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AMERICAN ROCK GARDEN SOCIETY BULLETIN

Albert M. Sutton, Editor

VOL. 28 October, 1970 No. 4

CHOICE PLANTS FOR THE GARDEN IN THE SHADE

From eastern Asia and eastern North America

HAROLD EPSTEIN, *Larchmont, N. Y.*

A casual analysis of the desirable decorative plants used in our gardens reveals our dependence upon eastern Asia, and particularly Japan, as a natural source for choice plants adaptable to our Eastern climate. It was over a hundred years ago (1859) that the renowned American botanist, Asa Gray, published his classic paper which stressed the relationship of the Japanese flora to that of the eastern United States. Since that time there has been an increasing, but slow, introduction of new and dependable garden subjects available to us. Asa Gray recognized and revealed the close affinities which exist between the two geographical areas. This relationship is dependent upon a pre-glacial land connection between Asia and North America across the Bering Sea. A study of the flora of Japan and eastern United States indicates a total of thirty common genera, including *Clethra, Epigaea, Leucothoe, Pachysandra* and *Shortia.*

I have experimented for over 25 years with a large number of Japanese species in my suburban New York garden. It is interesting to note that most of the common genera are adaptable to the shady garden, and some require considerable shade. There are several common genera with just two species, one in North America and another in eastern Asia.

Familiar Genera of Woodlands

Caulophyllum robustum from Japan and *C. thalictroides* from eastern North America (commonly known as blue cohosh) are very similar woodland plants of easy culture. *Diphylleia grayi* (Japan) and *D. cymosa* (eastern North America), commonly known as umbrella-leaf, are also similar plants of easy culture.

Epigaea asiatica (Japan)—This evergreen, creeping subshrub, larger in all respects than our eastern relative, *E. repens* (Trailing-arbutus or Mayflower) defies the general rule of adaptability to our eastern lowland climate. Several attempts at cultivating it in the open garden under very shady and protected conditions have proven futile. The plants quickly become desiccated and apparently require cool conditions and a substantial winter snow cover. It has been cultivated with moderate success in some Pacific Northwest

gardens, but it appears to be intolerant of our Eastern climate. It is native to open woodlands in the mountains of the northern Island of Hokkaido, as well as northern Honshu, both areas with substantial snow cover.

Our native *E. repens* is not as difficult (for it is a lowland plant), and it can be cultivated either from fresh seed or established cuttings. Young small seedlings, when collected, can be established in an acid, peaty soil, and must not be permitted to become dry until well established. It accepts considerable shade and protection.

The *Shortia* genus has been simplified in recent years. The eastern United States species, *Shortia galacifolia* (Oconee-bells) has always been thus identified except for John K. Small, who had been with the New York Botanical Garden, and who published his *Manual of the Southeastern Flora* (1933), wherein he prefers the use of the genus *Sherwoodia.* It is doubtful that other botanists have given preference to this terminology.

Shortia is a distinctive evergreen ground cover highly valued by most gardeners; many consider it amongst the most beautiful native plants with all-year decorative value. Even collected plants are comparatively easy to establish if provided with semi-shade, leafmold and peat moss plus moisture. The decorative foliage is particularly outstanding in winter when it takes on reddish or bronzy crimson coloring. The one-inch, bell-shaped and nodding flowers vary from white to pink and appear in spring.

The Japanese members of this genus had previously been accepted in two genera, *Shortia* and *Schizocodon.* In recent years the Japanese botanist Jisoburo Ohwi simplified this classification, so that we still have *Shortia uniflora,* with the forms of *Schizocodon* now identified as *Shortia soldanelloides.* The latter species has several varieties—forma *alpina,* the dwarf alpine phase; var. *minima,* a very diminutive phase from the high mountains of Yakushima; var. *magna,* a larger-leaf; var. *ilicifolia,* a form with rather rare small leaves with teeth on upper half, from mountain woodlands; and finally var. *intercedens,* with broad ovate leaves, narrow at tip, whitish beneath with coarse teeth, white flowers.

Personal experience as well as observation of others in the Eastern area indicates that these Japanese species and varieties are not as adaptable and hardy as the United States native. While many of the Japanese forms are in woods in the mountains, others have been observed and photographed in open alpine regions where they enjoy complete exposure to sun. Most of these areas are cool in summer, with much humidity, and winters provide substantial snow cover. This combination of elements explains the difficulty in establishing these handsome plants in the East where there are hot summers and unreliable snow cover in the winter. In the more equitable climate of the Pacific Northwest, these Japanese species appear to be more adaptable, and some impressive plantings of them have been observed in gardens in that area. In Great Britain, the general opinion is that the Japanese species are more adaptable to their climate than the American ones.

Plagiorhegma diphylla—This eastern U. S. native is more commonly known by its less cumbersome genus of *Jeffersonia* (twin-leaf). It is an easy plant with distinctive foliage, deeply cleft into two lobes producing individual one-inch white flowers in March or April.

Plagiorhegma dubia is the only other species, and is native to Manchur-

Plagiorhegma (Jeffersonia) dubia

Roy Elliott

ian woods, indicating a remarkable geographical distribution for this genus. This is a more beautiful plant, large lavender flowers following the unfolding metallic blue-green leaves in early April. The foliage gradually turns green as it matures. Both species self-sow when planted in proper woodland conditions; humus-enriched soil which retains moisture.

In the study of the comparative flora of eastern Asia and eastern North America, there are other genera distributed within and outside Japan, which have also proven to be choice plants adaptable to our climate. The following

are some that are particularly desirable for shade.

Pachysandra procumbens—This native from southeast United States, although introduced into cultivation in 1800 and described and illustrated in color in the *Botanical Register* in its first volume in 1915, is not well known nor readily available. Its description varies from semi-herbaceous to semi-woody or half-evergreen, but in the New York suburbs the foliage is usually mutilated by winter conditions, and thus should be sheared in early spring before the new growth emerges. The foliage is dull and slightly pubescent, and is clustered at the top of the 8- to 12-inch stem. The 4-inch flower stalk is produced from the base of the stem. Although a coarse ground cover, it is useful even in deep shade and under adverse conditions. Its best demonstrated use is as an extensive lush ground cover under the low-hanging branches of a huge beech tree—always a difficult area where there are few possible candidates for an effective long-lived planting.

Pachysandra terminalis was first introduced into Europe in 1882 from Japan where it is widely distributed in woods in lowlands and low mountains in all the five major islands. The wide use of this coarse plant with its evergreen foliage is familiar to most gardeners in the East, where it is used extensively and is perhaps the most overused ground cover. Its varying uses are easily demonstrated by a drive through the suburban areas. But it is interesting to note that at great contrast to its popularity and adaptability here, there has not been extensive use of it in Great Britain and on the Continent. Even in Japan the average small garden cannot cope with this aggressive plant, which can eventually overtake and smother its near companions.

Although the records indicate about five species of this genus, the only other known in cultivation is *P. axillares,* a native of China and introduced in 1901 by E. H. Wilson. Although an evergreen, it does not retain this condition in our climate. Experience has proven that it is a much slower grower here, and the foliage is usually damaged in winter even if in deep shade and protection.

Iris gracilipes—This iris is native to mountain areas from the southern to northern islands of Japan. The huge *Iris* genus is divided into eleven groups, each with common characters. One is the Evansia group and includes this choice Japanese species, as well as two eastern U. S. species which are also being mentioned. This group was named after Thomas Evans, who introduced the tallest, *I. japonica,* which is questionably hardy. *Iris gracilipes* forms a slender, creeping rhizome from which arise fan-shaped leaves 10 inches long. From this dense neat foliage appear branched and wiry stems, bearing dainty round flowers of pale lilac with orange crests. It is a plant for partial shade, appreciating an open woodland soil. It is a fine companion for the following two species.

Iris cristata is the eastern U. S. species in the Evansia group. It is more spreading in habit and is excellent for retaining shady slopes. It is smaller in stature than the preceding species, with wider and stouter foliage. The single flowers on 6-inch stems vary in shades of lilac blue or mauve, and occasionally a deeper color form is available. It is an excellent ground cover for partial shade and will multiply rapidly in light woodland soil.

Iris lacustris is native to shores of the Great Lakes, which makes it an Eastern species. It is the most diminutive of the three. Resembling a miniature

form of *I. cristata,* it was for a period considered a variety of it, but it is definitely a separate species. The similar flowers are individually borne an inch or two high. There is also some color variation in these appealing flowers. Cultivation should be in sandy or gritty soil with some humus. All three of the described iris have albino forms, which are generally available, except for *I. lacustris alba,* a comparatively rare form and seldom offered in the nursery trade.

Saxifrages for Shade

The genus *Saxifraga* includes over 300 species with widely varying cultural requirements. This genus is divided into about 16 different sections; the one deserving attention here is the Diptera group. It has been selected because of the adaptability of most of its species to shade gardening. The group consists of only about six species, all native of China and Japan. No North American species are represented. All the following Japanese species have proven dependable in this area for the shady garden.

Saxifraga stolonifera has been known erroneously as *S. sarmentosa,* with the vernacular names of Mother-of-thousands, Aaron's beard, Strawberry-geranium and others. The species was first introduced into cultivation from China in the late 18th century and during all the intervening years, it has been cultivated primarily as a house plant. Many garden visitors here appear startled to observe the plant spreading on moss-covered rocks along pools and by its ability to endure the winter climate. This type of habitat is similar to its native conditions in Japan. It may also be used as a spreading ground cover in damp shady woodlands. The round marbled foliage is variable in coloring. It produces numerous creeping red stolons bearing young plants which easily root into available moss, open soil or crevices. The 10- to 12-inch branching flower spikes of midsummer bear quantities of attractive white, irregularly shaped petals with some red spotting.

Saxifraga fortunei, while native to various Japanese mountain areas, also spreads into Korea, Manchuria and China. It is a very hardy deciduous plant, forming clumps without stolons, preferring shady protected areas. It has handsome large, glossy, leathery foliage with a reverse of deep maroon. Its 12- to 15-inch flower spike, produced in October, bears pure white, irregularly petaled flowers. An unusual form under various names 'Rubrifolia,' 'Purpurea,' etc. has magnificent ruby red foliage and is as hardy as the type.

Saxifraga cortusaefolia, also from Japan, resembles *S. fortunei,* but does not have the underleaf maroon coloring. The foliage has longer and denser hairs, and is usually deeply cleft. It has similar growth and cultural habits, but precedes the former species in bloom by about a month.

The nativity of *Saxifraga cortusaefolia* is in question; some references state China and others Japan, but apparently it is an Asian species. This plant may be described as a diminutive form of *S. stolonifera* with similar variegated coloring and stoloniferous habit. The flower structure is also reduced in size with 3-inch spikes. It is definitely an indoor plant in this climate (or even in more temperate areas), for repeated efforts to cultivate it outdoors with various protecting means have proved unsuccessful. A cool greenhouse is its ideal winter home.

Saxifraga veitchiana is another member of the Diptera group, a native

of Hupeh in China. The roundish 1½-inch foliage is fleshy and dark green. It is also a stoloniferous plant, producing a dense ground cover in partial shade. It has been extremely hardy, requiring no protection or coddling. The 6- to 9-inch flower panicle, produced in late summer, has the typical irregular petals, pure white.

Primula sieboldii—In a genus of over 200 species throughout the world (primarily in the Northern Hemisphere), Japan is only represented by 13 species. Of these, the most adaptable to our Eastern climate is the very variable *P. sieboldii*. It has proven to be the most permanent of all primrose species and hybrids, tolerating all extremes of this area. Its defensive habit of shedding its foliage when dry or attacked by red spider, and retaining its underground creeping rhizomes, is the secret of its long life and ease of increase. If there were to be a choice of only one primula species for this garden, this is the selected one.

In Japan there is a specialized plant society devoted only to this species, and entire spring shows display many variations of form, color and size. In fact, there are hundreds of named varieties grown by Japanese specialists of this species. The plant has soft crinkled foliage from which rise 8- to 10-inch flower spikes. These run the gamut from pure white, pink, rose, lavender, to bluish, but not yellow. The outlines of the petals are as variable as snow flakes. It may be of interest to note that double forms have not been introduced. Its cultural requirements are simple—part shade, moist root run and care in not disturbing the dormant rhizomes. Where conditions are satisfactory, self-sown seedlings will appear. Propagation from seed usually produces a variable group of interesting plants.

Menziesia purpurea—Japan contains an enormous collection of deciduous and evergreen ericaceous plants. A lesser-known genus is *Menziesia*, which contains about seven species, all deciduous. Four are in Japan, two in western North America and one in eastern United States. The American species are not impressive and certainly not garden worthy when compared with those of Japan, which are beautiful plants of slow growth and deserving of appreciation in any collection. The Japanese species selected for description is undoubtedly the finest, and is not too different from *M. ciliicalyx* (and its varieties), the latter usually being the more dwarf. Other differences are basically botanical. Either species, when available, is worthy of acquisition. The plants and flowers resemble the better-known, closely related genus, *Enkianthus,* but the species of *Menziesia* are more dwarf and slower growers. The urn-shaped flowers of both are in drooping terminal clusters. *M. purpurea* has rich red to deep purple flowers. Its scarcity in commercial channels is regretted and should be corrected.

Leucothoe keiskei—The hardy species of *Leucothoe* are represented in Japan, and both the eastern and western United States. But this selected dwarf Japanese mountain plant has the largest flowers of all the hardy species. It is a beautiful and distinct low, procumbent evergreen shrub with smooth red young wood and glossy bright green foliage. The flowers produced in July are pure white cylinders, ½ to ¾ inch long by ¼ inch wide, in terminal drooping clusters. It is advisable to plant this species in peaty woodland soil in considerable shade, preferably with a western to north-

Arcterica nana Roy Elliott

western exposure in order to avoid leaf desiccation from cold winter winds. There is also a more diminutive form of this species, but it is seldom available.

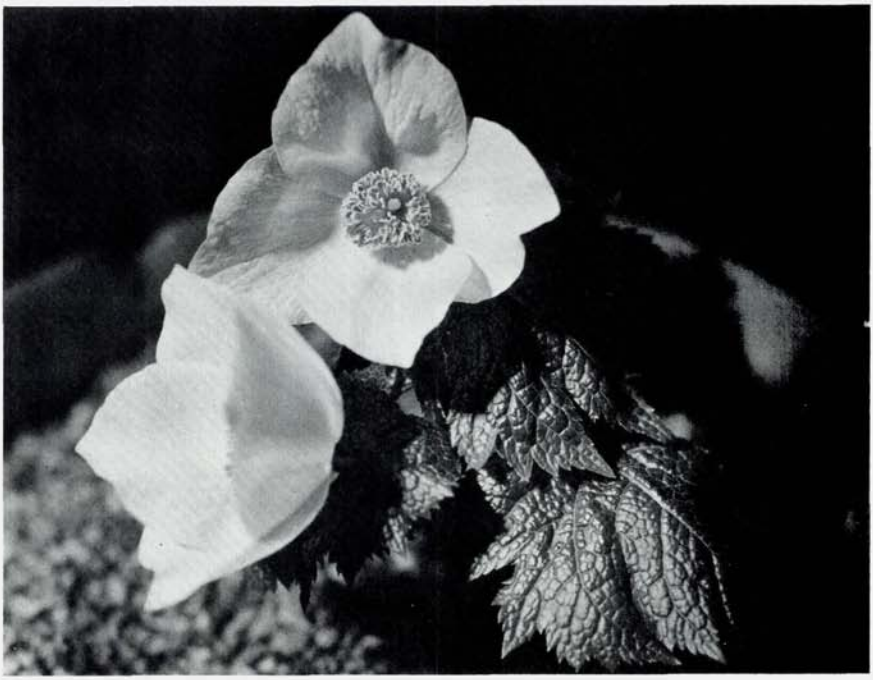
Arcterica nana—This is a monotypic ericaceous genus which has been previously classified as in *Andromeda, Pieris* and *Cassiope*. It is a diminutive Asiatic shrublet, ranging from northern Japan and areas farther north. It has dense, wiry stems with dark glossy green, leathery leaves. The fragrant flowers are wide, roundish urns in terminal clusters of three or four, and open in late April or May. It succeeds in acid, peaty soil and partial shade, and ordinarily is not difficult. It is a perfect plant for the small, shady rock garden, where it can never become a nuisance. Again it is not commonly available.

Plants Native Only to Japan

In contrast to the preceding there are a number of endemic herbaceous genera in the temperate areas of Japan which are not found elsewhere. They are all worthy plants, ideal for our gardens particularly in shade.

Anemonopsis macrophylla—This distinctive species is comparatively rare in mountain woods on Honshu, the major island of Japan. It is an elegant plant, with foliage resembling Cimicifuga and with racemes, about 18 inches high, bearing nodding flowers of a waxy texture and icy lavender-blue color. It has proven adaptable to a variety of situations in deep or light shade, and in woodland soil containing much humus—peat moss—to retain moisture. It commences flowering in August and continues through September. It is an easy perennial, long lived and readily (but slowly) grown from seed.

Deinanthe bifida—This Japanese endemic species grows in mountain woodlands in the warmer areas but is dependably hardy in the New York



Glaucidium palmatum leucanthum 'Compactum'

Roy Elliott

region. It has creeping rhizomes with erect leafy stems up to 2 feet, which bear waxy white flowers in July and August. It prospers in a shaded woodland area among low shrubs.

There is only one other species in eastern Asia, *Deinanthe coerulea,* introduced into cultivation by E. H. Wilson, who sent seed from Hupeh in China. This is another shade-loving woodland plant thriving in damp, peaty woodland soil. It grows to about 12 inches high with foliage like a hydrangea, producing magnificent, lilac-blue nodding and cup-shaped flowers in July and August. Both species have proven hardy for many years in the New York area.

Glaucidium palmatum—This is a distinctive monotypic plant of woods and thickets in high mountains of northern Japan. Being deciduous, its handsome bold foliage rises from the soil in April, gradually unfolding and producing the tight flower buds. The open cup-shaped flowers, 4 to 5 inches in diameter, have a satiny sheen and are lilac blue in color, shading into white in the center, and set off by a large cluster of golden stamens which enhance the beauty of this wonderful plant. The fully unfolded leaves are broadly palmate and dissected into seven sharply-toothed lobes. After fertilization, the flower sets two large bean-like pods containing flat winged seeds which usually take two years to germinate. The leaves and seed pods do not ripen in very shaded areas until late October. There is a magnificent pure white form exceedingly rare, and which warrants all efforts to locate.

Hakonechloa macra—This monotypic perennial grass, which has also been known as *Phragmites macra,* is seldom seen outside Japan. It has creeping rhizomes with leaf blades from 6 to 10 inches long. It occurs on wet,

rocky cliffs in mountains and is rather rare. Its variegated forms are cultivated as ornamental pot plants. In the garden it is an interesting accent in a mixed border and can be used to brighten a shady corner.

Kirengeshoma palmata—Here is another woodland plant of the mountains well suited for a shady slope. Its somewhat palmate leaves are large for the 3-foot plant. The flowers, which slowly emerge in August, persist for several weeks, and are 2-inch waxy yellow, pendant bells of great charm. It is an easy, long-lived shade plant, easily propagated by division, cuttings and seed. Why has such a dramatic plant remained so rare?

× *Tanakaea radicans*—This evergreen perennial is not completely endemic to Japan as it does spread into China. It is comparatively rare in its native habitat, wet, shady rocks where it gradually covers the moss and soil with its delicate growth. The leaves, pointed, toothed, deep green and leathery, produce erect white plumes of flowers, about 5 inches high, and indicate its close relationship to the astilbes. From each crown, fine stolons or runners emerge, and small plants are then produced from their tips, so that there is a slow radiating increase of this dainty ground cover. The growth is not excessive because of its size and slow rate of increase. It is an ideal plant when placed in the shade produced by choice, small ericaceous plants.

These choice Japanese and Asiatic herbaceous and woody plants are only a small sampling of the jewels available from that area of the world for the shady garden. Are there not sufficient keen and selective gardeners who appreciate these treasures of nature? Why do the introduction and commercial availability of the finer species require generations before being acknowledged and offered? In 1911 Reginald Farrer, the English dean of rock gardening, stated in his book *My Rock Garden* the following:

"*Saxifraga fortunei* is a singularly beautiful species, far too little cultivated." This was expressed 58 years ago and, while many of the recommended species are available in Great Britain, where can they be procured in the United States?

(Editor's Note)—Mr. Epstein submitted the above article simultaneously to the Brooklyn Botanic Garden for publication in *Plants & Gardens* and to the American Rock Garden Society for publication in the *Bulletin.*

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The current mail has just brought information concerning the 4th International Rock Garden Plant Conference and Show to be held at Harrogate, England, April 21 through April 25, 1971 as a joint venture of the Alpine Garden Society and the Scottish Rock Garden Club. An organized tour leaving London on April 17 and ending at Edinburgh on April 28 has been arranged during which famous gardens of England and Scotland will be visited. The tour will be interrupted at Harrogate for the five days of the conference. Just to read about what is in store for those who attend makes one want immediately to start writing checks and making plane and hotel reservations. ARGS members interested should write early to the Honorable Treasurer, D. Elder, 152 Raeburn Heights, Glenrothes, Fife, Scotland concerning the Conference and to Fairways & Swinford (travel) Ltd., 18 Saint George Street, Hanover Square, London Wir Oee about the Garden Tour.

MORE ON THE VIRGINIA SHALE BARRENS

LEONARD J. UTTAL, *Blacksburg, Va.*

The second article in the April issue of the *Bulletin,* on the Virginia Shale Barrens, was naturally, a "must read immediately" item for me. I live just a few miles from the southern limits of this strange ecological niche. In an hour or less, I can be in its heartland. I have been up and down nearly all the stations Mr. Humphrey wrote of so accurately. Thus, I feel I know the potential of their yet untold secrets.

Mr. Humphrey's article was accurate, and readers can be assured he described virtually every special plant of the area very well, indeed. But, since mine is another pair of eyes and I have dug with a different trowel, perhaps some supplementary comments might interest readers.

As Mr. Humphrey demonstrated, the genus *Clematis,* the upright herbaceous sorts, are plants *par excellence* of this region. The best, in my opinion, is *Clematis coactilis* (yes, since 1966, it has received full species treatment as a result of biosystematic studies). It has no common name except the general one for the genus, "Leather-flower." I wish that for this species it could be modified to "Ghost Leather-flower," for the plants are covered with a whitish fuzz throughout. The fuzzy, urn-shaped, suspended flowers later stand erect in seed, with typical plumy tails of the Clematis clan, again ghostly white.

The picture of *Clematis viticaulis* is misleadingly titled "similar to *C. albicoma.*" This is the rarest of our endemic Leather-flowers, found only at a few stations in two counties. It is derived from the viny-type plants of the genus, but has given up the habit of sprawling far and wide, and confines itself to neat clumps. To me, it is the best of the lot, for it flowers throughout the growing season.

The editor correctly pondered the name *"Galax rotundifolia,"* by asterisk, as *G. aphylla.* This plant is not limited to the Shale Barrens, but is common in acid situations throughout the northeastern highlands and locally elsewhere.

Another error is the listing of *Ruellia pedunculata purshiana.* There are two different plants—*R. pedunculata* and *R. purshiana.* The former is essentially Ozarkian, and the latter Appalachian. They are quite different in appearance. *R. pedunculata* bears its flowers on wiry peduncles, while *R. purshiana* bears them on short peduncles from the lower axils. The Ozarkian species is much better in the garden. *R. purshiana* tends to run down to strict cleistogamy under the oversolicitous habitat of garden life. It is not strictly a Shale Barren plant.

One more error is evidently one of transliteration. *"Erigeron" allenii* is *Eriogonum allenii.* True, it is coarse compared to the jaunty little Eriogonums of the West, but I would not fault it a place as an accent plant in the garden because of its large truss of sulphurous flowers—if it can be transplanted. I have only succeeded in moving small, young plants, and none of them have yet come to flower.

Whether or not *Allium oxyphyllum,* the white nodding onion of the Shale Barrens, is distinct from the common *A. cernuum* probably remains

moot in many minds, but I can say the majority of recent specialists include it as just one of the minor varieties of a wide-ranging continental species. In the garden, they cross freely, washing each other out, and I warn you, they can take over.

The showy bindweed of the Shale Barrens, *Convolvulus spithamaeus* is a variety, *pubescens,* due to a constant felty pubescence. This is another attractive species you will regret putting in a garden because it runs its stolons all over the place when once esablished.

Endemism in the Shale Barrens is significant. Also, it is the home of some plants in the East not found elsewhere until one gets to the western mountains. Or, some of the plants may be closely related, not to eastern cousins, but to western ones. For example: the very desirable *Senecio antennariifolius* is the eastern representative of the widespread western *S. canus.* I like the eastern plants better because they are less leafy-stemmed. However, many plants of the Shale Barrens, closely related to plants nearby in other habitats, look different, but are really not, genetically. It is like some of our continental plants, particularly Composites, taking on a different appearance (usually more succulent and glabrous) as they grow near the sea. So many of the "different lookers" have received names in time past that the synonomy is loaded.

In conclusion, I would like to make a general taxonomic comment which may cause some disquietude. So many of us tend to be loyal to old plant names learned in the older manuals of our youth, which were our floral "bibles." This may seem to suit convenience, but it actually causes confusion when you consider that our *Bulletin* now is world-wide in circulation and reaches the desks of active botanists who are "up on their stuff." A stupendous amount of biosystematic study has taken place under ever more sophisticated auspices since the veritable manuals of old were published, so that the names and taxonomic concepts of numerous categories are no longer valid. Older manuals should be regularly revised. Barring that, we should not hesitate to turn to the newer manuals of authoritative botanists because it has been incumbent upon the authors to do the library research, and yes, much of the original research, in taxonomy and nomenclature which few of us are individually willing or able to take on. When questions arise as to the validity of a name a competent botanist can always be consulted.

Actually, taxonomic and nomenclatural research is making things easier for us because its trend is to demonstrate a continuity of life forms and an economy of plant names. It only seems comfortable to cling to the old and familiar, but what is familiar to us may have been long phased out to a conversant.

* * * * *

BOB WOODWARD, OF VANCOUVER, B. C. WRITES, "Jim (MacPhail) and I so thoroughly and excitedly enjoyed the week end that we did want to express our appreciation to all you people who worked so hard to make it possible. Seldom could one go to such a large affair and have everything so pleasurable. It (the Annual Meeting in Seattle) was beautifully organized and not, may I add, overorganized."

ONE MAN'S JAPAN

ROY DAVIDSON, *Seattle, Wash.*

PART II

Our visit to Tochigi-ken coincided with the peak season of the late-flowering Satsuki azaleas, a strain derived from *Rhododendron lateritium,* a June flowering species endemic to the Ten-Ryu River, where we were later to see it; a low, spreading evergreen with salmon-coral flowers, growing in sunny rock crevices. Horticultural forms take all the usual forms for flowers, hose-in-hose, rosebud-doubles, etc., plus some split corollas which were "feathered" fantastically in colors ranging from crystalline white through ivory, blush, the shell-salmon-coral-tangerine range to an unbelievable cerise. What is more, all these colors may appear on one plant, many of them on a single flower. This sounds atrocious, but, in reality, some of the show specimens on display at the Satsuki festival were fascinating "living brocades," some five feet high with each of several tiers a separate color, grafted perhaps (?) although others sported several colors from the same flower cluster! My favorite was a pale orange-ivory (if there is such a color) one with the small flowers shaped like those of a perfect *Campanula isophylla.* In a hidden corner of a trucking firm, we accidentally re-discovered a form long lost to horticulture, a small hose-in-hose, the persistent calyx portion mottled ivory, green and pinkish coral, quite charming in a very Japanese way. The tetraploid forms are easily the most magnificent of azaleas, with heavily substanced, waxen flowers of extra segments, bold carriage and clear colors, to five inches in diameter.

The woodlands and low mountains of Tochigi-ken experience some snow in the winters though it does not accumulate to any great depth, nor do the temperatures fall far below freezing; thus much of the native cover might prove successful in my Puget Sound garden. One of the finest plants seen was a foot-high *Osmunda lancea* in its endemic station on the river north of Numazu. An afternoon's hike into the grounds of the Kaso-san Shrine led up a steep trail through virgin forest, mainly Cryptomeria. Near the summit we passed beneath one ancient multi-trunked *Cercidiphyllum japonicum,* so fragile looking, but so alive in all its branches. Epiphytic *Lepisorus oneoi* (a fern) and *Dendrobium moniliforme* (an orchid) grew thickly on its aged skin. A marker, itself so old it was "ancient," pointed out that this was a "memorial tree." Age is venerated in all things in Japan. Further along, a rocky cliff was hung with huge links of hand-forged iron chain to assist the faithful in attaining the summit, for this, as all shrine trails, both began and ended in a shrine. The wet rocks were clothed in fern species, from the filmy *Gonocormus minutus* to the exceptionally graceful *Monachosorum (= Polystichum) flagellare,* hanging as in festoons. With the ferns was a solid carpeting of the African Violet's cousin, *Conandron ramondioides,* its blossoms like very exceptional potato flowers.

Nikko must indeed be one of the loveliest places on earth—certainly the first people there recognized it as such, for it has since been sacred. Nikko is an area, not a place, though there is a village of the name within the area.

A deep canyon appears to have been dyked by successive flows of lava, forming a landscape of sheer cliffs, deep lakes, spectacular waterfalls; situated in the Nikko Range of mountains, its highest peak, Mt. Nantai (7800 feet) towering over the region. It would be spectacular without plants, but it was inevitable that such a place should become a haven to a great number of finest diversity; a plant list here would consume pages, so I will mention only some of the spectaculars. Certainly the great *Quercus mongolica* var. *grosseserrata* must be mentioned; with it in the parklike grounds leading to Yudaki waterfall were *Sorbus alnifolia, Abies mariesii,* and *A. homolepis, Corylus sieboldiana* (its fruit an important food for the native monkeys), *Betula platyphylla, Pinus pentaphylla,* and *Acer argutum,* with lovely "cherry-bark." Beneath were ferns of many sorts, *Cardiocrinum cordatum, Trillium tschonoskii,* and innumerable leafy subjects forming acres of carpet, *Hosta albomarginata* among them. In a sunny situation, several large *Weigela maximowiczii* displayed their surprising yellow flowers, spotted a ruddy orange. A large number of vining plants would be expected in such a woodland, and they were running everywhere—many species of *Actinidia,* a *Celastrus* sp., *Schizophragma,* and *Clematis japonica.*

Our descent from the uppermost area of Nikko-Yumata Spa was on foot, following the deep-cut watercourse in the soft volcanic rock. No less than five azaleas co-mingled to overhang the rushing waters, *Rhododendron kaempferi, Rh. albrechtii, Rh. wadanum, Rh. japonicum,* and the most spectacular, *Rh. pentaphyllum* var. *nikoense,* which becomes a tree to over fifty feet, bearing large, snowy white flowers on bare branches, we are told. A specimen some twenty feet high overhanging the undergrowth of *Vaccinium hirtum, Menziesia pentandra,* and *Enkianthus campanulatus* among the other azaleas, was spectacle enough. On the lower slopes, *Magnolia obovata* and *Cornus kousa* were in their glory. At one point the roadway passed through an ancient grove of *Malus sargentii,* looking for all the world like a long-abandoned apple orchard somewhere in the midwest. (U.S.A., that is!)

The Nikko Botanical Garden lies in the lower part of the Nikko Valley; a beautifully kept classical rock garden is a feature here. We saw *Iris gracilipes, Melica nutans,* a snowy mound of a "chobo" (dwarfest) Deutzia, not a foot high and spreading freely underground, *Thalictrum filamentosum* var. *kiusianum,* among many other fine subjects, all in flower. Here I saw my only *Tanakaea radicans* flowering. Photographs of cliffsides in the Izu Peninsula made me long to go there and see it thus, but that, among many things, was put aside for another time.

A feature in the rock garden is a wide, shallow marsh, which was an inspiration. Here in slowly moving fresh water a surprising number of things grew and flowered happily, including Hostas and the fine deep indigo *Iris setosa* var. *hondoensis,* and fine specimens of *Lysichiton camtschatcense,* which became another subject to be explored another time in its nativity, for the Oze swamp area, so famous for this snowy arum, lay only over the ridge from the spa at the uppermost level of Nikko, but then, time did not allow.

Back in Utsunomiya, we called on Mr. Hashimoto, president of a local group of alpine gardeners; his tiny garden was overflowing with the subjects

of his affection, and we hastened away to see the overflow in another area about a block distant, such rarities as Lysichiton (although a native plant in higher and more northern areas, is not easily grown in gardens), *Diapensia lapponica obovata,* and *Pinus pumila.* Night was upon us and we were assisted with packing our treasure, gifted with more, and literally "bundled" onto the train with more than we could carry, for the ride back through Tokyo and on to Shimizu.

Later, another excursion took us to another remote spa in the interior, first by local train, then the fast Shin-Kansu, then another local (after sufficient time for a lunch of eels, the local delicacy of Hamamatsu). Arriving at the end of that line too late for the "sub-local" (a toy train that was standing on the track), we proceeded by taxi over terrain that could be likened to crossing Glacier Park and arrived at our intended destination in time for a leisurely dinner. This was followed by the bath ceremony, and bed, Japanese style on the floor. Bright and early we were out next morning climbing through a steep tangle which hid the path, and discovered we were in the epicenter of the endemic *Schizocodon ilicifolius* var. *intercedens,* exclusively white-flowered. A short bus ride connected us once more to the rails and we boarded the toy train, built so small that only the shorter Japanese could stand in it. The reason for this was the very narrow area available for the railway, which wound unbelievably and ducked in and out of tunnels that were scarcely larger than the cars. All this was alongside one of the loveliest rivers, the wet rocks everywhere covered with fern species. Huge trees of *Sorbus alnifolia* across the river in the mixed green cover perplexed us for identification; the flower clusters borne up-facing in great profusion were quite showy. This was the area for *Rhododendron lateritium,* and we viewed the low spreading, salmon-flowered bushlets springing from the rocks alongside the river, tidy as well-grown nursery plants.

One of the supreme experiences was certainly the climb of Mt. Ontake's 10,000 ft. crest. This is the loftiest and southernmost of the summits of the Northern Japanese Alps. It is an extinct volcano on the border of Gifu and Nagano Prefectures in west-central Honshu. We arrived at the base village of Kurasawa, a spa from whence centuries of departing pilgrims have set forth to attain the summit of their sacred mountain to watch the sunrise. Although it had rained heavily in the night and the rivers were running very high, a bright dawn had seemed to promise a good day for our ascent, but it was not to be; after a hot lunch of rice noodles, we tied covers over all our packs and set forth. Literally, we climbed a cataract the first two hours. The eroded path, though ankle-deep in places, was nevertheless a great convenience. As with all such trails, it both began and ended in a shrine. It was reinforced with stone where available and in its absence rails and treads of short, stout branches were pegged down all the way to the summit. We climbed a spine between two rushing rivers dashing down from the slopes of Ontake. The lower area was covered with a mixed forest beneath which *Rhododendron degronianum* (fawn-felted), azaleas of many names, *Viburnum sargentii* (precisely pleated, chocolate-colored young leaves) spread as an understory for the ferny carpet interwoven with *Schizocodon,* and interspersed with *Coptis trifoliata, Oxalis acetosella, Cornus canadensis, Maianthemum dilatatum* var. *nipponicum, Trientalis europa,* all in mosses layers deep.

Further up, the rhododendron became *R. metternichii* var. *hondoense* with a similar flower, but unfelted leaves. Some of the carpeters were edged a bit with additions of *Ilex rugosa, Gaultheria miqueliana,* several species of *Viola,* of which Japan has about a hundred, *Disporum smilacinum, Clintonia udensis* with its typical satin-shining leaves, and the winter-burnished rosettes of Heloniopsis giving spikes of flowers from lilac to rose. Wind soughed through a venerable grove of birches, shaggy-boled and heavy-headed, and then the path emerged very suddenly onto a huge boulder field covered with *Pinus pumila,* continuing to the cinders at the summit, still an hour distant.

For a brief, shining moment the sun came out as it set, bathing the summit in unbelievable golden light heralding our arrival at the shrine hut. We clambered about, in and out of snowdrifts, on one of the three major summits of the mountain, which also holds five tarns, ice-bound still. It was possible to remain in the open but a few moments at a time with only huge rocks offering shelter from the storm. With the pine, *Rhododendron aureum* was constant, and the *Schizocodon* held to the summit, there to be found with *Arcterica nana* and *Vaccinium vitis-idaea* var. *minus* and *Empetrum nigrum* var. *japonicum,* sometimes all three crowded together, huddled with a pine or a rhododendron.

Loiseleuria procumbens often joined them, and *Campanula lasiocarpa* ranged through the pumice. Great matted plants of *Diapensia lapponica* var. *obovata* were filled with pearly buds; I had hardly dared to hope for this, and felt it was easily worth all the distance and toil. *Potentilla matsumurae, Cardamine nipponica* and some Stellarias (perhaps Minuartias), along with *Saxifraga merkii* var. *idsuroei,* a large colony of the magnificent *Anemone narcissiflora* in full glory, and a whole series of intriguing associates whose identities were to remain obscure. One of them was certainly *Sieversia pentapetala,* the stems and buds so strongly characteristic. All of these mostly unidentified plants, unidentified as far as we were concerned, were scattered about in profusion among the pines and *Alnus maximowiczii.* Barren pumice had once held large colonies of *Dicentra peregrina,* collected out of existence, and now replanted behind a protecting barricade.

Next morning found us descending again to Kurasawa, where we soaked our weary selves (the inevitable bath-garden out the window, held a very fine specimen of *Menziesia ciliicalyx,* undoubtedly collected nearby). Only better weather could have heightened this great experience of climbing one of the major mountains.

Japan was a great reward; another time I would do the same things again, and I would go also to the famous Oze swamps and to Hokkaido, if it were possible. But just being in Japan is reward in itself and quite unforgettable.

* * * * *

FROM HARRY ELKINS, GROSSE POINTE PARK, MICH.—"We just returned from a nice visit to Scandinavia, mostly Sweden. There are some very interesting rock gardens in Sweden and the owner of one of them, Mr. T. Lundell (a member of the ARGS), whom I visited, is indeed a master gardener who has a beautiful and interesting garden."

NATURALISTIC ITINERARIES OF ITALY

THE MEDITERRANEAN REGION

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

(Editor's Note)—The first article by these two authors was printed in the January, 1970 issue of the *Bulletin* under the title "The Lake Region of the Southern Alps." The editor, unaware that other articles were to follow, had not used the authors' heading "Naturalistic Itineraries of Italy." This, the second article, is headed as the authors indicated.

The Mediterranean Sea is, practically, a closed basin of about three million square kilometers, which at the western edge is in communication with the Atlantic through the slender threshold of the Strait of Gibraltar, and the Strait of Constantinople.

A mild climate, a bright sky, a heavy insolation, a fall maximum in the period from late autumn to spring, after which a long summer drought follows with a temperature toned down in its excesses by the thermo-regulating influence of the great water mass, are the determining factors of the vegetal Mediterranean landscape and of its floral richness.

A singular flora it is, both as to its physiognomy and as to its biological adaptations, rich and about twenty thousand species: a figure remarkably superior to that of any other land at the same latitude, and of which the endemic component, partly dating back to the Paleogene, partly of more recent origin, constitutes about 38% of the total.

Other factors, such as the winds, the exposure, and the soil nature, contribute to create an exceptionally various, discontinuous, and fragmentary mosaic of situation; hence the motives of interest, of attraction, of charm the Mediterranean flora exerts both on the visitor feeling its aesthetic motifs, and on the student of its character and genesis. Yet, the sight now offered by the Mediterranean flora, under the light of a deep blue sky and before a transparent sea, is only a faint remnant of its original opulence.

FROM FOREST TO STEPPE

The lands washed by the Mediterranean Sea have been the birthplace of ancient civilizations, those to which the western world owes its philosophical, spiritual, and scientific heritage; civilizations dating back to times much prior to the events handed down to us by Homer and Herodotus, where it is hard to distinguish between reality and myth. But eight millennia of human settlements and of peoples' alterations have not been without consequences, both to the vegetal landscape and to the fauna.

It is true that to just these events we owe the enriching of the many species of high agronomical interest, including the wheat *(Triticum),* still at the base of nutrition for the western world, and whose present races are hybrids of genetic stocks originally of Asia (Afghanistan), and of Africa (Ethiopia), Included, also, is the Olive *(Oleo europaea),* which from its native lands in western Asia was propagated through cultivation in the whole Mediterranean zone, so that today its area is regarded as a sign of "Mediterraneism," even if only in the climatic sense. Other species of Asiatic origin

The Mediterranean Region of Italy

are the Fig *(Ficus carica)*, the Pomegranate *(Punica granatum)*, and the many shining-leaved *Citrus*.

It is as well true that the gradual growth of population has deeply altered the face of the primeval vegetal landscape. The need of wood has caused a progressively intensive deforestation. The excess number of wild nomad herds, the cause of the custom (still today not completely given up) of setting the bush on fire to get more grazing space, favored the uncovering of the soil and its consequent degradation by meteoric waters. Cereal farming,

constantly in search of new areas (until little more than a century ago manuring was unknown) always left behind more barren land, easy prey of the pressing desert.

So, of the evergreen forest where once thrived the Holm-oak *(Quercus ilex),* the Cork-oak *(Quercus suber),* the Aleppo pine *(Pinus halepensis,)* the Maritime pine *(Pinus pinaster),* and the balsamic Sweet Bay *(Laurus nobilis),* have survived only small strips, more or less extended in conformity with the care now devoted to their regeneration. Mostly, the forest has degenerated into the "macchia" (or maquis), that today is the characteristic element of the Mediterranean landscape along rocky coasts. It appears as a deep green belt, more or less thick or lacunary in conformity with the morphological unevenness of the ground, and it consists of small trees like the Strawberry tree *(Arbutus unedo),* the Lentisc *(Pistacia lentiscus),* the Buckthorn *(Rhamnus alaternus),* the Judas tree *(Cercis siliquastrum)* in an entanglement of often spiny or winding shrubs, as *Smilax aspera* and *Asparagus acutifolius.*

It suffices a cigarette stub, a spark from a camp fire, an automobile's backfire, during the summer, and with the help of dry winds of Saharian origin, to start ruinous fires, unfortunately not rare in the Italian Riviera and in the neighboring French Provence. It is easily understood how, where fire has been for centuries a normal practice to get more pasturage, the macchia has degenerated into the "garigue." This is a scattered and discontinuous vegetal association, with low shrubs occasionally taking the appearance of big, compact spiny mats, *(Astragalus massiliensis,* localized in the Tyrrhenian Islands, and *Centaurea horrida,* endemic of Sardinia).

There predominate small trees of white-grayish appearance due to the protective covering against transpiration (tomenta, down), often aromatic, as Rosemary *(Rosmarinus officinalis),* common on littorals, and a particular Thyme *(Coridothymus capitatus),* frequent in the Apulia (the southeastern end of the Italian Peninsula) from the Gargano headland to the Murge.

At the lower stage of degradation comes the steppe. A steppe, yet having nothing in common with those of southern Russia but a certain aspect due to the presence of hard grasses belonging mostly to the genus *Stipa.* The Mediterranean one is a "cultural steppe," due to the soil depauperation as a consequence of cereal cultivation during many tens of centuries. Of it there are examples in some interior zones of the two major islands of Italy; Sicily and Sardinia, and in some tracts of the two parallel peninsulas at the extreme south of Italy; Apulia and Calabria. Here the monotone extents of ground assume a barren look, yellow with sun-burned stubble, and in them have flown together many adventitious species from northern Africa and western Asia. Also, on neglected stony grounds and close to dry walls, some aspects recalling the deserts of Mexico are found with the impenetrable tangles of aculeate flat cladodes of *Opuntia ficus-indica* with its showy yellow flowers and juicy but prickly, wine-red fruits. Over them hang here and there the bright green, thick foliage of the Carob *(Ceratonia siliqua),* only survivor of an ancient group whose relatives are since long extinct; the wider and more aerial leaves of the prodigal Almond tree *(Prunus amygdalus),* and those, sparse and expanded, carried by capriciously twisted branches of the Fig *(Ficus carica).*

THE SPRING FLOWERING

Still, in spite of the undeniable devastations which have occurred in the vegetal landscape, it would be wrong to imagine the lands washed by the Mediterranean as a silent world, devoid of beauty as to the flora.

So, as the ruins of mighty Doric temples of Greek colonies in Sicily already in February are given a tone of pagan gaiety by white-flowering Almond trees and the penetrating scent of Lemon flowers, and from the remains of theatres, of Roman villas, of the ash-buried towns of Ercolano and Pompei resound images of life we cannot regard as vanished or lost, so does the Mediterranean flora preserve some precious jewels of its ancient wealth, and flaunts them, especially in spring.

It is the season when the denuded steppe is covered with the branched inflorescences of Asphodels (white in *Asphodelus microcarpus,* tinged with rose in *A. fistulosus,* yellow in *Asphodeline lutea*), with bright attendance of many summer-dormant terophites: *Tulipa grandiflora; Iris chamaeiris, I. planifolia, I. sisyrinchium, I. xiphium;* many Narcissus, *(N. tazette, N. aureus, N. papyraceus, N. serotinus* and others); Crocus, *(C. sativus, C. versicolor);* Muscari, *(M. comosum, M. commutatum, M. atlanticum);* Anemone, *(A. blanda, A. apennina, A. coronaria);* together with very many Orchis, Ophrys, and related genera.

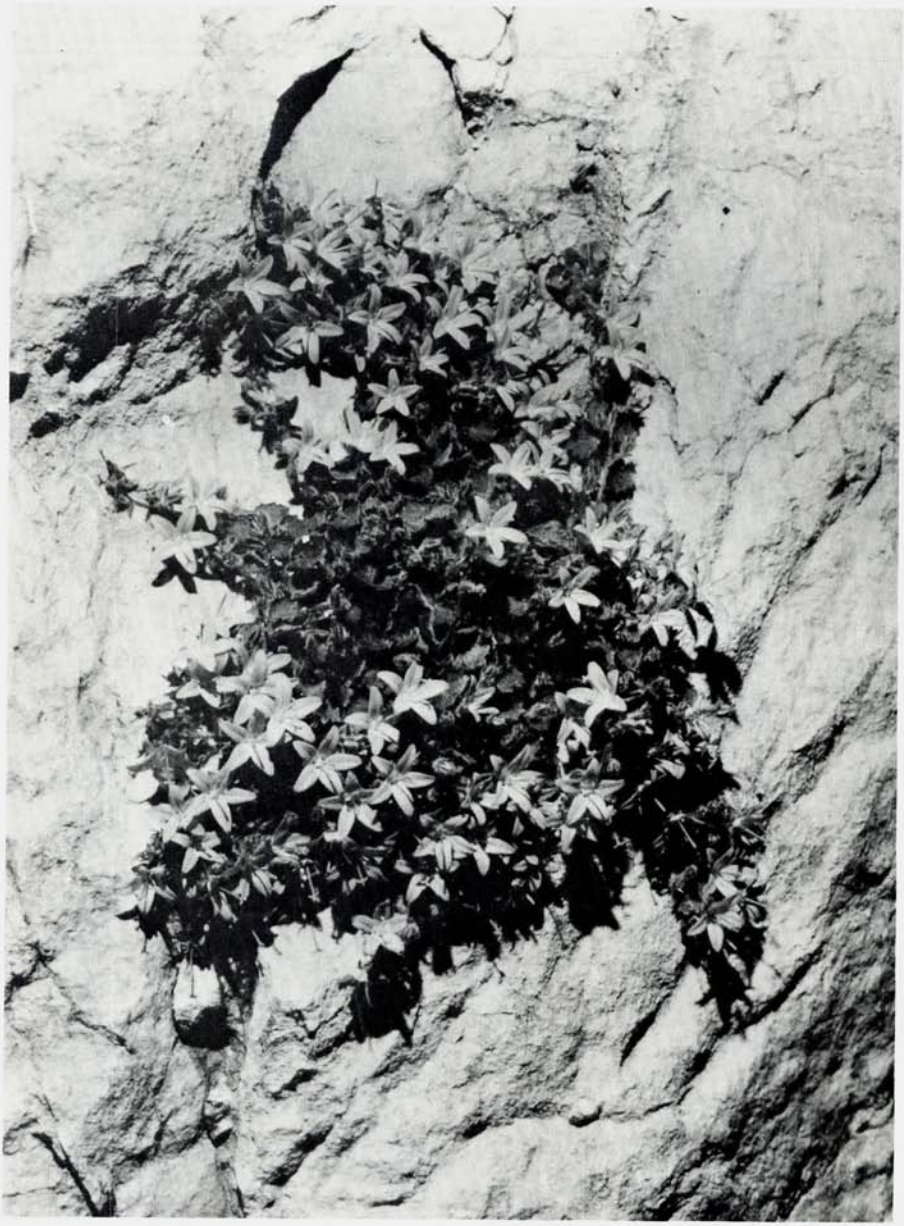
This is the season when, in the garigue and in the low macchia, the compact shrubs of the Rockroses are covered with flowers recalling at first sight those of Hedgeroses, (white in *Cistus monspeliensis,* rosy in *C. incanus*), while towards the summer, along the dry beds of streams, blaze with their showy, deep rose flowers, belts of Oleander *(Nerium oleander).* This is the season when the shrubby macchia is displaying the palette of its yellows with the massive flowering of the rush-like *Spartium junceum,* of the spiny *Calycotome infesta,* of *Genista cinerea,* of the arboriform *Euphorbia dendroides,* while between western Liguria and French Provence the azure spikes of Lavenders *(Lavandula officinalis* and *L. latifolia)* intensely scent the air.

THE MEDITERRANEAN ENDEMISMS

It remains now to mention the residual exponents of earlier floristic nobility; the endemisms. Their origin and conservation differ deeply from those of alpine endemisms of which we have already spoken.

The Mediterranean region, in fact, has not been subjected to the destructive phenomenon of Pleistocene glaciation, from which we are separated by a period of about ten thousand years. It has instead undergone, from the Cretaceous until the Miocene (about 120 to 26 million years ago) the phenomenon of continent translations, from which originated the Alpine chain, in concomitance with the birth of the Rocky Mountains and of the Andes, while the Mediterranean took its present form of an ocean lobe nearly enclosed by land.

The ancient tertiary flora was influenced by the disjunction of continental masses, with the breaking of supply routes from the far genetic irradiation centers. Later came the more lively concurrence of neogenic floras, the ancient races adjusting themselves to the isolation of the most uninhabitable rocky places, often assuming appearance and character different from their original ones. For their part the newcomers have evolved new



Campanula garganica

Oscar Fervidi

autonomous isolated forms, increasing the already considerable endemic component.

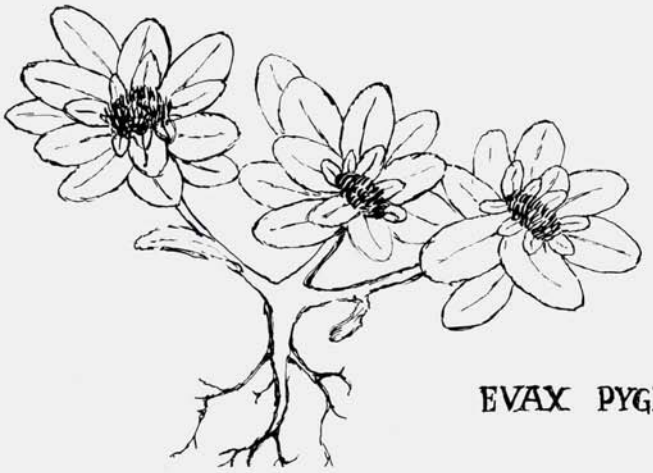
A complete enumeration of these particular species would require space not compatible with the merely informative character of these notes. So, we shall mention only some, mostly those which often give the rocky places of the coasts a look of true rock gardens, unfortunately very difficult to re-

produce, bound as they are to quite particular environments. In this respect there could be an exception with *Primula palinuri,* with its umbel of sweet-scented, golden flowers, related to the alpine *Primula auricula,* which it closely resembles, but it is of much more ancient descent and the only known survivor of the section Paleoauricula. *Primula palinuri* has a very limited area, restricted to a few stands of calcareous rocks of the Tyrrhenian coast of Campania and Calabria. The skilled care of some nurserymen have obtained from it a rather hardy race, which appears with its original naming in some British catalogues.

Something similar may be said of some magnificent Campanulas, members of a mosiac of neoendemic rocky species, in part encompassing the perimeter of the Adriatic Sea and in part that of the Tyrrhenian Sea. *Campanula isophylla* of western Liguria, the Tyrrhenian *Campanula fragilis,* festooning the rocks of celebrated Capri Island near Napoli, and *Campanula portenschlagiana* (the hardiest) of the Dalmanic shore are valuable species for the calcareous rock garden. *Campanula garganica,* with cascading tufts decorated with stellulated corollas of a pale blue, strictly localized to a few stands on the rugged Gargano headlands, is often seen in rock gardens.

The tiny *Scabiosa dallaportae,* with showy, rosy flesh-colored capitula, is a wonderful instance of xeromorphic adaptation and of exceptional frugality. Its little, dense cushions peer from cracks in the rocks, where by the strong insolation the temperature rises during the summer to a figure near 160 degrees F. In Italy are known only a very few stands, and these

Oscar Fervidi



Oscar Fervidi

on the Gargano, with a few other stands on the opposite shore of the Adriatic and to the Greek island of Cephalonia. Although not endemic, another little-known plant of steep rocks on the sea worthy of notice is the little circum-Mediterranean *Evax pygmaea,* a humble species somewhat recalling for its white woolly hairiness and for its star-shaped inflorescence the Edelweiss of the Alps. It lives in calcareous soils, sometimes in places so hot and dry that it would be hard to believe anything could thrive there. Yet it can, thanks to its unusually developed roots capable of finding the last traces of water in the rock fissures. It would make an ideal rock garden plant, but alas it is an annual, and must be reseeded each spring.

Here and there, from the Gargano north to the center of Italy, appears *Genista michelii,* an endemic undershrub with yellow flowers gathered at the apexes of the twigs, soon leafless, but abundantly covered with spiny, trifid divaricate aculei. Not endemic on the contrary is the looking-alike species *Genista anglica,* oddly separated on the pastures of mountain heights of the Calabrian Peninsula from its area, which is Atlantic, and ranges from northwestern France to England.

Endemic of the Apuan Alps impending on the Tyrrhenic shores of Tuscany is the little, compact *Globularia incanescens,* with a lovely capitula of filiform blue flowers. Particularly elegant is an evergreen shrub related to the Rockroses whose leaves resemble those of Olive trees in form and color; *Halimium halimifolia,* not strictly endemic, but bound to acid, sandy soils along the perimeter of the western Mediterranean. It reaches its southern limit of spread in the southern Adriatic, while westward it pushes forward along the Atlantic coast to the shores of Portugal. In June and July it displays showy, five-petaled, yellow flowers, each decorated at its base with a lively, round, violet little speck.

The discussion of Mediterranean flora, of course, cannot be covered in these notes. These, on the contrary, are only scattered tesserae of a great and magnificent mosaic, which, in spite of the blanks left by the "ground marauders" following one another during the span of eight thousand years in the lands washed by the blue Mediterranean, still shows its charming, unexhausted beauty.

For a better account of Mediterranean flora, there is a full range of works; among them:

"Conosci l'Italia"—vol. 11, La Flora—Touring Club Italiano—1958

Flora Mediterranea, by Luigi Fenaroli—Aldo Martello, Milano

Flowers of the Mediterranean, by Oleg Polunin and Anthony Huxley —Chatto & Windus, London 1967

FURTHER NOTES ON THE VIRGINIA SHALE BARRENS

EDGAR T. WHERRY, *Philadelphia, Pa.*

Having been one of the earlier explorers of the Shale Barrens and their flora, I was glad to see this remarkable assemblage of American rock plants written up in the April, 1970 *Bulletin.* A few corrections and comments seem to be in order, however.

Low on page 47 and high on page 48 the genus name *Erigeron* is mistakenly used instead of *Eriogonum* which make the remarks about the plant confusing. This eastern member of the Buckwheat family is admittedly outsized for many rock gardens, yet its profuse yellow flowers borne in late summer when little else is in bloom suggest its desirability. It is actually most satisfactory on the large scale rock slope at the Henry Foundation at Gladwyne, Pa.

The species standing of the strikingly white-hairy *Clematis coactilis* has been established by Dr. Keener, who monographed the group. *Senecio antennariifolius* would indeed be desirable if a long-lived strain could be found, but the common form seems monocarpic, dying out after blooming. The species name of the Shale Barren onion is misnamed *"oxyphyllum"* which would mean acid-leaved, whereas it should be *"oxyphilum"* for acid-loving.

The attractive shale barren Convolvulus is *C. purshianus,* a subspecies of *C. spithamaeus.* But, a word of warning is in order: this plant spreads by rhizomes rampantly, and if one once puts it in a small rock garden, it will crowd out all other diminutive treasures. The species name of the Appalachian Bead-lily should be *Clintonia umbellulata.*

Finally, *Opuntia compressa* is not the only cactus in the southeastern states, and it does not grow in the Shale Barrens at all. The species here is *O. calcicola,* which I named thus in reference to its profusion on the limestones of the Shenandoah Valley (overlooked or ignored in the botanical manuals). It differs in larger pads, larger flowers, longer fruits and sharper-edged seeds.

* * * * *

ONE MEMBER STAYS HOME AND ENTERTAINS VISITORS—Lawrence Crocker remained at home in Medford and attended to the necessary chores at the Siskiyou Rare Plant Nursery, so missed the Annual Meeting in Seattle. However that did not prevent him from meeting many who did. Among them were the Fosters and their group, the Redfield brothers from New Jersey, Mr. and Mrs. Chester Chatfield, of Seattle, Mrs. Pauline Croxton and Owen Pearce, both of California. Added visitors were Mr. and Mrs. Arthur Menzies, also Californians.

ANNUAL MEETING AND AWARDS

The Annual Meeting of the American Rock Garden Society for 1970 was held at the Washington Plaza Hotel, Seattle, Wash., late in July. The details of the meeting and the activities before, during and afterwards, observations, comments, etc. appear elsewhere in this issue of the *Bulletin* and *Bulletin Board*. One highlight of the Saturday night banquet at the hotel was the presentation of the various awards of the Society for 1970. The citations were read, in the order in which they appear below, by Boyd Kline, Medford, Oregon, *ARGS* Vice-President; Clifford Lewis, Seattle, Chairman of the Northwestern Region, and Bernard Harkness, Geneva, N. Y., *ARGS* President. The Citations:

THE MARCEL LE PINIEC AWARD
1970
To Margaret Williams

Mrs. Margaret Williams, of Reno, Nevada, is the personification of a Rock Gardener. As such, she has brought credit to herself and to a number of organizations, including the American Rock Garden Society and the California Horticultural Society.

She has always been interested in the outdoors: in the so-called "barren deserts of Nevada" and in the Sierra Nevada of Nevada and California. In pre-rock-gardening days she, with her husband, Loring, and their two children, spent week ends travelling over this interesting country. Some fifteen or so years ago, after seeing a display bench of a made-up rock garden display exhibited by the California Horticultural Society at the Oakland Spring Garden Show, she became so excited over the subject of alpine plants that she immediately registered in a course in botany at the University of Nevada, in Reno. From that time on she so devoted herself to the subject of rock and alpine plants that she has become known world-wide to those at the top of the field.

She has given unsparingly of her time in exploring and studying the plants native to the hills and mountains she loves. Every week end finds her on the go, to locate rare endemic plants, studying identification and, in proper season, collecting seeds. Every year for a number of years now, she has sent out lists of her collected seed to all corners of the world to avid alpine plant growers who have become her friends. She invariably has at least seventy-five species represented in the lists, and the total number on the largest list has reached almost a hundred and fifty. In addition, she has become an authority on several genera of plants, among them the Fritillarias and the Lewisias, in particular. Roy Elliott, in preparing his monograph on Lewisias, presented in the Alpine Garden Society's *Bulletin* a year or two ago, depended heavily on Margaret's research work on the genus. She also furnished many of the photographs used.

Those of us in the West who know her are very happy that she has been given the Le Piniec Award by the American Rock Garden Society, for

Margaret Williams

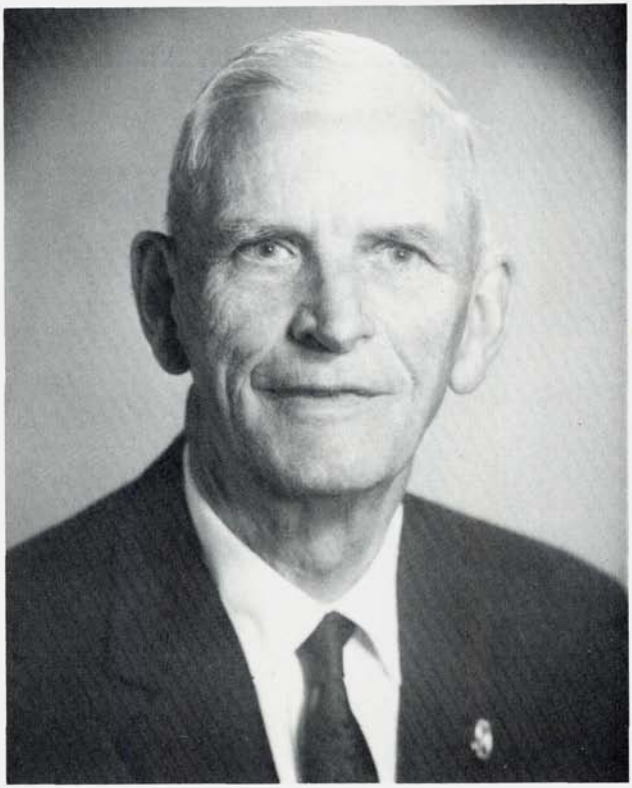
if anyone has fulfilled the requirements for such an award, Margaret Williams has done so superbly.

F. Owen Pearce, *Orinda, Calif.*

ARGS AWARDS OF MERIT
1970
To H. Lincoln Foster and Albert M. Sutton

ALBERT M. SUTTON (MERLE)

The American Rock Garden Society has been fortunate to have as editor of the *Bulletin,* since 1962, a knowledgeable rock garden enthusiast whose patient attention to detail and untiring research has resulted in a cosmopolitan publication which lives up to our expectations in presenting informative readable material, gathered, literally, from all over the world. A. M. Sutton (Merle to all his countless friends) came to this task with a background of close harmony with the native plants—particularly the alpines—of the Northwest, and with considerable experience in growing choice wildlings in the city gardens which he and his wonderful helpmate, Eileen, have had in Seattle and elsewhere, and in the country garden which they are now developing at Port Townsend, Washington.



Albert M. Sutton

EDY

The camping trips and hikes which Merle, Eileen and their daughter, Sharon, have taken through the years since, and even before their interest and membership in the ARGS, have covered the Olympics, the Cascades, much of Oregon, and other areas too numerous to list. Fascinating articles written by Merle for the ARGS *Bulletin* make delightful reading, as they describe such excursions in such detail that we have all shared in the plant lore reported. Consequently our appetites for more plant hunting have been whetted. His excellent pictures of plants and places have made possible vicarious trips for the many groups to which he has shown his slides. Trips planned by the Northwestern Region have very often been scouted and even led by Merle.

Contacts with horticulturally minded people met in the hills, as well as in the city, and by correspondence which is tremendous in scope, have been reflected in Omnium-Gatherum and other facets of the *Bulletin*. ARGS members from out-of-town receive a warm welcome from the Suttons and are often entertained in their home or on trips planned for their pleasure and enlightenment. Their personal plans give way on a moment's notice in many cases. The wide acquaintance thus developed with botanists, nurserymen, and other professional and amateur plantsmen has contributed to Merle's ability to serve the Society. He keeps a close watch on the pulse of its activities, he senses its moods and he is ready to do whatever is required

to keep things running smoothly. More work is done behind the scenes than is visible at a casual glance.

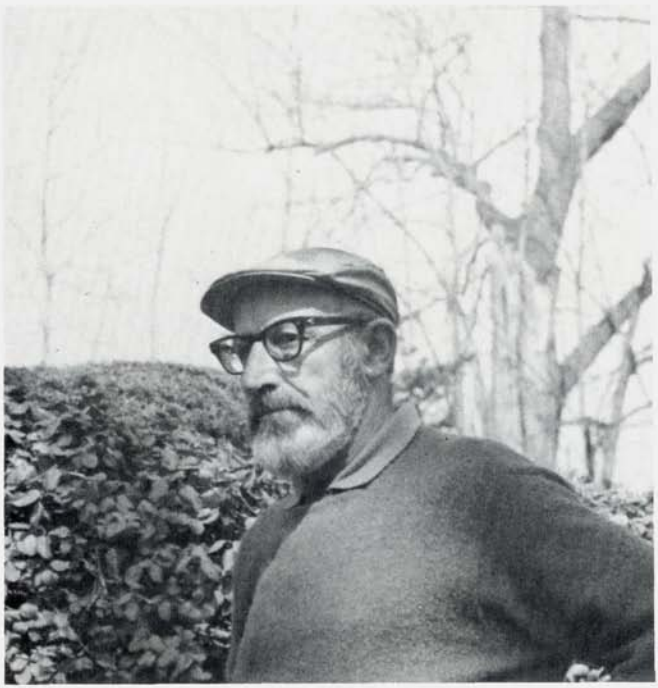
Merle served as Regional Chairman in 1951, and he is frequently working on one or more committees even while devoting so much time and consuming attention to the *Bulletin.* Plant sales, shows, and other regional functions run more smoothly because of the Sutton touch.

Conservationist, writer, photographer, organizer, botanist, and—above all—a friend, we present Merle Sutton as a fitting recipient of the American Rock Garden Society Award.

Frances Kinne Roberson, *Seattle, Wash.*

H. LINCOLN FOSTER

In this resumé of the life and works of H. Lincoln Foster on the occasion of this presentation of the American Rock Garden Society's Award of Merit, small justice can be done to the depth and wide scope of his attainments. Foremost in our minds must be that here and now we can show our appreciation for the thought and time devoted to the administration of the Society during the four years of his presidency. Succeeding pilots will enjoy much smoother sailing for many years to come. As John Osborne wrote in the *Bulletin,* October, 1968, "He brought to the office many new ideas and, possibly of more importance, he brought renewed vitality to many of the



H. Lincoln Foster

Laura Louise Foster

Society's existing activities."

Our attention, these days, is being drawn very forcefully to our relationship with our environment. Linc Foster has long been a student of the whole spectrum of nature. Native plants, rhododendrons, trees and ferns have all been the objects of study with the results shared in his teaching and his writing. Hence, too, came the creative touch that could blend into a forested Connecticut mountain side the diverse elements of rock garden plants of all provenances that are a collector's envy, with ferns, wild flowers and ericaceous shrubs. The continuing influence of this example of gardening art can never be fully recorded.

We are sure that these same talents which are now given in the service of gardening were also appreciated in the field of teaching and at the Norfolk School of which he was a founder. Also, the State Legislature of Connecticut must indeed have benefitted by his term there as a Representative. Such solid achievements as the two textbooks: a poetry anthology and an edition of *Moby Dick* and the chapter, "Ferns in the Garden," in Cobb's *A Field Guide to the Ferns* stand along side the book of 1968 publication, *Rock Gardening,* which is indeed "a guide to growing alpines and other wild flowers in the American garden."

Since 1949, Linc has had the inspiring help of his wife, Timmy, as the Society knows her; Laura Louise Foster as the readers of her several books know her. At this time, they have returned to the western mountains to renew their strength for the crucial struggle at Millstream House, which I do not have to detail to you here. We hope that this award may be one of the compensatory events of this new decade and a help in facing whatever lies ahead.

Bernard Harkness, Geneva, N. Y.

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FROM PITLOCHRY, SCOTLAND, MARGOT STUART WRITES, "Just a note to tell you how much I enjoyed my visit to Seattle and to the Annual Meeting. I met so many people who were just names before. I have lots to think about now for a long time."

* * * * *

TIMMY FOSTER, OF CONNECTICUT WRITES, "Our trip to the Olympics was rather like our last visit (1964); thick fog and rain, even some hail. Linc and I strolled along Hurricane Ridge, but Karl Grieshaber, Boyd (Kline), Marnie Flook, Paul (Palomino), Lee Raden, Rex Murfitt, Ellie (Brinckerhoff) and Armen Gevjan got themselves up to the top of Mt. Angeles where they saw fabulous flowers and were practically pushed off the top by a large herd of mountain goats. They were soaked through and were chattering with cold and exhaustion when they got back to the lodge, but declared they had had a fascinating time. I was glad Karl and Boyd had a real good look at least at the flora if not the view on their first trip to the Olympics. They were both ecstatic, especially Karl who declares our western mountains far surpass the Alps."

CASSIOPE MERTENSIANA CILIOLATA

"The Hairy Cassiope"

MARGARET WILLIAMS, *Sparks, Nevada*

The casual question, "Have you seen *Cassiope mertensiana ciliolata* in the wild?" asked by Miss W. M. Muirhead at the Edinburgh Botanic Garden in Scotland triggered a pleasant series of events that led us to new friends, new plants, and new mountains to climb. Pursuing *Cassiope mertensiana* in the Sierra Nevada and Cascade Mountains of California had been a continuing diversion of ours for several summers previously.* We had found it in many locations, and felt well acquainted with it. Plants from different areas exhibited the average amount of variation in size, flower form, and growth habit, but we had assumed there was no specific difference between these plants. So it was surprising to be asked about a "hairy" cassiope that we hadn't realized even existed.

A search of the literature revealed that Piper** recognized two subspecies in California:

1. *CASSIOPE MERTENSIANA CILIOLATA*. Leaves ciliolate with delicate white fugacious hairs. Calyx lobes entire. Apparently confined to Siskiyou County, California. Specimens examined from: Cliffs at Castle Lake, 1882; north of Mt. Shasta, 1897; Mt. Eddy, Copeland, 1903, elevation 2,550 meters (8366′), type location.
2. *CASSIOPE MERTENSIANA CALIFORNICA*. Leaves rather large, very minutely glandular-ciliate; calyx lobes and corolla lobes more or less erose-denticulate. Many specimens examined from Lassen Peak southward through the Sierra Nevada. Type location, Mt. Lyall, 3300 meters, 1902.

Modern botanical authors now lump these into *C. mertensiana.****

Our curiosity was piqued. We wondered how long the white hairs persisted, and if they changed the appearance of the plant. The locations cited were interesting ones, and so the search was on. Friends agreed to join us, and an attack was planned. Surely, with three chances we couldn't miss. The three locations form an isosceles triangle around the town of Mount Shasta in Siskiyou County, in northern California. It is about 18 air-miles from Mt. Shasta (the mountain) to Mt. Eddy, and from Mt. Shasta to Castle Lake. Mt. Eddy and Castle Lake are about 9 miles apart. The statement "North of Mt. Shasta" is vague, and none of us particularly liked the idea of climbing cliffs at Castle Lake, so we settled on Mt. Eddy (the type location) for our first attempt.

As we drove northward on a hot day in late July and approached the town of Mount Shasta (our point of divergence), the snow-covered slopes of Mt. Shasta looked infinitely more appealing than bald Mt. Eddy to the west across the valley, so we couldn't resist a brief detour to Panther Meadow on Mt. Shasta. There were ideal places in the meadow for a Cassiope to grow, and we couldn't believe it wasn't under the next rock. The search was

delightful; the meadow was carpeted with *Phyllodoce empetriformis* rosy in bloom, while *Kalmia polifolia* var. *microphylla* and a Vaccinium had gone by. Phlox, violets, and Mimulus added their bits of color to the intricately woven undulations. On the slopes above the meadow, *Luetkea pectinata* and *Penstemon davidsonii* grew in tight mats, hugging the rocks. Shrubby, but prostrate, *Polygonum shastense* blended right into the hillside. Cushions of Eriogonums and an Anemone with woolly seed heads completed the picture. We thought briefly about climbing higher but the snow-covered peak which loomed above was unlikely and "North of Mt. Shasta" could be anywhere. Although we had failed in this ericaceous haven, we really hadn't expected to find it here. Still, as we looked across the valley at Mt. Eddy we began to feel dubious. Its slopes didn't look very arctic-alpine. We could see a few patches of snow so perhaps our "hairy" Cassiope was below one of them.

It had taken only a few minutes to drive up the paved road to Panther Meadow, even allowing time to look at *Lilium washingtonianum* and at a particularly bright red *Penstemon newberryi*. But it took the rest of the day to grind up a tortuous road to Morgan Meadow on the southeast side of Mt. Eddy. The forest ranger had assured us the road was passable; it was, barely. We spotted *Xerophyllum tenax,* but it was impossible to focus on smaller plants as we inched upward because our sturdy car jolted so. The ranger had no idea of what a Cassiope was like, but he assured us that Morgan Meadow was a flower garden. Again he was right, but it was quite a different sort of garden than we were looking for. It was almost a bog, with lilies taller than our heads, *Veratrum californicum, Darlingtonia californica, Frasera albicaulis* and associated plants were interesting, but hardly bed-fellows of a Cassiope. But, at least here at an elevation of about 5,600′ we were within striking distance of 8,366′ on Mt. Eddy.

Early the next morning, we were on the trail leading to a mine on the southeast side of Mt. Eddy. Most plants were dried up and even their seed was gone. Anemones, Astragalus, and Phlox must have been a sight earlier. The scattered flowers on Lupines, Monardellas, and Eriophyllums scarcely rated a cursory glance as we passed upward. But we did pause to examine all the seepage spots under the trees. *Linnaea borealis* and *Adiantum pedatum* var. *aleuticum* were the choicest things we found.

Finally, we were above the trees on an open scree slope. Our excitement mounted. Here the plants were at their prime and many were new to us. A tiny blue Campanula threaded its spaghetti-like roots under the rocks and poked its gray-green leaves above. *Campanula scabrella* would be a treasure for any rock garden. Furry *Veronica copelandii* with a short spike of dark blue flowers was appealing, also. At least, Copeland must have been here, too. Were we on the right track? The precious Viola matted under the rocks surprisingly was just a diminutive *Viola adunca,* but it has remained compact in the garden. A grayed mat of leaves called our attention to an Epilobium (perhaps *E. clavatum*) still not in bloom. The gaudiest of all were the golden clumps of *Hulsea nana*. While this is a low-growing plant, its boldness is best suited for a rock garden on a grand scale such as this. Boulders had green petticoats of fronds of *Polystichum lemmonii*. We coveted the cushions of Eriogonums with interesting leaf forms and subtle grayed colors, but there was not a bit of ripe seed.

Rounding a corner, we came upon a small cirque with a snowbank on the edge of a fairy pool. We were reminded of our objective; our senses quickened. Would the Cassiope be here? A few early buttercups were charming, but not what we were searching for. Now the day was spent, we were almost at the right elevation—were we on the wrong side of this big mountain? The barren-looking peak of Mt. Eddy was still above us, but it was just more scree. Mt. Shasta, across the valley, silently watching us, kept its secret.

We still had Castle Lake. This was a fisherman's paradise. Each camp site was in its own leafy bower. Deer daintily wound through the patches of *Rhododendron occidentale* and tall lilies. These lilies of the northern California mountains are difficult to sort out, but are of the pardalinum complex.

Castle Lake is enclosed on two sides by huge rounded boulders and rugged, steep cliffs. One of the other sides is thickly wooded. On another side, a trail upward to Little Castle Lake had been carved through the dense brush for the convenience of fishermen. Would the Cassiope be at the top of the majestic cliffs? We could approach them from the top of the trail, so up we headed.

When the trail leveled off, the shrubs became more scattered and we were in the open, high above Castle Lake. The manzanitas and Ceanothus were underplanted with *Erythronium klamathence,* its yellow and white flowers were replaced by seed. A few furry kitten-ears, softly lined with blue, sat on the ground. There was even a pinky one. If they weren't *Calochortus elegans,* at least they were elegant! The ivory and pink flowers of *Dicentra pauciflora* reminded us of ghostly versions of *D. uniflora* on long stems. Ferns, mosses, and Sedum filled in the chinks in a rocky outcrop. Hybrid dasanthera Penstemons liked the rocks, too. At first we weren't aware of the many plants of *Lewisia leana.* Their myriads of tiny rosy flowers on wiry stems were almost hidden by the grass.

Farther on, it was exciting to find a tiny Campanula growing out of crevices in a huge rock outcrop. It was very much like *C. piperi,* of Olympic fame, but we were way south of its range. Since then, it has been described and named *Campanula shetleri.* (Heckard, Madrono, Vol. 20, 4: 231-235. October, 1969).

Good plants were at every turn. In shady places *Luetkea pectinata* grew with abandon. Brodiaeas were coming up thickly in a drying meadow that earlier had been full of buttercups. Again, the Cassiope had eluded us, and again Mt. Shasta mocked us from across the valley. Was it trying to say that the climate had been different in 1882, and now the environment was wrong? Or was it telling us that we should have been more daring and climbed the precipitous cliffs?

Though specifically this trip was a failure, floristically it had been fantastically successful. And, while we went home somewhat daunted, we were determined to have another go at it.

Another year, we approached Mt. Eddy from the northwest. It was early in September and we were surprised to find the lower meadows still had flowers. We were excited by *Mimulus primuloides* var. *pilosellus* in the stream beds. But the queen of the day was *Gentiana newberryi*—emerald green mats studded with stunning blue trumpets. The usual Sierran form of

this gentian has greenish-white flowers and it is one of our favorites, but there is something special about gentian-blue. Untidy clumps of *Gentiana calycosa* sprawled in the lush meadow and on slopes above. Although the flowers of this gentian were a rich blue, too, they weren't as choice. Annual *Gentiana amarella,* though covered with lavender-blue flowers, seemed pallid in comparison. Again, we had a glorious day—there were wet places, dry slopes, scree slopes, many of the same plants we had seen on the opposite face, and the same final results.

Now, seemingly, we had exhausted our original objectives—so finally we consulted the Herbarium of the California Academy of Sciences. We should have done this much earlier, for here was an actual specimen of our elusive heather! It had been collected in Caribou Basin in the Trinity Alps of Siskiyou County, California about 30 years earlier. By now, our imaginations had clothed the Cassiope leaves with ermine, so we were quite surprised, for to the casual eye, the pressed plant could have been any ordinary *Cassiope mertensiana.* Satisfying as it was to see the "hairy" Cassiope, it was disappointing, for the hairs do not show without a hand lens. Nonetheless, our desire to see the "hairy" Cassiope in the wild had not diminished and Caribou Basin became our next objective.

Caribou Basin lies inside the rugged Trinity Alps, about 50 miles west of Mt. Shasta. This is an isolated wild country, its icy lakes are favorites of fishermen, and the mules of the pack stations on Coffee Creek make the trip up and over Caribou Mountain easier. At the time we made the trip, the trail ascended and descended very steeply; now a longer but more gradual trail can be traversed more quickly. The eastern part of the trail led through a deep forest where occasionally we caught glimpses of Mt. Shasta, still with its watchful eye on us.

The trail became exceedingly steep near the rocky summit, and here each mule had his own style of forging upward. It was torture; some scrambled groaning over the rocks, others progressed with jerking plunges. It was hardest to cling to a "hopper." The "hopper" would teeter indecisively on the rocks before each leap and the rider, even though braced, somehow was never prepared. Over the summit, the trail became a chute of granitic sand, and the mules simply sat back on their haunches and slid down the first steep part. The animals were amazingly surefooted; what they lacked in grace, they made up for in experience and instinct.

Again, the trail wound through a thick stand of pines and firs, now with an occasional stately *Picea breweriana.* Then the trees thinned, we were on level ground, and the trail led through a patch of *Leucothoe davisiae* and across a meadow. The packer deposited our gear in a small grove of trees near Lower Caribou Lake, and then with the promise to be back to pick us up four days later, he and the mule train clattered off.

Our camp was primitive, indeed, but fortunately, rock ledges were conveniently located to serve as furniture. A great granite slab was our terrace overlooking our private lake. Other slabs paved the way down to the lake on our side, but trees hugged the shore on the two sides adjacent to us and swept up the slope in a green wave. On the far side, the trees melted into the horizon, and the sinking sun streaked the sky with rose and gold. Except for the well-trodden trail and the pile of firewood by the blackened stones of

the campfire, we almost had the feeling that no one had ever been in this idyllic spot before.

Our lake seemed too hemmed in for the Cassiope, but there was lots of territory for exploring. Jagged Sawtooth Range was silhouetted starkly against the sky and deep shadows still darkened the precipitous slope above Snowslide Lake when we followed the trail to it next morning. The jumbles of rocks were all too barren and perilous for Cassiope, we thought. We didn't linger, but pressed on up the steep trail toward Upper Caribou Lake.

Abruptly, there at our feet, in the granite sand alongside the trail, was Cassiope. The search was over. Suddenly, it seemed all too easy. A hand lens confirmed that the leaves, indeed, had a few hairs on their margins—no fur. Otherwise, the plants were indistinguishable from any other California Cassiope. It was now mid-August and there weren't even remnants of flowers left, so we had no idea if they might look unique in flower, or if they might have been hairier earlier. We felt inclined to agree with the botanist who lumped the California Cassiopes, though a Cassiope buff might have been inclined to disagree.

This area seemed quite dry now, hardly the spot we might have picked for ericaceous plants. But growing with the Cassiope were *Phyllodoce empetriformis, Kalmia polifolia, Gaultheria ovatifolia,* and *Vaccinium occidentale*. These plants grew in rather isolated colonies on a shelf carved in the granite wall. Their roots must have dug in deeply, and must be fed by seepage from high above.

Exploring the basin was intriguing, and though we kept our eyes open, we didn't see a Cassiope anywhere else. It was dry everywhere; even *Gentiana newberryi* and *G. calycosa* were blooming sparsely in grassy areas, reserving their strength for a better year. Both *Parnassia fimbriata* and *P. californica* managed a few flowers and there were straggling blooms on Asters, Erigerons, and Castillejas. Evidence indicated that earlier several species of Mimulus and Penstemon had flowered well. *Luetkea pectinata, Pyrola secunda,* and *P. occidentale* had sought out shady spots. Many Lewisias were in the rock crevices. Although their leaves had been well nibbled, there appeared to be *Ll. cotyledon, leana,* and perhaps intermediates between them. Sedums and ferns decked the rocks, too. It was challenging to try to identify the plants as late in the season as it was, and dry as it was.

The spectacular scenery was overwhelming and more than made up for the lack of flowers. Whenever we'd climb to the top of a ridge, other ridges marched ahead of us in endless succession, tempting us. Over one ridge lay another basin, with its own jewel-like lakes. What would we find over the next ridge? With each changing hour, the scene changed. Each bend in the trail opened a new vista; marvelous pictures were in every direction. The charm of this tranquil wilderness lingers in our memories, and I hope someday we can return and see the "hairy" one, *Cassiope mertensiana ciliolata,* in flower.

*A.R.G.S. *Bulletin,* Vol. 18, No. 3, p. 82.
**Piper, Smithsonian Miscellaneous Collections, No. 50. 4:195-202. 1907.
***Munz, A California Flora, p. 414, 1959.

OMNIUM-GATHERUM

A FEW HIGHLIGHTS OF THE ANNUAL MEETING IN SEATTLE—THE WEATHER—All kinds! July 22 (the day the Epstein touring group reached Paradise Inn at Paradise Valley on Mt. Rainier) the mountain was visible until six in the evening. The tour arrived at seven and the mountain was fogged in—no peak! No exclamations of awe! But as dusk descended, the mists faded from the vast white peak, the stars appeared and some of the people ventured outdoors to watch the moon cast its glowing light on the mountain. Starkly beautiful! July 23—An absolutely perfect day, all day; brilliant sunshine, visibility unlimited, comfortable hiking temperatures, no wind, heavenly air to breathe, mountain flowers everywhere and exquisitely arranged; Mt. Rainier's majestic peak, friendly and so close, aglow in the bright sunlight; every detail of rock, cliff, snow, and glaciers with their glowering crevasses visible in great clarity. ARGS members happy. Happy with each other, luxuriating in the weather, happy on the several trails and enchanted with the scenery and the flowers. Happy, too, with the Inn's meals (mostly the Northwest's famous salmon was ordered for dinners)—happy with the Inn's summer help, all college students. A day to remember! But, at dusk a small cloud cap appeared atop the mountain—a sign of a weather change.

July 24—The visitors awoke to find the Inn and everything else fog-shrouded—visibility zero. After breakfast, scheduled hikes for the morning were called off—too dangerous and nothing to be seen. So, after lunch the buses carrying the tour people left for Seattle, as did those members who had come to Paradise Valley independently. To Seattle to check into the Washington Plaza Hotel and others where reservations had been made. Followed then registration for the ARGS Annual Meeting and the three days of activities. Being inside, the weather did not matter, for the gathered members furnished their own cheery weather. Friend greeted friend. Self-introductions were the natural means of making new acquaintances as the name cards worn by each member flashed under the ornate chandeliers of the high-vaulted and spacious reception hall. Conversation was rapid-fire and all but deafening. Again there was excitement and happiness. Members who had arrived via the tour buses were joined by those who came to Seattle by other means and by the local members. There were members from many states in the Union and from Canada, England, Scotland and from far-away New Zealand. Dinner followed and again there was salmon for the hungry and excited people who filled the banquet room after which all settled comfortably to listen to Linc Foster's illustrated talk on "Rock Gardening—One World."

July 25—(Saturday)—Garden Tour Day! Rain during the night (It never rains in Seattle this time of the year?)—cloudy during the day. But gardens on the tour were fresh and rain-washed and beautiful. From the Pendleton Miller garden at the Highlands, spacious and splendid, no Olympic Mountains were visible across the grayness that was Puget Sound—a pity—but the garden was at its July loveliest. Three bus loads of members, arriving at spaced intervals, roamed uphill and down, through woods and open spaces, led by Northwestern Region members—everyone happily enjoying the super-

lative plantings as a whole, and the many individual species so cleverly and pleasingly intermingled. The A. K. Free's garden, on a city lot, caused one member to rhapsodize, "A jewel of a garden, a diamond with every facet perfect. What more could one ask?" Again there were happy members despite the mistiness and mild chill. The extensive garden of George Schenk, so well known to so many was a third example of the diversity of Seattle's gardens. At the noon hour a box lunch was served at the Arboretum of the University of Washington, supposedly amid the beauties there, but because of the weather, held indoors. Most unfortunate!

In the evening there was the Award banquet, and weather, good or bad, was forgotten. After the dinner was over and the award citations had been read, Margaret Williams made all happy with her illustrated talk, "Plants From My Favorite Areas." It had been a full and exciting day.

Sunday, July 26—This day we all trouped to Mt. Rainier again—to the northern side this time, to Yakima Park where transportation was abandoned. Cloudy, misty, sometimes showery—who cared! No mountain visible from this grandest of all places from which to watch its changing moods. This day it had retired behind its veil of clouds and one had to take its presence on faith. Upon arrival, a box lunch was served at 11:30—dead on schedule—inside again, this time in the Visitor's Center of the National Park Dept. Then, out onto the trails, some visitors going on the long hike to Burroughs Mountain, others to Fremont Peak, or Berkeley Park, or on even shorter tramps. All afternoon, no glimpse of the great mountain or other lesser peaks—only blank grayness in the distance. But there were flowers—such a wealth of mountain flowers. Hour after hour on the trails and no complaints from anyone on the weather. Actually, the flower fields, the flower-strewn hillsides, the colorful meadows, and the trail-side plants were hauntingly and mysteriously beautiful in the mist—fresh and bedewed—far more ethereal, according to some, than they would have been in bright sunshine. So, in one way we were fortunate although there was no mountain—again, a pity.

Monday, July 27—Formalities over—a day of rest for most, but there remained more activities of an informal nature. Some needed no rest and dashed off to the mountains, other mountains. One organized group went as far as the Wenatchee Mountains under the highly qualified leadership of Dr. Arthur R. Kruckeberg, while others went independently to the Olympics. Throughout Seattle there were supplementary garden visits and in the evening dinner parties in private homes. More friendships formed!

July 28, Tuesday—The members of the touring group left Seattle for the Olympic Peninsula, going first to the Rain Forest on the Ho River and to remain the night at the Lake Crescent Lodge. Other parties drove to Hurricane Ridge in the Olympic Mountains for the day. Again the weather was unsettled, though there were moments of sunshine. On July 29, the Epsteiners reached Hurricane Ridge amid hail, rain, and general cloudiness, but again there were flowers (even unto white *Campanula piperi*) and uncomplaining members who demonstrated their complete disregard for weather conditions. Grand people!

July 30 and 31—These were the days the Seattle people settled back

to rest and review the past week, but the visitors either started for their distant homes or continued on into British Columbia where, report has it, they found wonderful hospitality, good weather, lovely gardens, and so much pure enjoyment that they were loath to break up and start their own ways home.

From the standpoint of the local, or host members of the ARGS, we found the visitors from other parts of the country, from Canada, and from overseas to be grand people who lived up to the highest standards set for Rock Gardeners (what higher standard is there?) and we loved every one of them and wish them happy gardening and a quick return to the Northwest. Bless them!

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WRITES DON HAVENS, MILWAUKEE, WISC., "Across scree and moraine, snow fields, and beside iceberg-strewn lakes we trecked. ARGS field trips, led by dauntless Northwestern Regional members are not for the timid and weak! The rewards, however, are limitless: *Salix cascadensis* and *S. nivalis; Luetkea pectinata,* sheets of it; *Lupinus lyallii,* mostly blue and a few white, all six to eight inches; *Phlox diffusa* everywhere; *Erythronium montanum* and *E. pallidum,* fields of them; *Campanula piperi,* blue (and I found a white); *Smelowskia ovalis; Spraguea multiceps* (now *S. umbellata*); *Pedicularis* in several species. All these and many, many more found in fog and clouds—and some sunshine. I cannot begin to tell you of the wonderful hospitality of the Northwestern Region."

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