

The Journal
OF
The Scottish
Rock Garden Club



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The Journal

OF

The Scottish

Rock Garden Club

Editor—J. L. MOWAT, University Botanic Gardens, St. Andrews



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Editor's Notes

THE LAST issue of our Journal bore reference to the impending retirement of our President, Major Walmsley, and we now put on record the thanks of all members for the four years of untiring effort put in by him during his occupation of the Presidential Chair. The Club's new President, Colonel Dundas, is no newcomer to the responsibilities of Club administration, having been a member of Committee (later the Council) since the Autumn of 1936, when the Club was but three years old. In the years since then his eager enthusiasm and thoughtful contributions to discussion have held the respect of his fellow-members, and we all feel that the future is in safe hands and that under his guidance the Club will go on to further successes built on sure foundations.

It is apparent by the steadily growing membership of the Club that the love of rock-gardening is an infectious thing with a growing number of converts. Even more encouraging is the fact that from among some of our more recent members have appeared enthusiasts who, right from the start, have been able to challenge the "old hands" and compete with them both in keenness and skill. This augurs well for the future of rock-gardening in our country and for the continued well-being of our Club.

The very extensive selection of seeds offered to members by our Hon. Manager of Seed Distribution, Mr. R. S. Masterton, this year provides ample scope for all to "have a go" at some of the choice and more select rock plants of recent introduction, and to try their hand at some of those plants which are not so easy of cultivation as their more obliging brethren. The thanks of all of us are due to Mr. Masterton for the vast amount of work he puts in to make the popular "Seed Distribution" such a success; only those of us who have had to handle such a scheme can know how much labour is entailed.

To those members who took part in the Rock Garden Plant Conference arranged by the Alpine Garden Society and the S.R.G.C., and held partly in London and partly in Edinburgh last Spring, the recently published Conference Report will bring back many happy memories of friendships made then, keen discussions, interesting lectures and addresses. It will also refresh and help to fix in our minds the more detailed items of less common plants, methods of culture and treatment, and the hundred and one other points brought out during the course of the Conference. To those who were unable to be present, the Report, with its two hundred pages and its fine illustrations, will prove a mine of interesting and valuable information, which will not date for many years to come.

Members of the East Lothian Branch of our Club are to be heartily congratulated on providing us with another delightful interest during what has been a lean time in the Club's year. The branch Show in Haddington last September was a perfectly organised and really delightful event, calling for great praise to all who took part in it. Imitation is the sincerest form of flattery, and in June Fife members hope to emulate their East Lothian friends with a branch Show in Dunfermline, differing, however, in that not all sections will be confined to members of "the kingdom."

Talk of shows brings two thoughts to mind. The first is that in all our shows there are classes for native plants. These classes are interesting and praiseworthy, and while no doubt the large majority of members take the greatest care to do nothing to endanger our rarer native plants, there is ground for belief that some few tend to be somewhat ruthless in their hunt for specimens. What makes this even more regrettable is the fact that more often than not plants torn from their natural setting, at frequently the wrong time of year, will fail to survive in cultivation even in skilled hands. Better far to collect seed and raise young plants or, where possible, propagate from carefully taken cuttings.

The second thought takes us back to the early days of the Club. When the S.R.G.C. was founded in August 1933 and the late Andrew Harley of Devonhall elected the first President, with the first Club Shows in Glasgow and Edinburgh in April and May 1934, not even the most optimistic could have foreseen the sturdy and flourishing eighteen-year-old of today. Even after its modest but courageous start the Club for a time made halting progress and was just finding its feet when the war came to throw it back again. Apart from Show Schedules, the Club's first publication—"The Life and Work of George Forrest"—appeared in 1936, followed that same year by the modestly titled "Publication No. 2." In 1937 came our first Journal, and our second in 1938, after which the war and its aftermath put a stop to such activities till 1946.

Another memory of those early days was the exceedingly successful meet held in Wigtownshire, that centre of fine gardens, in the early Summer of 1936 when members visited the gardens of Loch Inch, Loch Ryan, Glenapp, Corsewall, Logan and Montreith. What a feast of good things!

During the past season many county groups have shown a lively activity throughout the summer in numerous organised visits to members' gardens, in some cases at quite a distance from the home base, and in winter by meetings, lectures, and discussions. In other counties attempts have been made to start such activities, but have had to be given up owing to lack of support from the members themselves. May we suggest that all should endeavour to support their "County Rep." by turning out if at all possible to any meetings or lectures arranged in their area. Where the distance may be rather far, as can

happen in some of our larger counties, do not sit back and leave it all to someone else, but try to get together in smaller local groups. If lack of numbers prevents this being a successful proposition, then the answer is to get sufficient friends interested and enrolled so that a local group becomes a possibility.

Here is another suggestion, or complaint—call it what you will. In proportion to the number of members in our Club those who exhibit at our Shows are comparatively few. Now we know that not all are in a position to compete at shows, but there can be no doubt that many more could compete, and compete successfully, and gain for themselves unimagined thrills in so doing. There is much to be learned by competition and comparison on the show bench, and those who have not enjoyed the spirit of camaraderie and friendly rivalry of a show are missing a wonderful experience. Think, too, how encouraging to our Show Managers packed show benches would be, and also what a topic would be provided for winter evenings' discussion and debate.

We make our apologies for these criticisms and strictures, but we feel that something might be done on these lines to the gain of every Club member. We also have to make apologies to our neighbour Society, the Alpine Garden Society. By a most unfortunate mistake on the part of the printer after the final proof had been submitted and approved, the Gentian emblem of the A.G.S. appeared on the front cover of the Year Book instead of our own *Dryas* emblem. Before this could be rectified copies were in the post and on their way to members.

It is still a matter for great regret that, in spite of the steadily increasing membership of the Club, so few take an active part in their Journal to the extent of contributing articles about the plants in which they are most interested, or present their various problems (of which from experience we are sure there are plenty) to their fellow-members for discussion and possible solution. There must be many members who in their own experience have come across something that may be the answer to another's difficulties; pass it on—a few lines will often be all that is necessary. We again invite contributions—either articles, short notes, or queries—to the Journal, which, we remind members, can only be what they make it.

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The Round Rockery

By R. M. HINDER

I'd like to make a rockery
With little terraced rises—
And then I'd fill her pockets up
With scores of sweet surprises.

I'd throw a gay aubretia shawl
Around her shoulders bare—
With breast knot of auriculas
And gentians in her hair.

I'd make her skirt of arabis
In tiers of snowy frills ;
And give her jewelled eardrops
That were tiny daffodils.

And when in winter she must wear
A sombre suit of brown—
With rosy sprays of erica
I'd decorate her gown.

And oh ! I'd try in every month,
The long year through, to see
That she was always fragrant
As a lady loves to be.

Snowdrops

By R. GINNS

FLOWERS that appear in winter and very early spring must always hold a high place in the esteem of all true gardeners, and with many people Snowdrops head the list. Drifts of the common snowdrop in coppice or shrubbery in early February are one of the most cheering sights of the new year and where they are naturalised can always be sure of a succession of admirers. But few, even among the ranks of keen gardeners, realise the number and variety of plants to be found in the genus *Galanthus*. Whilst the common Snowdrop looks its best in the situations mentioned above, most of the others like a more open situation and are ideal for parts of the rockery, particularly in the

neighbourhood of dwarf shrubs which in summer give too much light shade for the true alpiners. A collection of species and varieties offers variety of form, size, foliage, marking, time of flowering and even colour, although many of them are difficult, or even impossible, to obtain in these days. Few can be found in the catalogues of bulb merchants and must be searched for in the gardens of collectors or in old gardens whose present occupiers are often unaware of the treasures tucked away in odd corners. Some varieties that have been described are probably lost for ever. In view of these facts I shall confine myself in these notes to those which I grow myself, which total no more than a score of varieties.

The typical form of our wild Snowdrop, *G. nivalis*, is so well known that I shall ignore it in these notes, apart from mentioning that I find the double form much more vigorous and easy of increase than the single.

Numerous varieties of *G. nivalis* have been named and it is this species that has produced the colour break from the normal white and green of the genus. These are *G. n. lutescens* and *flavescens*. I grow one of these, a double form with yellow markings in place of the usual green, but have not found out which of the two it is. They are said to grow wild in Northumberland, but as far as my experience goes they are rarely seen in gardens. This may be accounted for by the slowness with which they increase.

Another type of variation is shown by *G. n. viridapice*. In this the lower part of the outer segments is blotched with green instead of being pure white as in the type. The size of this green mark varies with different individuals and does not seem to be constant even with the same plant. A clump which was strongly marked when I planted it has in a few years almost reverted to normal, having only a mere tinge of green.

A favourite of mine is *G. n. poculiformis*. In this the inner tube is missing, its place being taken by segments similar in form to the outer ones. The green markings are also absent so that here we have a pure white snowdrop. Variety of form is also given by *G. n. Scharlokii*, a comical looking little thing. In the usual forms the spathe consists of two parts united by a membrane. But with this form the membrane is absent, the two leaflets are elongated and stand out at an angle like the ears of a donkey. It increases well.

Then there are the varieties that prolong the flowering season. Of these I only grow two forms, *G. n. Olga*, which flowers in late October before the leaves, and *G. n. cilicicus*, a tall slender form with very glaucous foliage, which comes in December. Others for which I am searching are *G. n. corcyrensis*, which may bloom in late September, and *G. n. aestivalis*, which flowers a month later than the type. It can thus be seen that Snowdrops can be had in bloom from September until March.

Whilst on the subject of an extended season mention may be made of *G. Elwesii*, a very vigorous species with wide glaucous leaves and globular flowers on tall stems. A distinguishing feature is the amount of green on the inner segments. The extent and shape of the markings vary, in some plants almost entirely covering the segments, whilst in others we have two separate patches, one at the top and the other at the bottom. I have a large group, all obviously *Elwesii*, where the first flowers may appear as early as November whilst others are as late as March, and on occasion even in April. The home of this fine species is Asia Minor.

From Southern Europe come some other large growing species. *G. caucasicus* has very glaucous leaves, much wider than in the Nivalis group, narrowing at the base to clasp the stem so that the less observant might mistake them for Tulips when not in bloom. Exceptionally large flowers, over an inch long, are characteristic of *G. Imperati*, found near Naples, and its variety *Atkinsii* is, with its long narrow heads, one of the most perfectly formed of all the Snowdrops.

Still another group of species comes from the Crimea and around the Black Sea. The most distinctive characteristic is the plicate leaves, but the flowers are large and handsome. The only one I have met with is *G. plicatus*, but in the *Warham form* of this species the flowers may reach a height of nearly a foot under favourable conditions. An early blooming plant is *G. byzantinus*, supposed to be a natural hybrid between *Elwesii* and *plicatus*, with the flowers of the former and the leaves of the latter.

The last group is the Latifolius Group, which is distinct from the other groups in having shining green leaves. In *G. latifolius*, which I suppose I should now call *G. platyphyllus*, the flowers are smaller than in any other species I have grown, and to that extent unsatisfactory. This fault is corrected in the variety *Fosteri*, which also has the outer segments tipped with green and the inner surface of the inner segments entirely green except for a narrow white border. *G. Ikariae*, found wild only on the island of Nikara, is one of the most distinct of snowdrops, requiring a rather warm position. The glossy bright green leaves are fluted and reflexed at the tip. The large flowers are of a very solid white and the inner segments relatively small.

In the past many beautiful hybrids and forms have been selected. Few of these are now to be obtained, unfortunately, being lost with the gardens where they were raised. But one of these, at any rate, *Magnet*, still survives. The flower is very large and carried on an unusually long pedicel, giving it a most graceful appearance.

The above makes no attempt to treat the genus botanically, but to point out in what ways the various forms differ from a horticultural standpoint, and possibly to increase the interest in these lovely plants.

Alpine Plants in a Difficult Garden

By DOROTHY C. PAPE

I WOULD like to give beginners some ideas from the uphill struggle I have had to grow alpine plants in a somewhat unfavourable garden during the last 24 years. I can provide absolutely pure air, as the site is almost midway between Newcastle and Edinburgh and therefore there is no city nearer than 55 or 60 miles, but to counteract that the rainfall is only about 24 inches to 28 inches a year. The soil is heavy and badly drained and is slightly limy, as it lies on carboniferous limestone. The soil cracks in dry weather. The site is very bare and open to the strong prevailing South-west wind, which dries the garden out very quickly, and there is little shelter except for the few light ornamental cherries and crabs I have planted and the 4 feet stone wall of the old schoolmaster's garden.

The site is flat with a very slight slope to the North and as no sloping rock garden could be achieved without making a very artificial mound of soil, I have contented myself with quite simple rock beds on the flat. Planting Alpines in the soil as it is, would produce very poor results and so I excavated beds to a depth of $2\frac{1}{2}$ or 3 feet deep and placed a 6 inch layer of stones in the bottom, and over this, a layer of whinstone chips with a generous layer of half rotten leaves to prevent the soil washing into the drainage—sphagnum moss would be better. Discarding the heavy subsoil, I filled up with the best soil mixture I could lay hands on—imported light soil mixed with the original top soil, plenty of local river sand, though it was not sufficiently coarse, fine whinstone chips and fine river gravel. In the top foot of soil, I put a generous quantity of decayed sphagnum peat, preferably Sorbex, and also some moorland peat. I cannot give an exact recipe for quantities, as I was always controlled by what was available; the mixture in some beds may be different to others, but all did equally well. The soil was mounded above the level of the surrounding ground because much sinking takes place, and a final level above that of the surroundings is desirable.

Finally, there was the setting of the stones. Most of these were obtained by visiting a local sandstone quarry and helping myself to stones off the enormous heap of discarded material. As I have very little help, I do not think I have any that I was not able to lift alone, but I would prefer larger stones if help was available. On a flat site, it is very difficult to place the stones in the accepted method of making pockets as is done on a sloping site and, after years of experimenting and producing results, some worse than others, I came to the conclusion that an effort to produce lines of stratification like the limestone terraces in Westmorland gave the most naturalistic result. I often see it

advocated that the stones are buried two-thirds of their depth, and this, of course, may give most natural appearance at first, but I find they sink very rapidly, especially when the soil has been made spongy with peat and, with my small stones, I just place them one-third below soil level as long as they appear natural and can be made perfectly firm. The face of the outcrop should, of course, slope slightly backwards ; this will cant the top of the stone backwards and so run all rain off into the soil. The lines of the stratas should all run in the same direction, but at different angles, and the gaps between the stones should differ in width and will provide comfortable moist homes for many treasures. This type of setting the stones looks very effective if planted in drifts, but where pockets are required for a single plant an odd stone can be placed to divide it off. I fear this explanation is very inadequate, but it is almost impossible to describe the placing of rocks on paper. I have often been asked why water from the surrounding heavy soil does not drain into these beds when I do not arrange any outlet by drainpipe, which of course would be the ideal arrangement. I can only reply that I do not know if it does or does not, but that I seem to have achieved very happy homes for my plants, so I do not worry.

My experience leads me to believe that screes where underground watering cannot be provided are not beloved of the plants in the drier parts of the country. I made my screes exactly to Mr. Ingwersen's prescription as far back as 1936 or '37 and the only plants I find that revel in them is *Anemone Pulsatilla* in the lime scree and small bulbs in the peat scree. *Kabschia Saxifrages* definitely do better in troughs. In fact, I think that stone troughs are much the best way of growing small alpiners like *Saxifrages* and *Androsaces*, and the larger the trough the better ; I hardly think that sinks will provide sufficient root room and moisture, but I have no experience of them. For those that cannot obtain troughs, which are now becoming very scarce, a good substitute can be made by building a raised bed with discarded building stones packed with turf for the walls, but it will be almost impossible to prevent worms entering such a structure as one can with a trough, nor have I found that slugs are troublesome in troughs when they are raised from the ground.

Fifteen years ago I gave up attempting to grow *Ericas* other than *carnea*, but I have been perfectly successful with many varieties of the latter if plenty of moorland peat and sand is incorporated with the soil at planting time. *Rhododendrons*, on the other hand, do not seem to have such an aversion to lime, and I find that I can grow many of the dwarfer kinds if the beds are well made up with peat and sand. Where I have planted the *Rhododendrons* and other moisture-loving plants, I have constructed walls about 2 feet high of discarded oblong building stones jointed with turf and filled with prepared soil in the centre. These are topped with crazy paving stones or flags and make a useful stand for small stone troughs, and the interstices provide happy homes for a number of small alpiners.

On the North side of these walls are narrow beds where the Rhododendrons are planted, and the walls provide the very necessary shelter from the wind and shade for the roots. That this object has been achieved has been amply demonstrated by the show of bloom this season. Some have been smothered with bloom and many which have not flowered before have given me a taste of joys to come. This was presumably the result of the wet season of 1950 having suited them and provided plenty of new growth, but the spring frosts were very cruel and deprived me of many displays just as the buds were opening. Some of the later flowers have given a wonderful show.

I am beginning to wonder if the striving after new and rare plants is not being carried too far. It is very pleasant indeed to be able to show one's friends plants they have not seen before, and to catch the judge's eye on the show bench, but at the recent Conference we seemed to be able to discuss little but the spate of Himalayan Primulas and, if it continues, it seems to me that many of our gardens are going to lack variety and a host of very decorative plants will soon be forgotten.

In this brief article I am going to forget the new and mention only some of the old favourites that have done well for me, as I have had so little leisure since the war that I have not had time to essay these fickle new beauties that take so much trouble. For the same reason, I have no ambition to grow plants in frames or alpine houses and what showing I have done has always been of plants lifted from the open. And now to review a few plants.

Ramonda pyrenaica. This is a flat rosette of wrinkled dark green hairy leaves with mauve flowers, with a yellow eye not unlike the flower of a potato. It requires a neutral or peaty soil. I have had odd plants of this since I took up rock gardening, but I only wedged them between rocks on sloping sites and the plants were none too happy and got very dried up in hot sun, though it is really remarkable the manner in which a brown withered plant, which one has written off, will revive and become green again at the first downpour. No amount of artificial watering seems to keep them in health. In 1939 I collected many Ramondas at Gavarnie and others above Pedré. The latter were said to have pink and white shades among them, but I have had no luck with them in this respect. Shortly afterwards I built the walls already described and planted the Ramondas in the vertical crevices of the North side in the manner they grow in every crack of the rocks in certain places in the Western Pyrenees. Here they all flourished and the largest is now 10 inches in diameter and it gave a wonderful long display of bloom in the damp days of last summer. Occasionally a seedling is found in one of the troughs.

Androsace carnea var. *Laggeri*. This is a charming little rose-pink Androsace that also prefers a neutral soil and is very happy in a trough. I collected mine in the Vallée d'Eyne in the Eastern Pyrenees. It has an exceptionally long flowering season for an alpine—2 months, and often more.

Aster subcoeruleus. This is an early introduction from the Himalayas and is a very colourful compositae with mauve ray florets and a bright orange disc. It is a very easily grown plant which increases quickly but is easily kept in check. No special position or soil is necessary.

Celmisia spectabilis is another not difficult compositae from New Zealand. It has attractive leaves with a silvery, hairy reverse and white florets with a yellow disc. It will require a somewhat better soil than the last.

Myosotis rupicola (*alpestris*) is a most attractive dwarf deep blue forget-me-not, a native of this country to be found at Widdybank Fell, near Middleton-in-Teesdale, and on Ben Lawers. Another delightful little forget-me-not is the white *Myosotis explanata* from New Zealand, which is quite prostrate. I usually grow both of these in troughs, though *M. rupicola* does well on the top of the wall.

Eritrichium strictum from the Himalayas is another plant resembling a forget-me-not, but it has smooth silvery foliage. The flower is a very pure sky blue on a 6 inch stem. It will not tolerate lime and requires a gritty acid soil, but it is not too difficult and is much the easiest of the tiresome eritrichium family. It is easily grown from seed, and sometimes seeds itself. It has always been a particular favourite of mine.

Omphalodes luciliae is another favourite of mine from Mount Olympus. It has threepenny-bit sized forget-me-not flowers of light translucent blue with touches of pink, and pink buds and glaucous waxy grey-green foliage. This is considered a rather more intractable plant, but I have managed to make it happy by making up a pocket of very light soil with much mortar rubble and river gravel. It does not do well in a trough and when not flourishing it becomes very unsightly, with black, withered leaves. When happy, self-grown seedlings are often found.

Oxalis enneaphylla is a lovely white sorrel from the Falkland Islands. The foliage is pale green and very attractive. The roots are rhizomatic and a large clump may be broken up, but it is much better left alone. It does best in a raised bed or a trough. There is a type *rosea* but I always think it a washy colour and less pretty, but perhaps I just obtained a poor form. Another *Oxalis* of the same type is—

Oxalis adenophylla. In this case the foliage is greenish grey and the new growth is very beautiful. The flowers are a rather purply-pink, but it is an indestructible, easily grown, hardy plant. It is bulbous and an old clump will be found to contain as many as 24 bulbs which, when separated, soon make good plants. It seeds itself quite frequently. It will grow under the most adverse conditions and put up with any amount of neglect. I regard it as inferior to *O. enneaphylla* in spite of Farrer's eulogies.

Fritillaria meleagris is an old favourite and it is a native of England, growing in the water meadows around Oxford. It is either wine coloured, chequered with white (the Snake's Head Fritillary), or pure white, and many people prefer the latter. It is very easily grown and seeds itself all over my garden, becoming almost a nuisance in the rock beds.

Fritillaria pyrenaica is a slightly taller type with wine bells chequered with gold and olive green. I have seen it growing wild at Gavarnie, where a rare albino form was collected by Mr. R. B. Cooke. It soon forms large clumps but is never invasive like the native type.

Fritillaria pallidiflora is again slightly taller with glaucous foliage and two or three greeny cream bells on a stem. The nicest ones have a plum blotch at the base. It is very easily grown from seed, but takes some years to reach flowering size and, when it is happy in woodland, it will spread very rapidly. I once had a most delightful plant of *Fritillaria latifolia*. I obtained the bulb from van Tubergen's, but I think it will be very difficult to come by now. It was like a very fat, sturdy *F. meleagris* and the red bell was chequered with green. It required more careful culture and, alas, it is with me no more.

Cypripedium Calceolus, the bronze and gold slipper orchid, a rare native of North-west Yorkshire and Durham and in quantity in the Alps, likes the mild lime of this garden if kept in a shady position in well-prepared soil. I have had three plants for 14 years and sometimes they have had as many as 20 blooms, but I fear they are going back now through neglect. When happy they should never be moved. In the same bed, I once kept the much more beautiful but difficult *C. spectabile* (reginae) for 5 years. It is a more sturdy pink slipper from U.S.A. and prefers a peaty soil. A relative living in the wilds of New Hampshire told me it grew in the woods round his home and was known as "Mocassin Flower."

Orchis foliosa from Madeira is a sturdy, easily grown wine-purple Orchis, which increases well and, I imagine, it has crossed with the native early purple in my garden and produced a very fine race of seedlings.

Orchis latifolia var. *alba* is an attractive, slender, chalky white orchis which I have had for a long time, and it presents no difficulties.

Gentiana Farreri, one of the first of the Chinese gentians to be introduced, is worthy of all the praise bestowed upon it by Farrer, who sent the seed to this country. If a good colour form is obtained, it is the colour of the summer sky itself, with a white throat and green and black stripes on the outside of the trumpet. It has narrow, grassy foliage. It is a good doer in this garden, as it will put up with lime better than any of the other Asiatic gentians, and it will grow heartily in the ordinary soil of the garden if it is lightened and given a generous dressing of peat moss.

Geranium napuligerum (Farreri) is a neat little cranesbill of delicate pale pink with black anthers, introduced by Farrer from Yunnan.

Geranium subcaulesceus which, I think, was introduced by Mr. Ingwersen from Mount Olympus, is a slightly larger plant with fiery magenta crimson flowers with a black centre. Both are of easy culture in good soil.

Daphne Cneorum is a beautiful deep pink, somewhat temperamental plant, but it did well on my rock beds if it was mounded with peaty soil after flowering. It is very easily increased from layers and cuttings. I once had a much larger, finer form that I grew from a cutting from a plant collected in the Bavarian Alps by a friend. I saw a similar fine form in the garden of Mr. A. T. Johnson in North Wales. These plants are sweetly scented and I remember, when we visited the Pyrenees, from *D. Cneorum* var. *Verlotti*, running through the meadow grass above Gavarnie. We rode up on mules: it was a very hot day and when we came to the plateau the air was laden with the scent of honey, which proved to be the *Daphne* at a distance of half a mile. There also I saw one of the prettiest mountain meadows I have ever seen—masses of forget-me-nots and buttercups.

Daphne retusa makes a sturdy little bush covered with off-white flowers with a wine reverse to the petals, and it is also sweetly scented. It presents little difficulty in cultivation. It is sometimes rather difficult to obtain good young plants on their own roots, but I obtained my two bushes from Mrs. Carter, of Crook. They have excelled themselves this year, but are now about 14 years old and showing the first signs of losing their compact shape. I must try to propagate them, but the bark is very tough and proves rather intractable as a cutting, though Mr. Kemp showed us rooted cuttings at the Conference. I fear I shall have to make do with growing from the berries which are freely produced.

I cannot leave the subject of *Daphne* without mentioning that the finest *Daphne* I have seen is not, as far as I know, yet introduced into cultivation. This is the beautiful white, sweetly scented *D. striata*, to be found at Lantaret in the Dauphiné. It is no sickly albino with pale foliage, as are so many white editions of plants normally coloured, but a lovely creamy white with orange buds and deep green foliage. Unfortunately, the pink *D. striata* is difficult to collect and intractable in cultivation and no one seems to have been clever enough to introduce the white form into gardens. Mr. Correvon promised me to try in 1937, but when I asked him at the recent Conference he said he had not obtained it.

Here I must leave the list of a few of the showy, reasonably easily grown plants which I have found do well with me in a somewhat difficult garden.

Some North-West American Irises

By JACK DRAKE

IT HAS always been a matter of some surprise to me that so few gardeners seem to know or grow these glorious and dainty plants, generally known as the Californian Irises. They are indeed plants which have that elusive thing called "quality." Many are almost orchid-like in their flowers, which, for sheer grace and elfin charm, must surely be difficult to match. And the endless variation in colours is fascinating, for I think it true to say that no two plants of a species are identical in this respect, except where they have been propagated by division.

They are all completely hardy and only require a well-drained lime-free soil to which some peat or leaf-mould has been added. In Scotland at any rate they will grow in full or half shade and flower in May.

The best known and certainly one of the loveliest of the group is the yellow form of *Iris innominata* from Oregon. It grows some six inches high and produces, from a mass of thin wiry leaves, many large flowers of a deep, almost apricot, yellow netted and veined with brown pencilling. This plant varies in colour to lavender and purple and has produced some lovely hybrids with other Californians in a whole range of exciting colour-combinations—ice-blue and yellow, purple and apricot, "coffee-pink," etc.

Iris tenax, also from Oregon, is probably the easiest one to grow, producing in May the masses of beautiful large flowers, two to each 12-inch stem, from the plentiful wiry foliage. The colour of the flowers is again very variable, ranging from deep purples and violets through claret to lilac-pink and lavender shades and even a pearly white, all beautifully pencilled.

Iris Gormanii is considered by many to be a form of *I. tenax*, but it seems to be distinct enough—at least from the gardener's point of view—to deserve a separate name. The habit is the same as that of *I. tenax*, but the flowers are enormous and are of a uniform soft primrose yellow completely devoid of any pencilling. It is a superb iris which should be widely grown. Seed produces numbers of hybrids—indeed it is difficult to raise the true plant from seed—and many of them are very delightful indeed, with flowers of "coffee-pink," buff-apricot and other intermediate shades.

Iris chrysophylla is a charming little plant like a miniature *I. tenax* in all but the flower, which is white netted with violet lines.

Iris Douglasiana, from California, produces a mass of tough ever-green leaves. It grows to a height of some 12 to 15 inches and produces flowers of widely varying colours, ranging from creamy pink to deep purple. The falls are beautifully frilled and strongly marked with dark lines.

A superb hybrid between this species and *I. chrysographes* is Iris X "Margot Holmes" with the habit of *I. chrysographes* and flowers like a deep raspberry-red *I. Douglasiana*.

There are a number of other closely allied Irises which I have not yet grown. Chief among them are *I. bracteata* with yellow flowers, and *I. macrosiphon*, which appears to be a strong-growing plant and extremely variable both in stature and colour.

With the possible exception of *I. Douglasiana* and I. X "Margot Holmes," all these little Irises look well at the base of the Rock Garden, where they can be grown as single specimens. Elsewhere in the wild and bog gardens they should be freely massed.

Propagation is not too easy and this may account to some extent for their comparative rarity in gardens.

Division should only be attempted in May, June and July, when the plants are in full growth. At no other time should they be touched. The divisions should be watered well in after planting and kept moist for several weeks until it appears that the roots have gained a hold in the soil. They may take a year to recover fully from this treatment. Division is, of course, the only means of propagating a particular colour. Where this is not of paramount importance seed is the best means of increase and this should be sown as soon as the seed pod begins to burst. The seed will not germinate until the following Spring and the resulting seedlings can be potted up into small pots when about two inches high. They can then be planted out in their permanent quarters safely, without root disturbance, when big enough to do so.

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LIST ON APPLICATION

Visits

NOT LONG ago I had the temerity to write a short article for the Journal. In it I tried to describe some of the predicaments into which I have fallen when left temporarily in charge of my wife's rock garden.

Unfortunately, it is not only when she is away that I can manage to put my foot in it, but perhaps that happens to other husbands also.

One of the greatest joys of real gardeners is to visit other people's gardens and to have other people come and visit their's. Of course the outlook depends on whether one is visiting or being visited, but on all such occasions there are pitfalls for the unwary, especially when, like me, their knowledge leaves much to be desired.

Last year my wife and I went to see a most charming garden, which is mainly devoted to alpines. On the way there I made up my mind to be intelligent and to avoid a display of ignorance. Our friends gave us an excellent lunch, after which we sallied forth to see the garden, a process which I have learned from experience may occupy several hours.

In spite of my good resolutions, within five minutes I fell from grace. There was a water pool, surrounded by rocks with lovely things growing among them, and I was at once struck by a pretty little white flower, with a yellow centre, delightfully placed in a niche and reflected in the water. The only trouble was that it looked to me just like an ordinary Daisy, such as grows in profusion on my lawn. But surely such a thing could not be, in a garden cared for by experts. In all good faith, therefore, I drew attention to the plant and enquired most seriously whether it was some rare species. The reaction was immediate and I was horrified to see our host tear up the poor thing by the roots and cast it from him. It was, in fact, just a Daisy.

Thereafter I confined myself to much safer remarks, such as "How lovely!" or "Doesn't it look well!" though I did have the lack of tact to comment on a potato growing in a moraine.

I have discovered that, when being visited, it is most important to be able to rattle off the names of plants for the benefit of the guests. On the other hand, it seems to be a peculiarity of gardening folk to enjoy greatly, when looking at someone else's garden, to be able to give correctly the long, complicated and, to me, terrible names of what they see. I fear that in this respect I shall never become a gardener. Of course, labels are grand, but unfortunately our's often seem to have become quite blank or to have taken a little walk and come to rest against the wrong plant. I rather suspect this must be my fault, like the weather.

There was an occasion, some time ago, when we were honoured by the visit of some 25 members of the Club. They were charming and of all ages and sizes. Some, obviously, knew a great deal about rock gardens and gardens generally, others rather less, but in either case I was hard put to it to keep my end up. For a time I did not do too badly, as I was quite good at reading the name on a label before the visitor could spot it and, on this occasion, our labels seemed to be in unusually good form. All the same, after a while I felt that discretion was better than valour. So I withdrew and took cover behind a wall. Even that was not entirely successful, because I was soon run to earth by an attractive young lady. She was holding a twig from some shrub and demanded to know what was the name of it. However, I got some of my own back by making her walk with me for about a quarter of a mile to tell me the name of a tree. I was delighted when she did not know the answer.

I wish I could draw. I have tried, but the result is deplorable. What I want to produce is a portrait of two alpine enthusiasts looking at a rock garden. It is a picture that should be viewed from behind and it is a scene that I have gazed at so often. The posture adopted by the main actors is one of standing well bent over, with their heads near the ground and their eyes glued to some tiny specimen, which may or may not be in flower. If they have coats on, it is even difficult to tell which is he and which she. From the onlooker's point of view (which is mine) it is a position which one seldom sees unless about to indulge in the game of leap-frog.

I send my salutations to others similarly placed.

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Dwarf Narcissi

By E. B. ANDERSON

NOTHING is more attractive in the late winter or early spring, either in the Alpine House or in the Rock Garden, than the dwarf bulbous plants, and among these the dwarf Narcissi merit a high place. Here, by dwarf I mean plants up to six inches high in flower.

Depending on the climate in which they are grown, the flowering season may extend from December, when *N. Bulbocodium foliosus* may be in flower, to the end of April, when *N. Tazetta canaliculatus* usually closes the procession. Conditions vary so much from district to district that it is possible only to give very general hints regarding cultivation. They all require sun and, excepting only *N. cyclamineus* and *N. Bulbocodium citrinus*, which will grow in damp situations, they require a good, well drained loam for their roots, but if possible for the bulbs themselves a sandy or gritty top-soil which will tend to dry out in the summer. Two inches of coarse sand or fine grit on the top of the loam suits the rare species which are too expensive to risk experimenting with in the natural soil of the garden. The earliest to flower, *N. B. foliosus*, *N. B. Clusii*, one of the world's most exquisite beauties, and *N. B. Romieuxii* can be grown out of doors, but under these conditions they must have shelter from driving rain and wind, provided by a large rock or dwarf shrub or a glass if these are not available. Also, the first two must be lifted in the summer or covered with a glass to ensure ripening, in any but the driest areas.

These dwarf Narcissi are subject to the same disease as their larger brethren, but are possibly less subject to attack by the narcissus flies. It is important to control slugs as the slender foliage of many forms provides but one meal for these voracious beasts.

They multiply freely by offsets and in good seasons set quantities of seeds which, if sown not later than August, will give flowering bulbs in three to four years. Like most bulbs, unless they are spreading all over the garden, it is wise to lift them every three years, as this enables one to discard and burn any that are diseased or show signs of fly attack. If adverse symptoms are observed when they are in growth, they should be lifted and examined as soon as the foliage turns yellow, however short the time since they were planted.

Stable manure would, I am sure, be inimicable, but they do like a dusting of bone-meal in the autumn, particularly on soils inclined to be acid. In areas where a high rainfall causes excessive leaching, a little sulphate of potash mixed with the bone-meal is advantageous.

I do not propose to give descriptions as these may be obtained from books and articles and also catalogues, but will confine myself to

giving a list of those which I have myself grown successfully under the conditions described.

N. Bulbocodium foliosus, white ; *N. B. Clusii*, white ; *N. B. Romieuxii*, cream to pale yellow ; all very early and perhaps better in pots.

N. B. conspicuus, *B. nivalis*, *B. obesus*, *B. tenuifolius* ; all bright yellow, the last very vigorous, and *B. citrinus*, pale yellow ; for damp places.

N. B. Riffanus ; a miniature *Clusii*, but very pale cream, not the latter's glistening white, flowering later and remarkably resistant to weather although apparently frail.

N. triandrus (*triandrus aurantiacus*), bright yellow ; there is also a bicolor and a pale form, *N. reflexus* (*triandrus albus*), creamy white, *t. concolor*, pale yellow ; *t. pulchellus*, segments yellow, cup cream ; *t. calathinus*, white or pale sulphur ; the largest of the group, often said not to be very permanent, but it is in a hot, well drained place.

N. asturiensis (*minimus*), *minor*, *pumilus*, and *nanus*, all miniature "daffodils" and yellow as the "Lent Lily."

N. juncifolius, *j. rupicola* and *calcicola*, like miniature jonquils and bright yellow, also the lovely white *N. Watieri* with single flowers of similar shape.

N. cyclamineus, bright yellow with reflexed segments for damp places where it will naturalise itself.

N. canaliculatus, a miniature *Tazetta* with white segments and deep yellow cup.

There are a number of hybrids usually with *cyclamineus* or *reflexus* as one of the parents, but check the height before buying, as several are too tall to be classed as dwarfs.

Many are rare but the following are frequently available and appear to have a good constitution : 'Hawera,' 'tenuior,' 'Peaseblossom,' *minicycla* and 'W. P. Milner.'

The increasing interest in these gems is stimulating the introduction of others and all are worth experimenting with.

Orders for Plants

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Six Good Plants for a Small Rock Garden

By L. WALMSLEY

SO OFTEN one has heard the remark, "Oh, my garden is so small and it is so difficult to find a variety of plants which keep small." Here are six plants which do not spread, which should flower well, and which we find easy to grow. A sunny position, any sort of loam—ours is very poor—and good drainage, is all that is necessary for these particular six.

Asperula Gussoni forms a neat compact cushion ; the foliage is very small, dark green with rather a mossy appearance, and in June it is completely covered by tiny pink tubular flowers. Do not ever try to lift or move this plant as it grows by means of a long tap root, and if this is broken the plant may die. Here we grow it in full sun in a scree, it flowers very well and we give it no protection at all in the winter. It is quite hardy, but I would suggest, if not grown in scree, protection from winter rain might be necessary.

Calceolaria polyrrhiza John Innes—Hall's variety. This *Calceolaria* has a very long name. It is generally quite simply known as *C. Hall's* var., but it is a hybrid of *C. polyrrhiza*. We have grown it here for a number of years in ordinary loam, full sun, and it presents no difficulty at all. It forms a dense tuft of green leaves two or three inches high, from which numerous single stalks appear in late May. These bear large golden yellow puffy slippers, ornately marked and spotted in red and maroon colours. It is one of the most handsome rock calceolarias, and quite distinctive. The single stalks carry their extra large slipper flower so proudly, and the brilliant contrasting yellow and red hues always make one look twice at this plant. It flowers here for a month or more, and sets seed.

Gentiana Loderi. No rock garden is complete without a Gentian, and there are plenty of Gentians for the month of July. One of the neatest and easiest to grow here is *G. Loderi*. We grow it in various places in the garden and give it well drained loam, but it would make a good scree plant. It forms a neat, nearly prostrate greyish green mat, and the green shoots bear clear blue wide open trumpets, always at the end of the shoot. To show off the flowers the shoots turn up as much as to say "Look what I have got to show you." The flowers are open even on a dull day, but are perfection on a sunny day. This species is closely allied to *G. cachemirica*, which is very similar in habit, but presents different botanical characteristics. *G. Loderi* can be grown from seed.

Lithospermum intermedium. Most *Lithospermums* we have grown here are spreading and creeping, but *L. intermedium* is of different habit. It is quite compact and forms a sub shrubby tuft, composed of two inch long, narrow, dark green leaf rosettes. In May and June stems of six to eight inches in length bear cymes of rich blue tubular flowers, from which protrude deep pink pistils. It is a gorgeous thing and I cannot think why this plant is not more widely grown. We give it no particular attention, and it grows equally well in full sun and scree or ordinary rock garden soil. It appears quite hardy and can be propagated by cuttings.

Phlox depressa is a Colorado plant. It forms a dense mat of small slightly spiny leaves, but it is not unpleasantly prickly. We bought this plant a few years ago and, knowing nothing about it, put it in the scree. The first winter we thought we had lost it, as the completely prostrate foliage looked quite brown and dead, and apparently it does this every winter. However, in the spring it comes to life and produces a profusion of inch wide lavender blossoms. The flowers open quite flat and literally cover the plant so that no foliage can be seen at all. It is a particularly attractive *Phlox* and we hope to propagate it this year.

Rhodohypoxis has been shown on our stand at the Highland Show for the last three years and few plants have won greater admiration or caused more comment. It is rapidly being propagated and hybridised, and I hope will soon enhance many gardens in this country. It is a little jewel. Growing only two inches high the true species, *R. Bauri*, is a brilliant rose pink, and the tiny six-petalled flowers have a sort of three-cornered appearance opening flat out in the sun. The white form, which we have always known as *R. platypetala*, is completely white, and charming grown with *R. Bauri*. All the many hybrids now being raised give a variety of shades blending these two colours. The flowers are getting larger with cultivation and it will soon to be difficult to recognise the true species: indeed, the hybrids we have seen are a definite improvement on the species. We first grew it here in 1936 and we have never lost it. I have heard reports that it is half hardy, and some people in the north and east of Scotland have told me that it will not grow; but this year we saw magnificent colonies in Aberdeenshire. We have never given it any protection, and in the winter of 1940/41 the thermometer fell to zero. It is an African bulb and was collected from Basutoland. It is an easy bulb to lose in the spring, since the tiny green shoots do not appear until well into May; but it is not long before the first buds appear and numerous flowers follow in quick succession, and continue to do so until August; indeed, I have seen a flower out as late as September.

Saxifraga: Kabschia Section (Continued)

By DAVID LIVINGSTONE

IN THE last issue of the Journal I gave some notes on the history and cultivation of Kabschia Saxifrages. I now think it might be of interest to members to have an alphabetical list of plants which are thought to be in cultivation although some of them may be difficult to come by. As I indicated in my previous notes, many hybrids have been raised during the first part of this century and some have no outstanding features to distinguish them from others already in cultivation. I would emphasise again that care is necessary in the selection of hybrids and perhaps a little experimenting may be necessary to find out exactly which hybrids and species do best with the individual grower. If I may give an instance, *Saxifraga Burseriana* 'Gloria,' which is considered by most people to be the finest in this section, never flowered really well with me and I had to fall back on another form, *S. Burseriana crenata*, which grew and flowered very well indeed. In the following list I will make no attempt to describe the foliage. These little plants have their leaves arranged in rosettes or tufts and are usually green or silvery grey. They all follow this description more or less and it would be tedious to repeat after each name whether the leaves were grey or green. They all make firm compact mounds, symmetrical in shape and with one or two exceptions flower in February or March.

S. Ada is a garden hybrid thought to be the result of crossing *SS. tombeanensis* with *Burseriana crenata*. Two or three very pale pink, almost white, flowers are carried on stiff 1" stems.

S. Amitie is a hybrid between *SS. lilacina* and *dalmatica*. It has lilac flowers which fade almost to white.

S. apiculata is a garden hybrid whose parentage seems to be in doubt. It is one of the oldest of the hybrid Kabschia Saxifrages but it is still one of the very best of the stronger growing varieties. It will often grow to 2' or more across and in February, sometimes even earlier, it is covered with an amazing profusion of primrose yellow flowers carried on 2" stems in clusters of six or even more. Its flowers seem to stand up to rough inclement weather better than most. This is a great asset when one considers the kind of weather we often have in February.

S. apiculata alba is a white sport from the above hybrid. I have no great regard for it, because the primrose yellow of *S. apiculata* seems so much warmer, so much more a herald of spring and of all the good things to come. It is, however, a very useful plant for the large rock garden.

S. Arco Valleyi is a hybrid between *SS. lilacina* and *Burseriana minor*. This variety has fine pink flowers of good form and is easy to grow.

S. aretioides is a native of rock crevices in the Pyrenees and is closely allied to *SS. diapensioides* and *caesia*. Its leaf rosettes are tiny and compact. Its yellow flowers are borne two or three to a stem. This species is not one of the easiest to cultivate and some of the hybrid derived from it are both easier and prettier.

S. Bilekii is a hybrid between *SS. Ferdinandi-Coburgii* and *tombeanensis*. Its leaf rosettes are small and particularly tight and hard. The flowers which are borne several to a stem are pale yellow. This is a good plant for the alpine house or for a choice spot in the rock garden.

S. Boryi is a species from the mountains of Greece and related to *S. marginata*. Its white flowers are borne four or five to a stem.

S. Boydii was the first notable *Kabschia* hybrid to be raised by Mr. J. Boyd of Melrose. Its parents are now thought to have been *SS. aretioides* and *marginata Rocheliana*. Mr. Boyd at first thought that *S. Burseriana* was one of the parents but later inclined to the view that *S. marginata Rocheliana* must have been the pollen parent. This variety has citron yellow flowers of good form carried one or two to each stem. This is not an easy plant to grow and for ordinary purposes is far surpassed by *S. Faldonside*.

S. Boydii alba is not a form of the previous variety but a distinct hybrid. It is thought to be the result of a cross between *SS. Burseriana* and *marginata Rocheliana*. It has well rounded white flowers carried two or three to a stem. It is easily grown but there are other white *Saxifrages* which are more attractive. It is, however, well worth growing if one has a passion for *Kabschia Saxifrages*.

S. Burseriana is a charming species and it, and the various forms listed here, are very popular. It has been grown in this country since 1826 and in nature is to be found growing in the Dolomites. Reginald Farrer records in his "The English Rock Garden" that "as a rule it is not alpine and the most magnificent form of all its developments belongs to quite low levels in the valley of the Adige." This species has large solid white flowers of good form, usually borne singly, but sometimes there may be two or even more to a stem. This plant has been used as a parent for many of the good hybrid *Kabschia Saxifrages*.

Numerous forms of *S. Burseriana* have been selected and given names. The following are perhaps the best of them.

S. Burseriana crenata has white flowers with frilled and crimped petals. It is quite distinct, flowers freely and is easily grown. It is one of my favourites.

S. Burseriana Gloria is probably the best of the *S. Burseriana* forms. It is usually a strong and vigorous grower and has large round solid white flowers almost as big as half a crown.

S. Burseriana major is sometimes known as *S. B. Magna*. This form too is a vigorous grower and very often flowers earlier than the other forms. It also has large white flowers.

S. Burseriana minor is a very dwarf and compact form with nicely rounded white flowers.

S. Burseriana sulphurea. Although this plant resembles the type, its flowers are, as the name suggests, soft yellow, and it is thought by some people to be a hybrid of unknown parentage. It is a free flowering, easy doer and worth its place in any collection.

S. Burseriana tridentina. This plant is sometimes called *S. tridentata*. This is another form with large white flowers, but its petals are reflexed and they have wavy margins. It is a good grower and altogether a first rate plant.

S. bursiculata is a fine hybrid between *SS. Burseriana* and *apiculata*. It is a good plant of easy cultivation and particularly suitable for the larger rock garden. It has large white flowers carried in clusters after the style of *S. apiculata*.

S. Buttercup is a garden hybrid of unknown parentage which has rich yellow flowers.

S. caesia is a species found in the Alps of Switzerland, Austria, and I believe also in the Pyrenees. In appearance it is very much like a minute Silver Saxifrage. It flowers in April or May, later than most of the other *Kabschia* Saxifrages. It has white flowers carried on erect thread-like stems in small sprays. This species, although not particularly showy in flower, has a charm all its own and makes a good subject for the alpine house or a crevice in a selected part of the rock garden.

S. Cerise Queen is a hybrid of unknown parentage and is sometimes offered under the name of *S. Christine*. It bears rich cerise flowers and makes an attractive plant.

S. Cherry Trees is another of Mr. Boyd's famous crosses, obtained from *SS. aretioides* and *marginata Rocheliana*. The true plant is very rare in cultivation but is worth searching for because, although a slow grower, it is quite free with its flowers, which are large and pale yellow.

S. Cranbourne is an outstanding hybrid of unknown parentage. It has large, handsome, well formed rose coloured flowers. The deep pink flower buds nestling in their rosettes make a delightful picture themselves. This hybrid is of easy cultivation and does well in the alpine house, on the scree, or in the miniature trough garden.

S. Delia is classed as a *Kabschia* hybrid although there is *Engleria* blood in it, the parents being *SS. Godroniana* and *lilacina*. It is a tiny

compact grower with pale lilac flowers. I must confess I have been unable to raise any great enthusiasm over this plant.

S. diapensioides is a close, slow growing Kabschia species found in the limestone ranges of the Southern Alps tightly packed in crevices. The large pure white flowers are very pretty and are carried one or two to a stem. It is not an easy subject and is perhaps best treated as an alpine house plant.

S. Elizabethae is a valuable hybrid for the larger rock garden. Its parents were *SS. Burseriana* and *sancta*. Its flowers, soft yellow in colour, are carried in cluster heads on 2'' or 3'' stems. This hybrid is of easy cultivation and is also free flowering.

S. Faldonside is still another of the hybrids raised by Mr. Boyd. It has been in existence since 1890 and still ranks as the finest of the yellow flowered Kabschia hybrids. Its parents were *SS. aretioides* and *marginata Rocheliana*. Its flowers are large, of a good yellow, and its wide overlapping petals give a perfectly symmetrical flower. This hybrid makes a good subject for the alpine house, the scree and the miniature garden. It is a grand plant for the early rock garden Shows.

S. Ferdinandi-Coburgii is a species from the Balkans. It is easily grown and flowers freely. Its flower stems are rather longer than some, being 4'' or 5'' and the flowers, a hard bright yellow, are carried in a loose spray of eight to ten.

S. Haagii is an old and valuable hybrid, the parents being *SS. sancta* and *Ferdinandi-Coburgii*. It is a vigorous grower as well as being free flowering and it is a first-rate plant for the larger rock garden. This hybrid's flowers are of a better yellow than *S. Ferdinandi-Coburgii*: they are rather larger and more shapely too and, therefore, it may be regarded as an improvement on that species.

S. His Majesty is sometimes shown as a form of *S. Burseriana*, but it is more likely that it is a hybrid of unknown parentage. Its flowers are very large and are white with a faint pink flushing. This is a good plant for the alpine house, scree or small rock garden.

S. imbricata is a species from the Himalayas and is very rare in cultivation. It is very small and its leaves are tightly crowded in firm little rosettes. The pretty little white flowers appear to be almost stemless as they sit upon the rosettes of leaves. Indeed, the whole appearance is more that of an Aretian Androsace than a Saxifrage.

S. Iris Pritchard is classed as a Kabschia hybrid but as one of its parents is thought to be *S. Godroniana* it has Engleria blood in it. It has well shaped flowers of an unusual apricot colour, and it is unfortunate that it has the reputation of a poor constitution and of being shy with its flowers.

S. Irvingii is an exceedingly valuable hybrid whose parents are thought to have been *SS. Burseriana* and *lilacina*. The plant in bud—

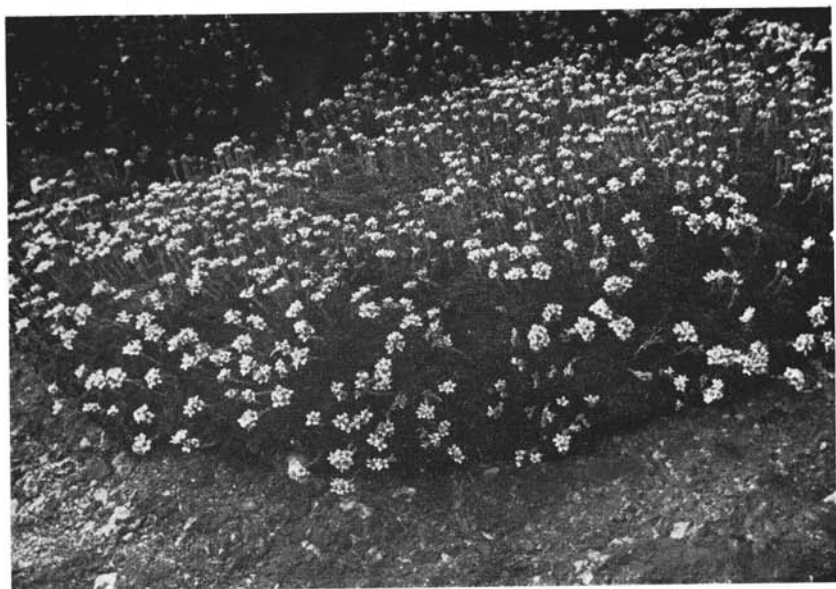


GALANTHUS PLICATUS



IRIS INNOMINATA

Photo—D. Wilkie



SAXIFRAGA X APICULATA

Photo.—D. Wilkie



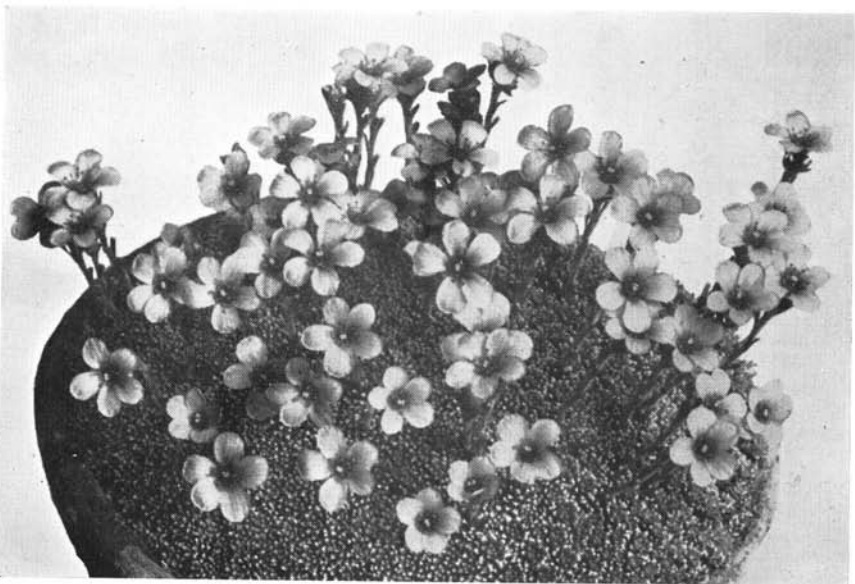
SAXIFRAGA BURSERIANA GLORIA

Photo.—D. Wilkie



NARCISSUS WATIERI

Photo.—D. Wilkie



SAXIFRAGA ARETIOIDES

Photo.—D. Wilkie



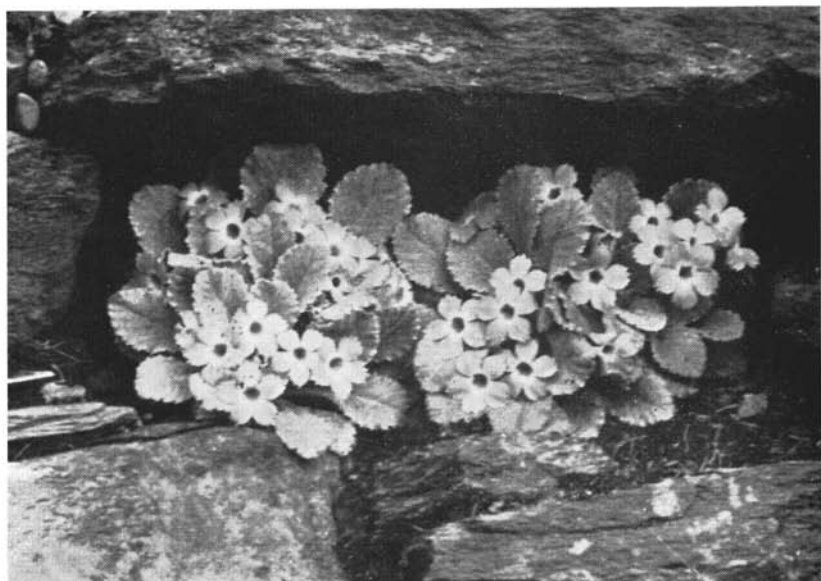
NARCISSUS CALCICOLA

Photo—D. Wilkie



NARCISSUS RUPICOLA

Photo—D. Wilkie



PRIMULA EDGEWORTHII

Photo.—D. M. Murray Lyon



PRIMULA PUBSCENS ALBA

Photo.—Jas. Gilchrist



NARCISSUS REFLEXUS (TRIANDRUS ALBUS)

Photo.—D. Wilkie



NARCISSUS JUNCIFOLIUS

Photo.—D. Wilkie

rich pink in colour—is a wonderful sight. The buds expand into pale lilac pink flowers on 1" stems. It is an indispensable plant for any rock garden, scree or alpine house.

S. Jenkinsae is very similar to *S. Irvingii* and is probably a result of the same cross. There have been many arguments in fact whether the two are distinct. For my own part I believe they are and would distinguish them by saying that *S. Jenkinsae* is slightly larger in growth and flowers rather later. One authority whom I have read on this subject, distinguishes them only by the fact that in a batch of each you will find all plants of *S. Irvingii* well flowered each year, whilst in the batch of *S. Jenkinsae* there will always be one or two plants not nearly so well flowered as the others.

S. juniperifolia is a very variable species from the Caucasus and is an inferior garden plant to many of those already listed. The dark green foliage is said to smell of Juniper when pressed. The flowers, which have tiny yellow petals and prominent anthers, are borne in small clusters.

S. Kellereri is another hybrid which is classed as a Kabschia but which has an Engleria Saxifrage for one of its parents. It is a cross between *SS. Burseriana* and *Stribnryi*. This plant is very often the first of the group to flower, as early as January or even December, and it continues to flower over a long period. Its flowers are pale pink, bell shaped in form, and are carried in a loose, branched head. The Engleria influence in the breeding of this plant gives rise to large, imposing rosettes of foliage, green in colour but well dusted over with silver. This is a good subject for the alpine house.

S. lilacina is a very distinct species from the Himalayas and unlike its brethren it dislikes lime and should be given sandstone, whinstone or granite as a substitute. This plant tends to remain flat rather than rise up into a hummock. It is, however, one of the finest when in flower, but unfortunately it is not always as free with them as I would like. The flowers are carried on short stems and they are, as the name suggests, a beautiful pale lilac. This species is also a good subject for the alpine house.

S. marginata is a species from the mountains of Italy and Greece. It is of dwarf compact growth and its white flowers are borne in loose heads. The flowers are a clear white of good substance and form and, as they are freely borne, the plant is a good subject for a select spot in the rock garden or for the alpine house.

S. Mother-of-Pearl is a very good hybrid of unknown parentage. It has shell pink flowers which are freely produced.

S. Myra is a first-rate hybrid. Its flowers are of a deep pink, almost red—perhaps cherry red would suffice for a colour description. Its colour makes it stand out amongst the Kabschia Saxifrages. There is some doubt about the parentage of this plant. It was raised by Reginald

Farrer and it is understood that he thought the parents were *SS. media* and *oppositifolia*. However, it is extremely doubtful whether these parents could have produced *S. Myra*, and it is now thought more likely that the parents were *SS. scardica* and *lilacina*. It is a good grower and as the flowers retain the richness of colour much better than some of the pink forms like *S. Irvingii*, it is well worth including in any collection.

S. Obristii is a good hybrid between *SS. Burseriana* and *marginata*. It is a free vigorous grower with big solid white flowers, several to each stem. This is a good plant either for the scree or the alpine house.

S. Paulinae is a hybrid between *SS. Ferdinandii-Coburgii* and *Burseriana*. It is an easy grower with a good constitution and flowers well. It has large well rounded flowers of clear yellow.

S. Petraschii is a hybrid between *SS. tombeanensis* and *marginata*. Farrer classed this one as the best of all the white flowered *Kabschia* hybrids. The flowers are very large, a good clear white, and are carried three or four to a stem. It is an excellent and easy grower, flowers freely with most growers but I have read one report which suggests that sometimes many of the buds which appear in late winter fail to develop. This, I may say, has not happened in my own experience, but I repeat what I have read as a warning that it sometimes does happen.

S. Riverslea is one of the most attractive and distinct of all the *Kabschia* hybrids, its parents being *SS. Frederici-Augustii* and *lilacina*. The plant is very free flowering, a compact and slow grower. The flowers are an unusual plum purple and are carried three or four to a stem. In my experience, this is another plant which flowers over a long period. It is first-rate for the alpine house, the scree or the miniature garden.

S. Salomonii is a hybrid of long standing. Its parents were *SS. Burseriana* and *marginata*. It is an easy, free grower, spreading quickly into wide masses. The flowers, large and vase shaped, white in colour, are carried four or even five to a stem.

S. sancta is a species from Macedonia and Asia Minor. I have not grown this plant and I find there are many conflicting views, ranging from Reginald Farrer's "one of the most valuable of the furnishing *Kabschias* and brings joy to the heart all the year round," to Clarence Elliott's "I discarded it long ago as too shy or uncertain in the matter of flowering." Mr. J. R. Kerfoot, writing in the *Alpine Garden Society Bulletin* some years ago, remarked that he was disappointed in this plant for some years, but he then planted some in a place where both as regards exposure and soil he had no hope of anything doing well. He goes on to say that the following Spring *S. sancta* flowered profusely and by giving it similar conditions he has flowered it as freely as *S. Elizabethae*. The position he chose was exposed, being open to wind, sun and rain, and the soil was literally rubbish or the most

impossible soil he could find, a real starvation mixture. It has bright golden flowers carried in loose trusses.

S. scardica is a species from the Balkans. Plenty of plants have masqueraded under this name and have given it a bad reputation in some quarters. The true *S. scardica* is a most beautiful and distinct plant. Its foliage is outstanding, the rosettes being large and the blue-green leaves broad, wedge shaped, very hard and sharply pointed. There is a thick marginal pitting of lime on the leaves, giving it a distinguished appearance. Its flowers are white, somewhat vase shaped, and are carried in a loose cluster on stems that are rather longer than those of most *Kabschia* Saxifrages, being five or six inches high. It flowers later than most of this section and on that account, as well as for its foliage and flowers, it should find a place in every collection.

S. squarrosa is a species from the Dolomites and is perhaps the smallest of all the *Kabschia* Saxifrages. It is smaller than *S. caesia* and surpasses that species in charm and brilliancy and is at least as easy to grow. It has, for its size, large white flowers carried on thread-like stems, some three or four inches high. This is a plant for the limestone scree or the alpine house.

S. Sundermannii (of Irving) is a fine *Kabschia* hybrid of compact growth. Its parents were *SS. Burseriana* and *marginata*. It has fine solid white flowers carried several to a stem. I have found this plant to be easy and very free flowering.

S. tombeanensis is a rare species confined to the Italian Alps. Farrer said of it that it was "perhaps the most fascinating of all the several flowered *Kabschias*." It is of small, slow growth and its flowers, carried several to a stem, are pure white and very large for the size of the plant. Naturally such a small plant should be given a choice spot in the scree or in a crevice or, perhaps best of all, a place in the alpine house.

S. tyrolensis is a natural hybrid between *SS. caesia* and *squarrosa*. It might be taken for a lax specimen of the one parent or a tight version of the other. There is no need to have this one as well as the parents, unless one wishes to establish a complete collection.

S. Vandellii is a rare species from the Lombardy Alps. It has been likened to a small edition of *S. scardica*. Its flowers, too, are white and the plant makes a good specimen for the alpine house or it may be grown in a crevice in the rock garden, in the scree, or in the miniature garden.

No pretence is made that this list shows all the hybrids and species ever introduced or in cultivation and it should be regarded only as a fairly comprehensive selection. As I indicated before, the beginner should experiment to find out which do best with him. There is no doubt what-so-ever that he will find many fine plants of great merit, whether for the rock garden, the scree, the miniature trough garden, or the alpine house.

A Garden in Salt Sand

By L. C. BOYD HARVEY

ON THE South shore of the Firth of Forth opposite Fidra Island is a garden made by nature which has an alpine lawn, a bog and a shingle scree. On the Northern side is a low sand bank at the foot of which is the seaweed line, and on its South are sand dunes knit together by the lovely silver and gold *Hippophae rhamnoides* and the bright blue *Echium vulgare*. At the Western end is a muddy brackish pond and a bog and here grow *Cardimine pratensis*, *Viola hirta*, *Orchis incarnata*, a small form of *Erythraea centurium*, and *Gentiana campestris*—a dull plant having beauty neither of form or colour but interesting as the poor relation of aristocrats. Further to the East flourishes honey-scented *Parnassia palustris*, a shorter and stouter form than found in the hills. There is a look of quality in its glossy heart-shaped leaves and translucent flowers. Beyond is *Pinguicula vulgaris* in its own private bog made by the tracks of farm vehicles. It is smaller and less buttery than plants found on high ground and has smaller flowers of a deeper purple than usual. The minute winter-resting buds are quite rootless and when the ground is flooded they float away and settle in a new place. The rare fern *Botrychium lunaria* grows here with its roots wet and its top in full sun.

The alpine lawn is at its best in July and August when carpeted with *Astragalus danicus*, several colour forms of *Thymus serpyllum*, and *Galium verum*. It would be difficult to find a better yellow-flowered "easy of cultivation" rock plant than this *Galium* with its mats of fine whorled foliage and cymes of almond-scented flowers. Peppering the sand between the other plants is *Sedum acre*, looking its best with tightly adpressed leaves flushed to a brilliant red with meagre diet, salt-spray, and continual top-dressing with salt sand. Here and there where the sand has failed to cover the grasses are the tiny leaves and large pink flowers of *Anagallis tenella*, its prostrate stems sending down long pairs of roots whenever they touch the ground. It is remarkable that a plant so frail and delicate in appearance is able to survive its hard life.

Passing on to the shingle scree, inspection on hands and knees becomes necessary. Every gale adds or subtracts sand, and the area is inhabited by long-rooted *Geraniums* and short-lived, freely-seeding annuals such as *Saxifraga tridactylites*, *Draba verna*, *Linum catharticum* and *Myosotis collina*,

The plants growing along a sea coast appear to survive by their tenacity and resistance to adversity in the same way that other plants live on the hills and escape being elbowed out of existence by the well-fed bourgeoisie of the plains.

A Suggestion for the Successful Cultivation of Some Difficult Primulas

By JACK DRAKE

MEMBERS of the Soldanelloideae group of Primulas are notoriously difficult to grow successfully, but they are so beautiful that many people are prepared to go to great lengths to make them happy. Representatives of this Group are *PP. Wollastonii*, *eburnea*, *Wattii*, *Reidii*, *nutans*, and *Cawdoriana*, all of which I think were seen on the show bench at some time or other in 1951.

I have managed to grow successfully all these varieties (and others equally difficult) during the past two seasons with very few losses, except of those plants which flowered themselves to death, a by-no-means uncommon occurrence among this type of Primula. And it seems to me that the method I have now adopted in growing these plants might succeed with other members of the S.R.G.C.

Although winter wet is probably their greatest enemy, I am sure that there are other factors which contribute to their downfall. I used to find that November was the most dangerous month. The plants were still green then and a severe, frosty spell of weather, which we always get up here in that month, seemed to turn the crowns to pulp.

I have found that it is possible to avoid this trouble in the following way. All these Primulas, whether grown in the open or planted out in a frame, are completely and efficiently covered with glass *from the beginning of October* until growth is well advanced in Spring. During that period not a drop of water is allowed to go near the plants.

The result of this early covering is that the plants go to rest much earlier and, instead of still being green and sappy, are quite dried off and hardened up by the time the November frosts hit them. This now appears to do them no harm whatever.

I do not believe that it is possible to keep these Primulas too dry during the period mentioned.

When these Primulas are grown in pots, I think it is advisable to plunge them in some suitable material for the winter months. It helps to soften to some extent the effects of sudden changes of temperature. Here we plunge in old sawdust with good results.

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Cacti and other Succulents in conjunction with the Rock Garden

By M. E. McLELLAN

THE TRUE Rock Garden enthusiast will doubtless regard the above title with grave suspicion ; but I was a lover of cacti before I made many acquaintances among rock plants, and have gradually gathered up a very mixed collection of both and find the result completely satisfying.

Most of my cacti and succulents live in a small, unheated greenhouse ; most of the rock plants live in the rock garden, but the more fragile rock plants, and those the field mice fancy, join the cacti under glass, while during late spring and summer many of the more colourful succulents find their way to the rock garden, and greatly add to its attraction.

At the end of the summer of 1950 I had 120 different cacti and other succulents, but unfortunately the long, difficult winter has taken its toll, and many precious plants have been lost. One very fine specimen of *Cephalocereus senilis* (Old Man Cactus) about 12" high was badly frosted, turning completely black with the exception of the top inch. Drastic surgery was called for, and after a painful interlude with a carving knife and Condy's Fluid, the top inch was duly re-planted and results are hopefully awaited. Another beauty, a golden bristled 8" *Pilocereus polylophus* suffered a similar fate, also some large *Opuntias*, and various small cacti.

The cacti were not the only losses, as some of the hardy rock plants failed to survive the bad weather. But in spite of this set-back, the rock plants in the garden, with succulents interplanted, are now (April) looking very gay and full of colour.

Among succulents that do excellently in a rock garden—and my rock garden is really a rock wall—is *Crassula lycopodiodes*, which grows very easily from the smallest cutting, and makes a small grey green bush of about 10" in height, the growing tips all being a pinky shade ; this is grown for its colour and shape and not for its flowers, which, though numerous all the way up the stems, are minute, but those so inclined may look for them with a magnifying glass.

Another good mixer is *Haworthia cymbiformis*, a low lying rosette of a delightful translucent green, but slugs must be guarded against as they have a fancy for this juicy looking plant.

Some of the true prickly cactus are grown out of doors in sheltered places, but I have not tried them—they certainly do well in some parts, and no passers-by will help themselves to cuttings !

Most of the Aloes and Gasterias thrive happily outside and many of these are very beautifully marked, but they must be brought in before the first frosts.

Another good one is the *Crassula bicolor* (this may not be its correct name, but I bought my original plant about eight years ago under this name), whose green leaves turn a lovely pink when kept near glass and fairly dry in winter, and they keep this colour for a long time after being planted out in the Spring. The flowers is pink and yellow and it is a beautiful plant.

The Sedums, of course, are outside anyway, but the *S. Adolphi*—rather more of a glasshouse plant—also looks well in a rock garden, its fat rounded leaves being a greeny yellow, often becoming orange at the edges, but again it must be wintered indoors.

Oscularia deltoides should also be put out : its leaves are grey-green, three-cornered with a crinkled edge, it makes a delightful little shrub, and is a mass of little mauve daisies with gold centres which open in the sun, in the late Spring.

Echeverias are very useful, and one of the glasshouse variety, *E. clavifolia cristata*, is well worth putting out, the cristate growth making a fascinating plant of close packed small fleshy leaves of delicate shades of grey-blue and pinky-mauve.

I personally have grown all these plants outside, and they thrive and appear to benefit from their change of location, and I have no doubt that they could stay outside all the year round in the South of England. There are many more ; I mention just a few to show that a combination of rock plants, cacti, and other succulents is very attractive and full of interest.

April 1951.

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Some Daphnes for the Rock Garden

By J. KEENAN

IN AN article to *Country Life* some years ago the late W. J. Bean wrote : "Before setting out to tell other people how to grow successfully a plant or group of plants, an important qualification one should possess is that of being able to do it oneself. It is a matter that is often overlooked. With regard to the Daphne as a whole I must confess that I for one lack it." The present writer, like the author of the above remarks, also lacks this qualification and readers are therefore warned at the outset that these notes contain neither startling information

with regard to the cultivation of the plants nor profound observation on them from a botanical point of view. The scope of this article is confined rather to discussing some Daphnes in cultivation which are eminently suitable for rock gardens. The advent of the modern rock garden has, of course, solved the problem of providing sites for the growing of dwarf shrubs in general : a shrub border is hardly the place for plants as dwarf as the alpine daphnes. The delicious scents possessed by these low-growing and prostrate Daphnes and their prodigious floriferousness are qualities that place them in a pre-eminent position among rock garden shrubs. Although in cultivation a few of them sometimes prove intractable, perseverance and patience are seldom more amply rewarded than when a measure of success with these few has been obtained.

So far as I am aware the only Daphne that may not readily be increased by cuttings is *D. Mezereum*. It is, of course, the case that in commercial horticultural practice some of the very dwarf species such as *D. petraea* and *D. arbuscula* are grafted upon established rooted cuttings of *D. Laureola*. This, however, is due to the fact that long enough shoots of the current year's wood are not usually available for cuttings. If stock plants are grown under glass, however, cuttings of a suitable length are then produced, and these, as recent results obtained in the Royal Botanic Garden, Edinburgh, have shown, readily produce roots. This is particularly the case in *D. petraea*, where the length of a year's shoot growth may, even on well established plants, be little more than a quarter of an inch. It is, of course, a matter for regret that *D. Mezereum* may not readily be propagated by cuttings since the fine dark flowered forms give rise to only a small percentage of similarly coloured progeny. The inter-specific relationship of all the Daphnes has not been clearly established and consequently they are not grouped systematically in the following notes.

Probably the most popular of them is the delightfully named Garland Flower, *D. Cneorum*. This is an introduction from the mountainous

districts of Southern Europe and it gained an Award of Garden Merit in 1927. It has been known as *D. odoratum*, a name no longer valid and rarely, if ever, used. It is low, evergreen and compact, rarely more than a foot high, and in May wreathed in clusters of rose-pink flowers. So strong is the scent that it is perceptible at a considerable distance from the plant. The species has given rise to several varieties and the best of these, and the only one which challenges the species, is *D. Cneorum eximea*, a variety differing from its type in having larger parts and larger, richer coloured flowers. The white form is an exquisite plant, perhaps even more floriferous, but lacking the vigour of the type. On Mt. St. Eynard, near Grenoble, grows another, var. *Verlottii*, which is distinguished by narrower leaves and looser flower clusters. Of the others the var. *major* is only a poorer form of *eximea* and the dwarf *pygmaea* is merely smaller. A point, by the way, to remember is that most Daphnes do not transplant well and rooted cuttings when established in pots should be planted in permanent positions.

Similar in habit and closely related to the preceding species is *D. striata*. This is another European alpine, but of much weaker growth and lacking the rich colour and flower size of its ally. The type, which bears lilac flowers, as well as the white variety, are very rare in nature and also in cultivation. Indeed most of the *D. striata* in gardens is actually *D. Cneorum* var. *eximea*. Another relative, endemic to a very small area in the Italian Alps, is the very dwarf *D. petraea*, which is only 3-6 inches high. It is a spreading evergreen shrub and bears clusters of waxy rose-pink fragrant flowers. This is without doubt the smallest and most beautiful of the alpine daphnes. I believe the late Reginald Farrer had a famous plant grafted on *D. Mezereum* which he showed for many years at the Royal Horticultural Society's summer show. Success with this plant demands above all good light and also a moist but nevertheless well drained position. There is a large flowered garden variety called *D. petraea grandiflora*.

The Hungarian *D. arbuscula* is considered to be intermediate between *D. Cneorum* and *D. peiraea*, but is obviously more closely related to the former. This delightful miniature shrub obtained an Award of Merit in 1915. It thrives best in a light, well drained soil and in June bears terminal clusters of fragrant rose-pink flowers. From *D. cneorum* it may be distinguished mainly by its different leaf arrangement, and from *D. petraea* by its broader, larger leaves and larger flowers.

D. alpina, which is often wrongly named *D. candida*, is another good dwarf alpine. It is essentially a rock-lover, happiest in moist rocky fissures similar to these in which it grows in the European Alps. Although this is not the best of the dwarf daphnes, its fragrant white flowers, intricately branched habit, and grey-green leaves nevertheless give the plant some measure of attraction. *D. altaica*, an introduction from Siberia, is not unlike the preceding species but differs from it mainly in size, for it attains a height of 3 feet, and in its glabrous leaves.

One of the finest and most useful prostrate rock garden shrubs is *D. Blagayana*, which was introduced by Messrs. Veitch in 1875. It was first discovered on Mt. Lorenzeberg in the Carinthian Alps by Count Blagay, after whom it was named. According to early accounts it apparently proved a difficult plant to cultivate, but this difficulty, at least in a moist, well drained and lime free soil, does not occur. It is evergreen, prostrate and of spreading habit, bearing from April until June dense terminal clusters of creamy-white fragrant flowers. The branches of this plant sometimes become long and straggled if they have not previously been pegged down or merely pressed into the soil by placing stones over them. Where contact is made with the soil, roots are, of course, readily produced.

There are few rock garden plants with a more delightful habit than a specimen of *D. Blagayana* which has been allowed to cascade over a ledge. Although in the South of England it apparently requires half shade, it will in the north thrive in full sunshine. A close ally of this plant, *D. collina*, from the Italian Alps, has also obtained an Award of Merit, although it is doubtfully hardy. It is some 3 feet high, bearing in June fragrant, purple flowers and may perhaps best be distinguished from *D. Blagayana* by its silky branches, shorter bracts and much shorter purple flowers.

There is some doubt about the exact status of the next plant. The distribution closely follows that of *D. collina* and by some it is considered to be a mere variety of that plant. Others, however, regard it as a natural hybrid between *D. Cneorum* and *D. collina*, and Bean considered it to be *D. oleoides* \times *D. Cneorum*. It is certainly a much more robust plant than *D. collina* and has been variously grown under the names *D. collina* var. *neapolitana*, *D. Fioniana* and *D. Delahayana*, but it would seem that the plant should now be designated *D. x neapolitana*. It is a bushy, erect, evergreen shrub up to 3 feet high and bears from March to June clusters of fragrant rose-pink flowers which form a delightful contrast to the shining green oblanceolate leaves.

To leave *D. Mezereum* until this stage implies no reflection upon this worthy spring flowering plant which, along with its varieties, have long brightened cottage gardens. It is doubtfully native to this country, but occurs sparsely in woods over a wide area of chalkland in the South of England. Records of cultivated specimens occur as long ago as 1561. The type may grow up to 5 feet high, but is very slow growing and requires a considerable time to become too big for a rock garden. Its naked branches are covered with closely clustered reddish, delicately scented flowers from February onwards. The forms differ from the species mainly in colour, although the variety *grandiflora* has large rich purple flowers which often appear intermittently from October onwards.

Although the species so far mentioned are with one exception European, the genus is by no means confined to Europe. There are

several Asiatic representatives of distinct garden merit. Such a plant is *D. retusa*, discovered by Pratt in the area of Tatsien-Lu in 1889. It was not, however, cultivated in this country until seed collected by E. H. Wilson was grown by Messrs. Veitch. It is distinctly more tolerant of cultivation than most members of the genus and is a shrubby, evergreen bush, up to 3 feet in height, with fragrant white flowers, tinged violet or purple, which in conjunction with the young leaves form a delightful combination. A near relative is *D. tangutica* from Kansu, a plant perhaps too large for rock gardens. *D. retusa* differs from the Kansu plant mainly in its more hairy young branches, broader and less revolute leaves and obtuser perianth parts.

A pleasant colour change is found in *D. Giraldii*, named after and first collected by Péré Girald in Northern Shensi in 1894. It was not until 1906 that seed collected by Purdom was grown and the plant introduced to this country. It becomes 2 feet or more high and is a beautiful deciduous shrub with golden-yellow, fragrant clusters of flowers. These are borne at the tips of the branches in early May.

Finally, one might consider the Japanese *D. Genkwa* or its ally *D. Fortunei*, and some of the innumerable garden hybrids such as *x Burkwoodii* and *Burkwoodii* var. *Somerset*. There are also natural hybrids such as *x Thaumia* and *Rossettii*, to mention only two.



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Wall Gardening

By A. L. WINNING

DRY STONE walling provides an ideal habitat for a wide variety of rock garden plants. In Scotland it is not uncommon for our homes, whether in town or country, to be sited on undulating ground. The formation of a terraced garden is one popular and practical solution to the problem of the most economical and easily managed layout. In such circumstances retaining dry stone walls are necessary to give a quick change of level, and the experience of planting such a feature has, in the writer's opinion, stimulated interest in people otherwise oblivious to the particular pleasures of rock gardening.

However, various types of wall can be used in other circumstances. The double wall (2-3 feet in height) can be used in formal gardens to create a particular landscape effect, providing at the same time two side wall faces for adornment and the top which may be used specially for dwarf shrubs, e.g. *Santolina*, *Lavandula* or *Nepeta*. A paved wall can also be used on a banking and is in effect a crazy paving inclined at an angle between 30°-60°. It is very economical, of stone, and suited for very rampant growers.

The advantages of gardening on the vertical, or "spaceless gardening," surely outweighs any disadvantages. The vertical face can accommodate a considerable number of plants in a very small space. This method to some extent obviates the problems of constant weeding, as the interstices of the vertical wall, unless specially prepared, are not very hospitable to weed seedlings, though certain plants, e.g. *Linaria Cymbalaria*, can become very troublesome. The provision of a wall allows the true saxatile plants and those requiring shelter in our variable weather, e.g. *Zauschneria*, or those whose rosettes would not likely survive during winter dampness if planted on the flat, e.g. *Ramonda*, ideal conditions. Again some plants are more effectively and convincingly displayed on walls or rocky fissures, e.g. encrusted Saxifrages.

Any disadvantages in walls arise from difficulties of planting up, unless done during building, and replanting.

The selection of stone should be done carefully and limited to a durable type kindly to plant growth by reason of its powers of moisture and heat retention, etc. A suitable free stone with straight cleavage lines in sandstone or limestone suits the plants and is easily built. It is, unfortunately, all too common to see whinstone and slag utilised, and their durability and comparative cheapness in some areas should not be considered the most important factors, as they generally prove inhospitable to plant growth. Durability of stone is very important

and any samples with an admixture of soft and hard stones (as may be acquired from demolished property) should be avoided. Even a small number of soft stones will lead to much trouble, as their disintegration will weaken parts of the wall and the replacement causes considerable upheaval in addition to the loss of some of the neighbouring plants in the process of rebuilding. The purchase of selected walling, stone 2''-8'' in thickness, will follow, and the thickness will depend on the general proportions. Low walls $1\frac{1}{2}$ - $2\frac{1}{2}$ ft. can use 2''-4'' stone mixed; higher walls can have the dimensions increased proportionately. The width of the stone is worthy of attention, as stones 4''-6'' wide allow the plants better conditions for growing, and the structure is not any weaker if binding is done.

The main points in construction include the provision of wall batter: the inclination or tilting backwards of all dry walls is essential. This facilitates the percolation of moisture to the plant roots through interstices, and in retaining walls gives strength to the structure. On walls up to 3 ft. in height a gradient of 1-6, i.e. 6 inches in a 3 ft. wall, would suffice. Where walls are over 3 ft. high and surrounded with higher ground consisting of heavier soil, it will be necessary to adjust this ratio, e.g. 1-5. In special cases it may be necessary to provide buttresses. The use of binding stones tie the wall into the banking and are necessary when over 2-3 ft. in height. Their dimensions and spacing will depend on the width of walling stone used, the narrower and thinner the walling stone the more frequent the inclusion of binders. Generally they can be placed at 4-6 ft. intervals in horizontal layers, 1-2 ft. part in height, with the binders alternating in each layer. These ties are positioned endways and can be 12-24'' long approximately.

Having considered the essential principles, the preparation of the foundation can proceed. If the banking is liable to water seepage, the connection to the field drainage scheme, or the provision of a rumpler drain of stone topped with rough ash, will give a solid foundation. If any further trouble from water seepage is anticipated the provision of seepage holes at intervals will prevent any collection of water behind the wall and avoid possible subsidence. On a consolidated base 6'' below the finished level put the first course, using the largest stones available and these should only be partly exposed; all stones should be inclined slightly backwards.

The courses can be laid to give a variety of fissures, all being filled with prepared soil and planted at the same time. The courses should be well bonded, allowing no vertical joint of one course to coincide with the one either above or below. This avoids any weakening effect and the joint should be approximately midway between the adjoining courses.

Early spring construction would enable planting to be undertaken conjointly. However, though very desirable it is often not possible,

as such constructional work is relegated to the winter programme and planting is not advisable at such a time. Provision can be made for plants by leaving pockets, e.g. inserting small flower pots which can be replaced by plants when the appropriate planting season arrives, i.e. March to April, and August to September. The insertion of plants is less easy after building and every care should be taken to ensure firm planting, filling the gaps with a sandy compost. If the wall is facing a clay back, the provision of at least 6 inches of sandy compost behind the stones would be advisable. It is also possible to sow seeds on the wall in Spring, e.g. *Linaria alpina*, *Erinus alpinus*, or *Papaver alpinum*.

The following considerations merit attention when the rock plants are being chosen. Choose plants to give a succession, commencing with *Aubrietia*, *Arabis*, *Alyssum*, following with *Phlox* and *Helianthemum*, being sustained with Pinks and Campanulas, and finally with *Polygonum vacciniifolium*, etc. Plant in groups of 2 or 3 or 5, according to the scale of planting. These can be planted along one course horizontally or arranged on more than one course diagonally or vertically. It is desirable to correlate the habit of growth with the distance apart, e.g. rosette plants—Encrusted Saxifrages—can be planted closer than the more spreading types like *Arabis* and *Alyssum*.

A suitable general selection for garden walls would include : Aubretia—named varieties ; *Iberis sempervirens* ; *Arabis albida* vars *variegata* and *fl. pl. x Rosabelle* ; *Alyssum saxatile*, and var. *cirtrinum* ; *Helianthemum vulgare* named vars ; *Achillea argentea*, *Huteri*, *umbellata* *Lewisii* ; *Corydalis luteus* ; *Erigeron mucronatus* ; *Gypsophila fratensis*, *Rosy Veil* ; *Sax. caterhamensis*, *longifolia* ; *Dianthus Winteri*, *Highland Queen* ; *Campanula Poscharskyana*, *muralis*, *garganica*, *Raddeana* ; *Erodium guttatum*, *corsicum* ; *Tunica Saxifraga fl. pl.* ; *Onomas tauricum* ; *Sedum Kamtschaticum variegatum*, *cauticum* ; *Sempervivum* vars. ; *Polygonum vacciniifolium* ; *Zauschernia californica* ; *Oenothera macrocarpa* ; *Silene schafta*.

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By L. C. BOYD HARVEY

A QUICK glance through the Year Book reveals what a high proportion of women members there are in the S.R.G.C. Although I have no statistics for the whole membership, the preponderance of women in my own county is 88 to 24.

I believe I have hit on a reason for this. Women members have access to so many good gardening tools and equipment which are out-of-bounds to gardening husbands with non-gardening wives. Even the miniature forks and trowels sold for tending graves and window-boxes are clumsy compared with the table forks and teaspoons to which we have free access for pricking out seedlings and moving tiny plants.

In the early months of the year the day is not long enough for all the gardening work crying out to be done, and I never waste daylight hours doing these jobs which can quite well be carried out after dark in the comfort of the kitchen. Husbands may spend hundreds of pounds on potting sheds, but how many of these are equipped with running H. and C., enamel-topped tables, and all the apparatus for soil sterilization?

A soak in a sinkful of boiling water and Byprox, and a quick rub round with a long-handled saucepan scourer quickly rejuvenates seed-pans. Soil can be sterilized in a biscuit tin in the oven. The sifted soil should be slightly damp, and the tin half full, with its lid in position. The Regulo should be set at 1-2 or Mainstat at B-C. After about 30 minutes all insect pests will have come to the top of the soil and a little while later they will cease to take an interest in what is happening to them. The tin is then removed from the oven and cooled, and John Innes seed compost to fill the tin is stirred in gradually with a trowel previously scrubbed in boiling water.

Another job more comfortably performed indoors under a strong light is the preparation of small cuttings of *Kabschia Saxifragas* and *Drabas*. For this an old razor blade can be used, but if you know where the new ones are kept, these are far superior. Small holes are dibbled in damp sand with a knitting needle to receive the neatly trimmed rosettes, and a glass fruit dish slightly smaller than the pan is fitted in position and left there until roots have formed—the pan being watered from below when necessary.

Farrer advises that one should subsist throughout the summer on glass-potted tongue and shrimps in order to have a sufficiency of glass roofs for winter protection, but for years now tongues have come

in tin cans and shrimps in cardboard cartons. Fortunately, however, glass fruit dishes sometimes crack when boiled stewed fruit is poured into them and these provide good substitutes for the Farrer tongue glass. There are also small dishes of oven-proof glass varying from 3"-6" in diameter which are useful over *Kabschia Saxifrages* to prevent birds from being mischievous with the immature flower buds.

Old flour sieves, gravy-strainers and cotton flour bags all have their uses in connection with collecting and cleaning seeds. Empty sticking-plaster tins can be used for sending little plant presents by post.

It must not be thought that we have nothing to learn from the men members. Mr. David Livingstone is a deft user of eyebrow tweezers for removing the side buds from *Petiolarid Primulas*, and other delicate operations. I well remember when I was a new member at my first Show, watching fascinated while Dr. Tod resuscitated a wilting plant with a perfume spray. No, it was *not* in the class for "Rock plant with scented foliage." Bath talcum of the correct flavour blended into the compost is a far better idea than that.

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Plants and Problems

AN ATTRACTIVE NATIVE

Loiselburia procumbens, sometimes known as *Azalea procumbens*, is found in many places in the Highlands between 1500 and 3500 feet and grown on open well drained slopes. This note was suggested to me today by reading in an old copy of "The New Flora and Silva" that this plant was difficult to flower in cultivation. I have succeeded in making it happy enough to flower well by growing it in full sun in scree with a low stone on its south side for its roots to get under. When planting it I put a few lumps of broken brick and peat below and round the roots, both the brick and peat being well soaked first, of course.

It can be propagated fairly easily from cuttings or layers.

Edinburgh.

M. L.

CONVOLVULUS CNEORUM

THIS lovely little rock shrub is hardier than many think. In a warm sunny pocket of light, well drained soil, I have known the same plant go on year after year till it was nearly three feet through and two feet high. It is very easily grown from cuttings, and younger plants are much more shapely than when they get old. The bush forms a compact dome of narrow silvery leaves and is profusely covered with pink-tinged white flowers throughout a long season ; a plant worth a place in every sunny rock garden.

J. M.

MORISIA HYPOGAEA

SOME people seem to find this rather "miffy," try it in scree containing 75% boiler ash. After reading in an article by Clarence Elliott that it ramped on an old ash midden, I did, and it was smothered in bloom, having had no glass covering or anything like that during the winter.

Edinburgh.

M. L.

NOMOCHARIS OXYPETALA

LAST summer I was fortunate enough to flower *Nomocharis oxypetala* (now *Lilium oxypetalum*) for the first time in my garden. It was indeed a lovely thing. About a foot high, its solitary flower was of greenish yellow colour with a rather drooping habit.

It grows best in a soil rich in humus, with some shade and shelter from the winds. Seed was set profusely.

Another nomocharis which is very like *No. oxypetala* is *N. nana*. This is a smaller plant in all parts and its flowers are of a like colour. The same conditions suit it and it also sets seed freely.

R. S. M.

POLYGALA CALCAREA

ALTHOUGH its name suggests a lime demander, this native Milkwort only asks for a soil that is not acid, and is a most delightful rock plant, growing in a low creeping mat that in April is covered with masses of flowers of an intense blue that rivals even the Gentian. It seems to delight in crawling through and over some neighbour such as a patch of encrusted saxifrage. Cuttings are very easily rooted and soon make nice young plants.

J. M.

POLYGALA CHAMAEBUXUS

NOBODY should experience any difficulty in growing *P. Chamaebuxus*, but that does not mean that it is unworthy of notice : on the contrary, this is a useful and attractive subject in any rock garden. While the normal flowering time is in the early spring, this dwarf shrub may produce its creamy, pea-like, flowers in late autumn and throughout the winter months ; perhaps providing the only spot of colour in a dormant garden. A native of Central Europe, this Polygala is to be found in partially shaded places and even in thin woodlands. The shrublet, attaining some six to eight inches, throws out creeping roots which break into tufts of hard little green branches ; though possessing this creeping characteristic, *P. Chamaebuxus* is never rampant and seldom invasive.

While no special treatment is demanded, it is desirable to select a site in the rock garden which is protected from driving rain and snow, as these elements will certainly damage the early flowers, but wind and frost have no effect on the plant whatsoever. Further, it should be noted that, though naturally a shade-lover, *P. Chamaebuxus* will stand all the sunshine that we may get in Scotland. Propagation is carried out either by simple division or from soft cuttings taken in the early summer and inserted in silver sand.

P. Chamaebuxus is known in more than one form ; perhaps the best is *P. C. var. purpureus*, sometimes listed as *P. atropurpurea*, which has standards of a particular bright pink. But in all the forms a noteworthy characteristic is the fading of the flowers to a deep orange towards the end of their life.

K. C. C.

PETIOLARIDS IN CAVES

A CAVE in a north wall is one way of growing Petiolarid Primulas. The photograph shows *P. Edgeworthii* in a cave 13 inches wide by 9 inches high, facing N.N.W. The plants are sufficiently far back for the crowns to be out of the winter drip. The two plants shown had

been planted on 20th March 1949, and the photograph was taken on 25th March 1950. The roof of the cave slopes back so as to run the rain water into the roots. *P. p. bhutanicâ*, *gracilipes*, x "Pandora," and *scapigera* are growing in similar caves.

Having a good supply of *P. Edgeworthii* seedlings, I used them as "guinea pigs" to see what amount of exposure to winter wet this *Primula* would stand. Admittedly the winter '49-'50 was a mild one, but they all survived and most of them flourished in every variety of position between a "cave" and right in the open on the flat, including positions almost vertical in stone and peat walls—some plants being partly overhung.

With the exception of two or three out of about thirty plants, they have also survived the '50-'51 winter and flowered quite well. Two plants of *P. Reidii* under an overhanging stone were also looking well after passing the winter when I left my garden on 31st May 1951.

No glass or other covering was used. All positions face roughly N.N.W. and are sheltered from the early morning sun by the bank behind them. In summer they are kept cool in the middle of the day by the shade of two birch trees. The soil in which they grow is about equal parts loam, sand, and the third part peat and leaf mould, half and half. A dash of bonemeal and John Innes Base is added as my loam is pretty poor stuff.

Perthshire.

M. L.

Since writing the above, I have heard that the *Primulas* were still looking well early in February 1952; the new owner, or his gardener, however, did not risk the plants in the open, but gave them Windolite verandahs.

Edinburgh.

M. L.

AN EASY AND BEAUTIFUL PRIMULA

Primula pubescens alba, a really choice *Primula*, is an easy doer and gives a fine display of its white flowers in April. Neat and compact in its growth, with large heads of flowers, it is worthy of either trough or special place in the rock garden. It does very well in a wall in full sun and is satisfied with any decent well-drained soil.

M. L.

PRIMULA EBURNEA

SEEDS of *Primula eburnea* marked L & S 21329 were received from Major Sherriff. These were sown under glass in early Spring 1950. Plants were raised and I was given one. This was planted on the 4/9/50 in my peat garden. The position faced N.N.W. on a peat wall between two peats and overhung by a third.

A sharp frost late in October turned the leaf rosette a pale brown and the whole rosette came away entire. This was ominous, but not

necessarily fatal. Frost held almost without a let up until late in March, then, beside the label, there appeared early in April a tiny bud of pale green. This increased and opened into a small rosette of primula foliage which grew slowly until June, when a second rosette appeared in the centre. This secondary rosette increased quickly and formed a much larger plant. In early August, a flower bud appeared and, after a fortnight, it stood 4" above the foliage. This opened to a circle of fringed white flowers facing downwards, the calices of the unopened buds being tinged with black, somewhat in the fashion of *Primula bellidifolia*, though not so dark. As more flowers opened, they stood out in a horizontal ring and formed a charming flower head.

In September, a second bud began, but this grew more slowly and failed to develop fully. In late October we had a spell of sharp frost and for a second time the whole plant became pale brown and all came away entire. No viable seed was found in the first flower head, probably because it had flowered so late.

This *Primula* has been raised successfully by Lord Aberconway and by Mr. and Mrs. Renton of Branklyn, Perth, but in both cases under glass. Mrs. Renton received an Award of Merit for *Primula eburnea* last year. My experience goes to show that *Primulae eburnea* is perfectly hardy and is a most desirable plant.

L. G. KINNEAR

PRIMULA FORRESTII

THIS IS an attractive *Primula* which is not so often grown as it deserves. It is not difficult if certain definite likes and dislikes are catered for. It does not like water on its crown or leaves, so it should be planted in a "cave" or under an overhanging rock, and in winter the addition of a small glass or Windolite verandah is appreciated. It does like plenty of sun. The stems are woody and the scapes are strong and carry good umbels of butter yellow fragrant flowers.

As it does not produce suitable offsets, seed is probably the only feasible means of propagating it. Grown as above in my old (Perthshire) garden, two young plants had in three years grown into a clump fully 18 inches wide. It normally flowers in April.

Edinburgh.

M. L.

PRIMULA ROSEA

IN THE Himalayas this *Primula* grows in marshy or wet ground, so I tried a clump of it on a mound in a small pool. Its roots must have been sopping wet all winter, but it was easily the best plant I had, so much so that I dug it up and showed it in preference to other plants carefully grown in pots in a frame for show purposes. The form known as *Micia Visser de Geer* (or sometimes *splendens*) has rather larger flowers and these of a better colour.

Edinburgh.

M. L.

BOILER ASH

THIS IS a material whose value is not, I think, fully appreciated. It is excellent for all drainage purposes—for digging into heavy soil in scree (up to 50% or more), for plunge beds, for putting over the crocks in potting, and I am ever trying it out as an ingredient in my potting compost.

It should be weathered for six months before use, and if you are in a hurry it can sometimes be got already weathered. It has the added attraction of being cheap.

Have you noticed how self-sown seedlings flourish in nursery plunge beds ?

Edinburgh.

M. L.

CROCKING

IN ALL good books on Alpine Plant culture one is advised to put plenty of crocks at the bottom of each pot when sowing seed or potting up plants. This is said to ensure perfect drainage. How and why ?

My own practice is to put one piece of crock over the outlet hole in the pot to prevent soil washing out. How can the crocks at the bottom of the pot affect the drainage of the compost at the top of the pot when you are using a porous pot and, when growing alpines, a compost of quick drainage ?

My idea is that the drainage would be far better round the neck of the plant in the form of an inch or two of coarse sand or small chips. It is at the neck where rotting most often starts.

Incidentally, if you have a plant that dies of "neck-rot," try root cuttings. Very often the roots are healthy about an inch from the plant. Cut away the diseased portion and plant as a root cutting in a propagation frame. You will lose one plant to grow ten !

R. S. M.

A WALL'S THE THING

A WALL seems to satisfy a number of plants which are often not too happy on the flat. For example, two which do well on a wall are *Lewisia Tweedyi* and *Draba polytricha*. The former is flourishing near the top of a south-west wall, growing on a narrow ledge at the foot of a vertical crevice.

The *Draba* has completely filled about ten inches of a horizontal crevice which is slightly overhanging by the upper stone.

Both plants have been out two winters without being given any protection and are growing in a scree mixture, the *Lewisia* having had some leaf mould added. Both flowered profusely, the *Lewisia* having 74 flowers.

Perthshire.

M. L.

THE SEX LIFE OF PRIMULA BHUTANICA

WHEN examining my old mature plant of *Primula bhutanica* today, 6th March, I noticed that although its flowers are not likely to open sooner than a fortnight or three weeks hence, five of the buds have pistils projecting an eighth of an inch. The stigmas seem to be sticky and receptive and have a few grains of farina from the buds adhering to their surfaces. The corollas in four of the five are still tightly closed within the calyx. I do not know whether *P. bhutanica* always behaves in this precocious way, or whether my plant is a freak.

Questions which arise in my mind are :—

- (1) Will any bee or other insect visit the plant without the inducements of colour, scent and nectar ?
- (2) If pollination should take place, will the plant then flower normally in a few weeks' time ? One knows that a flower always fades after fertilisation, so if the plant flowers it will do so only for the unselfish purpose of providing ripe pollen for a thrum-eyed friend.

Unless somebody can tell me, I shall not know the answers this year. The nearest *P. bhutanica* is out of bee-range twenty-three miles away, and the only other Petiolarid I have with its pollen now ripe is *P. aureata* form, which, I should imagine, is probably incompatible.

L. C. B. H.

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Book Notes

“THE DAFFODIL”

By J. M. JEFFERSON-BROWN

THERE HAS been for a long time a great need for a modern book concerned solely with daffodils and in particular for one which from the amateur's point of view is not only readable and easily understood, but also contains plenty of practical information. This book entirely fulfils these conditions. It is well written, well arranged and has nice large print.

The information is there and is of a practical nature without too much technicality. The illustrations are excellent and well chosen, some of them in colour. In particular, one of these shows the flies and grubs which do so much harm to bulbs.

From the alpine gardener's point of view, there is quite a lot about miniature and daffodil species suitable for the rock garden, alpine house, and frames. It gives advice on how to deal with bulbs in pans. This should encourage people who have not previously grown these charming and fairy-like flowers to try them, and enable them to make a success of it.

The book includes, too, a list of “Specific Names” showing the correct nomenclature of many species, and will be a great help to those of us who are not experts, but like to call things by their right names.

This book can be recommended as being very much what the enthusiastic amateur has been looking for. If it succeeds in stimulating interest in daffodil growing and producing better results, as surely it will, then Mr. Jefferson-Brown will have done a fine job. R. McC.

“WILD FLOWERS IN THE GARDEN”

By WALTER E. TH. INGWERSEN

MODERN systems of communication have greatly facilitated the introduction of plants and seed from the furthest corners of the earth and the appearance of many new species, along with the re-appearance of many that have been out of cultivation in this country for many years, has largely driven from the minds of gardeners the value, even the existence, of British native rock garden plants. Two recent events have, however, brought these worthy species once again to our minds. The first was the highly important and beautifully illustrated Paper read by Mr. Robert M. Adam before the 1951 International Rock Garden Plant Conference; the second has been the publication of Mr. Walter E. Th. Ingwersen's “Wild Flowers in the Garden” (London, 1951, Geoffrey Bles, price 15/-). To both of these authorities we are deeply indebted.

In his Introduction, Mr. Ingwersen writes “I would like to emphasise from the very outset that the attempt of gardening with our native flora is not the simple thing many might think,” and throughout his book he constantly draws attention to the difficulties encountered in

making these wildlings at home in our gardens ; "Careful provision," we are reminded, "will have to be made for their main likes and dislikes at all events." Thus is dispelled any idea that because a plant is a native of the British Isles it is, *ipso facto*, a weed which will grow in spite of anything and make a nuisance of itself by swamping and strangling anything in its vicinity. In point of fact, and as the author tells us more than once, some of our native Alpine plants are difficult to manage and slow to grow to any size at all. *Silene acaulis*, which occurs on some of our highest mountains, and in the Shetlands, is a valuable scree plant for any rock garden. *Mertensia maritima*, "a rare species from the seashores of Scotland, North Wales and Ireland," will certainly try the skill of most gardeners, but if succeeded with will provide a splash of colour which will invariably attract the attention of visitors to the garden. *Primula scotica*, if it can be induced to survive at all, will unquestionably appeal to all plant-lovers by reason of its diminutive stature, and will call forth praise of the cultural skill of its owner from the knowledgeable. For those fortunate enough to have water in their rock gardens, or at any rate very moist places, the Pinguiculas are both interesting and attractive little plants. *P. vulgaris* and *P. grandiflora* may be mentioned ; the former is widely distributed, the latter confined to S.E. Ireland and parts of Cornwall. The large genus Saxifraga is represented in these islands by, amongst others, *S. S. cespitosa*, *granulata* and *oppositifolia*, while the flower adopted as its emblem by the S.R.G.C., *Dryas octopetala*, and described by Mr. Ingwersen as "an indispensable rock garden plant," may be found on some Scottish mountains.

But a catalogue of all the valuable native plants suitable for cultivation in gardens cannot be given here ; those interested in the subject are advised to consult "Wild Flowers in the Garden," where all the native species are full described and in many cases figured in the attractive little drawings by Russell Leslie. Perhaps a sufficient number of plants has been mentioned to create an interest in British Alpine flora and to induce gardeners to take greater notice of them.

While Mr. Ingwersen undoubtedly deserves the thanks of gardeners for his most interesting little book, so also he merits the plaudits of all who are interested in the preservation of our wild flowers in their native habitats. Time and again he gives warning against any attempt to collect plants in their stations, and he goes further when he writes : "May I plead that our countryside be respected as far as possible, especially where the rare species are concerned." And again : "I do plead that anything approaching wholesale collecting should be avoided, as harm enough is already being done by our ever increasing towns and the roadmaking and building this entails." All who desire to cultivate our native plants should content themselves with the collection of a few capsules of seed or, as Mr. Ingwersen suggests, specimens "should be purchased from one or other of the nurseries specialising in hardy and Alpine plants." It is greatly to be hoped that this excellent advice will constantly be followed.

K. C. C.

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