life away. As I look at my new friends' faces and hear their pessimistic words I realize that as Japan has changed, Angyo has become as much a repository of a distinctive way of life as a storehouse of plants that chronicle Japanese horticultural history.

It is, however, the plants that brought me to Angyo for the first time five years ago, and it is the plants that draw me back again and again. As I lie with my back pressed helplessly against the mat floor by a much-stratified hillock of quilts, trying to sleep, my eyes trace the elaborate patterns of wood and bamboo on the ceiling, patterns that suggest to a

drowsy mind a primitive road map of Angyo, and even in my sleep I am drawn to travel these roads in earlier, warmer seasons.

Seen from its constricted roadways, Angyo is a labyrinth in effect and appearance. Naturally, this characteristic makes it extremely difficult for an outsider to travel the same route twice, although horticulturally attuned outsiders probably wouldn't care, for the partitions dividing the labyrinth are not mind-numbing expanses of box or yew, but rather the stock plants of generations of nurserymen mad and sane, lined out on the boundaries to conserve space, and now grown into nearly solid tapestried walls. Rather than visual obstructions, they stand for the careful observer as a multimedia catalog of Japanese taste in ornamental plants over three centuries. A looming tree of yellow-variegated *Sciadopitys* and an evergreen oak with bizarre crested foliage recall the Japanese passion for such mutations in the 1700's. Spastic maned skeletons of *Pinus palustris* and the glistening hulking mounds of *Magnolia grandiflora* commemorate the Meiji Restoration and the subsequent flow of American native plants into Japan in the late 1800's. Trees of *Davidia*, *Araucaria*, and *Eucalyptus* testify to the eclectic thoroughness of postwar Japanese nurserymen. I am astonished by the variety, stopped short again and again by cultivars of trees not yet listed in the definitive texts: a variegated *Firmiana*, a pendulous persimmon, a pink-flowered *Styrax japonica*. Before long my overloaded sensory pathways yearn for a banal image — a Norway Maple, a Globe Arborvitae — anything to cool down the circuitry.

I find no relief. As overwhelming as these roadside plantings are, they are only wallpaper for the rooms of

the maze, rooms that are the nurseries of Angyo. There are over 500 nurseries in Angyo with only 300 acres in cultivation among them, so no nursery is large. Indeed, it often seems that the smaller Japanese foot must have acquired its adaptive advantage and evolved in just this kind of habitat.

There is scant variation in the layout of Angyo's nurseries. Typically a sea of pots washes up to a copse of trees which in turn shelters a hardworking nurseryman, his harder-working wife, 2.2 children who work either very hard or not at all depending on age, and a menagerie of exotic fish, fowl, and insects. Most prominent are the pots, pots on tables, pots under tables, pots suspended from tables, pots on the ground with yet other pots perched on them, bewildering both in their number and in the variety of their contents. Nothing is labelled, nor priced, and it is not even clear what, if anything, is for sale. Furthermore, no one knows a single botanical name or is impressed if you do. But whatever the peculiarities of the system, there can at least be no complaints about insufficient variety. One nursery propagates over 700 cultivars of *satsuki* azaleas, another well over 100 cultivars of Japanese Maple. Several nurseries sell hundreds of species of small herbaceous plants, and others a blinding array of variegated plants. Still other nurseries specialize in the fancifully named myriad selections of such normally undramatic plants as *Selaginella*, *Rohdea*, *Ardisia*, and many many others.

Of course, a Caucasian poking around Angyo is as unlikely a sight as thirty-five cultivars of variegated *Selaginella* at your local Shop'n'Save Garden Korner, so the kind of interaction with the people who can lead one to a more thorough understanding of the charms of Angyo is not automatic, but neither

is it excessively difficult. After all, any group of people who can recognize the value of a *Nandina* with leaves reduced to twisted remnants of the midribs cannot be long put off by a human mutation with pale unnatural hair, rounded eyes and big feet. In no time one proprietor will proudly display a five year old bamboo seedling now half an inch tall and streaked with white. Another will tune up the crickets he is breeding for the summer festival, and another will permit reverent inspection of the 300 year old *Akebia* vine in his courtyard. A conversation with a friend about *Asarum* in a local coffee shop snares a friendly eavesdropper whose mother's family fought under the *Asarum* crest, and for an afternoon *samurai* warriors again successfully defend the Aristolocaceae.

Gradually something larger emerges out of all this detail, a synergistic something that is not only place, not only people, not only plants. It is more some peculiar sort of plant-human society resembling a lichen in symbiotic construction, but ever more complex. This relationship inspires a pride that

I now more fully understand, but I also understand more fully the depth of my friend's sadness, and yet somehow I feel sorry for myself.

Separated now from my friends, back in the real world, I stare out the window at the rushing darkness as I ride a speeding train back to downtown Tokyo. I tell myself that Angyo's future cannot be closed with the snap of a real estate salesman's briefcase, that a culture that has declared a species of Bladderwort a national monument will not permit the demise of one of the world's great horticultural resources. Then I wonder how a man who has to drive a taxi to feed his family will pass the torch of *Nandina* appreciation to his son, even if his son stays around to accept it.

I look up and down the car, at the rows of slick ads for products and diversions, and reflect upon the peace I found in Angyo. Then I wonder how they will work that up into a really catchy name for a subdivision, and who will live there, and why.

NOTES FROM ALASKA

HELEN A. WHITE
Anchorage, Alaska
Drawings by the author

VIOLET VALLEY

One of my favorite one-day botanizing jaunts is from here in Anchorage to Turnagain Pass or Violet Valley as I have named it. The route to the pass leads along scenic Turnagain Arm for a good part of the way. There are many interesting specimens to be found along the Arm, but unfortunately there are few safe places to turn out

and stop. This is also true in Violet Valley but one can find ample parking at the rest area at Mile 57 just before coming to Lyon Creek. There are plenty of plants to be found around the parking area but it is best to hike back to the place where there is a 20-foot snow marker near the highway. Scout around from here for violets as well

as many other plants. Violet Valley has a myriad of other species besides violets, of course, but it is the violets that appeal to me in this small area. Here is found *V. glabella*, the Stream Violet, flaunting its gay golden flowers almost before the snow is gone.



V. glabella

The loveliest violet of all, however, is *V. langsdorffii*, the Alaska Violet. Normally it grows to only about five or six inches in height but I have seen it with flower stems more than a foot long, no doubt trying to reach the sun through tall grass. The color is a typical bluish violet. It has rather large, well toothed leaves. Its distinguishing feature, to me at least, is the squarish outline of the flower. There are places in this subalpine mountain



V. langsdorffii

pass where one cannot move without stepping on Alaska Violets. Although these violets naturally grow most often in moist situations, I have found them self-sown in dry, rocky soil; and what is more, they survived and bloomed sparingly year after year although the plants were much reduced in size.

Other violets here include the less spectacular *V. adunca*, Western Dog Violet; *V. selkirkii*, Great Spurred Violet; and *V. epipsila*, Marsh Violet (*V. palustris* of some authors). *V. epipsila* is lavender in color but the other two are reddish-violet to violet. Dainty *V. renifolia*, the White Violet, is also found in this vicinity. In fact, all of these violets have been found within 200 yards of one another in this area — a good reason, I think, for calling it Violet Valley.

Congratulations, Jim

It's not everyone who gets a plant species named after him, but James R. LeCompte of Ashburton, New Zealand has been so honored. *Aciphylla* 'Otago', which he found on the Hector Range while searching for aciphylla species in 1978, has recently been officially named *Aciphylla lecomtei* Dawson. The announcement of this newly named species was published in the *New Zealand Journal of Botany* 1979, Vol. 17, pp. 339-51. Jim described the plant and the trip on which he found it in the Winter issue of Vol. 37 of the ARGS Bulletin.

THE ROCK FERNS

Special Forms and Unusual Species

KAY BOYDSTON
Niles, Michigan

This is the third and final article in a series written by Mrs. Boydston about the rock ferns she has tried at "Fernwood" and includes special forms and near relatives of those she has previously described in the articles in Vol. 35, p. 141 and Vol. 37, p. 79. —Ed.

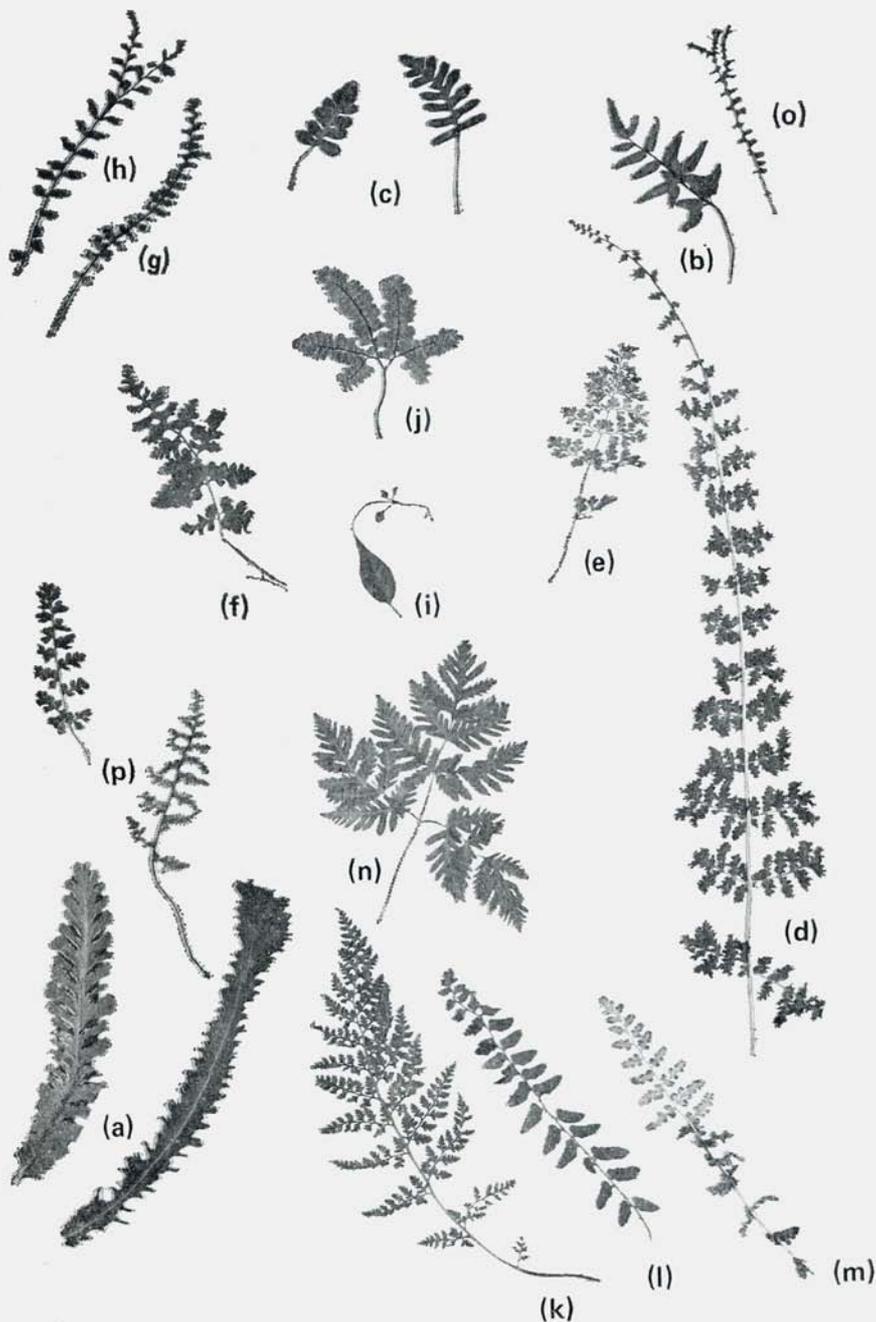
As paragraphs of brief description were written for the twenty-five rock ferns in the first and second articles, it was difficult to omit special forms and relatives of some of them, which came to mind but could not be included because of lack of space, so it was decided to give them an entire article. In order to engender more interest, I suggest you compare the silhouettes in the first two articles to those described and pictured in this article, which have been lettered rather than numbered in order to avoid confusion.

At (a) we see two of the many queer forms of the rare Hartstongue shown in its simplest form at No. 1, p. 143, Vol. 35 with very slightly wavy but uncut, entire outline. Here at (a) we see a lacerated form showing the sori in a regular, almost unreal pattern. This one, sent by Neill Hall, is quite attractive. The other boasts no beauty at all and is worth its space only because of its queer departure from the familiar frond. The compressed, hard, almost tooth-like cutting along the outside edges hold the sori in tight little bunches. There are many other freak forms. Just before the turn of the century the English went completely crazy over these — some were found

in the wild, others developed in greenhouse growing and a good catalogue of those days might list over a hundred named forms. At Fernwood we have 'Kays Variety' — very different, but have not been successful with 'Yamocristatum', a very compressed and contorted form. *Phyllitis scolopendrium cristatum*, the crested form of Hartstongue, is interesting but not pretty. Our favorite is *P.s. crispum*, a gift many years ago from Mr. Michaud, Sr. at Alpenglow, now a healthy plant with many light green, wavy-edged fronds. Always sterile, increase must be by division.

(b) *Pellaea glabella*, at the top right corner, another cliffbrake — shorter and somewhat bluer than our No. 2 on p. 143, Vol. 35, the Purple Cliffbrake (*P. atropurpurea*). As shown in the pressed frond (b), the lower pinnules are sometimes divided into three parts. This long coveted little fern grew happily in a trough but with several trials has been impossible to get started in the rock garden. Probably the reason is that given by Dr. Wherry in his guide, "difficult to cultivate because it dries up quickly before new roots can form". At one time this fern was considered a varietal form of Purple Cliffbrake, it is now given specific status.

(c) Our Common Polypody (No. 3, p. 143, Vol. 35) sometimes shows special forms when the segments (not pinnules in this case) become broader, crested or frilled. None of these were available for silhouettes but at (c) two smaller species are shown one of which is *P. polyp-*



podiioides, our Eastern Gray Polypody, so-called because the undersurface is covered with gray to brownish scales. How it

came to have such a stupid botanical name I don't know — it can only mean a polypody resembling a polypody. In

the Gulf and Southern states where the fern is more at home it grows thickly on trunks and branches of large trees. My first sight, along the streets of Mobile, of huge old trees solidly covered with the dark green of this fern was one of my memorable fern experiences. This is also called the Resurrection Fern as the fronds curl up in dry weather, expanding again soon after a good rain. The small sori along the edges of the segments are often lost to notice as they are embedded in the thick scales of the lower surface — quite different from the large bright yellow round ones on the underside of the segments toward the tip of the fronds of the Common Polypody.

The other small frond at (c) is a western species, *P. hesperium*, a neat little fern not yet tested for our climate though two of these grew well in the troughs last summer. It is one we'd like to keep.

(d) This one is a real surprise — compare it to our very familiar Bulblet Bladder Fern, *Cystopteris bulbifera* (No. 4 on p. 143, Vol. 35), a long, tapering, fast spreading inhabitant of damp places. Little known, this crested form, *C. b. forma crispa*, was found by H. Lincoln Foster only a few years ago near the falls in Falls Village while doing field work for the Peterson *Field Guide to the Ferns*. It was a baby at the time and did not declare its identity in time to get in the book. It seems as though it were a different fern entirely from the regular Bulblet. My first plant, sent to me in 1976 by F. Gordon Foster (no relative of the discoverer), who mentions it in a revised edition of his book, draped a few fronds over the west edge of the trough all summer. I wish I had left it there for the winter but, afraid of losing it, took it into the basement where it existed under lights, to collapse when moved back into the trough in the spring of 1977. Two new fronds started but never attained a length of more than an inch. It

looked even more puny after the severe winter of 1978 and I despaired, but all is not lost as I received a new start of both plants and bulbils from Linc Foster when I visited his garden last summer.

(e) and (f) Our other cystopteris is the Fragile Fern, *C. fragilis*, shown at No. 5 on p. 143, Vol. 35. Here we show two other species, *C. regia* and *C. dickiana*, both European. *C. regia*, only a few inches tall, to quote Reginald Kaye of England, is a "most beautifully dissected emerald filigree" and he goes on to say it is "frequent in Europe" but included in *British Flora* on the grounds of having been found once on a wall in Essex. The other, *C. dickiana*, described as "tiny and rare" is found only in one area of Scotland. Its rarity is sure, but the tiny size of the first plant in our trough was surpassed by our second plant and as shown in the silhouette, grew to a size equal or surpassing *C. regia*. Both are foreigners we'd like to get established. Time will tell.

(g) and (h) Our easy and favorite rock fern, the Maidenhair Spleenwort (*Asplenium trichomanes*), two fronds shown at No. 7 on p. 143, has two well known forms: the incised (g) and crested (h). Apparently the first incised form found was quite fluffy with many pinnules, but in the ones I have seen and have had at Fernwood, the cutting of the tiny pinnules makes them seem even tinier, the resulting frond showing poorly in the silhouette, but a living plant with many such fronds is a dainty sight indeed. Both these forms can be raised from spores, though the incisions and crests do not show up right away in the baby ferns.

(i) Our Walking Fern (*Camptosorus rhizophyllus*), of which two typical fronds are shown in Vol. 35 at No. 8, is a favorite of all — an intriguing fern to see "walking" on a mossy rock and a fine one for terrarium growing. It is one of

the only two species of the genus in the world. Of the other, *Camptosorus sibiricus*, we were fortunate to have a live frond to put in our silhouette page at (i). The smaller size, the rounded rather than auricled or heart-shaped base make it unique. The baby fern at the rooting tip is shown in healthy condition though the long-tipped frond is still very small. This one, with many contemporaries, was raised from spores here at Fernwood. The spores were collected in 1974, planted and germinated in 1975, the prothallia transplanted in 1976 and in May, 1977 finally transplanted again as the tiniest of baby ferns. This rooted frond was picked for the picture in November of 1977 — a happy ending to a two year wait, deserving the center highlight of our page of silhouettes.

(j) Above it and as near center stage as possible is another high favorite, Dyce's form of the dwarf Maidenhair Fern (*Adiantum pedatum*) shown at No. 10 on p. 143, Vol. 35. Mr. Dyce, a fern enthusiast in England, grew many of our Carl English dwarfs, selecting from succeeding batches of sporelings ever smaller ones. This is just about the dearest thing that grows and holds a special place of favor in the center of our troughs. In my plant, not every frond is of perfect Maidenhair shape, but always some of them are.* (See footnote at end of article.)

As far as forms of the other rock ferns shown on p. 143 in Vol. 35, I do know that No. 6, The Ebony Spleenwort (*Asplenium platyneuron*) has occasionally been found in many forms. An incised frond was picked from a plant seen on the New York trip in 1952, but probably lost or discarded long years ago. A very beautiful, incised, frilled and imbricated form named *hortonae* after its original discoverer, Frances B. Horton, in 1901, has been found a few times since in quite widely separated areas. This lovely plant never produces fertile fronds and can

therefore be propagated only by division. In the American Fern Journal for April 1976, three professors of the Botany Department, Southern Illinois University of Carbondale, have an article about the variations of this North American asplenium, describing six of them and on page 66 showing drawings of three of the most striking. How exciting it would be to see one of these actually growing on a hillside of normal Ebony Spleenworts. Unfortunately there were none on hand for silhouettes.

I do not have knowledge of special forms of other ferns shown in the first article except that there are "mountain forms" of *Adiantum pedatum*, which would be close to but slightly different from *A. aleuticum*, No. 9 on p. 143, Vol. 35. And there are several known hybrids (or forms?) of *Cystopteris fragilis* of interest to botanists, but the one or two pointed out to me had differences so slight as to be unseen by my unpracticed eye. Hybrids do occur also between *C. fragilis* and *C. bulbifera* but there was no frond here to add.

To begin with the ferns in the second article on page 80 in Vol. 37, at Nos. 13 and 14 *Woodsia obtusa* and *Woodsia ilvensis* are shown and described. Here at (k), (l), and (m), we show three more woodsias, one of them western in origin, two of them from their names when received, foreign. The woodsia shown at (l) is *Woodsia polystichoides* from Japan though the silhouette would lead one to believe it a frond of *Asplenium ebenoides*. It has, however, marginal sori with the typical starry indusium of the woodsias. Because it is so densely hairy on the underside, this specimen is probably *W. p. veitchii*.

Several other Eastern U.S. woodsias are eagerly sought and we hope that the coming year will turn up some of them: *W. alpina*, *cathcartiana*, *glabella*, *scopulina*.

(n) At No. 15 on page 80 in Vol. 37, a small frond of the Oak Fern (*Gymnocarpium dryopteris*) shows its interesting shape as the sections unroll from three little balls like those of a pawn shop. At (n) the plumose form of this is shown. As grown for two years at Fernwood it has been a lovely little fern with quite a different look from that of the regular Oak Fern. While on this subject, another gymnocarpium should be mentioned though there was no frond available for the picture. Roots of two are under leafmold, however, so may show tops this spring. This one is the Limestone Oak Fern (*Gymnocarpium robertianum*). It always sounds like an easy one for the limestone garden and environs but for some reason each I have had (begged from others, usually) has come to an untimely end. Each one was a disappointment.

(o) This silhouette is of a beautifully crested little *Blechnum penna marina* shown in its normal form at No. 22 on page 80 in Vol. 37. Both are natives of New Zealand but seem to settle happily in the U.S. — especially for the West Coast gardeners who call it “easy, disease and trouble free”. Not quite that easy (or perhaps not quite that hardy) for me, but possible.

(p) Two cheilanthes — one species probably *C. mexicana* and one unknown. There are many, many cheilanthes; to know them would be difficult, to grow them an almost impossible attainment.

Some Eastern ones tried and for a time okay in a wall of the Rock Garden at Fernwood are the Alabama Lip Fern (*C. alabamensis*), Slender Lip Fern (*C. fei*) — a cutie impossible to establish — the Woolly Lip Fern (*C. tomentosa*) and the Hairy Lip Fern (*S. lanosa*). All of these are now settled in the troughs but will be tried again in the Rock Garden. Earlier experience was that they would be happy for a while — even a few years — and then in a severe winter would disappear.

The wealth of cheilanthes, pellaesas and notholeanas in our Southwest and Mexico is untold — and a great temptation to collect and try to grow. As far as I know it has been impossible to duplicate in garden or greenhouse all their special habitat conditions though it is tempting to keep trying.

About the other ferns shown in Vol. 37, I have seen in its native habitat the *ohioensis* form of the little Wall-rue (*Asplenium ruta-muraria*, No. 19) with its somewhat differently shaped tiny pinnules and have seen several variable sizes of *A. montanum*, No. 17, whether separate forms or just due to habits of growth and different soils was being argued at the time. There may well be forms of the Green Spleenwort (*Asplenium viride*, No. 25) and the Black Stem Spleenwort (*A. resiliens*, No. 21), but I don't know of them nor, of course, have pictures to add.

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“Fernwood Notes”, No. 134

*“*Dyce's Dwarf*” was produced by J. W. Dyce in England by selection among dwarf fern sporlings of the miniature *Adiantum pedatum* that have been in the trade at least since 1950 under a variety of names and with an unknown origin. In the summer of 1977 J. Pojar and F. Boas discovered a natural population of the dwarf Maidenhair Fern on the Brooks Peninsula of northwestern Vancouver Island.

Specimens were studied by Dr. Warren H. Wagner, Jr. of the University of Michigan. He was convinced that here was a wild population deserving botanical recognition as a true variety of the species. Dr. Wagner, in collaboration with Kathryn E. Boydston of Fernwood in Niles, Michigan, published a paper in the Canadian

Award Winners — 1980

Award of Merit Winners

Milton S. and Jeanne Mulloy

The American Rock Garden Society honors at this time two members, husband and wife, whose contributions of time and talents have been given jointly and unselfishly in the interest of the Society and its members. They are Jeanne Mulloy, who was taken from us since our last Annual Meeting, and Milton Mulloy who served as Secretary from 1972 to 1976.

Following retirement to the ancestral Mulloy home in Waterbury, Connecticut

from business and government careers in Washington, D.C., Milton and Jeanne, already actively involved as students of flora and fauna, became identified with the Connecticut Chapter of the American Rock Garden Society. The talents and energies of both, soon seized upon, were given freely, not only in support of Chapter activities but of national meetings and study weekends hosted by the Chapter.

When Milton was elected to the office



Journal of Botany, Vol. 56, 1978, giving a valid name to the dwarf Maidenhair. At least we can be assured of its status by calling it *Adiantum pedatum* L. var. *subpumilum* W. H. Wagner.
—H.L. F.

of Secretary of the Society in 1972, the role that Jeanne would play in meeting the increasing demands of the office was acknowledged during the meetings between outgoing and incoming officers. The incoming President, Harry Butler, recalls vividly the advice of the outgoing Secretary, Dick Redfield, that "Jeanne Mulloy should be invited to participate; she will be very much involved". The wisdom of the advice was soon demonstrated. Jeanne took on and managed a myriad of office details with great efficiency. Thus she aided Milton to give his undivided attention to the other burgeoning requirements of the office. Both were wise and trusted counselors to those who served with them as well as to those who have followed in office.

With very great pleasure the American Rock Garden Society presents to Milton and Jeanne Mulloy, jointly, its Award of Merit for their outstanding service to the Society. We would that Jeanne were here to share in person the joy that is in the hearts of all of us whose lives they have touched and whose interests they have so ably served. —H.B.

Clifford G. and Olga Lewis

In the fifteen-year span of their membership in the American Rock Garden Society the contributions of Clifford G. and Olga Lewis in the interest of the Society and its members have been sustained and closely intertwined. It is considered befitting, therefore, to honor them jointly at this time.

The role of Clifford Lewis in the affairs of the Northwestern Chapter has been one of leadership from the beginning of his association with the Society: Chapter Treasurer, 1966-1967; Chapter Chairman, 1969-1970 when the Chapter hosted the Society's 1970 Annual Meeting in Seattle; Field Trip Chairman, 1971; and, again, Chapter Chairman, 1975-1976 when the Chapter had a major

role in organizing and hosting the First Interim International Rock Garden Plant Conference in North America. National officers attest to the wisdom of his counsel where matters of national concern are involved. His qualities of leadership are presently reflected in his being president of the Penstemon Society.



Clifford G. Lewis

Olga Lewis has given generously of time and energy to insure that members' interests and concerns have been met. Her social sensitivity, whether formally identified as Hostess Chairman of the Chapter or expressed in assisting others in that role, has contributed much to the success of many Society activities. No less significant has been her organizing of special study groups and public displays on such matters of interest as trough and container gardens.

In addition to the continuing support that Olga has given Cliff in his official duties, their joint efforts have been particularly notable in their leadership of field trips, garden tours and similar group activities. Their long hours of labor as members of the 1978-1979 ARCS Seed Exchange Committee contributed much to the success of the Exchange. The generosity with which Cliff and Olga

have supported Society objectives is evident in the way in which they share their garden and their expertise in growing alpine plants. Cliff's talks on the growing of alpinas as well as their gifts of the plants themselves, has contributed importantly to an expanded interest among other horticultural groups in the Northwest. In brief, Clifford and Olga Lewis have been a vital force in furthering rock gardening and the interests of rock gardeners individually.

The American Rock Garden Society is proud to present to Clifford G. and Olga Lewis, jointly, its Award of Merit for their outstanding service to the Society.

—F.R.

Marcel Le Piniec Award

Marjorie A. Walsh



It is most appropriate at this meeting of the American Rock Garden Society hosted by the New England Chapter to recognize the achievements of a native New Englander and a member long devoted to the work of the Chapter, the objectives of the Society and the special

interests of its members.

Born in Massachusetts, Marjorie Alice Walsh was a resident of that state until 1939 when her family moved to Maine. She studied Engineering Physics at the University of Maine and there met and married George A. Walsh.

After several years given to home making and the rearing of a son, her desire for "intellectual liberation" found expression in gardening. Her talents in this area soon led to growing plants commercially to meet the desires and needs of others. Beginning as a garden center, the enterprise shifted to sales by mail in 1969 and, as a result of her membership in the American Rock Garden Society, to an emphasis on rock garden plants. From a modest catalog listing in 1969, her offerings have increased to a present catalog of some 750 special and select plants that reaches gardeners in 47 States and several foreign countries. From the beginning she has adhered to the policy of providing the best plant forms and of concentrating offerings to those hardy in climatic Zones five and six. Her listings include ericaceous plants, both deciduous and evergreen dwarf shrubs, phlox, primula, saxifraga, and many others — always the best that she can provide.

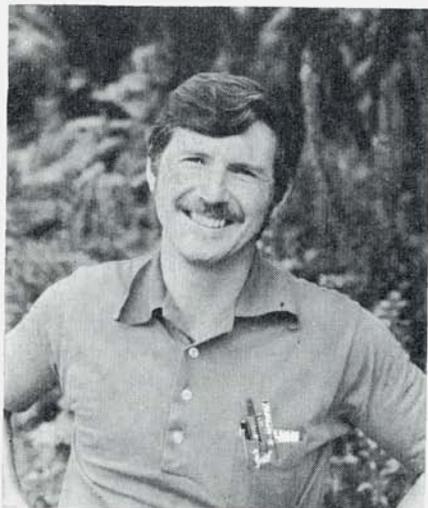
In addition to meeting the continuously increasing demands of the business, Marjorie has attended all Eastern Study Weekends of the American Rock Garden Society since the first one in 1969. She is presently Vice-Chairman of the New England Chapter and is Secretary-Treasurer of the Maine Nurserymen's Association. She also appears frequently before garden clubs and other organizations.

In recognition of her sustained efforts to provide rock garden plants of excellence and to promote good horticulture, it is with great pleasure that the American Rock Garden Society presents to Marjorie Alice Stromberg Walsh its Marcel Le Piniec Award.

—E.S.

Edgar T. Wherry Award

John T. Mickel



The Edgar T. Wherry Award of the American Rock Garden Society is presented from time to time to a student of the American flora who has made a special contribution to horticulture by way of publication or introduction of plants.

On this occasion we have a recipient who echoes in many of his activities the very qualities of the man for whom the award is named. John T. Mickel is the Curator

of Ferns at the New York Botanical Garden. In that capacity he has made the Garden the center of great activity in the realm of ferns. He is the Editor of "Fiddlehead Forum", the news bulletin of the American Fern Society, and was for two years the president of that august society.

During 1979 he authored two widely acclaimed books: *The Home Gardener's Book of Ferns* and *How to Know the Ferns and Fern Allies*. This latter work, a scholarly field guide to the ferns and their allies of all of North America, is dedicated to Dr. Edgar T. Wherry. (See *Book Reviews in this issue —Ed.*)

Dr. Mickel has done extensive field work in the Americas, North, South and Central and has published abundantly in learned journals. What gives him particular and fitting distinction is his bringing fern lore to the general public through his teaching, through his fern festivals at the New York Botanical Garden and, not least, through his enthusiastic sponsoring of and personal working in the new, extensive fern garden at the Cary Arboretum in Millbrook, N.Y., an extension of the Botanical Garden.

For all of his achievements and for his infectious enthusiasm for the study and growing of ferns, we are pleased to present John T. Mickel the Edgar T. Wherry Award of the American Rock Garden Society. —H.L.F.

Stylophorum Diphyllum

MRS. RALPH CANNON
Chicago, Illinois

Over the years in our virgin woods there have been many wild flowers planted by nature. Rains have come in heavy storms, winds of tornado strength

have passed through, drought and really hard winters have created a difficult environment. Yet the flora of these woods remain interesting, beautiful and surpris-

ing. There is always something new to present itself and we have learned when strolling among the trees that we must have the alertness of a hunter. Woodlands are never static. Finding new plants takes place very often because we watch for the lovely, unexpected gifts of nature.

Stylophorum diphyllum was one of these unexpected gifts growing happily under a large maple. It was a surprise and I started at once to study its likes and dislikes. This little poppy is a dicotyledonous herbaceous perennial belonging to the order of Papaveraceae, the Poppy Family. Frances Perry and Leslie Greenwood in their book *Flowers of the World* write that "Papaver is said to refer to the noise made when chewing the seed. Pap also means 'a thick milk' and is appropriate since most species secrete latex in their stems". This little poppy has a yellow sap in its stems. It is a native American woodlander generally found in woods from Pennsylvania down through Wisconsin, Illinois, Missouri and Tennessee. Seeking dappled shade and woodland soil full of leaf mold and moisture it will grow to a height of about one foot. Two deep lobed, large oak-shaped leaves, once or twice pinnatifid, and bright green in color, are arranged alternately on each slender stem covered with fine hairs. The leaves are also covered with fine hair and strongly resemble the leaves of the plant, the Greater Celandine, *Chelidonium majus*. Do not get *Stylophorum diphyllum* commonly called Celandine Poppy mixed up with the Greater Celandine, a weedy biennial; be careful.

Stylophorum diphyllum is a beautiful plant even without its flowers, which come in May and are very striking. They are large yellow bowl-like flowers resembling those of *Meconopsis* in shape, a genus in which it was at one time placed. The deep yellow solitary or clustered flowers are about two inches wide

at the summit of the stem, possessing two hairy sepals, four petals, many pollen rich stamens, one pistil with a two to four lobed stigma, and a superior ovary, meaning an ovary with the perianth inserted below it. Many-seeded capsules about one inch in length result therefrom and these can be gathered when ripe or left on the plant to disperse their seed. The flowers are short lived and, since they have no nectar, the brilliancy of their color must be the prime reason they attract insects for pollination.



Stylophorum diphyllum

The plant will seed itself and soon colonize. For propagation, seed is best because the established plants resent disturbance. They are hardy as they have survived our -20°F many times and withstood all other climate abuses. They thrive without any attention because the trees under which they grow supply plenty of leaf mold. If a rock-gardener is looking for a woodlander to grow in dappled light this is a good choice as it is so adaptable. Even though it blooms in the spring, the foliage provides so much beauty in shape, texture and color contrast that flowers will not be missed during the summer. Without a doubt, a drift of this glowing, noble, superlative little yellow flower is a joyous way to brighten a woodland or a rock garden.

THE SCREE

**As Advocated by the Late J. E. Mitchell
Mitchell Nurseries, Barre, Vermont**

The so-called "moraine" as advocated by Farrer and other English writers on the rock garden was an elaborate and costly structure with cement bottom and three feet of stones and gravel with perforated water pipes about a foot below the surface. This would work fine for about a year and then the holes in the pipes would become clogged with silt and rust and other troubles developed and in the end the so-called "moraine" was regarded as a failure and the dry scree became the popular place for difficult plants.

I will say plainly that I have little use for the scree as constructed by English gardeners. The scree that I advocate is an imitation of the natural scree found so abundantly in our western mountains, also here and there, among the Green Mountains of Vermont and on a large scale on the north shore of the Gaspé Peninsula, Province of Quebec, particularly at Mt. St. Pierre, where there are hundreds of acres of scree on which grow many fine rock plants.

The English writers all follow Farrer who wrote: "Let the ground be excavated to some three feet in depth". Then they put in a foot of larger cobbles, then a layer of turfs, then two feet of gravel mixed with a small amount of good soil. A practical American would ask: "Why dig a hole three feet deep? Why not place your scree on top of the natural soil on a hillside (not too steep) and do away with the foot of cobbles at the bottom?" This is the way nature makes her scree. The small stones constituting the scree are broken from the cliffs above by the action of frosts and slide down the moun-

tain, often attaining several hundred feet in depth. In many cases the cliffs above the scree are dripping with water seeping through the rock fissures from the higher hills and mountains in back. This water drips on the shingle constituting the scree and since the scree is a side-hill, it seeps always to a lower level, thus keeping the whole scree always damp but never too wet and never with any stagnant water anywhere. Truly an ideal place for anything but a desert plant. Even after three months of drought, this scree is moist two inches below the surface. This is nature's wet scree. Her dry scree is the same without the dripping cliffs above, depending on the local rain fall for its moisture. As nature makes her dry scree, homogenous at all depths, these scree retain the local rainfall to a remarkable degree and the scree will be found to be moist a few inches below the surface at all times regardless of how dry the summer may be.

In making a scree in our rock garden, let us follow nature as far as possible. We can approximate the dripping cliffs and we do not need the hundreds of feet in depth found in nature. Take a part of your rock garden that has an inclination of at least one foot drop to six feet back, a two foot drop will be even better, as the drop gives you the necessary drainage. Remove all weeds and turf from this area and cover it with the scree material given below to the depth of at least a foot, probably two feet might be better in rainy climates, then water thoroughly and plant.

The scree material is the important part of the scree, and as a large percentage of scree plants are lime lovers, it

would be best if the lime section of the scree could be made of crushed limestone passed over screens as given below, and this can be done in many parts of our country. But do not worry if you cannot get the limestone. Go to the nearest gravel deposit with two screens, the largest made of two foot wide chicken wire with approximately one inch mesh. The other with a mesh of from 20 to 24 in the inch — copper (or aluminum) mosquito netting — and pass the gravel over these screens. The coarse screen will throw out the stones over an inch in diameter, and the fine screen will sift out the silt and fine sand which you do not want. To every eight bushels of this sifted gravel add one bushel of ground peat and a peck of wood ashes, if you can get the ashes. If the wood ashes are unobtainable, replace it with four quarts of agricultural lime. Build your pile up on these proportions and shovel the pile over at least three times and your scree material is ready to be placed and will make a lime scree. To make an acid scree,

use the gravel and peat in the same proportions but leave out the ashes and lime. As made above this is a dry scree and is fine for lewisias, difficult penstemons and many other difficult Westerners.

To make the above a wet scree you can come very near the dripping cliffs of nature by placing an inch pipe, which has been perforated with tiny holes about a foot apart, horizontal along the highest part of the scree and connecting with your water system. In between rains, turn on the water at night, just enough to get a fine trickle through all of the holes. (A perforated rubber or plastic hose should be just the thing for this purpose.) The scree should be moist all through by morning when you can turn the water off until nightfall.

The above is simple and is nature's way and can be built at one-third of the cost of the English method and in this country will give better results. No plant should be too difficult when you have a wet scree.

This could be placed into a garden setting in a location where such a rock slide might naturally exist. A roughly triangular space, with the broad base at the bottom, on a slope below a bold rock formation with outcrops on either side would appear fairly natural —Ed.

ALPINE PLANTS ON MOUNT GOLIATH

Edited by John G. Worman
Littleton, Colorado

In 1932 a group of conservation minded persons, together with the United States Forest Service, agreed that setting aside an area for study of the alpine vegetation of Colorado would be of great value, but it was not until March 11, 1957 that the Mount Goliath Natural Area was classified under the Secretary

of Agriculture's regulations as a Natural Area. There are only four other *officially* designated Natural Areas in Colorado, none of which contain alpine community types, though there are, of course, many other natural areas of alpine tundra in the Rockies, among them Trail Ridge and the whole west side of the Con-

tinental Divide in Rocky Mountain National Park, Niwot Ridge, and the high areas of the San Juans.

The Mount Goliath Natural Area consists of 160 acres within the boundaries of the Arapaho National Forest. It was primarily created to preserve a significant stand of ancient Bristlecone Pine (*Pinus aristata*), but includes an area of forty acres of alpine grassland, which supports an excellent cross section of alpine flora. The Denver Botanic Gardens is allowed cooperative use of this area by the U.S. Forest Service. This is a unique situation. No other botanic garden or arboretum in the United States has an alpine plant unit. Equally unique is the fact that the educational activities sponsored by the Gardens on Mount Goliath are conducted, not by the staff, but by very knowledgeable volunteer guides.



ALPINE GOLDFLOWER
Hymenoxys grandiflora

The Mount Goliath Natural Area is located about twenty-five miles west of Denver on the Mount Evans Road just five miles beyond Echo Lake on Colorado Highway 103. It ranges in altitude from 11,000 feet to 12,215 feet. (For practical purposes 11,000 feet is used as the timberline dividing point in the Colorado Rockies. Actually the timberline is

not so neatly defined in the mountains themselves. It is the scraggly, irregular area wherein the last vestiges of tree life give way to rock and tundra. In the Mount Evans region it varies between 11,000 and 12,000 feet, being generally higher on the southern slopes and lower on the northern slopes.)



TWISTED-POD DRABA
Draba streptocarpa

In general, most plants in the Mount Goliath Research Natural Area flower in June. The Cyperaceae (Sedge Family) tend to mature late in the season, while the Primulaceae mature earlier than the members of most plant families. This



ALPINE AVENS
Geum turbinatum

area provides an excellent opportunity to study alpine flora. From early June through August there is a diverse and colorful carpet of flowers extending as far as the eye can see.

The Natural Area is bisected by the M. Walter Pesman Trail, which is maintained by the Denver Botanic Gardens and the U.S. Forest Service. This trail provides easy hiking through the area and also protects the delicate alpine flora, which once destroyed may take decades to be replaced. The trail has two parts — a short loop trail above timberline for those who lack the time or strength for a long walk at high altitude, and the main trail, which is about a mile and a half long and passes through both alpine and subalpine zones at altitudes of 11,000 to 10,500 feet.

It would be almost impossible to describe in this short article the beauty that can be found when as many as fifty different species of tiny alpine wildflowers are in bloom at one time. About midway on the trail is a grove of gnarled evergreens including the Engelmann Spruce

but dominated by the Bristlecone Pines. Some of these pines have been shown to be over two thousand years old; at this elevation the annual growth is imperceptible. Also evident in the grove are the twisted remains of trees that have been damaged by fire. Moving on down the trail, one will experience considerable change as the timber becomes larger and more dense. At the lower parking lot is another grove of Bristlecone Pines and a sign prepared by the Forest Service to describe some of the history of the pines in the area.

The following checklist of plants is only a partial list. It includes some of the most frequently seen and most obvious plants. It might be wise when walking the trail to take along one of the books on wildflowers of this area. One of the best is *Meet the Natives* by M. Walter Pesman for whom the trail was named.

White, Creamy-white, Greenish-white, or Very Delicately Tinted Flowers

Polygonum bistortoides — Bistort
Eriogonum subalpinum — Subalpine
 Buckwheat
Cerastium arvense — Chickweed
Arenaria obtusiloba — Sandwort
Paronychia pulvinata — Nailwort, Whitlow-
 wort
Caltha leptosepala — Marsh Marygold
Androsace carinata — Rock Jasmine
Androsace septentrionalis — Rock Primrose
Saxifraga bronchialis — Dotted Saxifrage
Saxifraga rhomboidea — Snowball Saxifrage

Heuchera parvifolia — Alumroot
Ribes montigenum — Prickly Currant
Claytonia megarrhiza — Big-rooted Spring
 Beauty
Lloydia serotina — Alpine Lily
Zygadenus elegans — Wand Lily
Pedicularis parryi — Parry Lousewort
Phlox caespitosa — Alpine Phlox
Arabis drummondii — Rock Cress
Cirsium hookerianum — Woolly Thistle
Antennaria spp. — Pussetoes, Catspaw
Achillea lanulosa — Yarrow

Yellow Flowers

Geum turbinatum — Alpine Avens
Potentilla spp. — Cinquefoil
Hymenoxys acaulis — Woolly Actinenella
Haplopappus pygmaeus — Pygmy
 Haplopappus
Senecio spp. — Senecio
Castilleja occidentalis — Yellow Paintbrush

Hymenoxys grandiflora — Old Man of the
 Mountain, Alpine Goldflower
Oreoxis spp. — Alpine Parsley
Saxifraga flagellaris — Whiplash Saxifrage
Sedum stenopetalum — Yellow Stonecrop
Eriogonum flavum — Sulphur Flower
Draba spp. — Draba

Pink, Rose, or Rose-purple Flowers

Trifolium spp. — Clover
Primula angustifolia — Fairy Primrose
Sedum integrifolium — King's Crown
Sedum rhodanthum — Queen's Crown
Silene acaulis — Moss Campion

Pedicularis groenlandica — Little Red
 Elephant
Castilleja rhexifolia — Rosy Paintbrush
Epilobium latifolium — Fireweed
Erysimum wheeleri — Wheeler's Wallflower

Blue, Violet or Purple Flowers

Polemonium delicatum — Jacob's Ladder
Polemonium viscosum — Sky Pilot
Phacelia sericeae — Purple Fringe,
Pincushion
Mertensia spp. — Chiming Bells

Eritrichium elongatum — Forget-me-not
Campanula uniflora — Alpine Harebell
Erigeron spp. — Daisy
Aquilegia spp. — Columbine

The botanical names in the above checklist, prepared by Dr. Helen Marsh Zeiner of the Denver Botanic Gardens, are according to Harrington's Manual of Plants of Colorado.

The information for this article was abstracted from "Plant Study on Mount Goliath" by Jeanette Hartman and "The Mount Goliath Alpine Unit" by Dr. Helen Marsh Zeiner, these articles having appeared in *The Green Thumb*, Vol. 35, No. 2 and Vol. 24, No. 4; and an article by James R. Feucht, Extension Professor at Colorado State University, associated with the Denver Botanic Gardens, an article which appeared in the *Denver News*, March 8, 1979. Drawings from Meet the Natives by M. Walter Pesman.

Parahebe Canescens — A Seasonal Groundcover

DANIEL C. WEAVER
Hamden, Connecticut

Listed in *Hortus Second* as *Veronica canescens*, this tiny perennial creeper survives in *Hortus Third* as *Parahebe canescens* ("Veronica canescens, of Hort.") Years ago I purchased this plant as *Veronica lilliputiana*, whimsical and appropriate, but not Linnaean.

A native of New Zealand, this gem has ovate leaves about 1 mm. long, with runners to at least 8 cm. (three inches) long; when the plant thrives, loose mats form. Leaves are a pleasant dusty gray-green (allegedly there are minute hairs.) Flowers are a comparatively huge 4 mm. wide, charmingly blue, in July, August and September.

Parahebe canescens will not survive if consistently overrun by any plant that deprives it of light and air (surprise!), although it will put up with considerable insult. When rediscovered beneath encroaching vegetation it does not readily survive transplanting. Ultimately I 'lost'

(i.e., neglected) my plants. They must be carefully protected, therefore, from sedums and other vicious invaders.

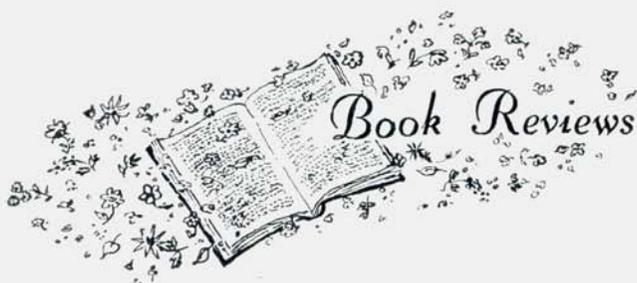
Fortunately I had provided a specimen to Eleanor Brinkerhoff of Georgetown, Connecticut, who recently returned a gorgeous mat. This was divided, flowered, and is doing well.

What a choice plant! Is it now available in the trade? Although it is barely hardy and requires some modestly special conditions, Ellie grows *P. canescens* in a trough, where it creeps from under a rock each spring. My plants have their roots under rocks in the garden, in partial shade, and also send out new runners in the spring. Clearly the plant thrives with moderately rich, sandy soil and root protection from heat and cold. Runners extend over humus, trap rock, and sand, tending to seek moist soil. Occasionally these runners root.

Propagation by division certainly

works. If my plants set seed, I shall attempt germination. Self-sowing may occur but all moons must be in conjunction to permit germination, recognition and survival.

Protected in a trough or raised bed, *P. canescens* should be a delightful groundcover. If the trough is protected, perhaps a year-round mat will result.



HOW TO KNOW FERNS AND FERN ALLIES

by John T. Mickel. 1979: Wm. C. Brown Co. Publishers, Dubuque, Iowa, \$5.95

THE HOME GARDENER'S BOOK OF FERNS

by John T. Mickel with Evelyn Fiore. 1979: Holt, Rhinehart and Winston, New York, N.Y., \$12.95

John T. Mickel, Curator of Ferns at the New York Botanical Garden, has the distinction of having two books on ferns and fern allies published in a single year, 1979. Each of these works is a major contribution to American fern literature: one a field guide to the wild ferns and fern allies of North America and the other a horticultural guide for the home gardening fern buff. Though these two works appeared in the same year they are obviously the result of many years of study and first hand experience.

The field guide, titled for some reason in lower case, is called *how to know ferns and fern allies* and is published in The Pictured Key Nature Series by Wm. C. Brown Publishers. It is dedicated jointly to Dr. Edgar T. Wherry (long-time mem-

ber of the American Rock Garden Society) and Dr. Warren H. Wagner, Jr.

What makes this a unique work is that here, for the first time, is a field guide to the ferns and fern allies of *all* of North America in one volume. Previously a fern student had to refer to regional or state guides for identification of species. All of these regional guides are listed in the back of Mickel's book. This volume, with cardboard covers and ring binding, is packed with information. One is tempted to quote at length from the eloquent two page preface that so precisely defines the purpose and methodology of the work, but we urge you to explore for yourself the full flavor from Preface to Index and Glossary, 229 pages.

There are introductory short chapters, packed and expert, "What is a Fern?", "Fern Structure and Life History", "Hybridization in Ferns", "How to Grow Ferns", "How to Collect Ferns", "How Ferns Are Named." The main body of the work, beginning on page 34 and running to page 216, contains an eight page key to the genera and then page by page a key to the species under the genera. Each species is described, with a line

drawing of the total plant, plus critical marginalia, and for most, a range map of the United States.

Because of the scope of the book, forms and in most cases hybrids can be only briefly noted, but it is amazing how thoroughly every known pteridophyte taxon is somewhere mentioned, however briefly. Here we have a learned field guide of the ferns and fern allies of all the United States and Canada that can be profitably consulted by both the professional and amateur.

Mickel's second book, again without caps in the title, *the home gardener's book of ferns*, aside from this typographical eccentricity, is the most complete and useful book about ferns and how to grow them that this reviewer has ever seen. The text is written with Mickel's usual lightness of touch, sprinkled with humor. The information about the vast field of ferns and fern allies is clear and lucid, with a large number of excellent black and white photographs and drawings. Perhaps the most valuable sections of the book (these occupying a considerable portion of the book) are those devoted to the propagation and growing of ferns. The directions are clear and simple, obviously the result of many years of experiment and experience, and cover culture not only out-of-doors but in the greenhouse and even the living room. However, in addition to these chapters on culture, there are a number of pages, which this reader found fascinating, on the natural history, morphology, and lore of ferns and their allies: the whisk ferns, the clubmosses, the spikemosses, the quillworts, and the horsetails and scouring rushes.

These two publications mark John Mickel as a man of rare talent, combining a highly trained scientific knowledge

with a sound and practical horticultural skill, all beautifully presented in a lucid graceful style. —H.L.F.

THE FLOWERING PLANT INDEX OF ILLUSTRATION AND INFORMATION

compiled by Richard T. Isaacson. 1979: The Garden Center of Greater Cleveland, Cleveland, Ohio with G. K. Hall, Boston, Mass.; 2 vols., 760, 722 pp., \$200.00

This is not precisely the kind of book every rock gardener feels he must have on his bookshelf; it would, however, be an extremely useful reference book in any horticultural or botanical, or even art or agricultural center, or in any public or university library, and as such it deserves a mention. It may also be of interest to some of our members.

The work contains 55,000 entries arranged alphabetically by botanical name. Each entry leads the user to the book, monograph or periodical in which he can find illustrations, (in color only), either photographic or artist's rendering, along with information as to plant use, history, culture, plant lore, habitat and other data about the plant in question. The entry gives the author, title of the indexed work, indication as to whether flower, fruit or habit is illustrated and the page number on which the illustration appears. Only flowering plants illustrated under botanical name are indexed, however, all entries are also cross-indexed for common names.

About 200 titles and approximately 400 volumes have been indexed and these are generally popular, post-1930 titles, many available in most libraries. They include monographs and plant periodicals as well as books.

QUEEN OF THE PRAIRIE

LOIS ECKLUND

St. Cloud, Minnesota

Drawing by Allan Stavos, Wayzata, Minnesota

In spring when the woodland wild-flowers bloom beneath the expanding tree-leaves, the prairie flowers, unnoticed by many, are also blooming among the stems of last year's grasses. One of these early prairie plants is the Pasque Flower (*Pulsatilla patens*), sometimes called Prairie Crocus, which to me is the "Queen of the Prairie".

In the central plain of Minnesota it blooms around Easter time or at least the furry buds are showing by then. The flowers open down among the barely unfurling ferny leaves close upon the ground, usually several blossoming stems in each clump. The flowers are about two inches across, the five to seven pale petal-like sepals furred on their outer surface with long silky hairs. Below the flower is a whorl of finely divided leaves or bracts called the involucre, which, like the sepals, are covered with silver fur. When it is cold, rainy or snowy, the sepals and involucre close about the stamens, thus protecting the precious pollen from the inclement weather. Within the delicate flower-cup is the typical boss of gold-tipped stamens clustered around the long styles. These remain attached to the numerous seeds as they ripen to create a feathery puff not unlike the seed-head of *pulsatilla's* close relative, the *Clematis*. This seed-head is carried aloft as the hairy stem lengthens, a ploy that raises it to where it can catch the breezes that disseminate the seed.

Last spring, as I ventured forth in my new surroundings in St. Cloud, I was surprised and delighted to find across the road from our new home on the banks

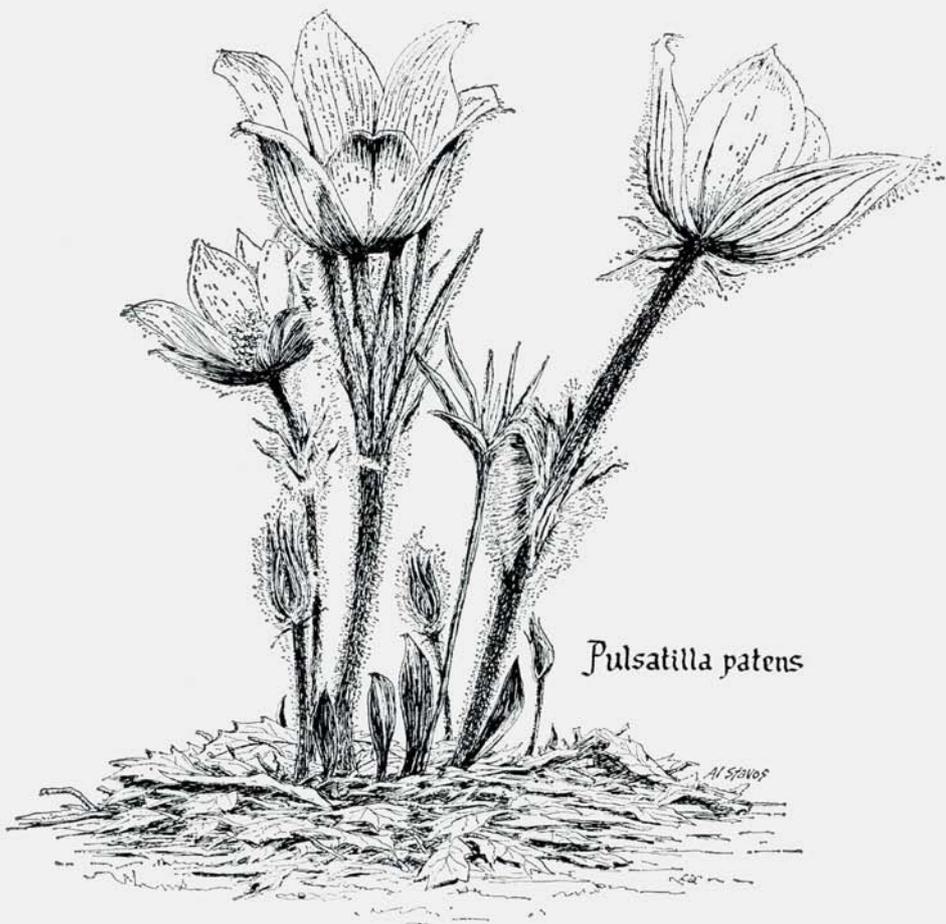
of the Mississippi a piece of land that I believe is a remnant of the original prairie. Pushing up through a light cover of snow were hundreds of Pasque Flowers, each one a slightly different shade of lavender, some even a pearly pink.

During the summer and into the fall, on my many trips up the hill, I transplanted from this small bit of prairie quite a few small *pulsatillas*, along with a number of other plants, to my own southwest facing bank along the river and my newly constructed rock garden.

Among the plants that made the transition very nicely were *Geum triflorum*, which is also called Prairie Smoke. This low, reddish prairie plant is usually less than a foot tall and grows in patches. The nodding flowers have conspicuous pink sepals. After flowering the styles elongate to form an erect brush of soft slender pink plumes, the "smoke".

Also transplanted successfully were *Penstemon grandiflorus*, a two-foot perennial with pale purple bell-shaped flowers about two inches long in a long spike-like cluster, and *Penstemon gracilis*, the Slender Penstemon, which has smaller pale purple flowers about three-quarters of an inch long on stems of one foot.

The two native pucoons, *Lithospermum caroliniense* and *L. incisum* also took well to their new locations. *L. caroliniense* is about a foot tall, the stem topped by a cluster of bright orange flowers, each about three-quarters of an inch across and with five united petals. *Lithospermum incisum* has fringed petals of lemon yellow and also grows to one foot. The leaves of both these pucoons are



Pulsatilla patens

covered with stiff hairs.

Artemisia ludoviciana or Prairie Sage, usually one to two feet tall with leaves covered on both sides with soft white hairs, makes a beautiful accent plant on the river bank. The small grayish flower heads are in an elongate pyramidal cluster.

Viola pedatifida, also successfully transplanted, has divided leaves and flowers that are flat-faced with petals all the same shade of blue. The lower petals are bearded on the inside near the base. I found these a little further down the hill by the Burr Oaks where there is

more moisture.

The native soil in which these plants were found growing is a very sandy loam on a south-facing slope with no shade and the area would be considered a dry prairie. It is what ecologists call an ecotone, an area of transition between vegetation types. Many of the western grassland-forest transitions begin as savannas, which are invaded by trees, such as Burr Oak, and shrubs such as sumac and these will eventually take over this little piece of prairie.

In addition to the plants I have mentioned there are many other forbes and

grasses in this area. Among these are *Allium stellatum*, *Amorpha canescens*, *Anemone cylindrica*, *Aster ericoides*, *Campanula rotundifolia*, *Delphinium virescens*, *Heuchera richardsonii*, *Phytolalis virginiana*, *Petalostemon purpureum*, *Potentilla recta*, *Rosa arkansana* and *Verbena stricta*. The only grasses I have been able to identify are Sideoats Grama (*Bouteloua curtipendula*), Blue

Grama (a *Bouteloua* species), Little Bluestem (*Andropogon scoparius*) and Big Bluestem (*A. gerardi*).

I collected seeds of the *Pulsatilla patens*, *Geum triflorum* and *Anemone cylindrica* and sent them into the ARGS Seed Exchange in the fall of 1978. Furry seeds such as these seem to germinate better if given a hot water (approximately 150°F.) soak before sowing.

A Basic Reconsideration of Rock Gardening

R. C. HUFF
Southbury, Connecticut

This essay is meant to constitute a very radical reconsideration of rock gardening as art and act. Rock gardening is an act in as much as whatever can be present within the gardener confronts directly a variety of natural entities — rock, soil, and plants — and, further, seeks to structure these entities and to reconcile them not only with each other, but with himself. In this sense, the rock garden can be viewed as an arena where the gardener discovers and concretely actualizes the full range of natural values. Such is perhaps more the case with rock gardening because it remains such a peculiarly personal form.

If we consider rock gardening from a phenomenological standpoint, that is in terms of rock gardening as an *experience*, it is clear that the gardener, while confronting the natural materials of his art, allows his experience to generate meaningful structures and new layers of perception. And these, in turn, act to alter both the character of his gardening and that of his inner state. We can assert, for example, that one's way of "seeing" a plant changes quite definitely if we compare our initial perception of a type of plant with that perception which follows

many years of active familiarity with its species in the context of cultivation. In the course of rock gardening we are led into a domain of laws independent of time — what Farrer termed "the more awful rules of Nature herself".

Few rock gardeners would deny that the structural characteristics of the rock garden are of the most extreme importance. In this case we are referring not only to the general lay-out of the site, nor only to the seeking of an advantageous position for the garden in relation to other elements of the landscape, but we are speaking of stonework as the skeletal structure of the rock garden.

One of the first points one learns in this regard is that one should strive for a naturalistic construction while avoiding a contrived or stilted arrangement of rock. In essence, it is stressed that one attempt to create an environment where plants of alpine origin and characteristic morphology will seem to be most natural and at their ease. This is no sudden process, but an organic act which may unfold gradually over many seasons, and which would appear to require a suitably meditative state on the part of the rock gardener. Indeed, it is doubtful that any

other type of activity provides a greater possibility of serving as a vehicle for the spiritual interchange between human being and natural environment. The objective condition of the rock garden and the inner state of the gardener are essentially linked so that the rock garden must become not merely an expression of the gardener's personality, but a formal symbol of its state. And it is precisely in this possibility of an interchange between objective structure and inner state that an access of understanding can be provided for the relationship between man and Nature in its broadest sense. In this respect, the structural character of the rockwork in a garden provides a mirror reflecting the timeless quality of rock gardening as a profoundly alchemical act.

Nowhere are the tremendous possibilities for meaningful expression inherent in stone placement as respected and developed as with the Japanese. There we find the reverent deduction of the subtlest shades of meaning expressible through stone garden structures, culminating in the masterpiece of the Ryoanji "sermon in stone" — which ranks among man's greatest art works. Inevitably the rock gardener is led to ponder about the possibility of bringing an enhanced respect for stone placement, as epitomized by the Japanese karesansui, into combination with the values of Western alpine gardening. Recently I opened a copy of Reginald Farrer's *My Rock Garden* and found there this exact same concept of an "ideal form" of garden. Farrer states:

Of course the absolute masters of rock-garden, before whose names one must go helpless to one's knees in adoration, are the Japanese. . . . But, perfected through a thousand generations as is their tact in dealing with rock, the Japanese care more for congruity of vegetation in the scheme, than for flowers as flowers. . . . Therefore what the idealist cries hopelessly to high Heaven for is a Japanese garden stocked with European alpine. . . .

This tormenting conception which, as

we have just witnessed, goes back at least to the turn of the century, and to the mind of Farrer, seems both "probably unattainable" and yet also clearly the most promising direction for rock gardening as an art. Experimental gardens which aim in this direction will fall short of the mark, and often end in curious (or ugly) disasters. However, any successes which might be achieved in such attempts would be of cardinal importance. Here we are aiming, after all, at the objective expression of a reconciliation of two lines of values each of which has grown independently for so long. This would be no small accomplishment. The growing numbers of Japanese members in the American Rock Garden Society suggests that gardens may be in creation even now which approach this extraordinary goal.

Another very basic aspect of rock gardening focuses on the development of the relationship between gardener and plant. Upon this critical factor, beyond the part of the gardener's store of cultural information regarding a particular plant, can hinge the success of cultivation. Such a relationship cuts through the ordinary, automatic level of one's functioning and touches upon an entirely different intuitive aspect of the inner man. The plant becomes, very slowly and in imperceptible stages, an entity, an individual, but also more than the actual, individual plant to which the gardener is present at the given moment. The gardener may penetrate to the eternal pattern of the species — of which the individual plant is but the temporal substantiation. I believe it likely that some of the more devoted and gifted rock gardeners have, in a very natural way, come to such an entirely different kind of perception, at least at certain times. There is a taste of this, for example, in some of Farrer's descriptions, as when he speaks of *Saxifraga florulenta* as: "This strange, lonely

plant, making its last stand against time and evolution . . . up under a few shady rocks in the Maritime Alps behind Nice". Or, again, his description of *Eritrichium nanum*: "So exquisite, so tiny, this indomitable small soul sits up here on the barren slopes, from age to age, working out its own destiny without regard for any worldly cataclysm". Of course, one must remember, this is likely to be only metaphor and poetic sentiment — but both of these as well are born out of some subtler aspect of the psyche than is our ordinary lot.

In this connection it is interesting to note the existence of very old traditions in Asia which maintain that each species is a sort of delicate apparatus for the transformation of energies, essentially linked to every other form of life. Of this possibility, and of the relationships maintained between plants and the world

of energies which surround us, we know nothing. From the standpoint of such traditions it is particularly noteworthy that the extinction, as it presently proceeds, of entire species of plants, as well as animals, may have consequences of which we have absolutely no appreciation whatever. Nor have we any appreciation for the consequences which we may subsequently be incurring for our own species.

I have meant to suggest that the rock gardener occupies a unique position in the interface between man and nature. Furthermore, he occupies an even less apparent position (less apparent because it lies in an "inner" direction) between man in a general sense and the domain of natural values — which perhaps become human values only in so far as we are able to accept and incorporate them within our own acts.

• • • of Cabbages and Kings • • •

Betty Lowry of Renton, Washington writes in an addenda to the excellent article she and her husband wrote about the tally of most frequently chosen species in the Seed Exchange listings that appeared in the Spring issue of the Bulletin:

"One cannot blame members for wanting to grow the alpinists they have heard about most and which are undoubtedly deserving of much effort, but just a little extra delving into the literature reveals the names of others equally desirable. Much of the pleasure of a Seed List is the adventure of tracking down new names and thus 'discovering' plants previously unfamiliar.

"The popularity of certain species in the Seed Exchange arises in part from name familiarity and reputation. Many

less publicized species can hold their own with those of better known names, however, and the only way they will become familiar is for members to grow them, show them to their friends, and share them. Members can take special pride in donating good, unusual, and little known species to the Seed Exchange, for all our rock gardens and alpine houses will benefit and be much richer for their presence."

In addition to sending in such seed to the Seed Exchange and ordering and growing them in our gardens, the editor would like to suggest that Chapters encourage members to bring samples of unusual plants to meetings and plant shows so that others may see them and thus, perhaps, "discover" a plant new to them. A brief show and tell session with

either living plants or slides at Chapter meetings would add much to our knowledge of unfamiliar plants and how best to grow them.

As a further suggestion the editor urges you to start a "Want List" if you have not already done so and when you see an attractive plant that is unfamiliar to you, either at a lecture, in a show, or in a garden, jot down its name, perhaps

with a brief description of the plant and where you have seen it growing. This is a great help when going through the seed lists and nursery catalogues, or when attending ARGS plant sales. Too often at such sales, unfamiliar plants that are not in flower at the time will be overlooked and an excellent opportunity to add a good plant to one's collection is thus missed.

Send In Those Seeds

It is only by disseminating and sowing the seeds of unusual plants and learning how to grow and propagate them that our gardens will assume character, richness and variety and that we, as gardeners, will become in time truly skilled and knowledgeable plantmen.

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