

BULLETIN

of the

AMERICAN ROCK GARDEN SOCIETY

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JANUARY, 1956

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C. R. Worth, Editor

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THE KEILLOUR GARDEN AND THE MAKING OF IT

M. W. K. FINLAY, *Methven, Scotland*

THE KEILLOUR GARDEN is situated half-way between Perth and Crieff on a ridge of hills, looking south over Strathearn to the Ochil hills. The present house was built over 100 years ago on the site and foundations of an old castle which was destroyed early in the 17th century, and stands on rock, between two gorges 75-80 ft. deep, at an altitude of some 500 ft. with a S.E. exposure. A good planting of mixed conifers and hardwoods must have been made sometime after the house was rebuilt and many of these still form a background and give some shelter from prevailing winds.

When we took possession in 1938, the place was completely overgrown with ponticum rhododendrons, birches, hazels, wild and bird cherries and every kind of weed, for, with the exception of the kitchen garden which had been partly cared for, no effort at all had been taken regarding the grounds surrounding the house. We had a hideous entangled rockery to the north-east of the front door, and in front of the house, on the peninsula between the two gorges, a few small apple trees struggled unfruitfully for existence and a broken down rustic trellis surrounded the area. There was no view at all, except from the tower windows of the small, but very tall house. Our house, as well as the cottages etc., had then to be reconditioned. We were fortunate indeed that this work was finished just before the outbreak of war.

Meanwhile, we began on the garden, working at weekends. The whole place was alive with rabbits. We netted ourselves (and rabbits) in to the extent of some 25 acres and made a rabbit proof grid over the main drive to avoid the opening and shutting of gates. We did away with the rockery, using the stone to build a retaining wall, cleared and levelled this area and sowed it down with lawn seed. We took out the apple trees, burnt the trellis and removed many ponticum rhododendrons from a sloping bank just north of the drive facing the front door. We made a small scree and did a little planting. (This sloping area, much extended, is now called the rock garden.) It was a period of vast bonfires

and many picnics. We were due to move in on September 8th, but we were both called up in August. The one gardener we had established was also called up, but we did find another to keep the kitchen garden in order and, when on leave, we worked very hard.

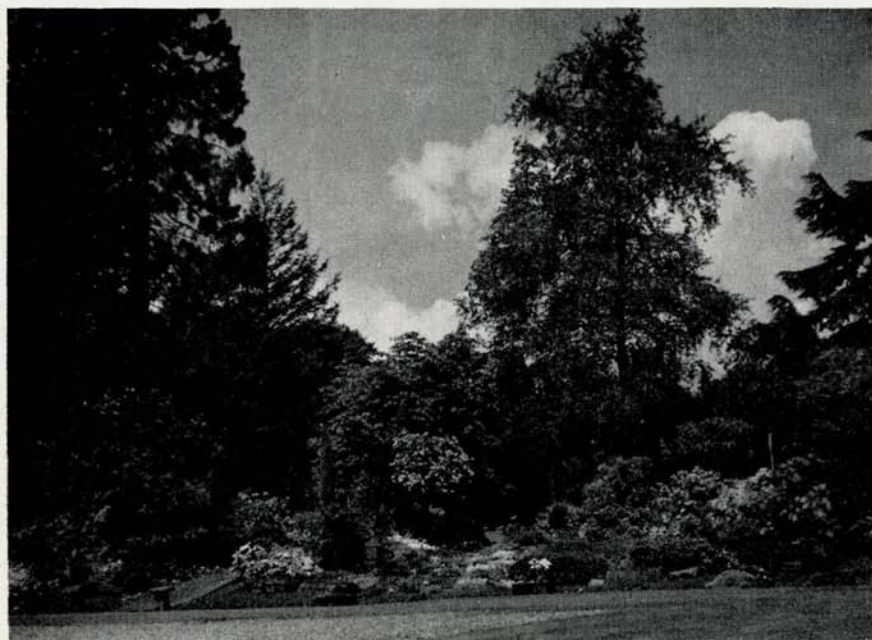
Towards the end of the war my husband was posted to H.Q. at Perth and was able to live at home. He did a vast amount of work in the evenings. Timber was required, and we had trees suitable for felling which the wood merchants were pleased to have and to remove. By careful planning, three main vistas were made, to the left, in front, and to the right of the house. This also involved the taking down of trees in the parks beyond the netted area and was not finally completed until much later. A tall and fine specimen of *Sequoia gigantea* was left as a focal point at the end of the peninsula. A small wood of large Douglas firs on the drive side was also cut down and nine large trees removed from the site of the so-called rock garden to be.

We brought from our previous garden a great many young shrubs etc. which we had been growing on for this purpose in nursery beds. They were "heeled in" in the kitchen garden and grew very well. Transplanting them was no easy work but somehow or other the beds with *Acer japonicum palmatum purpureum*, surrounded by various azaleas and underplanted with the many different ericas, were achieved on the drive side and interplanted with various prunus. The beds are surrounded by daffodils for spring effect and this early venture improves from year to year and provides fine autumn colour.

Unfortunately in April, 1945, just before the end of the war, my husband had a fall and was in a plaster cast from the top of his head to his waist for three months and in a neck and body splint till December. But after the first few weeks this did not deter him; he had the use of his arms, and he used them! It was difficult to find two good gardeners and difficult to get any domestic staff, but somehow or other we got going again.

From the woodland area where the trees had been felled, the roots had to be extracted and water led on from a small loch to supply the ponds and a small stream. Shrubs were planted to the north and west on the drive side as a shelter belt, beds made up for primulas by the stream and ponds, and many other plantings of lilies, nomocharis and meconopsis were gradually established, mostly of our own raising from seed. Of the primulas planted the *Candelabrae*—*PP. pulverulenta, japonica, helodoxa, aurantiaca, burmanica, bulleyana, chungensis, prolifera* etc. enjoy the moisture and so do *sikkimensis* and others of this section such as *secundiflora* and *waltoni*. *Primula florindae* is rather coarse in a wet situation but our hybrid \times *waltoni* is very pleasing in a variety of pastel shades.

Our next project was to provide more water for the ponds and streams. A fine bridge spans the east gorge leading the drive to the house. Below and to the north of this bridge, a dam was built and a ram pump put in from which water is pumped up to the top pond at the rate of one gallon per minute. Then we began to develop this area which is just above a deep water fall. The natural rock was used and terraced to some extent. Ramondas and haberleas delight in the terraces and even a few jankaea have settled down. *Primula forrestii* and *redolens* also like the terraces and lower down *Primula sonchifolia, edgeworthii* and *gracilipes* are happy. A few rhododendrons, not happy in the wild garden, enjoyed their move to the more shaded position. So we began to plant others there and of them the following are now good flowering shrubs: 'Elizabeth,' 'Aspansia,' 'May Day,' 'Fabia,' 'Exminster,' 'F. C. Puddle,' *R. aperantum* and *R. ciliatum*. On the sides of the steep path which leads to this den *RR. lapponicum* x



Looking toward the rock garden at Keillour.

triflorum, *moupinense*, *ludlowii*, *forrestii* var. *repens* and others grow, as also *Gaultheria sinensis* 'Morna,' *hispida* and *miqueliana* and *Vaccinium mortinia*, *Gaulthetia wisleyensis* and others of this tribe.

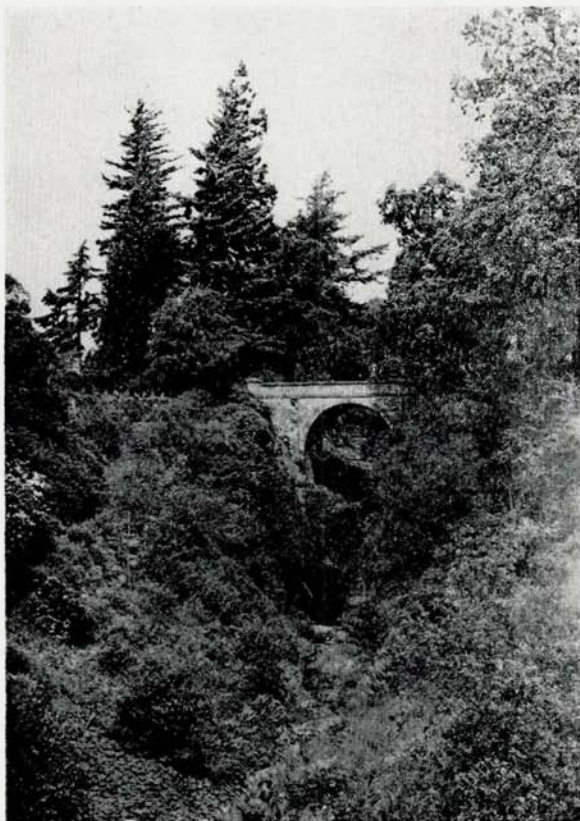
We have never really made a rock garden as we garden on natural rock, but the clearing made on the sloping bank to the north of the house is known as such. There are now four screes. *Paraquilegia anemenooides* does well in the limestone scree—old plants, some of them pre-war. *Corydalis cashmiriana*, planted in rotten rock at the top of the first scree, is very happy and seeds itself quite widely; the main bed is some two yards square. *Celmisia coriacea*, propagated from old shoots, likes to put its roots down behind a rock. *Androsace mucronifolia* multiplies itself in a trough but hates disturbance. Beds have been made up for lilies, *nomocharis* and many *meconopsis*. *Meconopsis grandis* (Ludlow and Sherriff 21069) was especially fine this year and *Meconopsis sherriffii*, that wonderful but difficult pink poppy, flowered beautifully. It is always difficult to pick and choose what plants to write about. There is a fine plant of *Kirengeshoma palmata*, well shaped and always in September covered with its dainty yellow flowers, nodding gracefully on their long black slender stems. The dwarf and weeping *Acer japonicum palmatum purpureum dissectum*, with their skirting branches creeping over the ground, are charming from late spring till they turn bright orange in October. A big bed of *Cyclamen neapolitanum* has become well established in dry and poor ground which is robbed by the roots of two silver birches. They flower from August to October after an annual top dressing in July of very old sawdust, and their lovely marbled leaves give ground cover over winter. *Cyananthus sherriffii* with its close grey hairy winter crowns and summer trailing stems some eight inches long with light blue flowers is interesting from July till October. There is a good bed of *Trillium grandiflorum*—a very favourite

plant of ours—in a semi-damp and shaded situation; *Gentiana saxosa* as a scree plant exists for a year or two. It is a dainty plant from New Zealand with small white cup-shaped flowers.

To the north of the rock garden there was a hard tennis court. About six years ago a small formal garden was made on this site. A long grass walk and border divides it from the rock garden. The border is backed by four three-cornered pillars formed from some standards and wire netting which had surrounded the tennis court. These are covered with *Vitis coignetiae*, clematis in variety and *Aristolochia siphon*. This border is planted mainly with shrubs: *Hydrangea paniculata grandiflora*, *Rhus foliis purpureis*, *Enkianthus campanulatus*, *Daphne mezereum alba*, *Buddleia fallowiana* fronted by *Meconopsis x cookii*, *Meconopsis grandis* (the old Sikkim form), *Adenophora liliiflora* and *Lilium sherriffae* which so greatly resembles fritillaria, growing, as it does, next door to *Fritillaria cirrhosa*.

In the beds on the late tennis court *Codonopsis vinciflora*, *convolvulacea* and *rotundifolia* do well. As they are climbers we provide them with bare branches to twine themselves around, and in this way they show off their flowers to advantage. *Cyananthus lobatus* (and *lobatus* Sherriff's form) and *integer* also like this well drained ground. *Iris innominata* seed themselves around and *Incarvillea delavayi*, *grandiflora* var. *brevipeta* and two others of the Ludlow and Sherriff collections (as yet we understand unidentified) require no looking after. There is a fine plant of *Stellera chamaejasme* (of Colonel Lowndes' collection), but with us it will not seed. *Thalictrum reniformis* (Ludlow and Sherriff's) grows now to a height of some six feet; it is most beautiful, but grown from seed it has taken some five years to come to full maturity with us. In the middle of each of the two centre beds there are good specimens of *Acer japonicum palmatum purpureum*, and the background of this small garden is, towards the north, again planted with shrubs, mostly for autumn and berry effect and with lilies all over the place. *Lilium szovitsianum*, some eight feet tall this year, was most spectacular. We grow many lilies and nomocharis but there is no time in this article to dwell on these. The monocarpic *Meconopsis regia*, *superba*, *nepalensis*, *integrifolia*, and also *M. quintuplinerva*, find a home in this area as elsewhere. Wide steps lead up from this garden, through two archways, the first cut through a single line planting of old and closely clipped *Cupressus lawsoniana* (or *Chamaecyparis lawsoniana* if you are very modern), and the second through an old yew hedge. These provide a vista to the two annual and dahlia borders in the centre of the main kitchen garden which are skillfully planted by our head gardener, Mr. Christie. These borders are backed by trellises on which grow rambler roses and clematis including a very fine form of *C. orientalis* of Ludlow and Sherriff collection.

Returning from the kitchen garden to the east of the rock garden, there is a semi-shaded path which leads back to the bridge. On either side of this path beds have been made up for primulas, mainly of the *petiolaris* section—*bhutanica*, *edgeworthii*, *alba*, *boothii*, *petiolaris* (itself so rare), and others. Now we can cross the bridge again to the east and go down the drive side for a short way to visit the peat walls. These have been made on a gentle slope facing north with underlying heavy clay and some seepage of water from the top wild garden pool. The beds there were made up with very old sawdust, sand and bone meal, and/or well made compost, and are retained in place by courses of peat blocks. *Primula clarkii*, *rosea*, *nutans*, *viali*, *griffithii* (and hybrids) *caldoriana*, *ioessa*, *reticulata*, *nepalensis*, *tsariensis*, *vernica*, *wigramiana*, and others, like these conditions and most of them quickly put their toes down into the underlying clay.



The east gorge
and bridge
at Keillour.

Of other plants which do well on these beds I can only mention a few: *Cypripedium tibeticum*, *Cassiope wardii* and the hybrid *mooreheadae*, shortias, schizocodons, soldanellas, a number of *Omphalogrammas* (*elegans*, *elwesium*, *soulei*, *farreri* and *vinciflorum*): *Rhodothamnus chamaecistus* and that grand plant *Glaucidium palmatum*.

On the other side of the drive there are gentian beds made up in the same manner as the peat walls but unfortunately with no water seepage and these beds have had to be helped this year. Our collection of gentians is quite extensive. They do not all grow here, but I detail a number of our favourites: *GG. farreri*, *veitchiorum*, *trichotoma* (with its lovely spectrum blue flowers), *ornata*, *sino-ornata*, Ward's form (W-126) *stragulata*, *verna*, and *verna angulosa*, and of the hybrids, 'Devonhall,' 'Glendevon,' 'Inverleith,' and the recent 'Coronation' (a *farreri* cross) and 'Kingfisher' of *G. x macaulayi* parentage.

On the house side of the bridge a large and new bed has been made. *Meconopsis punicea* flowered most beautifully there last year and this year. It is monocarpic and so tiresome about germination. The delightful little *Meconopsis bella* in both its forms grows, but it is not a good "do-er," but *Meconopsis delavayi*, which is indeed one of the "pets" of the garden, is very happy. *Meconopsis chelidonifolia*—an odd plant which can be propagated from bulbils formed in the leaf-axils—is attractive with its yellow flowers and slender stems. *Armeria pseudo-armeria* is of some interest and *Kniphofia galpinii*, that charming little

red hot poker, helps us along with autumn colour. *Primula obtusifolia*, so lovely, grows well with us and in this bed, as we always grow primulas whenever we can, we have also planted *PP. capitata* var. *crispata*, *scotica* (a native of the north of Scotland), *farinosa*, *bellidifolia*, *muscariodes* and *calliantha*. We are doubtful about *Primula calliantha*—it may not be this species.

To the front of the house where the old orchard used to be, the lawn continues and a rose garden has been made on the end of the peninsula—cut off, except for a wide grass path, by a hedge of *Cotoneaster simonsii*. On either side of the peninsula, iris, species roses and species peonies grow. To the right and west of the house we have made alterations by widening the beds and placing old wrought iron gates in the centre of a trellis which is covered with honeysuckles in variety. This gives a pleasing vista through to a further garden where the planting has not yet been completed. It is planned to plant a number of heaths there including *Erica vagans*, 'Diana Hornbrook' (deep pink) and 'Lyonesse' (a fine white), *Calluna vulgaris*, 'County Wicklow,' 'Mrs. Pat,' 'Mrs. R. Gray' (delightfully prostrate), 'Mullion' and *E. minima* which is indeed dwarf. Nerines and agapanthus are established close to the walls of the house and on the walls *Carpenteria californica* and *Tecoma radicans* withstood 28 degrees of frost last winter.

Three years ago the top portion of the west den was opened up. This is a steep and difficult area where the felling of trees was no easy matter. We had to fell in an awkward manner with no level ground to stand on and, at the same time, avoid damaging trees which we wished to retain. With the use of wedges the trees were swung up against their natural lean, and the final removal of the sawn up timber was completed by a tractor winch; thereafter the scrub was removed and we again enjoyed bonfires. Now, some three hundred rhododendrons have been planted, ranging from the large-leaved *Rh. falconeri*, *fictolactum*, and *sinogrande* to many species and hybrids such as *malloctum*, *haematodes*, *griersonianum* and 'Fine Feathers,' 'Winsome,' and 'Cornish Cross,' and including of the more dwarf, a selection of some forty Kurumes and the semi-prostrate *K. aperantum* and *R. forrestii* types. Rather ambitiously we have also planted a considerable number of camellias, and many other shrubs of interest including magnolias have been placed there. Courses of peat blocks have been used to construct a retaining wall for the steep bank on the high side of the path which leads down to the burn. These walls, some 90 yards in length, face west and are still only partly finished. We were, and are, ignorant about ferns, but the west den seemed to invite them and so we have now what I call our "beginner's collection." Of these my favourites are *Adiantum pedatum* from the Klondyke region and of the Lady Ferns *Athyrium filix femina* vars. *Victoria robusta*, plumose form (discovered in Scotland 90 years ago) and *frizelliae* (found in Ireland by Mrs. Frizell in 1857).

In the winter of 1954 we began working again in the east den but farther down than the bridge and waterfall. This is not really a new scheme, as long ago we appreciated that this bank, facing west, was a most important viewpoint from the lawn and house. We did an immense amount of clearing there some years ago and planted berberis, mespilus, spiraea, prunus, witch hazels, liquid-amber, maples, and *Cercidiphyllum japonicum* with special thought for autumn colour. Later we added *Embothrium coccineum* (which at last flowers with us) and some of the more interesting of the philadelphus—'Avalanche,' 'Kansoensis,' and 'Rinsfondiensis'; *Deutzia scabra floraplena* and *grandiflora*; *Diervilla florida purpurea* and 'Avantgard,' *Sorbus hupehensis* (how lovely in berry) and *Lonicera maackii* var. *podocarpa*. This steep bank has never been included before in our normal garden tour. Climbing up and down may be all right for us, but

we have hesitated to invite guests to do so. The "thirty-nine steps" were therefore contemplated and completed—but they developed into one hundred and nine! These steps are made of turf with log facings which are kept in position by wooden pegs and lead from the wild garden down to the burn and so up across stepping stones to the rose garden. In the stepping stone area beds have been made up and many other plantings are planned. It has been a period of weed killing with sodium chlorate and of getting ready, but in time, I think it will be a garden of some interest. Having returned to the rose garden we end our story and so back to the house. In truth a garden is never completed.

NEW SECRETARY

A FEW YEARS AGO, Mrs. Dorothy E. Hansell asked to be relieved of her duties as Secretary of this Society, a position she had held continuously since the inception of the organization in 1934. It was evident that the time required to maintain the records and correspondence of the Society had become too burdensome. As a compromise, and to avoid inflicting a successor with the same task, it was decided to experiment with a division of the duties. Consequently, Mrs. Hansell was prevailed upon to continue with part of her work as Corresponding Secretary and so to maintain contact with old members as well as prospective members. Mrs. J. B. Johnson kindly accepted the position of Financial Secretary in charge of membership records and dues, and Mrs. Ida A. Thomas assumed the duties of Recording Secretary.

During these last few years we have carried on with this division of responsibility and are frank to admit that the result was not as efficient as if the entire task was undivided and in the hands of one person.

A climax in these affairs was reached recently when both Mrs. Hansell and Mrs. Thomas advised that it would be necessary to replace them at the expiration of their terms in the Spring. After much discussion, it was realized that a more permanent solution must be found for the entire secretarial duties. Accordingly, it was the unanimous decision of the Directors to revert to the single Secretary as provided by our constitution, and to engage at a very nominal fee one competent person for this work. Our search has resulted in obtaining one of the most reliable Eastern members, who accepted the Secretary position provided he would take over the work immediately. This change is now accomplished, and we hope that it is a long term solution to a very vexing problem which has challenged so many other plant societies. Please note that for all matters relative to membership, dues, change of address, or other pertinent information, please communicate with our new Secretary:

Mr. Edgar L. Totten,
238 Sheridan Avenue,
Ho-Ho-Kus, New Jersey

* * * *

The difficulty of obtaining real stone led me to cast round for an efficient substitute, and I must say that, after considerable experience I find that roughly broken blocks of cement—such as are sometimes obtainable when the foundations of the London roads are being removed—are really very useful. In appearance it is suggestive of conglomerate—its light color when dry being its chief disadvantage. . . . At the same time I fully appreciate the advantage that real stone has, so far as its beautiful appearance goes and, needless to say, I should not consider the concrete lumps if stone were obtainable at anything approaching the same cost—Reginald Malby

DAPHNES

C. S. VAN HOUTEN, *Fairport, N. Y.*

GARDENERS CAN BE VERY GRATEFUL for daphnes, for there can be few plants which combine beauty, fragrance, and attractive foliage into quite such a perfect adornment for the rock garden or the garden proper. As Farrer rightly points out, daphnes are democratic and show neither fear nor favor. However, if their basic requirements were more generally known, growers would not approach the plant with apprehension and would find that with few exceptions daphnes are no more difficult than the average rock garden plant.

Daphnes are not demanding regarding soil or situation. Any spot in full sun or partial shade will do, but preferably one with shade from noonday sun only. However, avoid any situation where there is overhead drip: they may tolerate it during their growing season, but most certainly not during cold weather. Although a sandy loam is an ideal condition, the average garden soil is satisfactory; extremely light or heavy soil should have peat or leafmold, or both, added. The soil texture is relatively unimportant provided the plants have good drainage.

With *Daphne cneorum*, its forms and related species, and *D. blagayana*, it is most important to layer shoots whenever possible. Not only does this operation benefit the parent plant and protect the bare branches from too much summer sun, but it also reduces burning of the foliage and whipping of the branches, which the plants dislike so much in winter. Even if the center of an old plant dies out the rooted layers will eventually form nice plants, thus insuring a supply of plants for various requirements. The layering process is generally carried out here in late July or August, using wood of the previous year's growth placed at least an inch beneath the soil, with the current season's growth above the soil level. The stem is given a full twist before securing in position with a hairpin or peg. Lacking these, a stone will serve the purpose and perhaps prevent indiscriminating cultivators from uprooting the layers. It is not necessary to nick or cut the branch, as the twist is adequate for root formation and eliminates the possibility of rot. The layer, if placed in a mixture of leafmold, sand, and peat, should be rooted the following year and removed (if desired) the next spring to a new location. Either way, the plant has an increased root system and a new source of food supply, which is immensely beneficial if the roots of the parent plant are in an exhausted soil. If one wants a shapely plant, be sure that the shoot is upright when layered. To protect both layers and parent plant from too much sun, and to keep the soil cool, the author uses violas (*not* violets), whenever available, planted among the daphnes for a happy association for both families. Some authorities recommend shearing old plants back to five or six inches after blooming, thus encouraging new growth from the center of the plant, but this can be risky if hot, dry weather follows.

Daphne cneorum is the most widely grown species, and certainly deserves every bit of its popularity. In late May or June the exceedingly fragrant clusters of bloom smother the foliage and form a pink mound often twelve inches high and three feet in diameter. One really has to see the plant to realize how wonderful it is.

There are many forms of *D. cneorum*, some of which if better known would be more popular than the type. For those who like green and white foliage there is the variety *variegata*, which is otherwise the same as the type. *D. c. var. alba* has pure white flowers, a gem for the rock garden rarely more than two inches high by ten across, but like so many albinos, is of poor constitution and



Dr. H. S. Wacher

Daphne cneorum, popular but capricious.

difficult to increase. The following varieties are a bit more difficult to grow and may not be easy to obtain but are worth any consideration the gardener can offer. The blossoms of all are a deeper and better pink than those of the type. Var. *pygmaea* lives up to its name, only an inch high and seldom more than six inches in diameter; the rather large blossoms open a week or two earlier than those of the type. Quite the opposite is var. *eximia*, an exceptionally twiggy form, which has the largest leaves and blossoms of the *D. cneorum* group. The lovely deep pink four-pointed stars burst from red buds, as do those of *D. verlotii*, which has blossoms almost as large, and which may be recognized by the bluish cast to the foliage and by the long slender leaves. The Himalayan variety *cashmiriana* closely resembles the type plant, but has something which places it in a class by itself. The writer will never forget a classic plant of this variety in Carl Worth's garden.

Closely related to the above plants, and a favorite here, is the lovely hybrid 'Leila Haynes.' Its parentage is unknown, but the foliage and habit suggest association with *D. verlotii*. From a mound four inches high, and up to two feet across, vermilion buds burst into wonderful cerise pink blossoms. It is a most accommodating plant, and its prostrate tendency lessens the chance of foliage burn in winter.

Daphnes 'Somerset' and 'Burkwoodi,' practically identical, should be mentioned here as they are hybrids, *D. cneorum* x *caucasica*. Although easily grown and fragrant, they are too large and perhaps too coarse and clumsy for the average rock garden, and lack the distinctiveness of the daphnes noted above.

The following species have much larger umbels and individual flowers than those of *D. cneorum*, although the clusters are not as numerous, and the foliage is usually visible beneath the flowers.



Dr. H. S. Wacher

A fine specimen of Daphne collina.

D. blagayana opens its umbel of large white bloom in April or earlier, provided one has placed fairly hefty rocks over the bare branches to protect them from sun in summer and whipping in winter. Under these conditions it is an easy plant and well worth growing. It might be mistaken for a rhododendron while not in bloom. Well grown plants may be as much as three feet across, with heads of bloom dotting the pile of rocks in which they are happy, but this species is peculiarly addicted to dying off just as it seems its healthiest.

The shining dark green slender leaves distinguish *D. arbuscula*. The blossoms, although of a purplish magenta hue, are of a crystalline texture which is most becoming. The much-branched plant always looks neat. Although it has a reputation for difficulty in England, in this country it is one of the easiest and most dependable species, and is quite easy to propagate. It should be much better known.

Daphne petraea (rupestris) is referred to as the prince of flowering shrubs and you will find it so if you can make it bloom. The brilliant rose pink blossoms, huge in comparison with the size of the plant, are superb, as the dark green glossy foliage enhances their beauty. A ten year old plant will not exceed five inches in height. Although this shrublet is perfectly hardy, it is wintered in a cold frame, as the brittle branches are apt to be broken by fallen branches or strong winds. Attempts to bloom *D. petraea* have been nearly as unsuccessful here as elsewhere, and it is regretted that some novel cultural hint cannot be offered. Grafted plants (about all that can be obtained) lack some of the character of own root plants, but seem to bloom better. The variety *grandiflora* has slightly larger and deeper flowers.

Daphne x thauma is a lovely hybrid between *D. petraea* and *D. striata* with both foliage and bloom bearing a resemblance to those of *D. petraea*. The plant is taller, more open, and has larger leaves than its illustrious parent, and cer-

tainly blooms more readily, with flowers from pale to deep pink with a dark purplish throat. It grows slowly but quite surely.

Attempts to grow *D. striata* from seed have not met with any success here. Plants are practically impossible to obtain and difficult to grow. It is reportedly very floriferous and is considered inferior to *D. cneorum*.

Daphne neapolitana, *D. collina*, and *D. sericea* are quite similar in bloom although their habits are quite different. *D. neapolitana* is an open bush to two feet profuse with its pink blossoms and not at all temperamental, but seems to be on the borderline of hardiness and should be protected in winter. *D. collina* forms a shapely bush to about the same height and is generous with its purplish rose blooms early in the season, and is likewise easy to get along with. *D. sericea* has not bloomed here and is very slow about doing so. It is said to have pink blossoms generally along the lines of *D. collina*. The above plants have not wintered outside as there has not been a sheltered position available which they undoubtedly will require (here in the East anyway).

Except for its longer acute leaves *D. tangutica* is very near *D. retusa*. Both form sturdy tree-like bushes up to two and a half feet, with plenty of deep rose to purplish flowers when happy. Both are fully hardy and require a minimum of care. The thick, deep green leaves and wrinkled trunk make the plant look old long before its time.

Daphne oleoides forms a well shaped bush with evanescent white bloom from pinkish buds and is not regarded as highly here as some other species.

A hybrid from British Columbia, between *D. retusa* and *D. 'Somerset'*, has recently appeared and has much to recommend it. It grows and blooms easily and in all respects is midway between its parents. Best of all, it is a shapely bush and has discarded 'Somerset's' awkwardness. It is *D. mantensiana*.

From the evergreen species, there is an abrupt change to the deciduous ones, of which *D. mezereum* is the most widely grown. This plant may reach four feet and becomes spindly in doing so. However, this is all forgotten when the fragrant blossoms burst from the upper ends of the leafless branches in very early spring. These may be white, pink, purple, crimson, or any shade in between. 'Bowles' variety,' a good clean white, is considered one of the best. It seems to be erratic in some gardens. The blossoms are followed by berries which prolong the attractiveness of the plant and will quite often self-sow if the birds have overlooked any berries.

Daphne alpina is a nice plant to have around. The white blossoms, although quite small, are intensely fragrant and will scent a large area. This plant has been reported as a creeper but grows here to eighteen irregular upright inches. Do not dig up the plant if it loses its leaves during hot and dry weather, as it will usually start up again the following spring. If it does not, look for seedlings around the plant.

The following three species are generally regarded as tender in this part of the country, and the author only wishes he had enough plants to determine their hardiness by experiment.

Daphne genkwa is very beautiful with airy, lilac colored flowers from a soft growth of opposite leaves which are light green and silky underneath. It requires plenty of shade here and likes plenty of leafmold. The writer has not been very successful in obtaining well grown plants of this species. It is hardy at least as far north as New York City, and is deciduous.

Daphne aurantiaca is extremely rare and as difficult to flower as *D. petraea*. In summer the golden yellow blossoms are borne in a raceme rather than in a cluster, along arching branches which form a beautiful picture when well grown.

This hard-to-please plant needs shade and leafmold, but perhaps more sun would make it bloom.

The buds of *Daphne gmelini* (presumably the hardiest form of the florists' *D. odora*) show color in October or November and in a cold frame remain in this condition throughout the winter months. The rosy purple blossoms open during the first warm days of March and last a long time despite the erratic early spring weather. The powerful fragrance is intensely sweet. The plant may become quite leggy, but this is easily overlooked when one's nose finds the plant. It grows to at least three feet with a minimum of attention.

There are many other species of Daphne, but the list above contains what are generally regarded as the cream of the crop. Others may be easier to grow but may well be coarse, small-flowered or scentless. It should be pointed out that most of the species described bloom again in the fall when happy.

It is hoped that this article will bring a lovely group of plants to the attention of gardeners. Spring is always nicer when there are daphnes around.

POSTSCRIPT FOR 1955

GRACE F. BABB, *Portland, Maine*

AS OBSERVANT READERS probably noticed, my report on "Mountain Plants in my Garden" in the October BULLETIN concerned the summer of 1954. It was written about a year ago, and a few late notes for 1955 need to be added.

The saddest one is about the clematis which was supposed to be *C. verticillaris*, but which turned out to be the common Virgin's Bower. I should have been forewarned by the very long stems, but never having grown any of the urn-type clematis, took two years to realize the truth. Now I am wondering if I shall ever be able to get it out of its pocket in the rock garden again!

The seedling of *Artemisia canadensis* is a very pretty gray clump this fall. It had no bloom during the summer, but this suited me, as the bloom is worthless and the plant would probably have died out again. Parnassia and the draba are even larger clumps and both bloomed profusely. *Draba arabisans* in full bloom looks much like its cousin arabis with many tall branching stems of white flowers, quite effective in spite of its lack of really good color.

The precious *Primula mistassinica* bloomed well in spring, and came through our extremely dry hot summer perfectly content with daily hose-waterings. The foliage rosettes seem almost to disappear during blooming season, then strong new rosettes grow during the summer and multiply, from seed or stolons (I haven't dared investigate!), and the fat buds appear for next spring. Of course these "strong rosettes" are still diminutive, about 1½ inch across.

Viola nephrophylla and *Lobelia kalmii* bloomed again, as did *Erigeron hyssopifolius*, although this last seems to be disappearing slowly and I am worried about it. The little seedling plants of *Braya humilis* wintered safely and bloomed, but on very tiny stems, a far cry from the pretty leafy clumps on Mt. Pisgah. The seed-heads were scattered around, but I have found no sign of new seedlings to carry on.

* * *

What gardener is there who will ever despair of making a tender plant prosper in some toward place — or, if he have the heart of the veriest chicken, will ever turn craven, and cease from his magnificent uphill fight of endless experiment and wrestling with soils and climates?

FARRER.

ENGLISH WILD FLOWERS FOR THE ROCK GARDEN—III

R. GINNS, *Desborough, Northants, England*

BEFORE CONTINUING THESE NOTES I should perhaps make it clear that when any particular genus is being dealt with, I only write about those plants that I have grown in my own garden so that my list of species is not necessarily complete.

These notes are being written on March 1st, when the whole garden is deep under a thick mantle of snow, which has been there for most of February. Only in sheltered corners can the bare earth be seen but in one corner between two rocks edging the path is a plant of our common primrose (*Primula acaulis*) already carrying several of its sulphur yellow flowers. Elsewhere in the garden are plants of several of the Himalayan Petiolaris Primulas, none of them yet in bloom, to keep which is a constant struggle. And yet I cannot but think that our wilding, when well grown, is quite as lovely as these aristocratic foreigners. One of my most successful colour slides is of a self-sown primrose nestling at the base of a dwarf cupressus.

The primrose is a plant of deciduous woods and copses usually with a heavy clay soil and fairly thick undergrowth. This being so it is strange that it can make itself so much at home in the light, sandy soil, often baked hard, of my open rock garden. Self-sown seedlings appear in profusion and have to be weeded out except in corners not wanted for other things. This is annoying when I think of the difficulties I have in trying to grow Asiatic primulas from similar habitats. Colored varieties are common—scarlet, pink, mauve, white, rich yellow, purple and blue, although the latter always has an admixture of red with it—and my seedlings give me a mixture of most of these colours. There are also doubles, the growing of which is quite a different matter. Many of these have been named and I find them quite as difficult to keep as their Asiatic cousins. They deserve an article to themselves so I will leave them, as also the varieties Hose-in-hose, Jack in the Green, and so on.

In moist meadows is to be found the cowslip (*Primula veris*) with taller stems carrying a number of more or less pendant tubular flowers in a deeper shade of yellow. I have seen roadside grass verges, before the advent of chemical weed-killing sprays, golden with them. This plant likewise has colored variations, though with not such a wide range. Red, copper and orange are the usual colours and these make a fine show when massed as I saw them in the garden of the late Lady Beatrix Stanley, growing in an open shrubbery forming the background for a low rockery. There is also a variety known as *P. veris macrocalyx* which, as the name implies, has a much enlarged calyx.

Where the two species *P. acaulis* and *P. veris* are found in the same area is also to be found a natural hybrid between them known locally as the oxlip. This is, in effect, a larger flowered, coarser version of the cowslip and might be taken for a poor specimen of a yellow polyanthus. But there is another plant, known as the Bardfield Oxslip which is, I believe, a true species, *P. elatior*. This is much more refined in appearance, with larger but more open flowers in a paler shade of yellow. I have had it in the garden for many years growing up through a carpet of asarum.

In the north of England, particularly in Teesdale in County Durham is to be found a primula of quite a different type. This is *Primula farinosa*, so called

by reason of the white meal or farina that thickly powders the leaves. The flowers are much smaller than those of the common primrose and are carried in a bunch at the top of the stem. They are pink in colour with an inclination towards lilac and are habitues of moist meadows in the dales leading from the Pennines. It is a difficult plant to accommodate in our Midland gardens. In fact some Himalayan and Chinese primulas are far easier to keep. It will not tolerate our dry summers but when I have tried it in some small bog adjacent to a pool it has succumbed to too much moisture in winter. The Asiatic *P. frondosa* is very similar in appearance apart from being larger and coarser in all its parts but I find it easier to keep than our little native so grow it instead.

In Scotland is yet another Primula in the same group as *P. farinosa*. This is *P. scotica*, a tiny version of *P. farinosa*. I have had it in flower when the leaf rosette could have been covered by a shilling. I can only persuade this to remain with me by raising it from seed each year and treating it as a biennial. A year or two ago I failed to save any seed so at the moment, like *P. farinosa*, it is not to be found here.

Associated with primroses in our woods is *Oxalis acetosella*, sometimes called shamrock in these parts. This is an example of the difficulties that ensue when common names instead of botanical ones are used as the Irish Shamrock is a totally different plant. The confusion arises owing to both plants possessing trifoliate leaves. This plant is rather invasive when conditions suit it, as is the case in many parts of my rock garden but it has a very slight root system so can be easily weeded out. The fresh green of the young leaves is enhanced by multitudes of snow white cups and, were it only difficult to grow, it would be looked upon as one of the finest plants in the genus *Oxalis*. One variation is known to me. This has rose pink flowers but otherwise it is identical, both in appearance and ease of culture, with the type.

VIOLAS

BETTY JANE HAYWARD, *Scarborough, Maine*

THE SMALL VIOLAS of the highland and lowland meadows of Europe have always appealed to me greatly. The first I knew was a blue-violet flowered form of *V. calcarata*. It grew into a wide mat nearly a foot across and blossomed generously for several years. It was lost finally, and just this summer I have been able to get one more plant to grow. Seed seldom germinates, and the plant is the sole reward of many trials. Seed should be carefully gathered from garden plants, as collected seed is often unsatisfactory.

Viola lutea grows in the hills and meadows of the British Isles. It is said to vary to other colors, but the only one I knew was bright yellow, with the small flowers completely hiding the neat foliage. The garden variety *V. lutea* "splendens" is quite a different thing and although attractive enough, it has none of the refinement and charm of the wild species.

Viola aetolica saxatilis has the tiniest flowers of all; they are yellow, and measure about one-half inch in diameter. The plant makes a small rosette of branches with grayish leaves. These lie flatly pressed to the ground. The flowers are produced in profusion, so that the plant is spent with the effort and usually dies at the end of the season, leaving behind abundant seed to insure its continuation. Probably it should be considered an annual type.

Viola elegantula, better known as *V. bosniaca*, has long been a favorite. Its little pansy flowers are a very bright rosy purple. Some rock gardeners may shud-

der at the mention of that color, but a good drift near harmonious neighbors can be lovely.

Viola gracilis is never seen in its true character any more, for varieties such as *V. gracilis* "Purple Prince" have replaced the true form. Cultivated types have lost the grace and beauty of the little flowers with curiously twisted petals, and the color that was deep, deep, blue-black purple. The foliage too is distinctive, almost like grass, most un-viola-like. *V. gracilis* is said to have been one of the parents of the fine perennial viola "Jersey Gem".

Viola heterophylla is one of the choicest of the high alpine violas. Six plants make a cherished group on a sheltered slope by the garden steps. These grew from the sparsely furnished seed from a single plant grown in 1953. Each plant is small and refined to a degree, and has not the widening, spreading habit that characterizes *V. calcarata* and others. The flowers are tiny, of lovely warm amethyst, each with deeper staining at the center. Farrer, in *The English Rock Garden*, makes *V. heterophylla* synonymous with *V. dubyana*, but is contradicted by Sampson Clay in *The Present Day Rock Garden*, who places *V. heterophylla* in the *V. calcarta* group, and *V. dubyana* with *V. cornuta*. It is surely a treasure and an ornament to any rock garden.

The little viola "Bowles' Black", a hybrid and just a Johnny-jump-up, if once planted will stay around forever, coming up in the paths like any small weed. It is pleasant to have about.

Viola florariensis, a hybrid originating in Switzerland, comes true from seed. The pale blue flowers with white on the upper petals remain faithfully blossoming nearly all the summer.

All of the hybrids of *Viola cornuta* are beautiful and supply that continuous bloom so much desired in the summer garden. All of these furnish flowers longer than any plants one could mention. Planted generously in the less choice spots among such company as arabis, aubrieta, alyssum, etc., lovely effects are possible. Violas are most effective planted in drifts or groups of one color, in an informal arrangement. The deep shades, "Ilona", a warm purple, and "Jersey Gem", a blue purple, make a fine contrast with the lighter flowers, and give a depth and richness to the whole.

WHY WE PULL THE WOOL OVER OUR EYES

C. E. DAWSON, *Toronto, Canada*

THIS CLIMATE OF OURS on the northern shore of Lake Ontario is without doubt among the most heartbreaking and discouraging in the whole continent, especially for the stubborn and resolute soul who persistently tries to grow "miffy" alpinists and broad leaved evergreens.

The smart ones who know better stick to deciduous shrubs, evergreens and herbaceous stuff known to be hardy here. But what plantsman who has inhaled the heavenly scent of *Primula nutans* and who has beheld the steely green electric hue of *Gentiana farreri* could forsake them in favor of a French hybrid lilac or a bed of torrid peonies.

Not I, for one. And so it is that each year a fresh brood of immigrants is submitted to this cocktail climate, two ounces of capricious English dampness, four ounces of sizzling Sahara drought topped off with a liberal lacing of arctic bitters and plenty of ice.

Why is it, say my sagacious, trouble free, French lilac and torrid peony friends, that many of the plants we take for granted and which come up each year, come Hazel or high water, hail from sub-tropical and even tropical zones,

and these diminutive delicacies which you nurse, coddle and finally lose, come from fifteen thousand feet up in the Himalayas or way up in the tundra region? Why, they say, is a yucca or an opuntia able to come through our winter when a dryas or an androsace will not?

Snow, say I. Chiefly snow or lack thereof.

Snow. What's it worth? I thought I would find out. Trouble is we've only got five inches, saved up since the beginning of winter. Better see what that is worth anyway because next week it will be gone and all we shall have is frozen ground and *Gentiana verna* frying in the scorching winter sun.

Two "U" type greenhouse thermometers were placed out overnight January 28-29. One was on the surface and the other under two inches of snow. The former registered 2°F and the latter 15°F above zero. On the night of February 2-3 the second thermometer was covered by five inches of snow. The minimum temperature on the surface was 16°F below zero and that on the buried thermometer read 24°F above zero, a difference of forty degrees separated by five inches of snow. When, on that same day, the surface temperature rose to five degrees above, the temperature remained at 24 beneath the snow. A five-inch layer of "Styrofoam" sawdust also produced 24 above indicating that it resembles snow in more than its appearance.

The real villain, of course, is the sun. The thermometer hung in a shrub in full sun registered 32°F above. Water was dripping off the sunny side of the roof. The other thermometer was hung in a shrub six feet away in the shade and it registered eight degrees above zero. In less than ten minutes after the sun had left the first thermometer it had joined its neighbor at eight above.

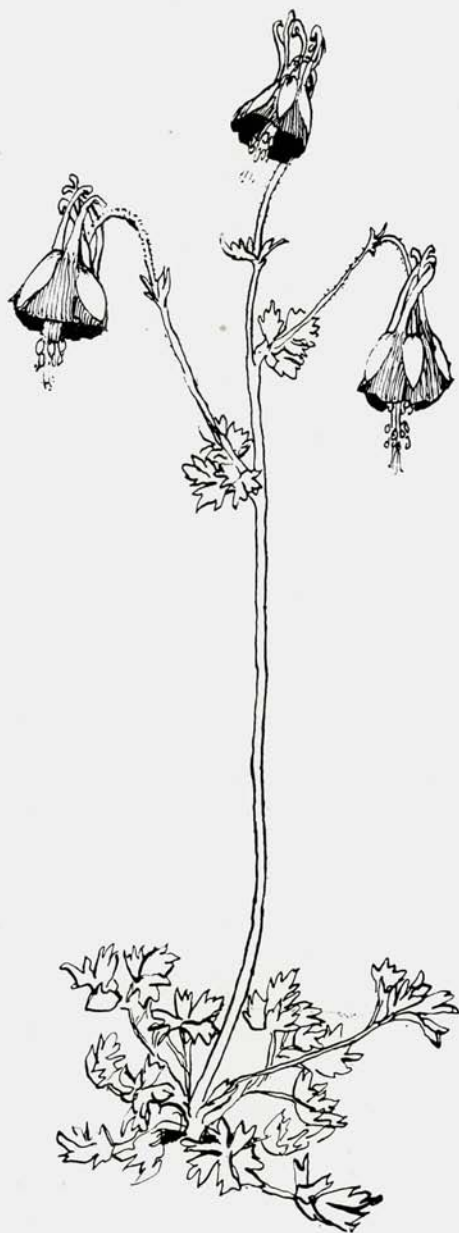
I read in Salisbury's "The Living Garden" that Loudon, experimenting over a hundred years ago, supported a cambric handkerchief on four stakes, six inches above the ground and he found that the temperature beneath was 8 to 11 degrees higher than that in an unsheltered area although the sides were not sheltered from the wind. The radiation of the earth's heat was arrested by the fabric. I tried this but in what must have been much more severe conditions than those prevailing in England at the time of Loudon's test. The ground was frozen to a depth of fifteen to eighteen inches and there were a few inches of snow on the surface. Even so, the temperature under the shelter was three degrees higher (ten above to seven above zero) with a fifteen mile an hour wind.

When I am muffled up past my ears, gathering up all the discarded Christmas trees along the street, or heading out to the nearest lingering snow drifts, with garbage cans and bushel baskets, to replenish the fast receding covers of my shivering rarities, I know exactly what is behind the sardonic grins of my lilac and peony friends. I wear one of those grins myself when the pilgrims pass unnoticed all the French lilacs, the peonies, the kolkwitzias, the Van Houtt spiraeas and poppies, to pay homage to my enameled cushions, bejeweled hummocks, embroidered carpets and sparkling cascades—when spring comes.

* * *

*Another measure which I recommend as a help, is the soaking of seed for twenty-four hours or so before sowing. Soak in warm water, if you can manage it; but anyhow soak, as best you may. This encourages the swelling of the albumen from within, I fancy, and, at the same time, weakens the rind or husk, in which all seeds, even the smallest, are involved. *Gentiana acaulis*, for instance, comes more freely when well soaked, and the rule holds good for all plants you may like to name.*

FARRER.



Doretta Klaber

Aquilegia viridiflora, easy and distinctive.

LAST YEAR'S CROP

DORETTA KLABER, *Quakertown, Pa.*

NOT ALL THE "NEW" PLANTS have bloomed yet, but enough to report about. *Geranium subcaulescens* is a beauty. It does not spread like the *G. sanguineum* forms, nor bloom as long, but makes three-inch plants like *G. farreri*. It has soft foliage and almost red flowers (with no trace of magenta) with dark stamens, a striking bloom.

Hutchinsia alpina was a welcome stranger and it was interesting to see what a moist cool position between rocks did for the plant. Its tiny dark green cut leaves have made a big mat and the clean white flowers bloomed a long time. Plants in a warmer drier position are a fraction the size, and stopped blooming long before the other.

Bellium minutum is another old friend recently returned. One of the smallest of plants, its tiny but spreading mats of leaves have daisies half an inch across on stems two or three inches high, which hold their own by virtue of their clear whiteness, and the stripes on the backs of the rays make the buds look pink.

Thlaspi rotundifolium needs another year to show its best, I'm sure. The dark green mounds of small shining foliage are growing up to tennis ball size, but this year they bloomed at golf ball size with very small fragrant pink flowers. No doubt they will improve another year. So often, one's first impression of a plant has to be revised. Last year I spoke of *Veronica gentianoides* as being wishy-washy. This year when it produced a forest of stems covered with its pale blue flowers I thought it quite lovely.

Primulas have been outstanding among the "new" plants. Many that I had failed to bloom at all, or only poorly, when planted at the top of the garden along a rill, have now found a happy home. I made a long bed for them (near the hose) at the foot of a wooded hillside, just beyond the trees. They get some shade in the morning, and good shade all afternoon. The soil is a combination of good loam, peat moss, a little rotted manure, grit, and lots of stone chips. Last fall the bed was given a good mulch of more stone chips. The plants all survived the winter and spring, which were certainly hard ones, and have been, are, and (I hope) will be blooming. *P. involucrata* and *P. yargonensis*, the one large white, the other purplish pink with a white eye, bloomed beautifully, their flowers fragrant, and have made forests of their small glossy leaves. *P. gemmifera zambalensis* has true lavender or pink flowers which grow in tiers on silver stems, and are lovely. My one plant of *P. waltoni* was beautiful with hanging bells shaded from maroon to tan, light inside with a dark eye. *P. sino-purpurea* and *P. chionantha* made large plants with eight-inch strap-shaped leaves, mealy underneath, but only teased me with a few non-typical flowers. The plants are so much alike that without the bloom I could not tell them apart. *P. capitata mooreana* is now blooming (end of June), about eight inches high. The rosette of pale green toothed leaves is decorative, and a silver stem holds a thick disk aloft, lavender buds frosted with silver, and dark blue-purple flowers, both the color and fragrance of heliotrope. Also blooming now is a small form of *P. florindae* (or first year's appearance?). *P. luteola* is growing happily and it too looks as though it meant to bloom this year.

Finally, *Aquilegia viridiflora*: the sketch shows the odd shape of the flowers, but cannot give the equally unusual coloring of green and brown nor their fine fragrance.

COMPOSITES IN THE ROCK GARDEN

STEPHEN F. HAMBLIN, *Lexington, Mass.*

MANY OF US, including the writer, hold the smaller composites in little esteem as rock plants. We want primroses, gentians, campanulas, and saxifrages, regardless of the fact that many of these are difficult to grow, or are impossible in the conditions of our local garden. Too often the daisy-plants are very easy to grow (for dandelions are far too easy), and frequently spread seedlings all over the garden. So far as I am concerned, not more than ten per cent of the planting should be composites. Of the thousands of species in this Composite family, which are the really desirable species not too tall for rock planting?

In early spring sunny fields of poor soil in our northern states display many woolly mats of pussy-toes, or ladies'-tobacco (*Antennaria*), in some fifty species, confusingly alike and rarely offered by dealers. The interest is in the gray foliage, for the flower-heads are very similar, showy only when the tiny pink-purple pistils are pushed forth. Some plants are but an inch high when in bloom, while *A. parlini* rises to nearly two feet. These all grow readily, can be more permanent than edelweiss, but can be controlled easily. They bloom with the first dandelions.

For large yellow daisies in April-May there are the leopard's-banes (*Doronicum*) of Europe. Many are two feet or more tall, but such as *D. caucasicum* are no more than a foot high. The solitary yellow heads are two inches or more across, the leaves heart-shaped, shining green, mostly basal, but alternate on the stem. The seeds are greedily eaten by such birds as goldfinches, so that self-sown seedlings are rare. Arnica is a similar group, mostly American, with opposite leaves and the yellow daisies clustered or solitary. Many bloom in midsummer, but *A. acaulis* flowers in April-May.

With June we have the first of the true asters, particularly *A. alpinus*. This is representative of the group of asters with solitary heads, on stems not a foot tall. The plant is native to the Alps of Europe and to places in our Rocky Mountains, so it is entirely proper in rock plantings. The two-inch daisies (like a "single" chrysanthemum) have rays that are lavender, purple, rose, to white. Many named seedlings are grown abroad, but the plant is little seen in this country. I find that it is a true alpine, disliking hot dry summers, and asking for a cool moist north slope. In some nurseries it seems to grow readily, but it will never become a pestiferous weed. There are many closely related alpine species in central Asia, *A. farreri*, *A. thompsoni*, *A. tibeticus*, *A. yunnanensis*, etc., rarely seen in American gardens.

Smaller yellow daisies are offered by *Actinea* (*Actinella*) *herbacea*, with leaves mostly basal, the heads solitary; while *Eriophyllum caespitosum* (*Bahia lanata*) is almost woody, well branched, with heads of eight yellow rays, and leaves very white-woolly below, deeply divided. This western species seems to thrive in eastern states at sea-level.

The large genus *Achillea* contains many tall weedy species and many dwarf kinds. It is a very puzzling group, not well known in gardens. Imported seed of dwarf species often becomes the universal *A. millefolium*. The true dwarf species seem to thrive in sun, heat, and drought, and make permanent small mats of gray foliage. *A. tomentosa* has clustered yellow heads, and *A. clavennae* is white; these are the two most commonly seen.

Coreopsis is OUT, as too tall and weedy, and seeding too freely. Of late there has appeared *C. auriculata nana*, truly dwarf, with the usual yellow heads with eight rays, three-lobed. Beware of *C. rosea*, native to our eastern states in moist soil, for although the rays are pink, the roots spread madly in moist soil.

Perhaps suitable for large rock gardens is our native *Stokesia laevis*, with large heads of many rays, lavender, rose, pink, to white. Native to our prairies, it thrives in any soil. Some of the great genus *Chrysanthemum* begin to bloom in early summer. Truly dwarf is the rare species with the terrible name, *C. tchihat-chevi*, sometimes listed as *Matricaria*. The stems creep on the ground, a true carpeter, the leaves are deeply carrot-divided, and the solitary white daisies are on six-inch stems. No dealer now offers it, and imported seed turns out to be some other species. *C. caucasicum* is a low mound of divided whitened foliage, with small heads of white rays. It blooms well, a real alpine in effect, but seems short-lived, growing readily from seed.

The edelweiss should be mentioned, for its romantic associations. The common species of the Alps (*Leontopodium alpinum*) is matched by several similar species in the Himalayas. Dealers do not seem to offer it, but imported seed germinates well. The rosettes of gray foliage are of interest, while the heads, of many rays, seem made of white flannel. The plants must be given true alpine conditions: hot dry summers are fatal.

Many species of artemesia are very dwarf, but the only one available is the recent *A. schmidtiana nana*, called "Silver Mound", a vigorous tuft of thread-like gray foliage, so tightly packed with leafage that decay begins in the middle of the tuft. Keep it starved, or divide each spring.

Two evergreen shrubs with divided foliage make tall bushes. *Santolina chamaecyparissus* (*S. incana*) has gray foliage and solitary daisy heads of yellow rays; *S. virens* (*S. viridis*) has dark green foliage and similar yellow daisies.

Autumn is the season of composites. There are dwarf goldenrods, as *Solidago cutleri* of our White Mountains, but six inches high and easily grown in any rock garden at sea-level. Other dwarf native species are known, but are not in gardens; while dwarf forms of the European *S. virgaurea* are listed abroad.

Among the many species of aster, a true dwarf is *A. linarifolius*, illustrated in the July, 1955, BULLETIN. Similar, but of yellow bloom, is the American genus *Chrysopsis*, of some twenty species, ranging from New England to Florida. All seem to thrive in dry sunny soils, in tight clumps of wiry roots. The heads are small, clustered, with deep yellow rays. The plants are long lived, spreading only by the feathered seeds. *C. falcata* has narrow silvery curved leaves, and *C. mariana* has smooth dark green ovate basal leaves, a taller plant. Seed of these two is in our Seed Exchange list, and I wish others were available. They make sheets of gold in autumn.

Nobody wants to grow such hawkweeds (Hieraceum) as orange hawkweed (*H. aurantiacum*) and king-devil (*H. pratense*), for these and others spread rapidly by root and seed. But our native rattlesnake-weed (*H. venosum*) is not spreading by root, and is apparently short-lived. The basal leaves are purple-veined on green, of interest throughout the year; the stems branched, with yellow heads in summer and autumn. Grow it in part shade, in leafmould, but do not expect it to persist.

The autumn chrysanthemums of the border have dwarf relatives. *C. arcticum* grows but a few inches high, with one erect white-rayed daisy. The lobed leaves are dark green on both sides, while the taller border chrysanthemums have the foliage whitened below. *C. alpinum* is also a very dwarf species, but rarely seen.

The smaller composites are not all of them weedy and undesirable.

LIROPE MUSCARI VARIEGATAELLEN PAGE HAYDON, *Riderwood, Maryland*

THE SIMPLE THINGS, the common things in horticulture, need not be utterly despised. We cannot all obtain or keep alive rare alpinists. Also in large rock gardens taller plants make good accents and show to greater advantage the diminutives.

The late summer and fall bloomers, too, have their desirability, after spring's glory leaves us rather bare 'till another year.

Erroneously believing *Liriope muscari variegata* to be *Ophiopogon jaburan*, which it resembles, I grew it as a pot plant in the house, having no knowledge of its hardiness.

However, as the plant needed dividing every now and then, and as the divisions became too much of a good thing, I decided to place them out of doors.

Two were planted in a sheltered spot in the rock garden. The first year they died down during the winter, but came back with much vigor in the spring, and flowered freely during late summer.

The second winter they did not die down, and the long grassy leaves remained quite green in the center of the plant, the outer ones withering slightly, although temperatures fell nearly to zero many nights.

This perennial herb of the lily family came originally from Asia. It is a very lovely and decorative accent plant when used in a large rock garden, and it is not invasive. From thick root stocks grow tufts of basal leaves, about eighteen inches long and about three-eighths of an inch wide. These leaves rise stiffly upward, then gently arch outward, each leaf terminating in a sharp point.

The flowers are borne on stiff, dark colored stems, usually the same height as the leafage, and are arranged alternately about the stem. From the buds they open as small bells, in shape and size and nodding habit similar to those of the convallaria.

But gradually, the tiny petals flare outward to form a flat star-like flower, the center of which holds a bunch of six yellow stamens. The color is a soft blue, very like that of the muscari.

There will be quite a number of these flowering sprays, if the plant is of good size. And as the leafage is shaded with bands and stripes of yellowish green deepening to dark green through the center, where the midrib forms a distinct fold or ridge, the color effect and general appearance of the whole plant is most pleasing. To add to its attractiveness the flower sprays yield a faint and delicious musky fragrance.

I have found the flowering period to vary; some years early, others quite late in the summer.

While some sun is not injurious, it seems to prefer shade, and demands moisture with good drainage for best results. The soil should be loam, sand and leaf mold, acid or neutral.

So far, I have not tried to raise *liriope* from seed, as I can always increase my plantings by division. But it may be raised in that manner.

Ophiopogon jaburan, which it so much resembles, is also a member of the lily family from Asia and there is a variegated form of this. The flowers are white or lavender.

These plants are used as ground covers in some southern localities. I am not personally familiar with them. The plant is also called Mondo.

As living north of Baltimore I have had success with *liriope* out of doors, I think members of the A.R.G.S. in this locality and south, perhaps north of here, could safely make it a welcome addition to their rock gardens or perennial borders.

NOTES ON THE SEED LIST MATERIALS

MEMBERS HAVE FROM TIME TO TIME requested that descriptions and cultural notes of plants listed in the Seed Exchange be made available. A complete list is obviously impossible, for it would more than fill an issue of the BULLETIN, while to compile such a list would require weeks of checking in an extensive botanical library. We shall be glad to publish any information sent in by contributors to the Exchange on species of special interest or cultural needs. The following notes are available at present, mostly from the Director of the Seed Exchange.

Perennial foxgloves have appealed to me for some time as a good field for investigation. There are reported to be about twenty species in Europe, North Africa, and western Asia. A few certainly cannot be expected to be hardy in upper New York State, but their blood might be introduced into hybrids. From their recent seed lists it appears that some interesting work with *Digitalis* is being done at the Botanical Institute of Strasbourg, France. Hybrids and wild forms from native stands are also being offered. (Experiments in hybridizing this genus are also being carried out at Cornell University under the direction of Dr. Robert E. Lee. Ed.)

For the stricter alpine gardens, no worthy *digitalis* has yet shown up. In the rock garden at Highland Park, Rochester, N. Y., which is planned to display dwarf conifers and deciduous shrubs, the perennial foxgloves furnish color from June on when other bloom begins to slacken. For naturalizing they are excellent.

Digitalis amandiana. No description has been found for this name, but the plants grown here of seed from the Botanical Garden of Darmstadt, Germany, have been recognized by a visiting botanist as typical of the north central European race of *D. purpurea*. Whether or not it is a good species, the color of the flowers in early June does not vary from a dark wine-red and the foliage is much less rank in growth, the leaves being long and narrow (2 in.), though of the soft, hairy texture of *D. purpurea*.

Digitalis fulva. No more recent description is at hand than that in Don's Garden Dictionary, 1831. Plants grown from seed from the Botanical Garden of Modena, Italy, seem to correspond essentially with his description. The plant makes a rosette of foot-long leaves which are under 1½ inches at their widest, veining is very prominent, and there is a purplish cast as winter approaches. Don postulates a hybrid origin, *D. obscura* x *ferruginea*. The straw yellow flower with faint markings within has the long lower lip of *D. ferruginea*, but the flower stems are much branched, unlike any foxglove so far grown, and might be derived from *D. obscura*, from which also might well come the handsome orange-red shading of the outside of the corolla. Seed is scarce this year, but now that the plants are moved from the seed row there should be a good supply another year. Flowering began in June, and there was a marked tendency to continue flowering the rest of the season.

Digitalis grandiflora. Yellow foxglove has flowers approaching in size those of the common foxglove, and makes a June display well worth more use in borders. It is sometimes offered under the synonym of *D. ambigua*.

Digitalis lutea. Straw foxglove is one of the smaller species from Europe. Its light yellow flowers face in one direction along the stem, its height is about two feet. It should be easy to naturalize.

Digitalis mertonensis. Except that it is a stable hybrid coming true from seed due to its chromosome doubling, I do not know the history of this plant which

has been distributed before in the Seed Exchange, and whence came my start. Its lush foliage and large flowers indicate readily enough a *D. purpurea* parentage, in part. The raspberry rose coloring of the flowers has been much admired and a large group is now set in a new half-shaded border. The indication is that individuals will be longer-lived than common foxglove.

Digitalis parviflora. Probably the least ornamental of this list, its small brown flowers are interesting. The spikes are so dense with flowers and bracts that at first they appear deformed, but the later elongation redeems them somewhat. Flowering begins in late June and extends into July. It is native to southern Europe, but the seed came here from Kew Gardens; it seems not to have been grown to any extent in this country.

Three other foxgloves are in the garden. *D. laevigata*, Danube foxglove, seems less reliably perennial than the others. *D. ferruginea*, rusty foxglove, is tall-growing with delightful small rusty-red flowers. *D. lanata*, Greek foxglove, is a husky grower with much-admired flowers, buff and white. All three are of value for July flowering.

I have a smaller start on a collection of corydalis, which must have many more than twenty species, mostly out of our reach in the mountains of Asia. However, *Corydalis ochotensis* from Japan has come by way of seed from the Goteborg Botanical Garden in Sweden. One plant sat in the seed flat last winter in a cold frame and was put in the garden in the spring. It made indifferent growth until late in our dry summer, when it rapidly became an eighteen inch mound of light green foliage. All of September it was covered with sprays of pale yellow spurred flowers. Zest was added to seed-collecting by the trigger action of the ripe pods, which explode, sending the shiny jet black seeds in all directions.

With *Anarrhinum bellidifolium* one needs a hand lens to establish its relationship to snapdragon. Then one finds the very short spur. The seed come from the Coimbra Botanical Gardens in Portugal. So far the very compact rosettes appear to be perennial and hardy, although references indicate that they are not dependably so. Pale blue flowers are abundant on two-foot stalks which often expand into too many branchlets for the strength of the stem and fall over. It is very amusing that all bees from the big bumble on down are passionately fond of the nectar of these very tiny flowers, and there is a constant throng precariously working over them all day long.

The best word about *Gentiana wutaiensis* is that of Sampson Clay, who says that it is a third-rate, feebler replica of *G. siphonantha*. It has a nice rosette of strap-shaped leaves, flowering is on a leafless stem up to eight inches, corollas up to two inches long, blue. Seed of this Chinese gentian came from the Parc de la Fete-D'Or of Lyons, France.

There has been no chance to check *Arisaema amurense* in flower, nor is there any description available. Seeds from the Botanical Gardens of Munich, Germany, germinated well and surplus bulblets are available. Woeikoff in the Manchurian Flora says it is one of the peculiar aroids of Manchurian forests, suitable for planting near ponds.

BERNARD HARKNESS.

Iris magnifica is a species of the Juno section, a "corn stalk" iris which bears blue-white flowers in the axils of the leaves in early May, and grows nearly two feet high. The more familiar *I. bucharica* is somewhat smaller, with yellow flowers. Both seem fully hardy in central New York, if grown in a very well-drained sunny spot, but seed will probably be slow in germinating, and

the babies equally slow in maturing. On no account should the seed-pot be thrown out if the seedlings disappear in early summer, as dormancy of the Junos begins early in the season. This remark applies to erythronium and dodecatheon seedlings also, and perhaps to other plants. Always hold over pots from which seedlings have apparently disappeared until the following spring. Even if the original babies are lost, there may be a second crop the following year.

C. R. W.

NETTIE'S GARDEN

A Memorial to a Fine Gardener

THE MAINE UNIT sustained a great loss last May in the sudden death of Mrs. Nettie Hamilton of Portland. Nettie was an ardent rock gardener, a member of A.R.G.S. for many years, chairman of the Maine Unit for two years, and one of the most active members, often attending the meetings of the N.E. Regional Group in Boston as well as local meetings.

Nettie's garden was an inspiration to all who visited it, beautifully tended, always full of choice and rare plants, carefully chosen and perfectly placed, since Nettie was a fine horticulturist with the true "green thumb" of understanding for each individual plant's needs.

The rock garden was constructed around three sides of her daughter's home where she spent most of her time. The land drops sharply away from the street level at the front, and a narrow terrace and rock wall were built on the east side of the house, and sloping rock gardens on the south and west. In the wall, with its warm early exposure, are sheets of arabis, aubrieta, alyssum and dwarf phlox, with clumps of campanula, sedums and sempervivums. Among the less usual plants here are the dainty *Alyssum podolicum* from Switzerland with small rounded white clusters like iberis, and the "cafe-au-lait" *Alyssum* 'Dudley Neville.' Here too is *Oenothera caespitosa* wandering at will among the rocks but never imposing itself in unwanted spots. This is the envy of all visitors who try in vain to keep it for long, while Nettie was never without its effective gray and red rosettes and huge white blooms, over a long period of years. On top of the wall in the warm south corner is a large clump of *Mahonia aquifolium* which is seldom seen around Portland. The foliage burns badly each spring but quickly renews itself in bright shining holly-leaves, and covers itself with the round balls of yellow flowers in June.

On the opposite side of the house, the plants are in shade until late afternoon, and most of Nettie's beloved primulas are here. At the top of the slope and somewhat sheltered by a low juniper is an immense colony of *Primula marginata*. The handsome silver-edged rosettes and lavender blooms make a "show piece" for any garden. Here they are so closely interwoven as to defy an accurate count, but there were easily a hundred rosettes in the spring of 1955. Many other species including her favorite auriculas are equally happy on this slope. Nettie both practiced and preached that the auriculas must be well entrenched with rocks in the soil around their roots. Some of the older parent plants are so thoroughly surrounded with rock that it is next to impossible to dig one out!

The most outstanding plant of the garden, perhaps, is here—*Saxifraga fortunei* (*cortusaefolia*, Sept.-Oct. 1947 BULLETIN). This is in shade under the spreading branches of the juniper, and is increasing slowly in size each year. The rounded scalloped leaves are decorative year-round, with their showy red backs, while the sprays of dainty white flowers are fascinating with one lobe

very much longer than the others, giving a delicate fringed appearance. These are very late blooming, and we well remember how Nettie brought a spray to a meeting on October 27th a year ago.

Another favorite with visitors is the unusual variegated form of *Polemonium reptans* with pale green, white-marked ferny foliage and pale blue flower sprays. Many clumps of the early pink *Primula sibthorpi* are happily situated in another part of the grounds under pine trees. Here too is a gorgeous clump of the Japanese sword fern (*Athyrium goeringianum*), its silver and purple fronds always late to appear and watched for with breathless anxiety.

Nettie was a great believer in compost and nothing went to waste in her garden. Whenever she pulled a handful of weeds, she dug a hole nearby and poked them back into the "good earth." She always kept a supply of liquid plant food on hand for seedlings and gift plants, to give them a good start.

Nettie was a most generous gardener, and no plant was too rare to divide and share with a friend. Many are the gardens in this part of New England which are the richer and more beautiful for her generosity (and that of her daughter), and these gardens as well as her own will long be living memorials to Nettie Hamilton.

G. F. B.

LETTERS TO THE EDITOR

I HAVE READ Mr. Ray Williams' article on "Alpines at Monterey Bay" with much interest. I always find pleasure in reading of rock gardens in climates very different from my own.

But I am surprised to learn that not much material suitable for the rock garden is available from South Africa, in a climate where it is possible to grow haworthias outside. Nor do I agree that if *Crassula schmidtii* will fit into his garden, there are not many more crassulas that will do likewise. After all, crassulas and sedums are closely related, and some species of either genus might easily be placed in the other when not in bloom, by the non-expert.

It is surprising to find that *Crassula namaquensis* is confused with *C. justus-corderoyi*. In England the former is seldom seen, whilst the latter is found in dozens of collections. There is no slightest resemblance between the ash-grey, rounded, closely packed leaves of the former and the pointed, dark green speckled leaves, forming clusters of rosettes on red stems, of the latter. I have never seen *C. namaquensis* in flower, but *C. justus-corderoyi* has heads of pink flowers similar to, but paler in shade than, those of *C. schmidtii*. Both would be suitable for the rock garden if they could stand our weather.

There is in cultivation here *Crassula sediformis* from Basutoland. This, like many Basuto plants, is quite hardy and might almost be taken for a fleshy-leaved mossy saxifrage when not in flower. In summer and autumn the tightly packed rosettes take on orange and crimson shades. Another low-growing cushion plant is *C. bolusi* with close rosettes of small, frosted leaves, speckled red and green and quite free-flowering. This is not hardy here.

Crassula socialis has larger leaves, closely packed on short stems. These are green and do not change colour but the mat of rosettes spreads rapidly and makes a very pleasing picture when smothered with short spikes of white flowers. *C. amoena*, if that is its name, is somewhat taller but still only a few inches high and soon covers a fair area. In a dry, sunny position the little spatulate leaves turn a beautiful bronze, and again, the plant carries a plentiful display of white flowers.

These mats of pleasing foliage would look just as much in place on a rock garden as the mat-forming saxifrages, sedums, or sempervivums. But there are

other species which trail over the rocks in a very pleasing fashion. Best known of these is *C. rupestris* with opposite, connate-perfoliate leaves, glaucous green or blue in colour, and carrying compact, hemispherical inflorescences of white or pink flowers. For some years a very similar plant, but smaller in all its parts and with long, loose inflorescences of yellow flowers, has been grown here under the name of *C. rupestris minor*. Mrs. Vera Higgins, an authority on the genus, has however just published a description of the plant and has named it *C. nealeana*, sp. nov. This is a quite delightful plant, the short, prostrate stems heaping up on themselves whilst the outer ones quickly root and extend the area.

This only touches on the fringe of the dwarf crassulas, but in addition I could mention *CC. teres, nota, corallina, hemisphaerica, pyramidalis*, and others. Once *C. schmidtii* is admitted to the rock garden all those mentioned have a valid claim for admission.

Before concluding, I must mention, in connection with Mr. Williams' remarks on *Sedum oxypetalum*, another sedum that gives an excellent imitation of a small, gnarled tree if given dry poor compost. This is *S. multiceps* with dark brown branching stems, each terminated by a small tuft of foliage. My plant, two years from a cutting, is still only four inches high.

R. GINNS, *Desborough, England.*

* * *

(To Mr. Harkness)

I believe you once asked me to let you know if I ever succeeded in flowering *Dicentra pusilla*. Well, by the end of this week (late August), it appears that I shall have one in full flower.

Three plants from the 1954 seed crop are growing in a ten inch red clay pot, which is on top of the ground and gets full sun up to about one o'clock, thereafter almost complete shade. The lower three inches of the pot were filled with gravel about the size of a robin's egg, the remainder of the pot filled with blue-stone chips a little larger than a kidney bean and mixed with builders' sand. The seeds were covered lightly with sand and then a covering of bluestone was placed over that to prevent washing. The pot remained out in the open all winter.

The seeds were sown immediately after they matured, in fact a few seeds may not have fully matured as only three germinated out of possibly fifteen. Very little attention was given to the plants. They were watered two or three times during the past dry spell, then only because other nearby plants were suffering.

I plan to leave the plants in this pot for another year, and then, if they are still alive, they will be moved to a steep part of the rock garden and a deeper bed of similar material prepared for them. (Later: all three plants bloomed.)

EDGAR L. TOTTEN, *Ho-Ho-Kus, N. J.*

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In a recent article in the BULLETIN we were much interested to read about a rock garden that a lady in Saline, Louisiana, had developed. We have travelled in the South many times, but we have never seen a garden such as she describes, and have often wondered why the innumerable tiny plants indigenous to the South have never been collected for this purpose.

It is true that many plants native to Florida, where the rainfall is plentiful, might not grow in southern Texas, and vice versa, but I imagine that many plants growing under such different climatic conditions could frequently adapt themselves. Here in the Ohio Valley we try out many plants that inhabit the mountains, but though the mortality is great a certain number manage to survive. Similarly, some plants found in southern Texas and Arizona have a

fairly extended life here. I recall two plants of which we gathered seeds — *Phlox mesoleuca* in southern Texas, *Psilostrophe cooperi* in Arizona. The former lived for several years in our garden, and the latter is still alive and bore its yellow flowers this past summer.

If we lived in Florida, for example, we should certainly want to have in our garden the common, but nevertheless charming *Houstonia rotundifolia*, the evergreen *Rhacoma ilicifolia*, with its red berries and holly-like leaves, and the more or less prostrate *Jacquemontia reclinata* with its white flowers. Incidentally, if anyone in the North has a cool greenhouse, where the temperature never goes below 32 degrees, he can readily grow these plants.

If the native Floridian should want a background of low growing shrubs, he could have a wealth of choice, such as the befarians, low growing azaleas, and several species of *Vaccinium*.

Finally, a native of Florida might object to such a garden on the ground that much of Florida is so flat that a proper setting for the rock garden might be lacking. True, a certain amount of preparatory labor might be necessary, so as to produce a more undulating landscape. Moreover, if he desired more of a rocky effect, could he not use the native coral rock that has been carved by the sea into all manner of shapes, and with its numerous crevices and holes, should be able to retain much of the moisture that enables many plants to survive.

Let us hope the article that the lady from Louisiana wrote may induce other Southerners to engage in this delightful form of gardening.

A READER.

BOOK REVIEWS

The Genus Phlox. By Edgar T. Wherry. 174 Pages. Philadelphia: Associates of the Morris Arboretum. \$4.00.

Dr. Wherry, Emeritus Professor of Botany at the University of Pennsylvania, and the first editor of this BULLETIN, has long been recognized as the leading authority on Phlox, but has published only a few papers on the subject. His monograph of the entire genus, long awaited, is at last available.

Although the present work is the result of more than thirty years' study, it does not claim to be the last word on the subject. Instead, the introduction points out that "the morphological data in themselves are inadequate to decide which taxa are ancestral and which derived, or even which deserve species and which intraspecific status" and that "supplementary study by cytogenetic and other specialized techniques will be necessary." Be that as it may, the book fills a long felt need for authoritative information on one of the most difficult, and perhaps the most widely grown in gardens, of all American genera.

In all, Dr. Wherry recognizes 67 species, and many subspecies. Keys to sections, subsections and species are given, and for each species a list of accepted and rejected synonyms and of variants, statement of the type locality and of the present location of the type specimen, features of the species, period of bloom, geographical distribution, and notes. Under "Features," separate paragraphs are devoted to plant habit, leaves, inflorescence, sepals, corolla, and styles. This mode of presentation enables one at a glance to single out the characteristics with which one is concerned at the moment.

Distribution maps are given for each species. There are numerous line drawings, and many excellent half-tone illustrations of plants in the wild, from photographs taken by the author.

While the language is largely technical, the illustrations and notes make the work interesting and valuable to the lay reader. Its value to anyone interested

in identification of plants in the field or in the garden is incalculable, for technical studies previously available have been far from adequate.

The format of the book is excellent, with unusual legibility, and is a credit to the printer, as well as to the author.

Shrubs for the Rock Garden and Alpine House. By Royton E. Heath. London: W. H. & L. Collingridge Ltd. 42 shillings.

Last year (1954) brought publication in England of SHRUBS FOR THE ROCK GARDEN AND ALPINE HOUSE by Royton E. Heath which is well worth close study by serious rock gardeners in this country.

Sir Compton Mackenzie contributes the foreword in which we are informed that Mr. Heath is professionally a hotel man (the Savoy). Nor are we spared an awful pun linking Mr. Heath with the Ericaceae.

In his introduction Mr. Heath gives the criteria by which he judged whether to admit or reject specific plants. On the point of hardiness the additional protection of an alpine house (unheated greenhouse) to an average British winter permits inclusion of many plants too tender for northern gardeners in America. Reference will need to be made to Rehder's Manual for our hardiness belts.

There are three short cultural chapters and a note on nomenclature in which conformity is furthered by adherence to the R.H.S. Dictionary of Gardening as a standard.

Some 33 dwarf conifers are admitted. *Abies balsamea* f. *hudsonia* is one of the few with annual growth of over one-half inch, as such too quickly grow out of scale in most present-day small rock gardens. Do we have it in this country? *Chamaecyparis obtusa* f. *nana* is described and included in the 54 excellent clear and large-scale plant photographs. My own plant under this name from England is taller than broad and does not exhibit the very dark foliage green of the true form. We are again reminded that we ought to call on our Japanese friends for seed of *Pinus pumila* in which the annual growth is "almost imperceptible." Mr. Heath stresses the importance of own root plants rather than grafted plants for the proper slow growth. The only *Taxus* recommended is *Taxus baccata pygmaea*, for which might be substituted the Rochester grown *Taxus cuspidata minima* as it comes into commercial production.

The main part of the book, some 132 pages of text and photographs, treats shrubs from *Acantholimon androsaceum* to *Vinca minor pleno* (yes, periwinkle is in Rehder, though more correctly as *Vinca minor* f. *multiplex* for the double form). *Aethionemas*, of which we usually have a good representation in the Seed Exchange, are recommended for full sunshine (in England). Of *Alyssum*, *A. alpestre*, *creticum*, *idaicum*, *montanum*, *tortuosum* and *Wulfenianum*, are recommended. *Anthyllis* and *Astragalus* are Leguminosae on the border line between herbs and shrubs, the Seed Exchange usually lists several. The description of *Carmichaelia Ensyii*, a legume from New Zealand, makes one hope that the five packets distributed this year will extend its use here. Ten species of *Cytisus* are discussed. Twelve *Daphne* species are given very full treatment. Four packets of *Drypis spinosa* were distributed in 1954, any luck with this *Dianthus* relative which Mr. Heath calls more interesting than beautiful? When one sees *Epigaea repens* re-possessing old potato fields in Livingston County, New York State, its reputation for miffiness seems less deserved but perhaps we should attempt instead the hybrid, with *E. asiatica*, X AURORA which Mr. Heath recommends as of better constitution than either of its parents. For two years now members in Japan have made seed available of *Gaultheria Miqueliana*, a winter-green with racemes of white flowers and white fruits, hardy to Zone V, not often over 4 inches high in cultivation according to Mr. Heath—and a plant called

by Dr. Fred Stoker in the earlier (1934) *SHRUBS FOR THE ROCK GARDEN*, "one of the best *Gaultherias*, and with no nonsense about it." Dr. Stoker's smaller book, a bound edition of an issue of the *Alpine Garden Society's Bulletin*, is an excellent supplement to the Heath work and should be sought from second-hand dealers.

Fourteen species of *Genista* are chosen of which three dwarf forms of Dyers Greenweed, *G. tinctoria* are of interest to me, as I have now several plants of the type in the garden though admittedly they must eventually be taken out as too large. Welcome light is admitted to the confused lists of *Helianthemum*, *Hypericum* and *Iberis* species. *Leucogenes grandiceps*, of our 1954 Seed List, if revealed by photo and text as a New Zealand counterpart of Edelweiss *Leucothoe Keiskei* is suitably celebrated. Fourteen species and one hybrid are mentioned for *Penstemon* indicating the value this American genus has for the rock garden everywhere. A discussion of 63 dwarf *Rhododendrons* is a measure of the attention given to the whole family of *Ericaceae*.

Sarcococca humilis, by Rehder treated as a variety of *S. Hookeriana*, is well worth special mention, as it seems perfectly hardy in Rochester in the partly shaded locations which best suit it. Sweet Box has been proposed as an English name and seems appropriate for its early April flowering is noticeable in the garden and attracts the bees on warm days. Its botanical generic name is somewhat of a handicap.

The two species of *Syringa* would seem better omitted as they are rather outside the standards kept for the other plants discussed, at least as they are grown here.

To compensate for the plants in Mr. Heath's book which are for various reasons not for our own gardens there is appended here a brief list of shrubs not discussed by Mr. Heath yet mostly available and usable in our severer climate:

<i>Buxus microphylla compacta</i>	<i>Indigofera incarnata alba</i>
<i>Chaenomeles japonica alpina</i>	<i>Indigofera Kirilowii</i>
<i>Cornus racemosa</i> 'SLAVIN'S DWARF'	<i>Lonicera Myrtillus</i>
<i>Deutzia Lemoinei compacta</i>	<i>Lonicera prostrata</i>
<i>Euonymus nana</i>	<i>Lonicera spinosa Albertii</i>
<i>Euonymus obovata</i>	<i>Philadelphus coronarius duplex</i>
<i>Forsythia</i> 'ARNOLD DWARF'	<i>Ribes alpinum pumilum</i>
<i>Forsythia viridissima bronxensis</i>	<i>Spiraea Bumalda Normani</i>
<i>Viburnum Opulus nanum</i>	

BERNARD HARKNESS.

Handbook on Pests and Diseases. By various authors. 96 pages. Brooklyn Botanic Garden. \$1.00.

A special printing of *Plants and Gardens*, Vol. 11, No. 1, this booklet is a quick guide to identification and treatment of most of the more common afflictions of plants. It begins with an index of plants, under each of which are listed the more common troubles of a particular genus, together with clues to their recognition. A list of a considerable number of insecticides, together with their proper use, follows. Separate articles are devoted to insect pests of ornamentals, pests of garden roses, iris and daylily, and lawns, bulb diseases, and disease problems of foliage plants. The articles are all by recognized authorities, and the profuse illustrations add much to the usefulness of the book.

ERYTHRONIUM DENS-CANIS

For many years, apparently, the beauty of American species of *Erythronium* has blinded our gardeners to the virtues of the only European species. But since the passing of Carl Purdy, it has become increasingly difficult to secure most of the western forms, and perhaps at last *E. dens-canis* will be appreciated.

Bulbs are quite easily obtained, and easy to grow in light shade. They increase rapidly, but seem to have off-years when very few flowers appear. The leaves are marbled, two to three inches long, and lie close to the ground. The beautifully formed flowers are carried solitary on very short stems of at most three or four inches, and are very large; in fact larger than those of American species with which I am familiar. The color range is from pure white through pinks to reddish violet. The one fault is that the flowers are usually nodding, and as they are so close to the ground, their beauty cannot be fully appreciated if grown on level ground.

CRW

* * *

In the beginning, the Rock Garden, springing, like all our noblest achievements in Art, Religion, and Philosophy, out of the East, was far more intimately allied with evergreen shrubs than with the ephemeral glory of flowers.

FARRER.

SALMAGUNDI

THE ARTICLE ON DAPHNES, by Mr. Van Houten, will doubtless bring a flood of letters inquiring where these delightful little shrubs may be purchased. To anticipate this, the only sources of which we know, other than for *D. cneorum*, of which the typical form is usually available from numerous nurseries, are Carl Starker and Alpenglow Gardens.

Actually, we are aware of very few nurseries dealing in alpines, other than those which advertise, or have advertised within the past few months, in the pages of the BULLETIN. Gone are the happy days of the 30's, when one's plant orders were limited only by the size of one's purse and the room available. Cronamere, Rockmarge, Green Pastures Gardens, Wm. Borsch and Son, Oregon Gardens, and a host of smaller concerns in the States, as well as numerous excellent ones in Canada, are no more. We understand that James Mitchell, after resuming activities a couple of years ago, is no longer able to continue his business, while N. A. Hallauer, in the late seventies, has been vainly seeking a partner to carry on his nursery, from which many choice things came in the past.

Perhaps the war, and old age, are largely responsible for the decline of the rock plant nursery, but the sad fact remains that there is not sufficient demand for plants, especially the choicer and more difficult ones, to make such a nursery, in general, a profitable occupation. It may well be that within a very few years the alpine nursery will vanish from the American scene.

It should be the duty of every person interested in rock gardening to encourage so far as is within his power the perpetuation of such nurseries as are still with us, and this can be done in only one way: by purchasing plants (and as many as possible) from them. The season for planting will soon be at hand, with its all too few catalogs of rock garden material, and it is to be hoped that every member of the society will send in as many orders as circumstances permit.

A few of our contributors maintain small nurseries, in addition to those who advertise regularly. Some of these perhaps do not care to ship plants by mail, but inquiries are probably welcomed. Those of whom we know are:

Ray Williams, 108 Meidl Avenue, Watsonville, California

Doretta Klaber, Quakertown, Pennsylvania

Mrs. Harry Hayward, Scarborough, Maine

Izetta M. Renton, North Bend, Washington. (Perhaps only Rhododendrons)

Frank Rose, 1020 Poplar Street, Missoula, Montana (Natives)

Perhaps there are others, but these, with our advertisers, comprise all of whom we are aware. Omitted are names of those who deal in woodland and similar native material other than mountaineers, but which often offer plants suitable for the rock garden.

* * *

After the appallingly hot and dry summer, October brought to this region abnormally heavy rains, although there were no floods locally. However, a series of frosts had stopped the growth of most plants, so that they were unable to profit by the plentiful moisture. Bulbs, though, started growth prematurely, and while the foliage of muscari and spring crocus appearing in November caused no alarm, some of the bulbous iris have their new growth almost ready to show above the ground, and probably will suffer during the winter.

There was very little second bloom this fall: one daphne, *Phlox* 'Temiscaming,' and a silver-leaf geranium, apparently a hybrid, have had a few flowers, but autumn gentians had most of their buds blasted, cyananthus was in no mood for profuse bloom, and several normally perpetual bloomers took the fall off. Altogether, a most disappointing year.

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