

Editorial Copy



The JOURNAL of
THE SCOTTISH
ROCK GARDEN CLUB

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VOLUME XIV Part 3
No. 56

APRIL 1975

Editor P. J. W. KILPATRICK • 10 Eglinton Crescent • Edinburgh • EH12 5DD

Obtainable from
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The ANNUAL GENERAL MEETING will be held at the Trades House, Glassford Street, Glasgow, on **Saturday 8th November 1975, at 2 p.m.**

Members are notified that nominations are required for President and other Office-bearers, and for five Ordinary Members of Council. Nominations *in writing, seconded by another Club member or members*, must be sent to the Hon. Secretary no later than 20th August 1975, the nominator having ascertained that the nominee is willing to serve if elected.

All Executive Office-bearers retire annually, but are eligible for re-election.

The following, having served for three years as Ordinary Members, retire and are not eligible for re-election as Ordinary Members for one year:

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Some Aspects of Alpine Cultivation

by H. ESSLEMONT

The W. C. Buchanan Memorial Lecture given at Edinburgh on 21st September 1974

WHEN ONE has been a member of the Scottish Rock Garden Club for a quarter of a century or more, one is sometimes asked to share one's experience with the members by giving the William Buchanan Memorial Lecture and this afternoon I have been so honoured.

The years roll by and as each one passes fewer members remain who knew Willie Buchanan. Although I got to know him only in his latter years, there are two plants that I shall always associate with him.

The first is *Spiraea* or *Petrophytum hendersoni*. At that time I had been recently appointed to the Joint Rock Garden Plant Committee, of which "Willie" was an old and valued member.

A plant of the *Spiraea* had been submitted and an Award of Merit proposed. I had ventured the observation that it was not a very shapely specimen. Willie's reply was straight and to the point: "I dinna like my plants served up like a dish of fish". The *spiraea* got its A.M.

My only visit to his garden was in the year he died. Among his many rare and interesting plants I admired a truly magnificent clump of *Cypripedium calceolus*. "How many crowns did you start with?", I asked. "One", was the reply. "And how many years ago was that?" "Forty". "That is a long time", I said. "Aye, but if you start with two, it will only take half as long!!"

We honour the memory of a great plantsman.

I have chosen as the subject of my talk this afternoon "Some Aspects of Alpine Cultivation" for two reasons. Firstly, it is a subject that particularly interests me; secondly, because it is one that I believe Willie Buchanan would have approved.

I have always been interested in gardening. It was not until I had a house and garden of my own, however, that I decided to specialise in Alpines. After the war I acquired a small eight foot greenhouse and a Crittall frame; I grew some good plants in it.

Some years later I spent my first A.G.S. holiday in Switzerland with Mr. Parker and saw alpines growing in the wild. I found it a wonderful experience. During the next twelve years I joined A.G.S.

Tours to Switzerland, Greece and Turkey. My only regret is that I did not begin earlier.

My town garden is a small one. It has a North-facing peat border for ericaceous plants and a South-facing herbaceous one to keep the flower arranger happy!

Concealed behind a trellis at the end of the garden is an alpine house (fig. 57) and frames which were built to my own specification in 1960. Features of this house are full top and side ventilation and slatted sun blinds. Only a few alpines enjoy full sun under glass and they are housed in one of the frames. All the pots are plunged in sand (fig. 58). This reduces watering considerably; in winter it may be as little as once a month. It also helps to insulate the plant roots against frost in winter. There is no heat. I am not dogmatic about this; the ideal I consider to be two houses, one cold and one frost free. I do believe, however, that alpines which will tolerate frost retain their character better in a cold house.

Having sketched in this background, I now turn to the plants. I have chosen as my first plant *Androsace helvetica* growing in a rock crevice on the Weisshorn at an altitude of 6,000 feet. The cushion is compact and firm and almost completely covered with flowers. One can imagine the severe root restriction and of course the plant would be quite impossible to collect. Fortunately you will be much more successful if you grow it from seed.

I do not propose to take time to discuss seed raising. There are three excellent leaflets obtainable from the Club written by such knowledgeable growers as John Duff, Alec Duguid and the late Henry Tod. Suffice to say, I sow my seeds in December and expose them to wintry conditions, covering them with snow when it is available. When the seedlings are large enough I pot them up in thumbs and when they flower for the first time, I select a few of the best forms to grow on and discard the others. One does not want to spend eight or ten years cultivating an inferior form. Remember their natural habitat and keep them tight potted, potting up only one size at a time over good drainage. A "collar" of hard tufa built around the plant makes a firm base for the cushion and helps to protect the vulnerable neck. Water the pots by immersion up to one-third of their depth and if they are attacked by aphids add a systemic insecticide to the water. It works!! In the winter keep the plants on the dry side; a crack in the cushion will indicate a request for water. Cushions are usually at their best for exhibition from six to eight years old and it is advisable to make fresh

sowings periodically to provide replacements. Cuttings can be taken from a particularly good form, although I prefer seed. If you tire of white androsaces, the pink *A. ciliata* (fig. 45) makes a pleasant variation. Three don'ts seem to sum up the cultivation of androsaces—don't over-pot, don't over-water, and don't encourage aphids.

Draba mollissima is another good natured and much easier cushion plant which will easily outlive the androsace. I have a twelve-year-old plant which covers itself with flowers most years.

My next group of high alpine comes from New Zealand. *Haastia pulvinaris* grows at 6,000 feet on the Southern Alps, the same altitude as our androsace. One might be forgiven for thinking that haastias and *Raoulia eximia* (fig. 59) would enjoy similar treatment to the androsace, but this is where I went far wrong and lost my first imported plants. Raoulias and haastias die slowly but very surely.

A letter from a correspondent, a former New Zealand Curator, pointed out my mistake. He wrote: "One thing I am sure of and that I have always been wrong in trying to grow *Raoulia eximia* in the warm sunny part of the garden. The slopes of Mt. Edward where it flourishes have been free from snow for only a matter of a few weeks, so these plants have been living and growing under snow. I am sure now that the two in my Tekapo garden love the cold weather and endure the hot sunny days in misery. You see them smiling in the sun, but don't always realise that they are really looking forward to being drenched in rain and mist in a day or so at most". To keep them happy I suggest planting them in a gritty ericaceous mixture and avoid over-potting. Keep them moist and reasonably shaded in summer, rather drier in their winter resting period, and give them a light spray on warm summer evenings to remind them of their mountain home. Seed again is the answer here, although viable seed seems difficult to come by. I experienced repeated failures until I was fortunate in getting a viable packet, when I got a very good germination. Cuttings of established plants will root without too much difficulty with the aid of a mini cloche.

While on the subject of New Zealand plants, some of the ranunculi are very attractive. I can recommend *Rr. sericophyllus* and *insignis*. Seed of both often appear in the excellent Canterbury A.G.S. seed list. Both appreciate long pots to accommodate their extensive root systems. I bottom water in the winter months as I have lost plants through damping off at the neck.

Ranunculus paucifolius is another interesting rarity.

Tufa can be helpful in the cultivation of certain plants. There are two types of tufa—hard and soft; both are porous.

The hard requires a power drill to bore it; soft tufa is easily cut and plants will root into it. I often use pieces of hard tufa to form a collar around the neck of cushion plants as an alternative to an inch of chippings.

Some plants such as *Kelseya uniflora* can be successfully grown in a hole bored through a lump of soft tufa. My plant took seven years to become pot bound and then produced four hundred flowers. It is said re-pot your *Kelseya* and say goodbye to flowers for the next two years.

Another plant that responds to tufa treatment is the saxatile *Campanula morettiana* from the Dolomites. Once established it makes an attractive and natural pan, draping a tufa lump. Unfortunately most campanulas bloom too late to be seen at our S.R.G.C. Shows.

Many of you grow *Primulas* so well that I hesitate to include them. I should like, however, to mention three. *Primula allionii* (fig. 46) from the Maritime Alps is a long-lived plant. I have a free-flowering wild form acquired from a dispersed collection some fifteen years ago which must now be at least thirty years old. I grow it in a compost containing one-third lime chips over good drainage and re-pot every third year. The plant is always bottom watered, kept on the dry side in winter, and it is important to remove all the dead flower-heads after flowering to prevent mould. I have also an attractive white form which at twelve years old is not a quarter the size.

The petiolaris *primulas* do not enjoy pot culture and thrive best in a cool peaty North border. If you want a colourful exhibit for a Spring Show, lift a few *Primula whitei* or *sonchifolia* in October, fill a twelve-inch pan with them and plunge it in a North frame. Bring it into the alpine house to finish off. If you want to propagate from seed, it must be sown green just as the capsules are splitting. *Primula aureata* is now quite a scarce plant and propagation by seed appears difficult, although several of you, I know, have accomplished it. My theory is that top watering is inclined to damp off the pedicels bearing the seed heads. Try hand pollinating the flowers and keep the plants moist, but the surface dry, by bottom watering.

I never had much success with *Primula marginata* until I remembered the stories about the yaks and put a good pad of rotted cow manure at the bottom of the pan. The result was dramatic!

It is said that one can have a cyclamen in bloom every month of the year. My F.C.C. form of *Cyclamen hederifolium* (*neapolitanum*)



Fig. 45 *Androsace ciliata*

Photo H. Eslemont

Fig. 46 *Primula allionii*

Photo H. Eslemont



was collected on Mt. Parnes in Greece fourteen years ago. It is a form in which the flowers and leaves appear simultaneously. Its modest demands are an annual top dressing of leafmould and bone meal and I only re-pot when it threatens to outgrow its pan. With *Cyclamen libanoticum* on the other hand water is withdrawn after it dies down and the sand around the pan is kept just moist during the summer. My corms were a gift from the late Mrs. Saunders. Seed germinates readily if sown when fresh and sticky. *Cyclamen creticum* survives with me, but like many of the Mediterranean cyclamen is happier in a frost free house.

I don't know if crocus are beneath your notice, but I shall mention two that can be easily lost through faulty cultivation. *Crocus banaticus* (fig. 60) or *iridiflorus* is a striking plant and always attracts attention. I had little success with it until I learned it is a peat lover and should not be dried off. After hand pollinating the flowers this year I was pleased to get some good seed. This is a worthwhile exercise with a scarce and somewhat expensive bulb. My corms of *Crocus scardicus* (fig. 47) were collected by Jim Archibald on the Passina Glava in 1967. They did not increase until I discovered that this was a high alpine and that its root system is never completely dormant and consequently should not be allowed to dry out in summer. It now produces offsets. Those two examples indicate the importance of understanding the nature of one's plants.

Some alpine have very long roots and *Asphodelus acaulis* from North Africa is one of them. Here long tom pots come to the aid of the cultivator. With the asphodel one must strike a balance with the soil mixture; if it is too rich the result will be all leaves and few flowers.

Some plants can be brought to a high standard if given V.I.P. treatment in long pots.

Thymus cilicicus, that Queen of the thymes, is one of them. This is another attractive plant always too late for our Shows.

Some plants can be improved by judicious pruning. *Verbascum* 'Letitia' is an example. This easy and floriferous plant only asks for the soil to be freshened up each spring. It can, however, eventually become a bit leggy. If it is pruned hard back in February and later some of the resultant side growths rubbed off a more shapely plant will result. Don't, of course, re-pot at the same time. As one of my old schoolmasters used to say, "I don't mind fun, but I won't stand impertinence". *Helichrysum plumeum* too is a plant which can be kept more compact by nipping out a few leading growths in Spring.

There are many shrubs I could talk about, but *Daphne petraea* must take pride of place among them. I believe that it has won more premier awards than any other plant. Its cultivation is a real test of patience. My plant took ten years to flower well and I lost it in as many weeks by taking too much soil off the roots when re-potting. I know that others have shared this unfortunate experience. I am very fond of the smaller and neater wild form grown on its own roots.

I once wrote in the *Journal* that the growth of *Daphne petraea* could be hastened by removing all the flower buds for the first five years as soon as they formed. Shortly afterwards I received a letter from a member stating—"I read your article with interest and steeled myself to cut all the flower buds off my daphne. I am over eighty years of age". I hastily put pen to paper stating that the improvement was only marginal and that I suggested in future he should leave the buds on and enjoy his daphne.

Another favourite of mine is *Daphne jasminea*, a native of the sun-baked cliffs at Delphi. Keep it tight potted in a mixture of half soft tufa lumps. Take care with your re-potting; I usually break the old pot as both the stems and roots are very brittle.

Kalmiopsis leachiana should be sought after in a good form. It too flowers best when slightly pot bound. I lost my F.C.C. form after re-potting it, perhaps too loosely or by letting the hard ball of roots in the centre become dry—very easily done. Fortunately I had rooted cuttings, but eight years' work had gone by the board. Experience comes the hard way!

Rhodothamnus chamaecistus requires similar treatment, but does not object to a little lime in the compost.

I wish that I could tell you how to flower *Rhododendron repens*. Rock form as well as my illustration every year. Sandstone lumps under the new shoots will help to ripen them and in my N.E. corner of Scotland winter protection of the flower buds is necessary to prevent frosting.

Epigaea gaultherioides is a plant both difficult to please and to obtain. A Caucasian, it grows in dense shade and requires plenty of moisture. It is probably happier out of doors in the peat border, but it will require frost protection. In the alpine house put it in a shady place under the staging and spray it nightly in warm weather.

There is a truly magnificent plant of this *Epigaea* at Keillour Castle and other examples can be seen at the Royal Botanic Garden.

We all have our favourite plants and this afternoon it is my privilege to name a few of mine.

Phlox triovulata from New Mexico is the Queen of the phloxes and is not the easiest plant to keep in cultivation. It seems to like a gritty soil and plenty of sunshine. Propagation is by root cuttings, but not everyone is prepared to risk their dearly acquired plant in this manner. An alternative method may save you some sleepless nights.

Pot the parent plant in an orchid pot (with holes in its sides). Plunge the orchid pot in a larger one and fill the gap with a mixture of peat and sand. If all goes to plan the phlox will root through the holes into the mixture and in due course the young plants can be taken off and potted separately.

Paraquilegia anemonoides F.C.C. form never fails to arouse admiration. The original plant was flown home by Major Sherriff to Branklyn in 1946 and my plant was a seedling given to me by that generous gardener the late John Renton. I believe that it is a deep-rooted and long-lived plant in nature and my plant in fifteen years has acquired quite a woody base. I pot on carefully, as on one occasion I nearly lost it through over-potting and on another by the use of too strong a fertiliser. Now I give it only a light surface dressing of hoof and horn in the Spring and keep a sharp look out for aphids. A heavy infestation can soon put paid to a good plant.

Seed of what promises to be an interesting white caespitose form was collected by the Wye College expedition above the Salang Pass in Afghanistan at 12,000 feet and a crevice *Isopyrum*, yet unflowered, could be exciting. It appears to be stoloniferous and to require deep shade.

The dwarf *Trillium rivale* enjoys a gritty ericaceous mixture and must never be allowed to dry out. Keep it in a North frame or plunge the pot in a shady peat border.

The shrubby and choice *Viola cazorlensis* from Spain is quite a tricky plant to keep in cultivation. Cuttings can be rooted, but it is a problem to bring them through the first winter as they die back to a resting bud.

A good pan of *Asperula arcadiensis* will always catch the eye of the judges. I suggest several plants in a twelve-inch pan in a gritty limey mixture. Careful bottom watering is required, especially in dull weather, or the plants will damp off just as they are coming into flower. If you have watched Percy Thrower on television cutting back *Aubrieta*, you will have learned how to deal with the *asperula* after flowering.

Cassiope wardii is possibly the outstanding member of the family. Many of you will have seen and admired the fine specimen exhibited

by the late Alec Reid. I am trying to cultivate a small plant given me by the late Mrs. Stuart of Millglen. A cool peaty border and a measure of sunshine seems to suit it.

I now come to a group of plants which I feel have been rather neglected by our members, the hardy cyripediums. *Cypripedium cordigerum* comes from 10,000 feet in the Himalayas and is completely hardy. I acquired three small crowns a dozen years ago. Now the roots completely fill a twelve-inch pot and in a good year produce nine or ten flowers. This confirms Willie Buchanan's arithmetic as very accurate. The pot spends most of the year plunged in a cool North frame. Like *Daphne petraea*, the cyripediums are a real test of patience.

I note that a pan of *Cypripedium reginae* with twenty-five flowers was awarded an F.C.C. recently in London and this fine species is certainly worth our attention.

My final paragraphs could be headed "Plant hunting by proxy". Few of us, however dedicated, can afford either the time or the money to visit such far away places as Iran, Afghanistan or the Andes. This makes us very indebted to those plant hunters who have organised such expeditions, expeditions in which it has sometimes been possible to take a share. One of the first in which I acquired an interest was the Bowles Scholarship Expedition to Iran in 1965.

They returned with a wealth of plant material, but I propose to deal with one aspect of my share only, bulbs and corms.

Most of mine began to go back after the first year and it was not until I learned from the late E. B. Anderson that bulbs have a hearty appetite that I started to reverse the process. I reckon that I lost several years by starvation diet.

Two of the more interesting Fritillaries I received were *Fritillaria michaelovskii* which is increasing well and *Fritillaria karelinii* (or *gibbosa*). A single bulb of a good form of the latter divided up after flowering. After seven years, six bulbs are at last approaching flowering size again. It could be an interesting pan.

It is always worth while hand pollinating a few of the rarer species to obtain seed. I feel that we ought to try to get as many of these good plants as possible into wider circulation.

Keen plantsmen always welcome a real challenge and Dionysias will certainly present one.

Reginald Farrer writes of Dionysias in *The English Rock Garden*. "If ever acquired they should have the care and cherishing displayed

upon their cousins the Aretian Androsaces, in similar conditions, but even warmer, drier and more sheltered corners." Dionysias are cousins of the first group of plants we dealt with, the Aretian androsaces, and are natives of Iran and Afghanistan. They are all crevice plants.

D. aretioides, the easy member of the family, is an inhabitant of the Chalus Gorge near the Caspian Sea. It is usually found growing in damp places and should be kept moist in the growing season. I grew several from seed collected in 1964 by Admiral Furse and they all proved free-flowering. I lost a good eight-year-old plant after re-potting, always a tricky operation with Dionysias, and I unfortunately had neglected to take cuttings.

Two superior clones of *aretioides* to be sought after are "Paul Furse" and "Gravetye".

D. tapetodes is a very variable species. I have four nine-year-old plants grown from seed; all are very different in appearance.

Dionysias can be propagated by cuttings. My plants of the rare *Dd. michauxii* and *janthina* were cuttings from a friend's only specimen.

Most of my plants, however, are grown from detritus or brushings from live plants in nature sent me by collectors who know that I am interested in the species. I spread the detritus on the surface of the soil in plastic trays in December, cover it with a thin layer of fine gravel and leave the trays in a cold North frame where they will get well frosted. Seedlings which germinate, usually in April or May, are pricked out into thumbs at an early stage. Be prepared for many blank trays. Sometimes only one seedling will result, but if it is a species new to cultivation as happened to me recently with *D. zagrica*, once established, it can be increased by cuttings.

With any recently cultivated group of plants it is difficult to know exactly which compost or mixture to use. What is certain with dionysias is that good drainage is absolutely essential and a coarse mixture is desirable.

I grow the more difficult species such as *michauxii*, *viscidula* and *microphylla* in double pots to permit more accurate watering. One error in winter can mean the loss of these species.

To those who wish to go into the subject in more detail I can recommend Grey-Wilson's monograph on Dionysias published by the A.G.S.

Pictures of *D. curviflora*, flowering amid melting snow, sent home by Jim and Janette Archibald, prove it is completely hardy and the superb Forrest Medal specimen shown by R. J. Mitchell at Edinburgh this year shows what can be done by a skilled and patient cultivator.

I like to remember that I gave him this plant in a thumb pot twelve years ago!

My last picture, taken by the Archibalds, is of *D. michauxii* growing on Kuh-i-bamu. As Jim Archibald wrote of it: "What a fantastic plant!" (fig. 48).

Can we reproduce it in cultivation? I leave the thought with you hopefully.

That distinguished gardener, E. B. Anderson, once said it takes two lifetimes to grow alpenes—the first to gain experience, the second to cultivate them.

I can only hope that the experience which I have shared with you this afternoon will help *you* to grow them.

Sources of seed:

- Seed lists of S.R.G.C., A.G.S., American R.G.S.
- Canterbury Alpine Garden Society N.Z., Hon. Secy., 157 Hackthorne Road, Christchurch, New Zealand.
- Alpine Garden Club of British Columbia, Hon. Secy., 590 East Kings Road, North Vancouver.
- Correvon et Cie, Chene Bourg, Geneva, Switzerland.

Literature:

- Seed Raising. S.R.G.C. leaflets by J. Duff, A. Duguid, H. Tod.
- Bulbs under Glass, J. G. Elliott, A.G.S., 25p.
- Dwarf Bulbs, B. Matthew, £2.80.
- Rock Garden Plants of the Southern Alps. Phillipson & Hearn.
- Seven Gardens. E. B. Anderson, £3.25.
- The Genus *Dionysia* by C. Grey-Wilson, A.G.S., 50p.
- The Propagation of Alpines by L. D. Hills (Faber & Faber, 1950).

A Contrast

by BRIAN HALLIWELL

ON A BRIGHT sunny day, not uncommon on Scottish hills in October once the early morning mist has lifted, a walker may be brushing through bracken which is turning golden. Tramping on through ankle-, occasionally calf-deep heather, the eye is drawn to the scarlet leaves of a bilberry (blaeberry) flaring briefly before winter snuffs them out. The walker may catch sight of some blue/black berries that may still be hanging; he may stoop to pick a few to pop into his mouth. The fruits of epicurean delight to those who know them have never

achieved wide popularity. Perhaps the chore of searching for sufficient and the back ache resulting from collecting has inhibited the gathering of this delicious fruit. The skyline may well be broken by a gnarled rowan, laden, if the birds have failed to find it, with orange-red fruit that far outshine a spectacular crimson foliage.

Far, far away to the south nearly twenty-five degrees nearer to the equator on an island which is sub-tropical at sea level, a walker on the uplands is treading a similar terrain and seeing the same plants. Madeira is the name of the island which is situated on the latitude of $32\frac{1}{2}$ degrees. At about five thousand feet is rolling moorland with peaks round about rising for another thousand feet. Here too in October the sun is shining from a blue sky, although clouds may be swirling about and mist can come down at any time and blot out the landscape. A walker here would also be brushing through bracken turning golden, which is exactly the same plant as that in Scotland (*Pteridium aquilinum*). Tramping through the heather, though, would be an arduous task, for it could be eight feet in height and when growing in isolation and shelter can become a tree of twelve feet with a trunk as thick as a man's thigh and with a rounded dense crown. The heather would be *Erica scoparia* or it could be *E. arborea*, both native species which are also widespread in Southern Europe. They are only to be found in Scotland in gardens where a cold winter will damage or even kill them. Upon high Madeiran peaks nearby can be found bell heather, *Erica cinerea*, which is so widespread on Scottish hills and mountains. The bilberries here, too, are giants at least six feet tall and these too can become tree-like. Everything about the Madeiran bilberry is bigger than its Scottish namesake, *Vaccinium myrtillus*. The shiny leaves are heart-shaped with only pinkish-red autumn tints, but the fruits, also blue/black, are less juicy and with tougher skins. Fruit is also gathered for adding to wine, making preserves, pies or puddings, but here the task is easy, for one bush can produce more than a pound of fruit and no bending is necessary in the picking. This bilberry is *Vaccinium maderense*, which in Scotland would be more suited to milder parts of the West Coast than for general cultivation.

Scattered over these uplands are occasional small trees poking their way through the heather, and bilberry with crowded windswept crowns carrying crimson-tinted foliage and glowing with masses of orange-red fruit. From the quantities of fruit to be seen it suggests that either Maderian mountain birds are not fruit eaters or that the berries are

unpalatable. These trees are so visually similar in habit, foliage and fruit with the rowan (*Sorbus aucuparia*) that one can understand why it has been considered as a form of that species, although now it has become a species in its own right, *S. maderense*.

It seems strange that in two countries so far apart, one sub-tropical and the other cool temperate, that terrain and vegetation can be so similar.

The Phyllodoce Problem

by J. CULLEN, Ph.D.

A Lecture given on 22nd September 1974 at the Discussion Weekend,
Edinburgh

ALL ALPINE garden enthusiasts know the genus *Phyllodoce* (Ericaceae Subfamily Rhododendroideae Tribe Phyllodoceae of Stevens¹ recent classification), and value its species for their neat growth habit and trusses of yellowish to magenta flowers borne in the Spring and sometimes also in late Summer. The plants are relatively easy to grow, given suitable soil and exposure, and easy to propagate by means of cuttings, so the keen grower might well ask: "What is the *Phyllodoce* problem?". This paper attempts to answer that question, indicating the classificatory and evolutionary problems that the genus presents; it is therefore in the nature of 'background reading' as far as the alpine gardener is concerned, rather than detailed information on the growing of the plants.

All *Phyllodoce*s are small shrublets, and possess ericoid (heather-like) leaves: i.e., the leaves are narrow and elongate, and appear to have their margins rolled inwards on the lower surface. In fact, anatomical research has shown that this type of leaf is not really inrolled, and that the apparent edge of the leaf when seen from above, which is marked by the presence of small hyaline teeth, is the actual margin. The inrolling effect is produced by a hollowing out of the lower surface during development. The leaf, as seen in section, consists therefore of two tubes, formed by the hollowing of the leaf, and separated by the midrib (fig. 49), open to the atmosphere by two narrow slits parallel



Fig. 47 *Crocus scardicus*

Photo J. & J. Archibald

Fig. 48 *Dionysia michauxii*

Photo H. Esslemont



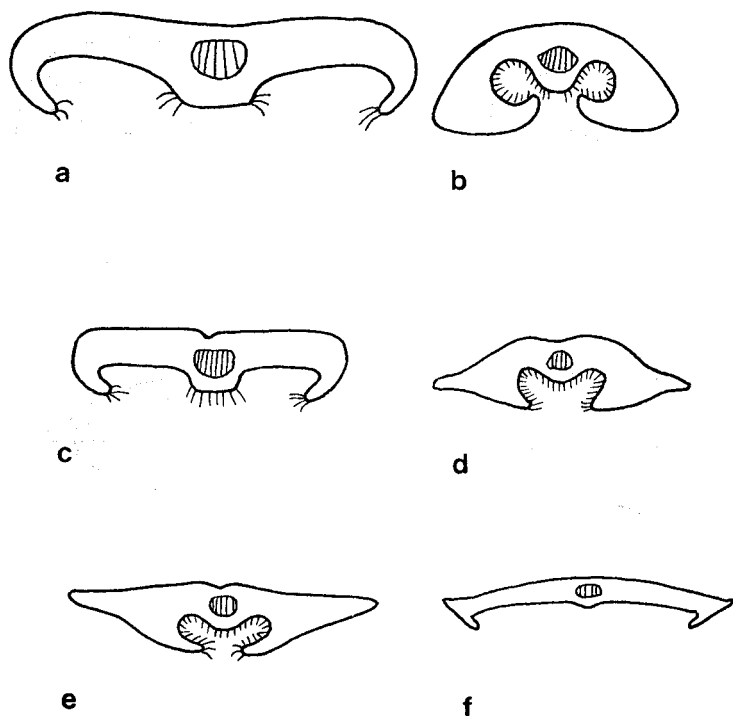


Fig. 49 Leaf sections. a, *P. breweri*; b, *P. aleutica* subsp. *aleutica*; c, *P. nipponica*; d, *P. aleutica* subsp. *glanduliflora*; e, *P. empetriformis*; f, x *Phyllothamnus erectus* (not to scale)

to the leaf axis, the inner surfaces of the tubes are lined, at least in part, with small white hairs, which are often also found on the lower part of the midrib, Stomata occur only on the leaf undersurface within the tubes, and the whole is clearly a modification of normal leaf structure designed to reduce water loss.

The flowers of *Phyllodoce* correspond with a very common type in the Ericaceae: (4-)5 sepals, a corolla of (4-)5 united petals, (8-)10 stamens, and a 5-locular ovary with axile placentation. The stamens dehisce by means of apical pores and the pollen is shed as tetrads. Great variability is shown by the shape of the corolla: it may be openly funnel-shaped, and deeply 5-lobed as in *P. breweri*; or campanulate with 5 small lobes, as in *P. empetriformis* and *P. nipponica*; or urceolate,

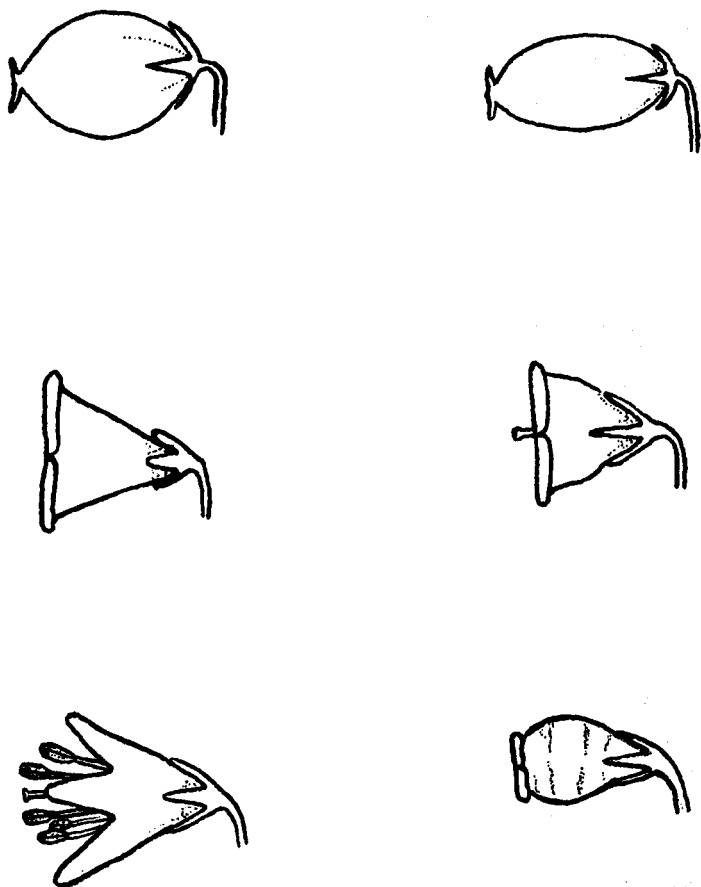


Fig. 50 Corolla shapes. Top row: *P. aleutica*, *P. caerulea*; middle row: *P. nipponica*, *P. empetrifomis*; bottom row: *P. breweri*, *P. x intermedia* (not to scale)

i.e. almost globular with a small mouth surrounded by 5 very small reflexed lobes, as in *P. aleutica* and *P. caerulea*. These shapes are illustrated in fig. 50.

In the classification of the genus which I propose, five species are recognised, one divided into two subspecies. Some notes on each are given below:

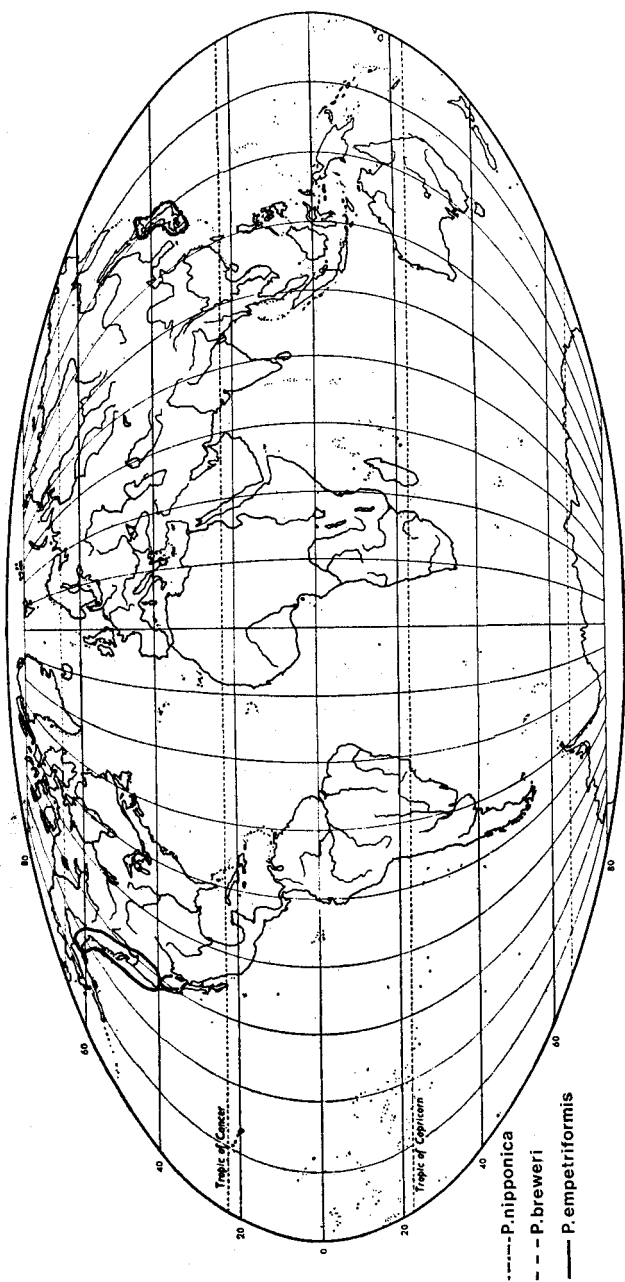


Fig. 51 Distributions of *P. nipponica* (broken-dotted line); *P. breweri* (broken line); *P. empetriformis* (solid line)

1. *P. breweri* (Gray) Heller.

This is the easiest of the species to recognise; the leaves are less 'rolled' than most of the others, resembling a '3' in section, with hairs restricted to the edges of the slits and the sides of the midrib. The flowers are borne in usually elongate racemes, and the corolla is pink to purple, openly campanulate and deeply 5-lobed (fig. 50), with the stamens and style exerted from it. It occurs in California only, on the Sierra Nevada and San Bernardino mountains (fig. 51).

2. *P. empetriformis* (Smith) Don. (*P. grahamii* (Hook.) Pursh).

An attractive species with strongly ericoid leaves and a pseud-umbellate inflorescence of up to 12 flowers, each with a tubular-campanulate, pink to rosy purple corolla, which expands rather abruptly at the level of the tips of the calyx lobes. The lobes of the corolla are short and reflexed, and the mouth is at the widest part of the tube (fig. 50). The style is shortly exerted from the corolla. The species is widely distributed in the Rocky Mountains, from the eastern border of Alaska, through Canada to Oregon, Northern California, Idaho and Montana (fig. 51).

3. *P. nipponica* Makino. (*P. taxifolia* auct., *P. tsugifolia* Nakai, *P. amabilis* Stapf).

A very similar plant to *P. empetriformis*, but with less ericoid leaves, the corolla white to pink, campanulate, not rather suddenly expanded at the level of the tips of the calyx lobes (fig. 50); the style included. The species occurs only in Japan (fig. 51). The pink-flowered variant is very similar to *P. empetriformis* and Hultén² in his recent revision of his Flora of Alaska has combined the two as subspecies under *P. empetriformis*. I think, however, on both morphological and geographical grounds, that they are distinct enough to be considered as separate species.

4. *P. aleutica* (Sprengel) Heller.

This species is divisible into two subspecies; both are plants with strongly ericoid leaves and cream or yellow urceolate flowers (fig. 50). The differences between the two subspecies are based on the indumentum of the corolla and filaments—glabrous in subspecies *aleutica*, or yellow-headed glands in subspecies *glanduliflora*. Subsp. *aleutica* is found in Japan, Sakhalin, the Kurile Islands, Kamtchatka, the Aleutian Islands and Alaska; subsp. *glanduliflora* occurs in the Rocky Mountains, from Alaska to Washington, Wyoming and Oregon (fig. 52), having a very similar distribution to *P. empetriformis*, though usually found at

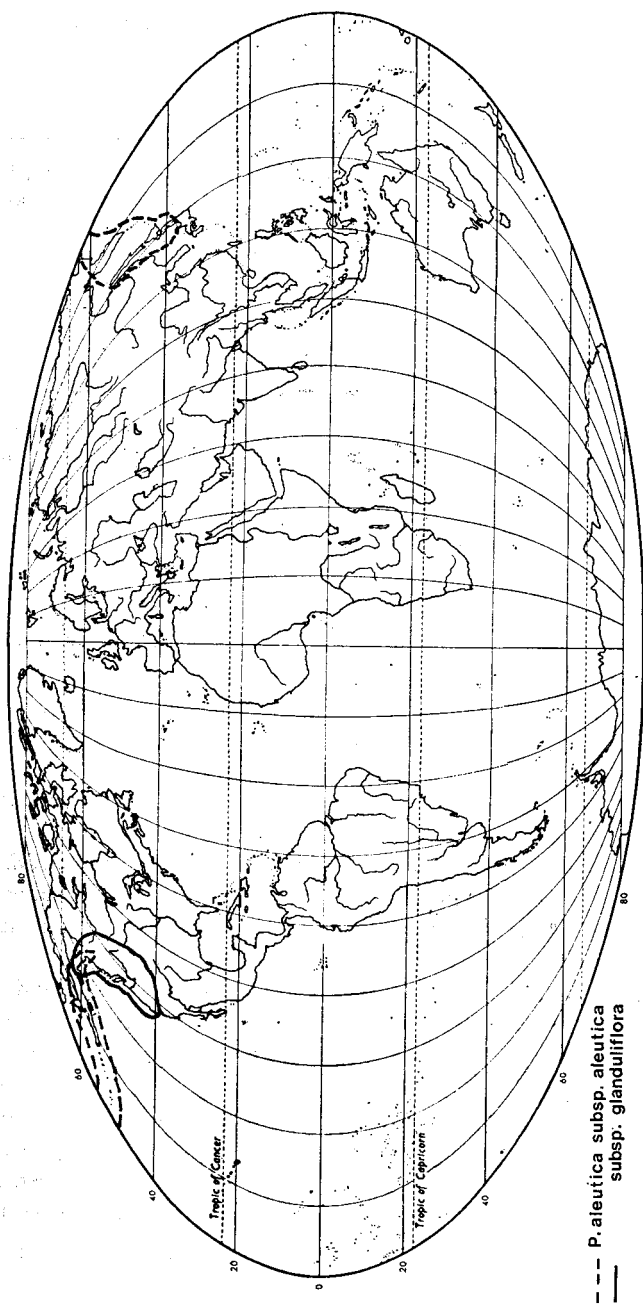


Fig. 52 Distributions of *P. aleutica* subsp. *aleutica* (broken line);
 subsp. *glanduliflora* (solid line)

higher elevations than this. Subsp. *aleutica* and *glanduliflora* overlap both morphologically and geographically in Alaska.

5. *P. caerulea* (L.) Babington.

P. caerulea is somewhat similar to *P. aleutica*, but tends to be larger, and has more oblong-urceolate (fig. 50), reddish or purplish corollas which have an indumentum of red-headed glands. It is by far the most widely distributed species, occurring in eastern Canada and the north-eastern part of the U.S.A. (New Hampshire), Northern Europe (including two localities in Scotland), the Pyrenees, and the northern part of the Soviet Union as far east as the Ural Mountains; it also occurs in eastern Siberia, Kamtchatka and Japan (fig. 53).

These five are the basic species, and as such they present few problems. Problems come in, however, when the relations between the species, their geographical distribution and their hybrids, both with each other, and members of other genera are considered.

(a) *Distribution and Interspecific Hybrids.*

Wherever two of the taxa overlap in distribution, hybrids between them have been reported. These areas are basically four:

- (i) The Rocky Mountains, where *P. empetriformis* and *P. aleutica* subsp. *glanduliflora* occur together;
- (ii) Western Alaska, where the two subspp. of *P. aleutica* occur;
- (iii) Kamtchatka, where *P. aleutica* subsp. *aleutica* and *P. caerulea* both occur; and
- (iv) Japan, where *P. nipponica* and *P. aleutica* subsp. *aleutica* occur together.

The hybrid between *P. empetriformis* and *P. aleutica* subsp. *glanduliflora* is widespread in suitable locations in the Rocky Mountains. Camp³ reports extensive hybrid swarms between the two, which, in their pure states are very distinct. The hybrid has been named *P. x intermedia* (Hook.) Rydberg (*P. hybrida* Rydberg non Makino), and a representative of it cultivated in British gardens has been named *P. pseudoempetriformis* Stoker. In the wild the whole range of variation between *glanduliflora* and *empetriformis* occurs, but only certain variants have been selected and are widely grown in gardens. Two of these have been named as cultivars: 'Fred Stoker' (*P. pseudoempetriformis* Stoker) with pink flowers and 'Drummondii'* with purplish magenta flowers. Both of these have corollas intermediate in shape between

*I have not been able to trace the origin of this name, and would be pleased to hear of any reference to it in catalogues from about the turn of the century.

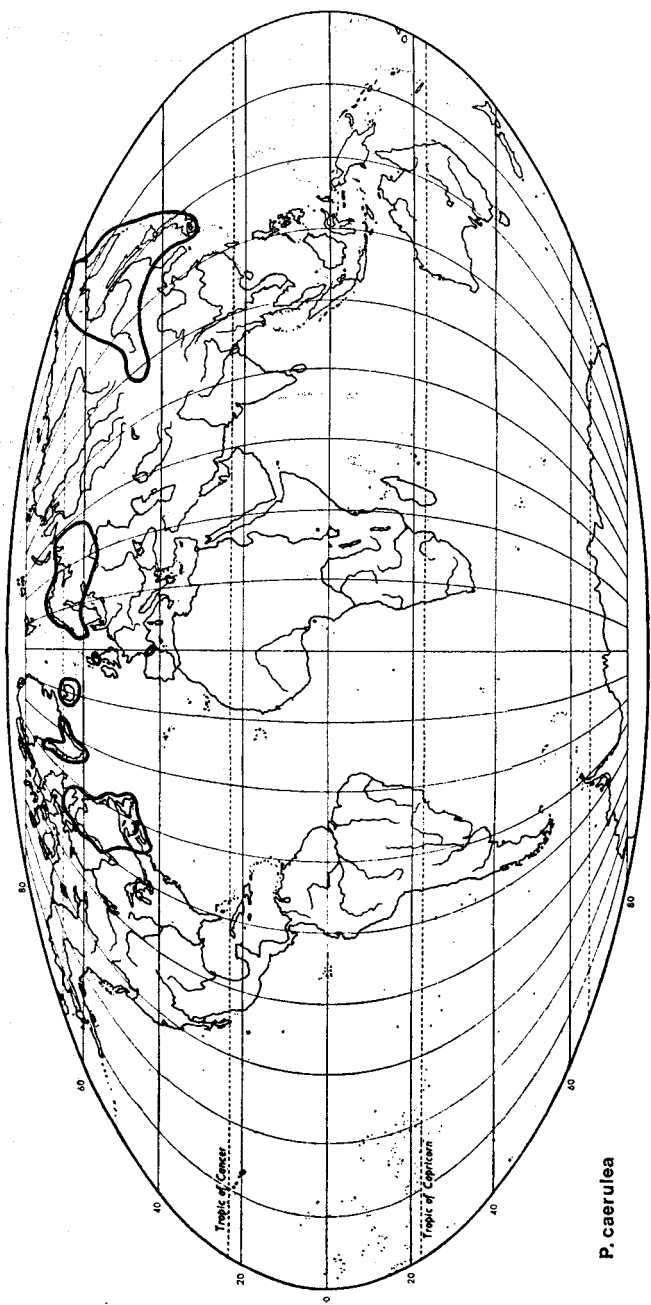


Fig. 53 Distribution of *P. caerulea*

those of the parents, with the mouth of the corolla about $\frac{1}{2}$ - $\frac{2}{3}$ of the diameter of the widest part; both also have transversely wrinkled corollas, a feature not found in either parent (fig. 50).

Even though *P. empetriformis* and *P. aleutica* subsp. *glanduliflora* hybridise, they are so different, in their pure states, that they must be recognised as separate species.

The two subspecies of *P. aleutica* overlap in distribution in Alaska, and intermediates between them are found there, showing different degrees of glandulosity of the corolla and filaments. As the two are very similar morphologically, and show a geographical replacement pattern, they are best treated as subspecies of the one species.

In Kamtchatka extensive hybrid swarms occur between *P. aleutica* subsp. *aleutica* and *P. caerulea*. These hybrid swarms have been described by Hultén,⁴ who also reports their occurrence on the Kommander Islands and the island of Attu (the closest to Asia of the Aleutian Islands). As in the case of *P. x intermedia*, the two parent species are rather distinct morphologically, and cannot be regarded as subspecies of the one species.

The hybrid between *P. aleutica* subsp. *aleutica* and *P. nipponica* has been recorded from various parts of Japan, and has been named *P. x alpina* Koidzumi. In the wild it is a rather variable plant, and various forms of it appear to have been introduced into cultivation. However, I have seen no material from gardens that matches the wild specimens, and the published descriptions of the hybrid are rather vague, so I am uncertain as to whether the plant is still in cultivation; information on this point would be very welcome.

A further putative hybrid is presented by a plant cultivated at Edinburgh under the name '*P. glanduliflora* White-flowered form'. This was acquired from the garden of the late W. Buchanan of Glasgow, who himself received it from Mrs. Flora Slack as a plant collected wild in the Rocky Mountains of Canada (Parker's Ridge). Mrs. Slack was kind enough to send me a late flower from her original plant to compare with the Edinburgh one: unfortunately the two are not quite the same. Mrs. Slack's plant certainly appears to be a very pale form of *P. aleutica* subsp. *glanduliflora*, with small, urceolate corollas covered with yellow-headed glands. The Edinburgh plant, on the other hand, is more robust, and has larger, pure white, oblong-urceolate corollas covered with an indumentum of red-headed glands. It appears to be a hybrid between *P. aleutica* subsp. *glanduliflora* and *P. caerulea*. This could not have occurred wild in the Rocky Mountains, as *P. caerulea*

is unknown there, but it might well have occurred in Mr. Buchanan's garden. Unless further evidence comes to hand the plant remains something of a puzzle. It is, however, possibly the most handsome of the *Phyllodoce*s, and deserves to be widely cultivated. A more extensive description of the plant, and a new name for it, will be published elsewhere.

The pattern of hybridisation outlined above involves all the species of the genus, except *P. breweri*; and Camp³ has suggested that *P. empetriformis* may have originated as a hybrid between *breweri* and *aleutica* subsp. *glanduliflora*. Thus all the species are potentially involved in a network of hybridisation stretching across the whole of the northern hemisphere. How this extraordinary situation has developed is an evolutionary problem which perhaps can only be solved by extensive field study.

(b) *Hybridisation with members of other Genera.*

As well as hybridising among themselves, certain species of *Phyllodoce* have produced hybrids with members of other genera. Two such hybrids are known, both of garden origin. One is widely grown, the other as yet not widely distributed.

x *Phyllothamnus erectus* is a hybrid between *P. empetriformis* from the Rocky Mountains and *Rhodothamnus chamaecistus* from the Alps. It is said to have originated spontaneously in Cunningham's Nursery in Edinburgh in 1845, and is beautifully intermediate between its parents even to the degree of inrolling of the leaf (fig. 49)—the leaf of *R. chamaecistus* is flat, that of *P. empetriformis* strongly ericoid; the leaf of x *Phyllothamnus* is rolled just at the edges. This plant again provides a very interesting evolutionary problem: how is it that plants which are so distinct morphologically and geographically, implying a very ancient separation, can have retained the ability to interbreed and produce viable offspring? I can offer no easy explanation: much more work on the genetics and taxonomy of the Ericaceae will need to be done before any kind of an answer can be given.

Less well known is a plant which arose apparently spontaneously in Hillier's nursery about 12 years ago, and which, as yet, is unnamed. This plant resembles *P. breweri*, but has larger flowers and broad, flat leaves (slightly rolled at the edges) which bear rather flat, scale-like orange or yellow glands on the lower surface. These morphological considerations suggest that the plant is possibly a hybrid between *P. breweri* and *Kalmiopsis leachiana*. This last plant is itself something

of a puzzle, as different forms of it are found in gardens, varying in flower size, inflorescence type and length of style. The relationship of these cultivated plants to the extremely local wild populations is obscure, though a series of articles by Roy Davidson⁵ has clarified the issue to some extent.

P. breweri and *Kalmiopsis* do not overlap in distribution, though they are found not all that far from each other (Oregon for *Kalmiopsis*, North California for the *Phyllodoce*), so it seems likely that this plant too arose spontaneously in cultivation. It is quite an attractive plant, and likely to become better known in gardens; as yet it has not been named.

These, then, are some of the problems presented by the genus *Phyllodoce*; though they have no direct bearing on the growing of the plants as ornamentals, they will, I hope, give an added interest to growers, whose direct experience with the plants can be of invaluable help to the taxonomist. I would be very pleased to hear of any interesting or obscure *Phyllodoce*s that may be in cultivation, and will be happy to identify specimens if they are sent to me at the Royal Botanic Garden, Edinburgh.

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Botany for the Alpine Gardener

Part VII - Papaveraceae

by Dr. MAVIS R. PATON

THE POPPY family is an evolutionary line developed from the ancient Buttercups. There is an American plant *Platystemon californicus* which has the characters of the family Papaveraceae but still retains one detail of Ranunculaceae, thus providing evidence of the family's origins.

This detail concerns the all important carpels which are quite free from one another in Ranunculus one remembers. In typical Papaveraceae they are loosely joined together, but in *Platystemon* these joined carpels become free from one another in the mature state and then resemble Ranunculus.

As the families of the flowering plants become more highly specialized, there is often a reduction in the parts of the flower and this has happened in the poppies.

The Papaveraceae is a quite small family with 24 genera. The genus Papaver is the largest of these with about 110 species ; Meconopsis with some 40 species comes second. The poppies are a very homogeneous family and therefore the basis on which the various genera are founded concern small anatomical details which differ from the genus Papaver. Many of these genera are monotypic: (represented by a single species).

The family is one of annual and perennial herbs growing in Northern temperate latitudes. Most have much divided basal leaves growing from a thick root stock. The flowers are often showy and colourful but with one exception bear *no nectaries*. Insects are attracted by the copious pollen. The stems, leaves and roots of poppies contain a sticky sap which varies in colour in the different genera. Except in a few genera where the capsule is a narrow pod, the distribution of the seed is dependent on the wind ; the movement shakes the seed through the pores of the ripened capsule.

The genus *Papaver* is widely known and easily recognised ; the detail of the plant is shown in fig. 54. Note the sepals fall away as the crumpled petals unfold. In Papaver the sap is *milky white*. *Papaver somniferum* produces latex from which Opium is obtained.

PAPAVER MIYABEANUM

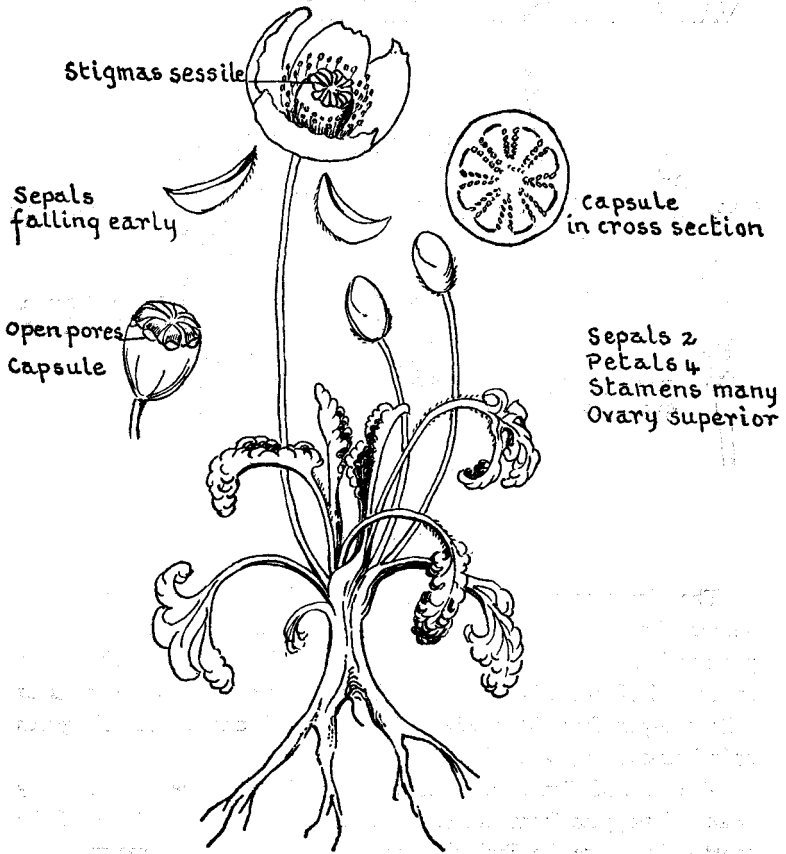


Fig. 54

As long ago as 1814 the yellow Welsh Poppy was taken out of the genus *Papaver* because of anatomical anomalies and placed in a genus of its own: *Meconopsis*. Thereafter it remained the sole representative until the Himalayan Blue Poppies were discovered with similar diagnostic features. The genus is now known to be well represented in South West Asia.

The botanical difference between *Papaver* and *Meconopsis* is in the shape of the ovary. In *Papaver* the stigmas radiate over the flattened top of the globe-like ovary, whereas in *Meconopsis* they are supported on a *distinct style*.

VARIATIONS IN SEED CAPSULES

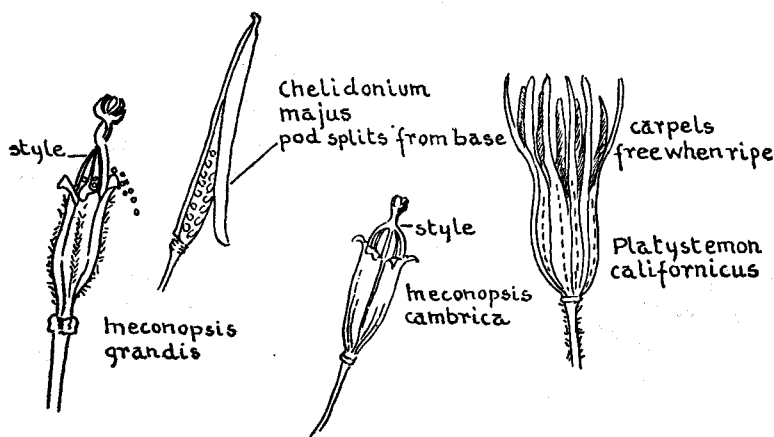


Fig. 55

The plants sometimes have a rosette of basal leaves which overwinter, the flower stem appearing the following Spring. Some are perennial, others die once they have flowered. Leaves are divided or entire and often softly hairy. The flower may be blue, white, pink or yellow. Apart from *M. cambrica*, *Meconopsis* is a true mountain genus only found at high altitudes.

The United States of America provides gardeners with many beautiful poppies from desert plants to alpine species. Some of the most brilliant are the *Eschscholzias*, a desert genus but some members grow at a height of 2000 ft. in the Sierra Nevada mountains. These Californian poppies produce the flowers singly: petals 4; sepals united to form a cone in the bud which is pushed off as the flower opens. The ovary is *inferior* in this genus only. The fruit is a long linear capsule.

Chelidonium is another genus with a long narrow fruiting pod (see fig. 55). The flowers are small and carried in an umbel; the stem carrying the flowers is placed *opposite a leaf* on the main stem. The sap in this plant is yellow. (The Horned Sea Poppy, *Glaucium flavum*,

has a similar narrow seed pod 3-6 times as long as in *Chelidonium* and the whole plant is fleshy in texture).

To continue the genera with a linear capsule, *Dicranostigma* is native to the Himalayas and West China. There are only 3 species. The main variation is in the stem bearing alternate leafy bracts (modified leaves) and in the stigma being distinctly 3 lobed.

Pteridophyllum racemosum is a remarkably different plant. Without the flower stems it looks very like the Hard fern except that the leaves are fleshy in texture: they grow from a fat root stock. The small white flowers are borne on a loose spike. The fruit again is a linear capsule.

Stylophorum is also a genus with 3 species ; one of which is American and two grow in S.W. Asia. These plants contain an orange-red milky juice. The flowers are in a terminal cluster. The capsule is narrowly ovoid and has a distinct *persistent style* remaining on the ripe fruit.

There follow three monotypic genera to conclude this family.

Eomecon chionanthum is a Chinese poppy producing a cluster of large white flowers ; the style is 2 lobed. The leaves are *fleshy*, heart-shaped and glaucous and the sap is orange-red.

Hylomecon japonicum is a Japanese woodland poppy with yellow flowers up to 2 inches across. The solitary flower stems bear bracts (modified leaves).

Sanguinaria canadensis is a North American plant of quite different appearance and the only poppy to bear *nectaries* at the base of the petals. The flowers, produced singly and having 8-12 white petals, appear before the leaves. The leaf is rounded and deeply lobed, glaucous and smooth. Each tuberous root grows one flower and one leaf each season. The common name 'Bloodroot' stems from the deep red juice contained in the root.

Geographical isolation has no doubt brought about these distinctive poppy types.

Fumariaceae

This small group of plants is closely related to the Papaveraceae and it is sensible to study the two families together.

The family differs particularly in the irregular flowers. There are 4 petals arranged in two pairs, the outer ones united at the base and one petal or both form a spur in which is secreted nectar. The flowers

are pollinated by insects seeking the nectar. The fruit is a one-seeded nut (in *Fumaria*) or a narrow pod (in *Corydalis*) (fig. 56).

CORYDALIS WILSONII

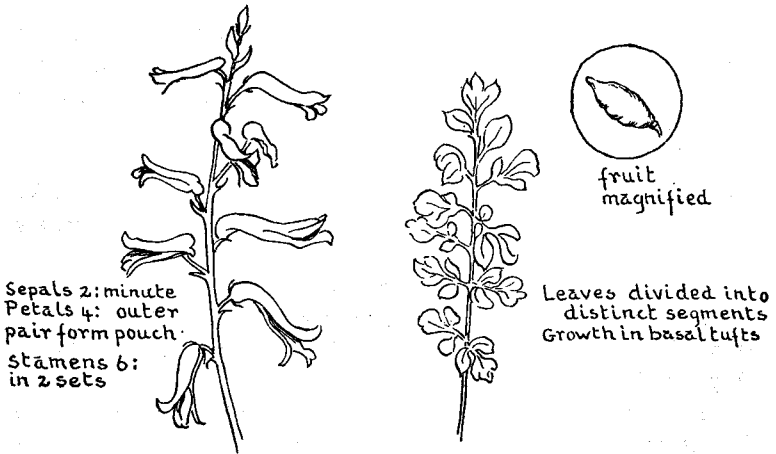


Fig. 56

The plants are all rather delicate brittle herbs with *watery* sap. The leaves are usually very finely divided and some species adopt the climbing habit. There are only 5 genera of which the following are of interest to rock gardeners.

Corydalis. This genus is perhaps best known for the lovely blue *C. cashmeriana*. *Corydalis* is recognised by the fruit which in this case is a *narrow pod* opening along the edges and containing several seeds. The roots can be tuberous or fibrous.

Dicentra. The flowers are formed along the stem in racemes; they *hang down* and so present clearly the large *pouch* at the base of each of the outer petals. These are very conspicuous in the species *D. cucullaria* which is commonly known as 'Dutchman's breeches'.

Sarcocapnos is a genus of 3 species. They are all dwarf and tufted plants with rather fleshy segmented leaves. The flowers are few in number borne in a terminal raceme.

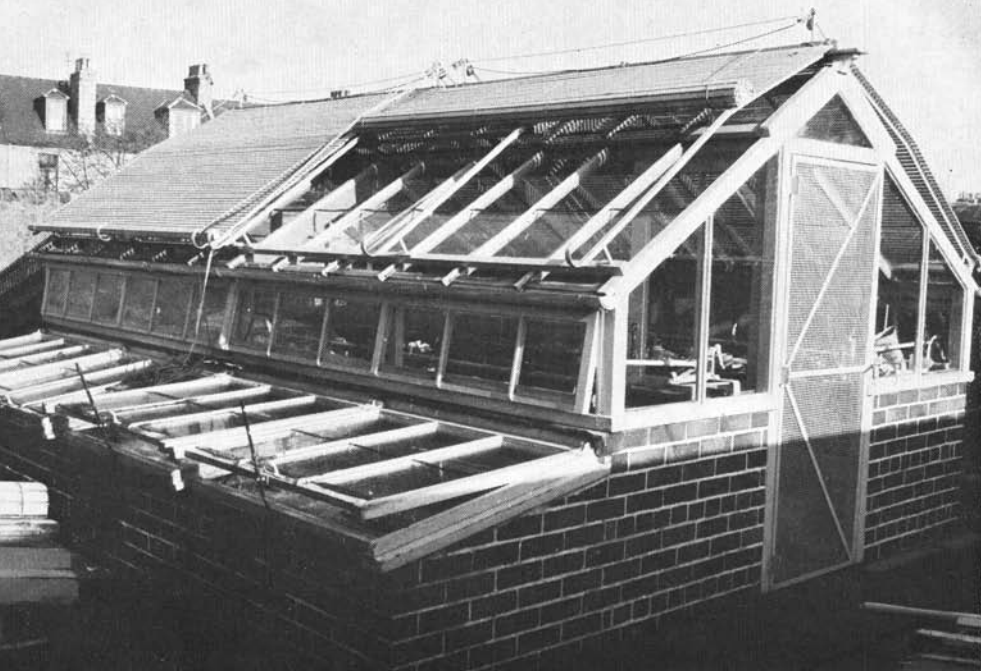


Fig. 57 Alpine House

Photo H. Esslemont

Fig. 58 Sand Plunge Bed

Photo H. Esslemont



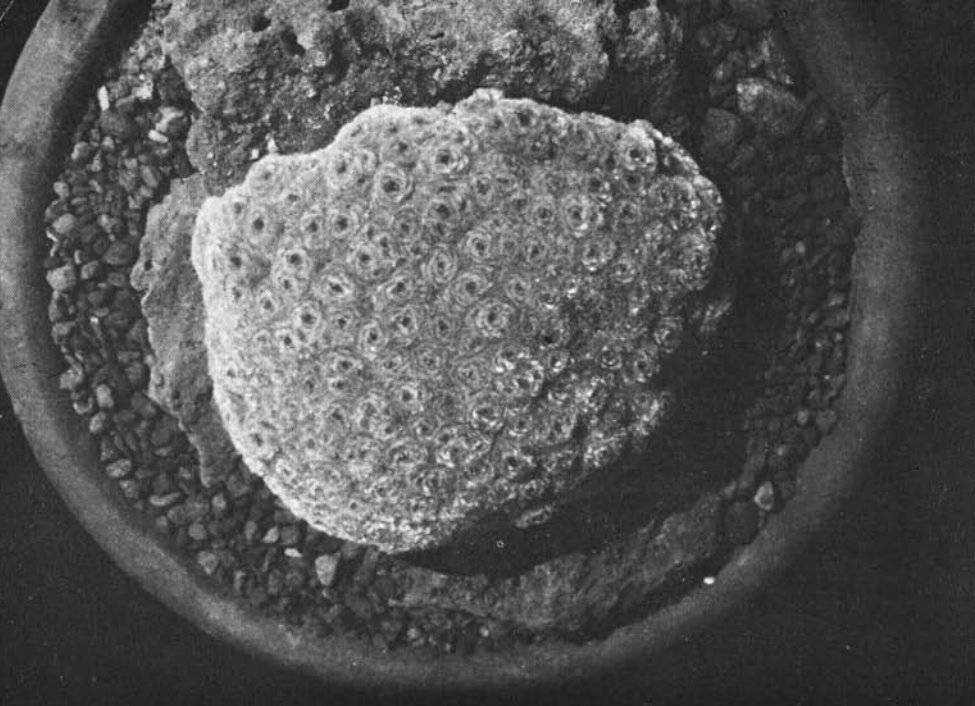


Fig. 59 *Raoulia eximia*

Photo H. Esslemont

Fig. 60 *Crocus banaticus*

Photo H. Esslemont



Bulbs from Seed

by C. F. DERRICK

THE PERUSAL of several bulb merchants' catalogues has caused me to think that many varieties of bulbs, kinds which are by no means new or rare, are now unnecessarily expensive, so much so that many keen gardeners must be deterred from purchasing them. Certainly stocks were much depleted as a consequence of the war, but the war was concluded nearly thirty years ago.

The fact is that the raising of less common bulbs has lapsed into the hands of a very narrow circle of growers, and it is surely time that some fresh adventurous spirits took up the challenge of growing them as a business or as a side-line.

In this connection it is interesting to study the old catalogues of Messrs. Constable and Mr. Cusack, and it is to be hoped that such reading may stimulate others to become professional growers.

Examples of the type of bulb to which I refer are—*Fritillaria pallidiflora*, which I have recently seen listed at £5 each, whilst the old Crown Imperial now costs about £1. Both of these come readily from seed and do not take over-long to come to flower. *Anemone fulgens multipetala*, with its brilliant but dainty flowers, is much missed by those who have grown it in the past, for it has almost disappeared from the market.

Many of the species Tulips, though not unduly expensive would, I feel sure, be more frequently grown were it generally realised how easily they can be raised from seed, and how relatively short is the period of growth to maturity. Similarly, dwarf Narcissus species are only too ready to please us, such as *N. triandrus albus* and *N. bulbocodium*, for example.

The principal object of these notes, however, is to persuade the amateur to set about producing his own stocks of bulbs. One way of proceeding is to purchase two or three bulbs of any species to which the grower may be attracted, and if they settle happily in the conditions of his garden, he may then save their seed and sow as soon as ripe, when the percentage of germination will probably be very high, and quite fast. After an interval a sizeable plantation would result.

Alternatively, seed may be obtained from a few well-known trade

sources, or from a friend's garden, or, more excitingly perhaps, from our Club or the Alpine Garden Society, whose lists include not only the commoner kinds, but many with which even some of the older hands may be unfamiliar.

So, if you become fascinated by bulb raising, it will undoubtedly be found to provide intense interest for an indefinite period, indeed, right up to the time you come to enjoy the flower glades of Paradise itself.

But what of the patience needed before the new bulbs come to bloom? Don't be deterred on this account, for as we know, in Nature there is continual development, and this alone provides perpetual interest, from the first appearance of the seedlings in the form of mere "whiskers" above the soil, through their period of developing true leaves, until later when they are re-potted or planted out you discover with delight that your tiny seeds have grown into substantial little bulbs, which in another season will produce their first thrilling flowers. In time there will be a surplus of bulbs to exchange with other enthusiasts.

Maybe you have read of the somewhat elaborate and expensive equipment employed by some ultra-keen specialists in this section of horticulture, but if one confines oneself to proven hardy species this will not be found essential. In the colder and wetter parts of Scotland some protection from frost and rain may be important, but as a mere Southron from Croydon I cannot presume to advise on this.

Most of my seed is sown in 3 in. clay pots, or in pans for larger quantities, using J.I. Seed Compost, topped with coarse sand or fine gravel above the seeds. These are stood in the open or sunk in a plunge bed, though a few are tried in a cold greenhouse, but with no remarkable advantage, except in the case of a few fleshy bulbs such as *Erythroniums*. One winter I accidentally left some of these standing in the open, only to find in the spring that the frost had reduced the bulbs to pulp.

Often a whole potful of young seedlings is turned out en bloc into the garden to grow on for a year or so prior to separating the individual bulblets, thus avoiding damage to the fragile growths. If soil conditions are acceptable, growth will be stronger than that of seedlings retained in pots, with the added advantage that little further attention will be needed for a twelvemonth, after labelling and carefully marking the site.

As to feeding the young bulblets in their first year or so, it should be remembered that the seed compost contains but little nutriment, so

that when the young leaves display a little vigour it is well to feed occasionally with a complete liquid fertilizer, or to sprinkle a little bone meal or hoof and horn over the surface of the pots. Personally, I vary the feed over the three, so that the seedlings are fairly certain to obtain a varied, satisfying diet.

The most important point about the soil is that ample drainage is needed, usually in a fairly sunny position. The soil should not be over-rich, the best fertilizer being bone meal. Avoid manure, though a sprinkling of hoof and horn can be quite useful.

Of course there are failures, as in all branches of horticulture. In my case I blame them on my own carelessness, on our wayward climate, or on stale seed. One's own fresh seed grows with certainty and in magical quantities. The successful sowings amply compensate for disappointments. Make sowings of a few new kinds each year, and as each species will develop at its own pace there will be a continuity of new plants coming along each year.

It is of particular importance to grow Lilies from seed, for you can then be sure of starting with disease-free stock. Many kinds germinate quite fast, and some produce flowers in their second season. Though as readily grown as many another type of bulb, a display of these aristocratic flowers gives immense satisfaction.

Everyone appears to envy the gardener who can show patches of Cyclamen in bloom. This is not a difficult achievement, as these tubers also come quite easily from seed; so virile are they that a small group once established will sow its own seed, so that the plantation will gradually expand. In addition, numerous odd plants will appear in all sorts of curious situations. *C. neapolitanum*, *C. coum*, *C. repandum* and *C. europaeum*, the latter with a delicious fragrance, are all species which should be tried. The seed pots may well be left in the plunge bed until planting out time.

The foregoing are but a few examples which I have proved to be easy growers: once you get going you will never experience a dull moment.

THANKS—The Editor would like to express his gratitude to the anonymous donor who has given a sum of money to cover the cost of blocks for a second page of colour in this issue. It was thought appropriate that this should be devoted to the W. C. Buchanan Memorial Lecture.

Obituary

Major-General D. M. MURRAY-LYON, D.S.O., M.C., S.H.M.

THE SENIOR surviving Past-President of the Club died suddenly on 4th February 1975.

“Murray”, as he was universally known in the Club, was born on 14th August 1890, the eldest son of Dr T. M. Murray-Lyon. From his schooldays he wanted to serve in the Army. However, his father told him that with younger children to educate it would not be possible to provide the generous allowance that was necessary at that time for a subaltern in a good Regiment.

Accordingly he started a medical education at the University of Edinburgh. After some time, Murray discovered that it was possible, in the Indian Army, to live on one's pay and, in order to prove to his father that he was not giving up medicine because of lack of ability, he continued till the end of that academic year, passed his examinations, and joined the Army.

Before entering the Indian Army, it was necessary to serve for some time with a British Regiment. He was commissioned, on probation, in the King's Own Scottish Borderers in November 1910 and after a year transferred to the Special Reserve and was commissioned in the Highland Light Infantry in December 1911. Whilst serving in the 1st Battalion in India, war broke out in 1914. He served in France and Belgium throughout that war. He was twice wounded and his wounds were more severe than he was prepared, publicly, to admit. He was awarded the Military Cross and, later, the Distinguished Service Order, and had commanded more than one Battalion in the field, with the rank of Lieut.-Colonel.

After serving in the British Army of the Rhine and as Adjutant of the 6th (Territorial) Battalion, H.L.I. in Glasgow, he transferred to the Indian Army and was posted to the 4th P.W.O. Gurkha Rifles, with whom he took part in two frontier wars on the N.W. Frontier of India as a Battalion and Brigade Commander. Here he received a Bar to his D.S.O. On leave in the hills he preferred the mountain flowers to the more usual military pastime of shooting game. It was then that his love and knowledge of mountain flowers developed. He usually had a small rock garden at the Army Station at which he was serving.

In the Second World War he commanded a Brigade in Baluchistan and later the 11th Indian Division in Malaya.

In about 1946 he retired to Pitlochry. In 1951 he moved to Edinburgh but, when in 1957 his old house at Pitlochry again came on the market, he returned to it and his garden became world-famous.

He became Publicity Manager of this Club in 1948 and he continued in this post until 1955 when he became President. His term of office as President expired in 1959, since when he has been one of the Vice-Presidents serving on the Council. In addition he was Edinburgh Show Secretary from 1953 to 1955.

He used to go annually to the Alps with a party from the Alpine Garden Society, frequently with his friends, the late Stewart Mitchell and Dr Duncan Morison. It was on one of these tours to Pontresina that these three wandered across the Italian Border, without passports, and were held by Border Guards. Two of the party were kept in the guardroom whilst the third was sent back to Pontresina. Whilst this was happening, wine was produced and a very jolly party was held, which continued after the arrival of the passports. The story of this exploit grew with each telling.

For the last 8 or 9 years he had led a party to the Alps or Dolomites at the end of June and beginning of July. He took immense trouble in looking up references to that place in the publications of our Club and of the A.G.S. He studied maps and brought slides to show beginners what flowers they might expect to find and where they would be. There was a small nucleus of S.R.G.C. members who went with this party year after year and several new members for the Club, often from abroad, were recruited from those taking part. He was taking the party to Corvara in the Dolomites this next summer. It would have been his wish that the party would go even if he were not with it, and this is being arranged.

He was a regular contributor to this *Journal*. His first Plant Note was in the *Journal* for 1949. He was a keen exhibitor at our Shows and a very regular attender at these. He won a Forrest Medal at Perth in 1957 and the "Best Plant in the Show" at Dunfermline in 1952. He was also a member of the Joint Rock Garden Plant Committee with the Royal Horticultural Society and the Alpine Garden Society. He was a member of both these Societies. He received the Scottish Horticultural Medal from the Royal Caledonian Horticultural Society.

Our sympathy will go to his wife, his daughter, grandchildren and great-grandchildren of whom he always spoke with pride.

His many friends in the Club will remember him as a very gallant officer and gentleman.

P. J. W. K.

Plant Hunting in New Zealand

by JACK DRAKE

THIS IS an account of a remarkable trip I made during January 1972 to the South Island of New Zealand, the purpose of which was to see as many high alpiners as possible over as wide an area as possible during the limited time at my disposal.

I was wonderfully fortunate in meeting Professor W. R. Philipson, from the Department of Botany, University of Canterbury, when he and his family were in the U.K. His remarkable book, "Rock Garden Plants of the Southern Alps", thrilled me, as no doubt many others, and gave me the desire to see these plants for myself.

Bill, and his wife Melva, most kindly asked me to use their home in Christchurch as my headquarters, and Bill then proceeded to make out a plan of campaign and, much to my delight, arranged to accompany me on all the trips we undertook.

Without his expert guidance and knowledge, and the co-operation of the wonderfully kind people with whom we stayed, I should not have been able to see more than a fraction of the plants I did see.

Many readers will no doubt have visited the mountains of Europe and become acquainted with the European alpine flora in all its brilliance and colour. The alpine meadows ablaze with colourful herbs, and higher the alpine lawns, cliffs and crevices glowing with brilliant blues, pinks and yellows.

To appreciate the New Zealand alpiners one must free oneself entirely of the mental pictures of the alpine flora of Europe, for they are entirely different.

To begin with, the large majority of New Zealand alpiners (indeed all New Zealand plants) have white flowers, and therefore there is little brilliance of colour, although individually the flowers are beautiful. Therefore one must look for their more subtle attraction in their habit, foliage and fruit.

Here the variety and colouring is infinite, varying from very compact mounds and cushions which may be spiky, hard, velvety or woolly in brilliant silver through white to grey, gold, copper, buff and vivid emerald green, to larger herbs and dwarf shrubs, some of which have hard, leathery, spiky spear-like leaves in vivid silver to bronze, while

others have hard whipcord growth. Many of the dwarf shrubs are notable for the beauty of their spectacular berry-like fruits, varying from deep and pale blue, to lilac, pink, vivid orange and crimson, and of course white.

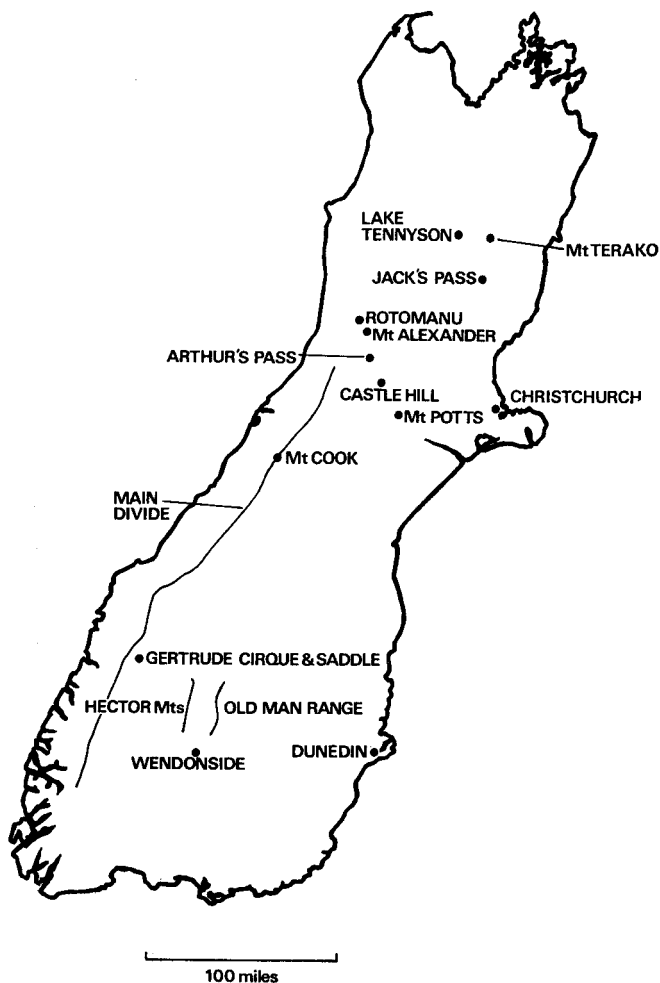


Fig. 61 New Zealand South Island

The South Island is some 600 miles in length (fig. 61) and is split unequally in two by the great backbone of the Main Divide, the narrow

strip between coast and mountain on the west side having a heavy or very heavy rainfall, while the country to the east tends to be dry, or very dry in some parts.

Except for the fertile Canterbury plains round Christchurch, the Island is mostly covered by a network of small mountain ranges, some clothed above tree line to their summits with tussock grass, amongst which the alpinists nestle, while others are shattered by vast screes which descend from the summits to the valleys. The lower slopes of many of the more western ranges are covered with magnificent *Nothofagus* forests.

With the exception of one or two notable spots, the South Island appears to have a neutral or acid soil, in which all ericaceous plants, including rhododendrons, seem to flourish.

The alpinists seem to be at their richest between 3500 ft. and 5500 ft. Above 5500 ft. there is usually nothing to be found but sheer rock, scree and snow, and the few plants which grow there will surely be found more plentifully at the lower levels.

Our first excursion was a day trip to Lake Tennyson in the Spencer Mts., some 100 miles north of Christchurch. We stopped on Jack's Pass for lunch, and for my first glimpse of New Zealand alpinists. On the way we were discussing the possible reasons as to why most New Zealand plants have white flowers. But the very first plant I found was the beautiful blue orchid, *Thelymitra crosby-smithii*. Here were also the low-growing *Hebe decumbens* and the gleaming white rosettes of *Celmisia incana*.

Then on to Lake Tennyson, where *Gentiana corymbifera* grew in quantity on grassy banks with the common, but lovely, *Wahlenbergia albo-marginata*, which almost exactly takes the place of our Scottish Bluebell, *Campanula rotundifolia*, and comes in white and pale blue. We decided to climb the mountain to the east of the Lake. Among the tussock grass of the lower slopes we found *Ranunculus insignis*, a noble buttercup much like a yellow *R. lyallii*, and *Bulbinella hookeri*, many mat-forming *Raoulia*s, *Dracophyllum prunum*, making hard wiry mats with waxy white flowers, *Gaultheria depressa*, *Aciphylla monroi* with wiry miniature palm-like leaves, and strange *Helichrysum depressum* making mats of dull pewter whipcord growth and looking as dead as the proverbial doornail.

Then came my first taste of the moving screes. They are like no

other scree I have come across, covering whole mountainsides, utterly desolate and tiring, and dangerous to walk over. Yet they sustain some of the most desirable of the New Zealand alpine plants. Here we found my first Vegetable Sheep, *Haastia pulvinaris*, which has to be seen to be believed. It forms huge mounds of creamy buff, densely woolly rosettes, which are faintly warm to the touch and it is hard to convince oneself that it is only a plant. Nearby was another of the Vegetable Sheep, *Raoulia bryoides*, which formed hard domes of almost white tightly packed rosettes, and grew in crevices in the higher cliffs. Other crevice plants were the well-known *Helichrysum selago* and its more attractive variety *acutum*, paler and more compact; *Helichrysum microphyllum*, forming very elegant shrublets of narrow whipcord growth.

Other notable plants of the scree were the superb, yet little known, Forget-me-Not, *Myosotis traversii*, with densely hairy leaves and large heads of ample white flowers; *Wahlenbergia cartilaginea*, so well camouflaged with its pearly grey bells and grey rosettes; the arresting Penwiper Plant, *Notothlaspi rosulatum*, forming tight rosettes of many layers of grey flannel leaves and a dome of white flowers of heavenly scent (fig. 62); *Hebe epacridea*, forming compact mounds of highly attractive square-shaped growth, topped by heads of white flowers; and *Hebe cheesemanii*, forming tiny whipcord-like bushlets.

Next day we drove south to Dunedin, then west to Wendonside, some 300 miles, to stay with the Spences. Here I found an alpine garden to make anyone's mouth water. Not only was there to be found as delectable a collection of native alpine plants as one could wish for, all superbly grown, but also a wonderful collection of alpine plants from all over the world, all growing outstandingly well in a very attractive setting. It was as good a rock garden as I have ever seen.

The son, Ian, was keenly interested in native alpine plants, and was also the owner of a four-wheel drive Toyota truck, in which we set off the following morning in low cloud to the Old Man Range, some 40 miles north-east as the crow flies, but 100 miles by road. This small range is a very rich hunting ground, and is formed of rounded hills up to 5000 ft. not unlike the Cairngorms. The slopes are mostly covered with tussock grass until you reach the tops, which are peaty and tundra-like.

As we approached, the clouds lifted and we were dismayed to find that the tops were covered by a heavy fall of snow. Undaunted, we drove up, through acres of *Celmisia pro-repens*, *C. coriacea* and *C.*

haastii, and glowing crimson mats of *Acaena microphylla*, into the snow, where we had to use chains, until we eventually reached the top. Little was to be seen and I was beginning to wonder what I had come to, as I was expecting hot sunshine and not the familiar winter weather conditions I was used to at home!

Slowly the snow began to melt and we were confronted with an astonishing sight. The whole of the tundra-like summit appeared to be covered by a carpet of interwoven, cushion-forming alpiners. Here were the miniature form of *Celmisia sessiliflora* forming hard silver mats; *Drapetes dieffenbachii* with waxy white flowers on heath-like grey mats; the intense silver of *Raoulia hectori*; the emerald green domes of *Dracophyllum muscoides* smothered with white flowers; *Pernettya nana* apeing our own *Salix herbacea*; *Gaultheria depressa* with white and pink berries; *Phyllachne colensoi* forming iron-hard emerald green domes studded with showy stemless flowers; *Phyllachne rubra*, a paler green than the former with curiously swollen tips to the leaves; the velvety silver-green pads of *Pygmaea thomsonii* looking like an aretian androsace; *Celmisia laricifolia*, *viscosa* and sombre *ramulosa*, and a host of others.

Having hunted here for a while and got frozen stiff, Bill and I had just about had enough, but Ian Spence tactfully persuaded us to proceed just a little further through the cloud and mist. It was lucky that we agreed, for we came to a series of rocky crags, known to Ian, which were filled with treasures. Very arresting were the hedgehog-like mounds of coppery rosettes of *Aciphylla simplex*; *Myosotis pulvinaris* grew here, looking like white *Eritrichium nanum*; tight pads of *Hectorella caespitosa* mingled with *Muehlenbeckia axillaris* in attractive fruit. In shady crevices grew the attractive *Ourisia glandulosa*, with caterpillar-like growth and large white flowers on inch-high stems; and *Ranunculus pachyrhizos* displayed its neat yellow flowers. Many other attractive plants grew here, too numerous to mention.

The next day dawned fair with high cloud, and we set off at day-break for the Hector Mts., some 30 miles due north of Wendonside (60 miles by road), a very rich hunting ground. This small range resembles our Border Country and is green to the summits. A long and easy climb through tussock country revealed a host of fine plants nestling among the tussock grass. We found no less than 16 species of *Celmisia* and innumerable fascinating hybrids. The most notable were *Cc. coriacea* in a dwarf and intensely silver form; the large form

of *sessiliflora* forming spiky silver mats, mat-forming *haastii*, handsome *verbascifolia*, and marvellous *hectori* making huge iron-hard mounds of shining silver. *Pentachondra pumila* formed wiry mats of tiny dark leaves, the small white flowers being followed by a terrific crop of outsize brilliant red berries. Several forms of *Dracophyllum pronum* were found forming hard mats of wiry growth and long waxy flowers, the most attractive of which were very compact with sea-green foliage. *Gentiana serotina* was everywhere, but unfortunately still in bud, and a good dwarf *Bulbinella*, probably *B. angustifolia*, was common. *Astelia nervosa* formed arresting clumps of shining silver-gold spear-shaped leaves.

As we reached the summit we found three great craggy cliffs, each covered with fascinating plants. Whole crevices were filled with the spiky palm-like rosettes of *Aciphylla similis*, while others were filled with a compact and very free-flowering form of the South Island Edelweiss, *Leucogenes grandiceps*, the silvery-white growth being almost hidden by the glistening white flannel flowers. An exciting bi-generic hybrid between the *Leucogenes* and a *Raoulia* (almost certainly *R. hectori*) was found, forming a dome of silver-grey rosettes, while in shady crevices were rich green thyme-like mats of *Ourisia caespitosa gracilis* smothered in showy white flowers on inch-high hair-like stems. *Ourisia glandulosa* was also here, and a remarkably fine hybrid between the two.

Bill got excited over a rare *Parahebe*, *P. trifida*, in seed, which has since covered itself in outsize white flowers at home, probably the best of the *Parahebes*. The superb *Gentiana patula* was in full bloom, with handsome sprays of rich white flowers.

Reluctantly we had to turn back, only to find even more plants in the tussock grass which delayed us still further.

Eventually, having started at 5 a.m., we got back at 10 p.m., very weary but thoroughly pleased with ourselves.

Next day we drove some 250 miles through fascinating and spectacular country to the gigantic and dramatic peaks of the Mt. Cook area, which is the highest part of the Main Divide. These mountains are completely different in aspect to any I had yet seen—tremendous rugged chunks of granite, their summits covered with snow.

Here we met Hugh Wilson, who was doing a botanical survey of the area. He took us up the Tasman Track to some 5000 ft. On the way I saw my first *Ranunculus lyallii*, unfortunately over, and in the

topmost scree my first glimpse of lovely *Ranunculus sericophyllus*, with large flowers of shining gold over parsley-like leaves. Other plants of particular note were *Celmisia petiolata* with very large flowers; *Hebe macrantha*, untidy but with exceedingly spectacular flowers; *Gaultheria crassa*, a mass of lily-of-the-valley flowers falling over a rock face, and the glorious *Senecio scorzonerooides*, which we were to see in better form later, while *Hebe ciliolata* formed tiny prostrate bushlets of whipcord growth, topped with white flowers, tucked into crevices.

But the chief memory I have of that walk is the tremendous Tasman Glacier, many miles long, flanked by the terrifying Caroline Face of Mt. Cook, a solid wall of snow and ice which has only recently been conquered and has already taken its toll of human life. And on the other flank the great bulk of Malte Brun with Elie de Beaumont in the background. It was a scene of utter desolation with only the noise of continuously falling rock and small avalanches to break the silence.

Next day we climbed, by the Sebastopol Track, up to the scree and rocky outcrops where I saw my first *Raoulia eximia*, the most typical of the Vegetable Sheep, growing rather untypically as a crevice plant. On the way down we passed through a grove of the dwarf conifer, *Podocarpus nivalis*, looking like a small Yew. We discovered one plant covered with hundreds of red fruits.

That afternoon we returned to Christchurch, where I spent a day packing plants for their journey home by air.

Our next trip was to Mt. Potts, some 80 miles almost due west of Christchurch overlooking the spectacular Rangitata river.

Mrs. Doyle, whose husband runs a sheep station nearby, had organised a jeep to take us up the recently constructed ski road. From the main road Mt. Potts looks an unassuming conical-shaped mountain, with smooth grassy slopes almost to the top. There is nothing to prepare you for what you will find on entering its inverted cone-shaped summit. The lower slopes are remarkable for the acres and acres of *Celmisia spectabilis* var. *magnifica*, which unfortunately were not in bloom. Entering the cleaved summit of the mountain was like going into another world; a world of utter desolation, rather like the mountains on the moon. From the topmost jagged crags fall solid scree on all sides, with scarcely a firm piece of ground or a patch of green to be seen—a truly awe-inspiring sight.

Following the bed of a small creek we found the charming little

Lobelia linnaeoides, its tiny creeping stems and elfin pale pink flowers almost hidden among the stones. There were glorious sheets of *Ourisia caespitosa gracilis* in full bloom and splendid mats of the well-known *Helichrysum bellidioides* smothered in white everlasting flowers. Magnificent clumps of *Senecio scorzoneroides* filled moist crevices.

Then we moved onto the steep, loose scree, which I found very hard going indeed.

Relief was found on one of the very few patches of firm ground and I found myself in a perfect miniature alpine garden. Some of the more notable plants were the silvery-white pads of rare *Raoulia youngii* covered with remarkably large showy flowers. Nearby were two remarkable hybrids of this plant and probably the ubiquitous *R. hectori* making glorious shining silver mats. The velvety green domes of *Pygmaea pulvinaris* covered with stemless white flowers were everywhere, and looking exactly like some aretian androsace. The hard emerald green domes of *Drapetes lyallii* and *D. dieffenbachii* were both in full flower, while *Hectorella caespitosa* and the miniature form of *Celmisia sessiliflora* made an impression with their attractive compact cushions.

A shout from Bill called me back onto those awful scree. He had found a colony of *Ranunculus haastii* in flower, an astonishing plant throwing up just one leaf the exact colour of the rocks, and one huge yellow flower. The plant has a lush look which makes it seem incongruous in its austere surroundings.

In the crevices above the scree we found *Gentiana divisa* making round tennis balls of white buds.

Coming down the scree slides was even worse than going up and needed special care. But I just managed to spot some plants of the much praised *Cotula atrata* in bloom. This is a strange plant with almost black pincushion-like flower heads, beautifully relieved by the brilliant golden pollen.

Looking across the cone onto the scree opposite I spotted—no, it could not be—a flock of sheep lying on the scree! They were, of course, dozens of huge plants of *Raoulia eximia*. So there was nothing for it but to clamber up the scree again to get a close look at these astonishing plants. This is the Vegetable Sheep par excellence and it is hard to make oneself realize that they are truly plants (fig. 63).

We went back for supper with the Doyles, where we saw another fine rock garden in a setting of fine trees, flowering shrubs and Rhododendrons.

Our next excursion took us to famous Arthur's Pass, through which runs the main arterial road from Christchurch to the west coast. This is a well-known area for alpines.

We started forlornly in dull drizzly weather, but, as everywhere else, my luck held and as we approached the Pass so the clouds cleared and the sun shone all day—the only place in the South Island where it apparently shone that day!

We stopped short of the Pass itself and climbed up into Temple Basin, which is readily accessible and has a rich alpine flora.

The walk up through the bush was full of interest. The Pygmy Pine, *Dacrydium laxifolium*, made wide, compact, bronzy mats everywhere, while a fine broad-leaved silvery form of *Celmisia coriacea* caught the eye, as did the distinct spiky rosettes of *Celmisia armstrongii*, each leaf with a bronzy-orange stripe. In fact we found no less than thirteen species of *Celmisia*, including the mat-forming *C. bellidioides* and *C. glandulosa*. In the shade of large shrubs were wide clumps and mats of *Ourisia macrocarpa* and *O. macrophylla*, each bearing spectacular sprays of large flowers.

The alpine slopes above the bush were full of interesting plants. Among the most notable were *Gentiana bellidifolia*, *patula* and *corymbifera*. *Donatia novae-zealandae* made iron-hard green mats in boggy places, covered in showy, stemless white flowers (fig. 64). Glorious drifts of *Ranunculus lyallii*, this most unalpine-looking plant, were alight with their huge white cups over large water-lily-like leaves, and *Senecio scorzonerooides* and its yellow counterpart, *S. lyallii*, were widespread on the edge of a stream. These two plants hybridize freely, the resulting progeny coming in all shades of cream to sulphur yellow. The beautiful little parasite, *Euphrasia revoluta*, formed most attractive clumps smothered in yellow-eyed white flowers. *Phyllachne colensoi* was at its glorious best, forming giant domes covered in stemless white flowers. *Raoulia grandiflora* formed mats of shining silver and the fairy-like flowers of *Forstera tenella* peeped out from the shelter of larger plants, while in moist depressions were found masses of the exquisite little white *Viola cunninghamii*. In the shelter of a cliff we found the true *Myosotis explanata*, a very different plant to the one in cultivation under that name, which is probably a form of *M. colensoi*. Tiny *Astelia linearis* was discovered by its stemless cluster of bright red fruits.

Marvellous views of great peaks could be seen across the valley, including the imposing and symmetrical Mt. Rolleston.

Rotomanu, some 80 miles north-west of Christchurch but 170 miles by road, was our next objective. The McLellans, with whom we were to stay, were arranging for us to fly by helicopter nearly to the top of Mt. Alexander.

Being near the west coast with its very heavy rainfall, it was no good going until the weather became suitable. At last the word came to go over quick, and again we drove up and over Arthur's Pass, stopping off on the way at Castle Hill, where there is a fantastic outcrop of limestone, worn into shapes worthy of Henry Moore. Here grew the extremely rare *Ranunculus paucifolius*, which had become almost extinct until the site—some 3 acres—was made into a reserve and fenced. Now the *Ranunculus* is slowly increasing again. It is a strange plant with leathery liver-coloured leaves and huge yellow flowers, and grows in the poorest, most arid soil, chiefly composed of chalk, and has as companions the rare blue-flowered *Wahlenbergia brockei* and prostrate *Myosotis decora*.

The road beyond Arthur's Pass becomes highly spectacular as it runs down into the lush green west coast country with its magnificent forests. Before arriving at the McLellans' station we drove through a wonderful stretch of virgin *Nothofagus* forest, the undergrowth of which was thick with tree ferns.

Next morning the small helicopter, which was of the perspex bubble type and belonged to a band of deer hunters, duly arrived and took us up some 5000 ft. to a ledge below the summit of Mt. Alexander. Here we had stupendous views over range after range in all directions.

The summit of Mt. Alexander consists of huge crags, from which fall away steep slopes on which *Haastia sinclairii* grew. The alpine lawns and rocky outcrops held a multitude of wonderful plants, many of which we had already seen elsewhere.

The spiny leaves of *Aciphylla crenulata* were here, each leaf having a bright orange midrib. A tiny mat-forming Anisotome (*A. imbricata*), covered with creamy white flowers over fern-like leaves, caught the attention. *Celmisia armstrongii* in a good robust form was here, and also the finest form of *Gentiana bellidifolia*, known as var. *australis*, unfortunately only in bud. It has since flowered at home and is superb. A whole batch of strong young seedlings of *Ranunculus sericophyllus* were quickly snapped up for sending home. And now I saw for the first time a plant which is, for me, one of the loveliest of all New Zealand alpinines—*Geum uniflorum*. The superb waxy white cups with crimson centres are held on slender stems over neat flat clumps of dark polished

leaves covered sparsely with hairs. It has an air about it which at once captures the heart.

While waiting for the helicopter I collected good compact forms of the delightful yellow *Senecio bellidioides*, a common plant, but highly desirable in its best forms, and then had the experience of taking off straight into space and looking down a sheer drop of 3000 ft. or more between my knees.

Mrs. McLellan has a fine garden, with a whole border of native plants, as well as a fine collection of Rhododendrons and other shrubs. Their hospitality was wonderful and I felt that I had caught a glimpse of the real New Zealand way of life on a country station.

Then came for me what was perhaps the best and most exciting and rewarding trip of all—to the Gertrude Cirque and Saddle in Fiordland in the south-west. We did the 500 mile trip from Christchurch in a day, the latter part being through increasingly magnificent scenery.

The Saddle is reached through a long valley to the right off the main road to Milford Sound just before reaching the Homer Tunnel which takes the road right through a mountain barrier before descending to the famous Sound.

The valley itself is fascinating with its low bush in which grew masses of *Ranunculus lyallii* and wonderful forms of *Celmisia coriacea* and *C. verbascifolia*, and endless hybrids between the two, making huge rosettes of silver, bronze and green. *Dracophyllum menziesii* formed highly decorative groves of what looked like miniature palm trees.

At the end of the valley there is a huge semi-circle of tremendous cliffs, from which fall the usual vast scree slopes. We had heard rumours that *Ranunculus buchananii* was to be found there. So we left the track and made our way up the screes, to be rewarded by great masses of *Ranunculus sericophyllus* filling all the moist cracks and crannies and blazing with its polished yellow flowers—and then we found quite suddenly *Ranunculus buchananii*. Only two plants were still in bloom, but enough to show the very great beauty of this rare plant. Huge multi-petalled white flowers, several on a stem, and elegantly cut grey-green foliage (fig. 65). This lovely plant tends to make *R. lyallii* look almost coarse.

Nearby we were lucky enough to find the superb hybrid between these two beauties, and on descending the scree again to regain the track we found the equally superb hybrid between *R. sericophyllus* and *R. buchananii*, the flowers being reminiscent of *Anemone alpina sul-*



Fig. 62 *Notothlaspi rosulatum*

Photo W. R. Philipson

Fig. 63 *Raoulia eximia*

Photo W. R. Philipson

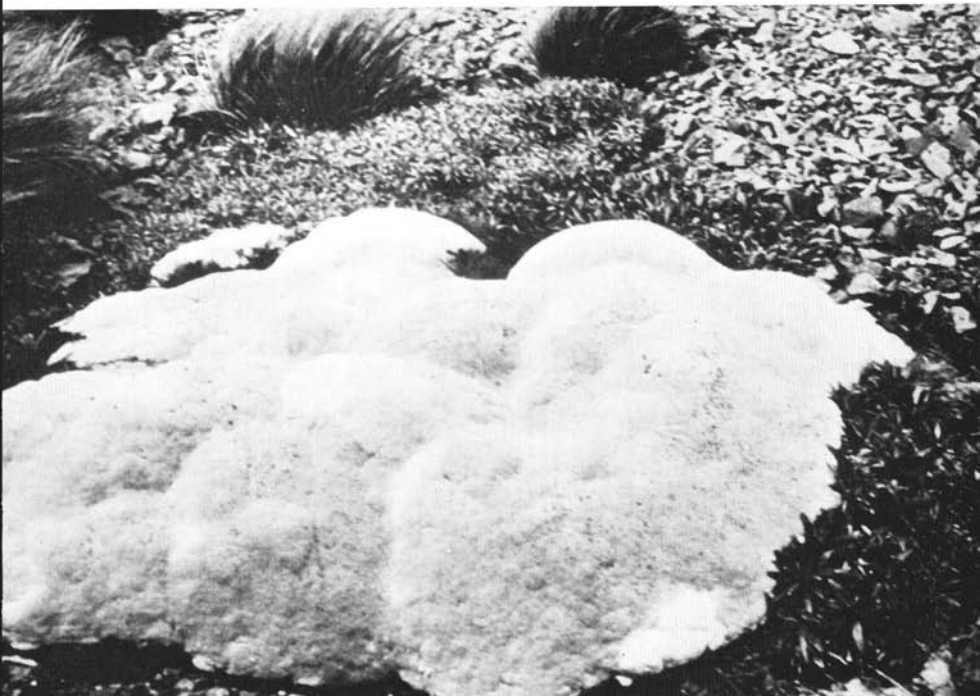


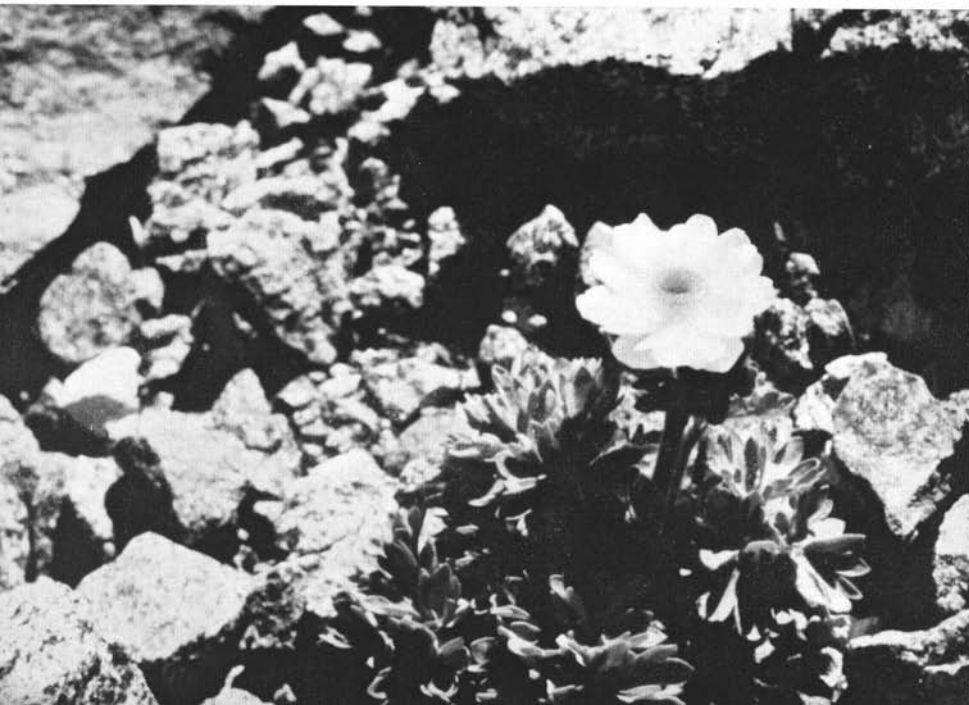


Fig. 64 *Donatia novae-zealandae*

Photo W. R. Philipson

Fig. 65 *Ranunculus buchananii*

Photo Jack Drake



phurea, over mounds of finely cut leaves, while nearby, tucked between rocks, was a magnificent mound of woolly-leaved *Haastia sinclairii* smothered in bloom. While this is by no means a showy plant, I understand that it rarely blooms with such freedom and was therefore a memorable find.

After regaining the track we had to traverse some remarkable smooth rock formations, every crevice of which was full of magnificent plants of *Senecio scorzoneroides*. This plant, when seen at its best, is quite breath-taking. The combination of rich green, shining, pointed leaves and the sprays of crisp shining flowers of an intense white is exactly perfect.

Also tucked into crevices was one of the finest of the dwarf *Aciphyllas*, *A. congesta*, forming congested rosettes of hard, spiky, deep green leaves with heads of pure white flowers.

After a scramble through two small snowfields we eventually reached the Saddle itself and looked down into Milford Sound, surrounded on all sides by rugged mountain peaks. The main objective here was *Raoulia buchananii*, and we found its velvety green cushions growing on steep rocks. This is another of the Vegetable Sheep. A lovely dwarf form of *Gaultheria crassa*, smothered in creamy white flowers, covered the ground. Sad to say this most desirable form failed to survive the journey home. *Gentiana patula* and *G. divisa* were here, and the little hairy rosettes of *Ourisia sessilifolia* with white flowers on two-inch stems, looking so much like *Primula reidii*. This plant crossed endlessly with *O. glandulosa*, and one could have spent a very profitable afternoon picking out outstanding forms. The velvety pads of *Pygmaea ciliolata* covered in white flowers looked like *Androsace pyrenaica*, and *Myosotisly allii*, *Leucogenes grandiceps*, *Celmisia hectori*, *sessiliflora*, *ramulosa* and *laricifolia* were everywhere. We ate our lunch basking in the sunshine and found it difficult to tear ourselves away from this wonderful spot.

Next day we spent the morning climbing to Key Summit, a well-known viewpoint, which was nearby. This was chiefly memorable for the short steep walk up through the forest, with its host of ferns and mosses, and above the tree-line for a new *Celmisia*, *C. petrei*, with large narrowly spiky rosettes, and for the enormous mats of *Donatia novae-zealandae* growing in bogs, hard enough to walk upon. With it grew another charming tiny bog plant, *Utricularia monanthos*, with surprising lavender flowers. Over all the higher ground grew magnificent

groves of the dwarf conifer *Dacrydium biforme*, forming compact upright bushes of whipcord-like growth. And very noticeable was *Phormium colensoi*, a dwarfed edition of the New Zealand Flax, *Phormium tenax*, with stiffly upright strap-shaped leaves and heads of dull-red flowers.

This left me with just three days before sailing, with two trips still left to do and the packing of plants, etc. to be completed.

The two trips, both short ones, consisted of Fog Peak to the west to see *Haastia recurva* and *Haastia pulvinaris*, and Mt. Terako in the Kaikura Mts., a hundred miles to the north, to see *Helichrysum coralloides*.

Obviously there was only time for one of these trips and the weather made up our minds for us. The first day it rained continuously, but the second day dawned fine but cloudy, with Fog Peak living up to its name and shrouded with cloud. It was clear to the north and so, much to my delight, off we set to Mt. Terako. For, of all the plants I still wished to find, *Helichrysum coralloides* headed the list.

Then things started to go wrong. We missed the turning to the mountain and wasted much time finding it again. Then, in order to save time, we thought we would be clever and take a short cut up a promising looking ridge. This landed us in almost impenetrable bush, where we were torn and scratched by ghastly brambles, known as "Lawyers". Torn, scratched and rather depressed, we eventually found ourselves above the tree-line and wondered if we had enough time to get to the summit. However, luck was with us and eventually we reached the vast screes of the topmost slopes, punctuated with fascinating rocky outcrops, each one of which would have made a perfect feature in the rock garden. And here we found the *Helichrysum* forming hard congested domes of fat whipcord stems, totally unlike the plant seen in cultivation in this country. The overall colour was a darkish green and so hard and congested were the "football" growths that it was quite an effort to prize the stems apart. The plants are enhanced by quite showy powder-puff flowers of orange-yellow, and seem to prefer to grow in exposed rocky crevices.

Other inhabitants of the screes were *Wahlenbergia cartilaginea*, and the exquisite *Swainsona novae-zealandae*, extremely hard to spot, so exactly is the colour of the lovely fern-like leaves like that of the rocks. We found large silvery-white domes of *Raoulia mammillaris*, while tucked among the rocks was that weird little plant, *Anisotome carnosula*,

forming little balls of hard spiky leaves. The silvery compact rosettes of lovely *Celmisia monroi* were much in evidence on the rocky outcrops.

The finding of the *Helichrysum* made a very fitting finale for what had been an unforgettable trip among mountains and plants quite new to me. Much of the South Island has still to be botanised properly, due to the extreme difficulty of penetration, and I see no reason why many new plants and new varieties should not be discovered in due course to add to the beauty and interest of our gardens.

Letter from New Zealand

P.O. Box 18, Edendale, Southland, New Zealand. 13/9/74

Miss J. Halley,
Hon. Seed Exchange Manager.

Dear Miss Halley,

Please find enclosed a selection of mainly NZ Native Alpine plant seed for inclusion in the 1974 Society Seed Exchange List.

Most of the seed which I received from the Society last season has shown good germination and now commences the challenge of growing on these seedlings to flowering stage. We have enjoyed an excellent winter this year, very much drier here in the Southern part of the South Island of NZ than usual. In our particular area we have experienced long continuous heavy frosts and I am sure that this has assisted seed germination. Our Spring weather has again been excellent; we have had nearly six weeks of fine sunny weather which has continued right through the lambing and calving, so livestock losses at this important time of the farming year have been kept to a minimum.

Due to the recent oil shortage in the Autumn, it was not possible to travel very far into the mountain areas of the Southern parts of NZ for seed collecting. (Weekend sales of petrol were banned for a period of nearly 5 months from the end of January.) I would have liked to have been able to send a greater quantity and variety of seed into the Exchange but this turned out to be impossible under the circumstances. I hope that other NZ members of the Society will have

been keen enough to gather seed in addition to the enclosed. Now for a few comments on the seed enclosed.

Most of the enclosed seed comes from two areas about 20 miles apart and about 100 miles from Edendale. The areas are mountainous with peaks rising to about 6500 ft. Most of the collecting was undertaken between 3500 ft. - 5000 ft. The areas were mainly exposed tussock grasslands rising into rocky outcrops with areas of low alpine scree. Between these heights it is possible to find a great wealth of plants, particularly members of the beautiful *Celmisia* family.

Unfortunately it was only possible to make one trip to an area to collect *Ranunculus buchananii* seed. To me this is one of our finest high alpine plants and also one of our hardiest, as it grows in scree conditions in wet shady crevices upwards from about 4500 ft. to near the line of perpetual snow. *R. sericophyllus* (yellow flowers) is usually found growing in association with *R. buchananii*. *R. lyallii* is well known in Scotland and, along with *Celmisia coriacea*, must be amongst NZ's best known alpiners. *R. enysii* is a prostrate plant with thick fleshy root-stocks, shiny leaves and shiny yellow-petalled flowers. It usually is found growing in shady parts of the scree slopes.

Aciphylla horridula, *A. scott-thomsonii* and *A. glaucescens* are all taller members of the *Aciphylla* family. *A. glaucescens* is very good and has very attractive finely cut blue-green leaves with a glorious golden yellow head of flowers. *A. similis* and *A. hectori* are dwarf members of the family, growing from 6 - 12 ins. in height. I find that the odd *Aciphylla* near choice plants is excellent insurance against the loss of rare plants from cat damage. All seem to do well in moist well drained peaty soil and will take a fair amount of sun.

Gaultheria depressa and *Pentachondra pumila* are two prostrate shrubs which enjoy peaty soil. Both exhibit colourful berry formation in the autumn.

Gentiana saxosa is well known in Scotland. This seed was collected from plants growing almost on the seashore on the South Coast of the South Island. I understand that this *Gentiana* is unique to the South Coast of the South Island of NZ. The remaining two *Gentians* are found well up the mountain slopes in the tussock grass lands, and both have white flowers.

The Bronze form of *Celmisia coriacea* is possibly the most beautiful foliage form of the *Celmisia*. It seems to be found mainly in the Old Man Range of Central Otago. The leaves are broad with white tomentum underneath, and the upper side is covered with silvery-white

tomentum, which shades to a golden bronze at the leaf base. It has the usual large white flowers. I understand that the normal form of *C. coriacea* is highly prized as a foliage plant. I can assure you that with comparison to either the bronze or silver forms, the normal green form is very drab looking. (This is good seed and has germinated very freely for me.) *Celmisia lyallii* has longish narrow green leaves and attractive white flowers and grows in amongst the tussock grasses where at first glance it can often be mistaken as a form of *Aciphylla*. *C. prorepens* likes moist peaty soil. It is a smallish plant, growing to only about 6 ins. The leaves are about 4 ins. long by $\frac{3}{4}$ in. wide and are completely without tomentum. The leaf edge is extensively ruffled. Flowers are white with a golden-yellow centre and are borne on 9 - 12 ins. wiry stems. (*C. densiflora* is very similar except that the leaves have white tomentum on the undersides). *C. hectori* and *C. sessiliflora* both have silvery-white foliage. *C. sessiliflora* forms hummocks of tightly pressed rosettes each bearing a stemless white flower. It seems to like moist peaty soils with a little shade from excessive hot sun. *C. hectori* is very much like *C. sessiliflora* except that the rosettes of leaves are borne on the end of woody stems and the showy white flowers are carried on 6 - 9 in. wiry stems. This species grows at higher altitudes than *sessiliflora* and is usually found near areas of scree. This seed was collected from plants which covered many square yards of ground and in places completely covered small rocks and soil hummocks. In large areas this is a very attractive plant both in flower and foliage. (I have experienced good germination with both *sessiliflora* and *hectori* seed).

Senecio revolutus is a low-growing shrub with glossy green leaves (gives the appearance of a dwarf *Rhododendron* when not in flower) with sprays of bright yellow flowers. This is a good hardy shrub which grows in exposed places to about 2 ft.

I do hope that this seed will be a useful contribution to the Society's 1974 Seed List and I do look forward to receiving the list later this year.

Yours faithfully,

ALISTAIR BLEE

CHANGE OF ADDRESS—Please note that the new address of the Group Convener for Sutherland, Caithness, Orkney and Shetland is Mrs. E. M. Walford, Chorcaill, Reay, by Thurso, Caithness.

Seed Exchange

by J. HALLEY

AT THIS time of writing we are waiting for the seed list to be printed and by the time you are reading this the exchange will be finished for the season.

We hope that members found the new method of listing the 'collected wild' seed helpful. Some may notice omissions in the list, as we found when checking over last year's packets that there was a distinct lack of enthusiasm over some items and they are not worth listing. Sp. after a generic name, unless a rarity, means it is not asked for at all. When you think of it, *Campanula* sp. could cover such a huge range of plants that this is a very understandable reluctance on the part of growers, particularly as not all seeds sent to the exchange are from garden-worthy plants. Forest trees are not popular and we have taken most of them out, and we also propose to look carefully at the popularity of herbaceous border plants, a lot of them easily obtained from nurseries, and not worth while raising from seed.

As we keep a note of all the packets of seed sent out, a second year of poor demand for any particular range of items will enable us to list these in the September *Journal* as it is a pity to let members undertake unnecessary work to clean and send in seed that is not requested.

The Seed List Handbook mentioned in the September *Journal* might be found useful by members who have not access to a large range of reference books. It is compiled by Bernard Harkness and can be had from Kashong Publications, Box 90, Bellona, New York 14415, for 3 dollars post paid. In it you will find the height, colour and place of origin of most of the plants in the seed lists.

We have had no time to check on one or two letters about the plants being perpetuated under incorrect names, but hope that we will be able to cope with them by the time the September *Journal* articles have to be submitted.

EDITORIAL NOTE—The Editor would like to express his gratitude to the printers who, by their efforts have enabled this *Journal* to be posted before the increase of Postal Rates. This has saved the Club something like £75.

Mountains, Screes and their Plants

by C. GRAHAM

A Lecture given on 22nd September 1974 at the Discussion Weekend,
Edinburgh

“THIS HAS been a most interesting set of soils and I was very intrigued by the tufa sample which was almost identical to a specimen I collected on a ranch in Nevada”. A characteristic statement from a dedicated man, Dr. Henry Tod, in his last letter to me. A personal friend for nearly 20 years, always willing with time and advice, he will be missed far from his native heath. The words in inverted commas are from this letter.

The soil samples, with one exception, were from the Farrer estate at Clapham, and as the Chairman in his introduction referred to my restoration work there, I must put the record straight. What was left, after years of neglect, of Reginald Farrer's rock gardens and nursery are now private property. His lily pools are there, concreted and empty. A pine and a few shrubs are all that are left of the original plantings. The famous cliff garden is smothered in ivy, ash and densely shaded by massive yews, and is out of bounds in the interest of safety.

In 1971, Dr. J. A. Farrer, the present owner of the Ingleborough estate, his wife, Mrs. Joan Farrer, and myself, inspected the gorge at the head of the lake. They are ardent and physical conservationists and, to a lesser degree, so am I. Here, on the North Craven Fault where the Silurian slates, normally below the dominant Great Scar Limestone, have been thrust up and covered with glacial clay, very shallow in parts, the Clapham Beck has cut through in a series of cascades and pools up to 20 ft. deep and formed a gorge, well sheltered from the North and Easterly winds. On the steep sides Reginald planted, presumably before the First World War, Bamboos, Acers of the palmatum heptalobum type, and tree Rhododendrons. A wilderness, we thought something could be done about it, even though the beck could not be seen in places for fallen trees. Restoration, therefore, consists of felling sapling Ash, Sycamore, Beech, Hazel, up to 40 ft. high, pruning hard, collecting seedling Rhododendrons and growing them on in our peat beds for two years, where they make a good root system. Planning for posterity, Reginald, looking down this Spring,

1974, would have approved the very large display of *Rhododendron* bloom though, perhaps, taking a rather jaundiced view of George Forrest's *R. sinogrande* in the nursery bed. Seeing, in 1964, what had been done at Benmore was of great help. "This soil is lime rich pH 8.0, fairly high magnesium but not enough to offset the 'lime effect'"; this is a tufa forming bog of lime water seepage below the clay and slate. No *Rhododendrons* grow or regenerate in this. "This soil is strongly acid, pH 4.6". Only three feet above the bog in which a *R. calophytum*, 15 ft., is in perfect health. "This is interesting—just acid, pH 6.7, but while the Ca is fairly high so is the magnesium". Soil surrounding a self-sown *R. thomsonii* hybrid approximately 15 ft. high and which flowers profusely, receiving a fair amount of morning sun. Well anchored in the Silurian slates a few feet above, the soil is pH 5.1, the top soil is washed with free lime water when the beck is in spate, but presumably the lime does not lodge sufficiently deep to cause chlorosis.

"From pasture above your garden, pH 6.3, Ca 4680 meq% Mg 185 meq% Ca/Mg 26.0. Probably a fair proportion of the lime has been leached and the pH has dropped to a moderate extent but the Ca/Mg is still high—the flora is of a calcareous type, isn't it?"

This was thin pasture which had spread over a Great Scar Limestone outcrop, no subsoil, and confirmed what we had suspected about the leaching, the slope averaging 1 in 5. The subsoil which varies in depth from a few inches to 2 ft. and is glacial clay which weathers easily must be at least pH 8.0. We received Henry's report long after we had made the peat beds to which reference is made later. In making the large scree in the upper part of the garden, a very difficult piece of pasture to mow, we skimmed the turf and stacked it upside down on the higher slope to give additional height and in this planted spreading conifers such as *Juniperus x media* 'Pfitzeriana', both green and gold forms, *J. sabina* and *J. horizontalis* 'Douglasii'. These are growing too vigorously and will have to be cut back hard this winter. *Abies pinsapo* we shall leave, though this looks like making a large tree, and also *Thuja occidentalis* 'Rheingold', one of the best conifers for the rock garden, with its golden foliage at all times of the year. One of the shrubby thymes from Spain, we bought a similar one under the name of *T. nitida*, seeds in every available crack, and in fact the number of plants and shrubs that seed in impossible places are making this more and more a natural garden. We certainly would not plant *Daphne mezereum*, *Berberis darwinii* or lavender in rock cracks. One dwarf shrub which

has given us much pleasure, draped over a rock, is *Euryops acraeus* from the Drakensberg Mountains. Withstanding 8° F. for two winters, last winter 1973-74, which was a mild one, it had become bare in the centre and was top dressed with good loam, grit and peat. It did not break again in the centre, but in September 1974 we lifted about one dozen well rooted side growths; as easy as southernwood. The yellow daisy flowers against the silver foliage make a very attractive picture. We can recommend it, full sun. In 1966 we planted a small *Abies koreana*, a lateral, in a fairly deep natural limestone crevice and filled it with peat. About 4 ft. through and with celestial inclination of the same height, 40 delightful violet cones in 1974 which, unfortunately, do not set viable seed. It must be well down into the alkaline sub-soil by now.

In making the peat beds, two, one 10 ft. and 4½ ft. above ground level, the other roughly 2 ft. deep and 30 ft. long, all the soil was removed down to base rock and awkward-shaped limestone to a depth of about 1 ft. put in for the bottom drainage layer in the long bed and 2½ ft. deep in the smaller. Above this, moss peat to a further depth of about 1 - 2 ft. and we top dress generously with this material annually, nothing else. The walls are of limestone because we have plenty and one could not build up to 4½ ft. with peat blocks, which would disintegrate over the years. On the other hand, these are used with great success at Harrogate for low banks and the new beds at the R.B.G. should be a very attractive feature, especially for *Shortias*, Asiatic petiolaris primulas and many other good things, with which we have difficulty, lacking shade and suitable tap water. A word of warning about peat blocks. They need thoroughly soaking and should be pointed with lime-free soil, peat moss or weed-free turf, inverted, of course. We stress "weed-free", having seen a magnificent crop of Marsh Horsetail (*Equisetum palustre*) in a peat block garden three years old. The owner dug it up and planted shrubs. We have the same problem with *Potentilla ambigua* which does not limit its activities to peat. *P. eriocarpa* is more easily controlled.

With the slope we hoped that the water from the upper pasture would drain into the loose stones at the bottom of the peat beds and away, avoiding free lime reaching the plants. This has happened. A visit to the R.B.G., Edinburgh, even though artificial watering is generous, will convince the gardener that Ericaceae withstand considerable drought and this has been our experience. The Rhododendrons there should be studied for correct nomenclature, flowers, habit,

and remember that it will be many years before those you plant reach the dimensions of the Edinburgh specimens.

In the small bed a 24 ins. diameter *Cassiope fastigiata* hybrid, perched 4½ ft. above ground level, flowers profusely each year; in the long bed *Cassiope* 'Edinburgh', 'Badenoch', 'Muirhead' grow vigorously, flower well; *C. lycopodioides* grows more slowly (there is an 18 ins. specimen not far away, planted by the late Dr. Lambert on top of a gritstone wall in 1954) and *C. tetragona* is rather shy flowering here. *Phyllodoce nipponica* grows steadily and flowers well; the others and *Phyllothamnus erectus* ramp over the top of the wall. *Cyathodes colensoi*, outside for 15 years, straddles a 12 in. limestone brain coral fossil of the Carboniferous era, a sombre thought. *Andromeda polifolia* spreads as freely as in the Jotunheimen bog from which it was collected 13 years ago, and has to be controlled. *Vaccinium nummularia* is a very attractive, dwarf spreading, foliage plant, and as I write these notes in early November several hundred flowers of *Gentiana sino-ornata* and 'Inverleith' are in bloom. As the so-called *G. acaulis* flowers profusely in our normal soil, we have the best of both worlds. We keep *G. verna* going by sowing our own seed each year, but the past drought Springs have been hard on it when it should be getting "snow-melt".

RHODODENDRONS

Members are recommended to read Dr. James Davidson's excellent article—"The Cultivation of Dwarf Rhododendrons as Pot Plants", R.H.S. Rhododendron Year Book, 1957. Apart from seedlings we have no Rhododendrons in pots. We grow the beautiful and early flowering *R. leucaspis* outside in the peat bed from roughly May to October, lift into a peat border in our annexe for flowering. Now over 2 ft. across and full of bud, it is getting too large to lift and we are hoping, with our generous top dressings of peat, that it will mound layer. Starting with six hardy hybrids just after the last war, we really got the Rhododendron fever at Bodnant from 1954 onwards with *R.* "Elizabeth" (we grow both parents) and the *R. augustinii* dwarf crosses. The first N.H.S. Rhododendron Group Weekend in 1962 had Mr. H. H. Davidian as mentor, a position he still holds. Mr. Beer's excellent Nepalese slides confirmed what we had been taught.

With this background it was natural that we should try Rhododendrons in this limestone garden, though any Rhododendron over 5 ft. is liable to be defoliated by the strong winds. The Great Scar

Limestone is a hard limestone and the normal rainfall around 40 ins. We grow 66 species, not for snobbery but for the challenge. I am still learning. L. & S. *R. wardii*, few flowers in the old garden, too sheltered; after the first winter here, 42 flower buds, no leaves, a prelude, we are told, to the burial service. Decapitated half to base buds, flowered cheerfully each year since, though you lose flowers for one year on the new growth. We decapitate other things too, such as *Salix boydii*. In fact any shrub that is leggy and shows the slightest sign of new growth at the base we cut hard back. We grow all our Rhododendrons in full sun as they do at Edinburgh.

We move shrubs around in the early years of growth, before permanent planting. Before the war this was good nursery trade practice—it creates a fibrous root system. We have just moved *R. schlippenbachii* for the fifth time. Over 20 years old, it measures 4 ft. wide and 30 ins. high and its autumn colouring matches the Acers; a fitting backcloth to the rock garden.

For a start in the rock garden we recommend *R. forrestii* var. *repens* (get the guaranteed flowering form), *R. ludlowii* and Messrs. Cox's excellent hybrid "Chikor", *R. impeditum*, the F.C.C. blue form of *R. scintillans* (trim back wayward branches after flowering), the best colour form of *R. calostrotum* and *R. lepidostylum* for foliage and scent. The *R. augustinii* dwarf hybrids are all good but grow a bit tall for the small garden. Finally, watch your bank balance.

JACK DRAKE

Inshriach Alpine Plant Nursery
Aviemore, Inverness-shire

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MECONOPSIS HEATHS

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The Bring and Buy

by ANON.

THIS EVENT has become part of the way in which money is raised for all sorts of S.R.G.C. purposes. Many of us have taken part, and much fun and amusement is to be had from them. Many excellent plants are sold at bargain prices, and much 'rubbish' is also contributed. Many plants are bought that are insufficiently rooted, and some of the plants have peculiar labels, i.e. 'Small yellow rock plant, Sax?' etc. But the most fun is to be had with the customers; many know exactly what they want and what they are buying, and some, like at a jumble sale (I suppose it *is* a plant jumble sale) stand as near to the plant of their choice as possible so that when the whistle goes for the 'off' they can grab their plant.

Some of the buyer's approach is as follows; an old lady: 'I want a plant for my niece, but I don't think she wants a mountain plant as she has only got a window box', so a rake round the assembled plants produces something that might be suitable; Auntie does not like the colour, so another choice is made, very often with success. Then the Know-All approaches: 'No thank you, I will never buy that again, it will never grow for me, and other people I know have had the same experience'. (One wonders how on earth it won't grow as it is usually impossible to stop!).

Then there is the timid approach: 'I am only a beginner, can you find me something easy to grow (perhaps the plant the last customer rejected! !). The usual questions are asked as to situation, soil, etc. A plant is selected: 'No, I don't want purple as it doesn't go with the house'. What colour can the house be? Tactfully you enquire, and find our red sandstone is the answer. A yellow alyssum seems to fit the bill; then 'does it flower all summer?'; well, it has a good flowering period, particularly if she cuts it back. Then we get bogged down as to how much to cut it back. When you tentatively suggest it is a bit difficult to have anything that literally flowers all summer, her rejoinder is 'my friend has one', but what this accommodating plant is we can't find out. But it is purple (surely the colour that doesn't 'go' with the house!). However, in time she also goes away with a plant, one hopes satisfied.

Next comes 'Bighead'. We have been watching him for some time

'slumming' among the plants. In a loud and superior voice: 'Is this all you have got? I suppose you have the better plants under the counter'. A question as to what he is looking for: 'Some of the rarer androsaces, dionysias, paraquilegias, I am not fussy as to which I buy'. When you point out that is not the kind of plant which is brought to a Bring and Buy he says 'I thought you kept them out of sight for the good growers' (him, of course).

Then one of my favourite customers comes along, a child with a 10p clutched in a hot hand who wants something 'pretty' for Mummy/Daddy for their birthday, or sometimes for their own garden. It must be in flower, and be a bright colour. It is a difficult choice and takes some time, but they get V.I.P. treatment, and nearly always go off delighted with their plant, and one hopes there is a future member of the S.R.G.C.

I end on two remarks heard at Shows. A very well dressed man looking at a well-flowered specimen of that tricky beauty *Eritrichium nanum*, called out, to his equally fashionably dressed wife, 'Come here my dear and see this plant; I was there when Old *** Grubbed it up on Ben Lawers'.

The perfect remark overheard at a Show, when a really superb Forrest Medal plant had been duly admired, a lady approached the Bring and Buy stall and said in a firm voice: 'I want three plants of the Forrest Medal plant'. The person selling the plants said in a sad voice, 'If only I knew where you could get *one* I should be delighted'.

Some thoughts about Showing Plants

by F. CYRIL BARNES

WHEN I was a good 15 years younger and more hopeful, though it be said a trifle more enthusiastic than I now am I perpetrated a short S.R.G.C. *Journal* (Vol. V, pt. 3, no. 20, April 1957, p. 251) note in which having reread I suggest that the Hon. Editor should publish and republish in every number of the *Journal*!

That is not to say that I am a devotee of my own preaching: indeed it is notable how my practice has deviated from my principles, but

if one is to preach thoroughly, whence cometh the time for practice?

I suppose in my nearly 20 years of membership I have shown a plant three times and if it is allowed also at the North East England Group Show in Ponteland in 1972. The account of these adventures may, I hope with all fervour, stimulate some of our members, especially the young and try-anything-once sort to have a try.

Of the first attempt, to which I have already referred, I remember little beyond the effusive welcome from the ladies of North Berwick and thereabouts and a gruff greeting from the Show Secretary: "Hello, Barnes, what have you got?" A thousand possible replies flashed through my mind but I settled for "A contribution to the Show."

What the plants were—I am sure there were three—I have no recollection; neither did David Livingstone, who wrote the Show Report, deign to mention them. However, they earned me, if I remember aright, 6/- in prize money. This and 25% more I spent on a *Primula reidii williamsii*. By the time I had made the rail journey back to Edinburgh, then to Newcastle, the poor thing had given up the ghost.

My second experience has an equally sad end, but it was hilarious while it lasted. I arose at 5.30 a.m. and with the aid of a taxi caught the 7.00 a.m. train to Edinburgh. *Rhododendron ciliatum*, which far outspanned its very large pot, was ceremonially set on the opposite seat to me in a first class compartment. In came two youngish business men; one knew enough to make a tentative suggestion that it was a Rhododendron. At Morpeth, some 15 miles on, they were joined by a colleague who clearly had had 'a good night', who was duly asked to admire the Rhododendron. He stood up, somewhat shakily, and after a moment of contemplation took off his hat and muttered "Requiem aeternam" and then turned to me and said 'What a beautiful wreath, but how sad you should have to go so far to deliver it.'

Delivered it was: the train was dead on time, 9.50 a.m. at Waverley. A taxi driver who deserves an award from the Royal Caledonian Horticultural Society, forgetting every rule of the road got me to the back door of the Music Hall in George Street, Edinburgh. Rushing up the back stairs with my incubus I made it with 30 seconds to spare, mercifully, because the Rhododendron class had been staged immediately opposite the door. There I met at the top of the stairs Mrs. Simson Hall who greeted me with "Well, Cyril, I half expected this." Needless to say my *Rh. ciliatum* took the first out of I think eleven entries, but it did not like Edinburgh (or possibly British Rail) for it died within the year.

Let not this discourage you; the circumstances of its return home were curious, to say the least.

'Sursum corda' et sursum stirpes. Lift up your hearts and lift up your plants.

In the Beginning . . .

by JAMES T. AITKEN

IN THE beginning there was nothing. Nothing of a garden that is to say.

As the title deeds put it we had the whole right, title and interest (subject to the dues that monthly had to be paid to the Building Society), to All and Whole that plot or area of ground in the City of Edinburgh and the County of Midlothian bounded on the northwest by the public road along which it extends sixty feet or thereby, along the northeast by ground occupied by Hastie & Denholm, Market Gardeners—and so on. Not very big. About an eighth of an acre with the house itself taking up a good chunk of the site.

And, as I said, nothing of a garden.

Apart from the house, the place was like the good book described the beginning—the earth was without form and void.

Well, something of a qualification. Not entirely void. It had been a hot dry summer and we had a super-abundant crop of ox-eyed daisy. If there had been a world wide shortage of ox-eyed daisy, and a demand for it, we were set for millionaires. It grew in the front, at the sides, at the back; it grew high; we had dwarf, miniature, variegated, multiflora, grandiflora, floribunda, nanus, acaulis, vulgaris—you name it; in the way of ox-eyed daisy we had it.

But that seemed to be all we had. Over the fence the said Hastie & Denholm were farming a good crop of brussels sprouts. The ground had been, from the evidence, well cultivated and fertile, because the feu had a year or so before been resumed from the market gardeners, acquired by us and it was while our builder erected the house that the ox-eyed daisy took over. Mr. Denholm knew nothing of any weed—almost implied we had specially brought them to the district.

However, void and formless, discounting the ox-eyed daisy.

Devoid it seemed even of worms, according to my mother-in-law,

who tried to stick a spade in the ground and it just stotted off the surface, bone-hard by drought. That was as the builder left it and we moved in.

Now let me, what they call, recapitulate a bit. We had lived in the great city of Glasgow, conceived an interest in gardening, got a job in Edinburgh, feued (as it is put in Scotland) a building plot, got a builder to build the house, flitted in (to flit is a Glasgow word meaning "to transfer household effects", in Edinburgh and England it refers to fairies and/or insecticide) in mid August 1955 and now looked out on the balance of All and Whole that plot or area of ground on which we hoped to make a garden.

I said it was not completely void, nor was it completely formless.

The site was flat. To lay out the founds of the house the builder had to skim an inch or two deeper at one corner, but it was inches. However, for the founds he had skimmed off the top soil and spread this over the ground at the back so that there was a rise of two feet from the immediate curtilage of the house to the main level of the back.

A further respect in which the site was not void paid off better than ox-eyed daisies. To the front, and separating us from the public road was a free-stone wall. The arrangement with the road authority was that we had no road charge to pay in respect of the development but we were to surrender to the authority the ground needed for road widening. So there was a sort of no-man's land between the front of the garden and the existing road which was bounded by this free-stone (a general Scots term for the local indigenous building stone—in this case sand stone) wall. The ground was to go for the road but nothing was said about the wall. So we spent that autumn and winter demolishing the wall and barrowing in the stone. By the time the year turned there was a fair sized bing of stone, in varied sizes, generally all sand stone, some with lime mortar adhering.

That was what then was in the beginning—a reasonable abundance of local stone, a flat site subject to a rise at the back from the immediate presence of the house, a soil which was fertile but prone to dry out and a local climate not too well provided with moisture.

We bought two tons of peat in 1½ hundredweight dry compressed bales. The rain came about October and by December the ground had moistened enough to be workable. (The ox-eyed daisy had gone but, alas, its seed had not and still we grow bumper ox-eyed daisy. Except that my wife looked up ox-eyed daisy in some botanical book and found that what we grew was not what was commonly termed ox-eyed

daisy. At one time she even had an erudite botanical name for it, but we have forgotten. 'Ox-eyed daisy' is hallowed by usage—and that is what a common name is).

So we could then dig and by the time the days were lightening the whole back had been turned over. No special trenching or double digging, just a good spade's depth of a dig. And no more ever seemed to be required.

And as the days lengthened we tackled the immediate back of the house. We reasoned that we needed a path round the house, for mundane things like painting and cleaning rhones, for practical things like services, pipes and cables below the ground, for carrying out the bin, and in the coal (because all this took place when we all got coal in bags to burn in fires). So we dug out a broad path round the house, not completely parallel, but varying in breadth so that there was a big bay at the back door. People have called it a patio but a patio always struck me as being paved and we never paved it. And a patio smacked of Andalusian suns, but the Edinburgh sun couldn't kid an Eskimo let alone an Andalusian. This house path varied. Here it could be three feet broad, there ten feet broad, but it never really stayed parallel at all.

The excavation of this path round the house increased, of course, the soil heaped on the back garden, so that we finished up with a variation of two to three feet.

At that stage we started. From the east—opposite what they now call the master bedroom—we were to make a rock garden, because we wanted a rock garden and because we needed to retain this fall in the ground of two to three feet to stop it slithering down on to the path.

The whole was dug to a good foot below the surface at the front all the way back to a breadth of about four feet. The peat bales were broken and dug in.

The whole soil was enriched by a very liberal application of peat. For two purposes; to add humus to the soil and thereby improve its texture and if not the chemical fertility at least its physical condition; second, to increase its moisture retentivity. By then we had grasped enough of the eastern climate to know that we were to be much drier than hitherto. In fact this was the main change we had to cope with. Again and again we had to learn how much drier was the East.

The stones were inserted, more or less according to the copy book. The strata, the seams or lines on the stones, had to run the same way on all the stones, preferably not parallel to the ground but at only a

slight angle to the ground level. The stones had to be well bedded in. Like an iceberg, only the top tenth should appear. When a stone is in place we prided ourselves we could jump and dance on it without it wobbling or displacing. Mind you, there was less of us then to dance and jump! Again this jumping and dancing is not to be taken too seriously. We achieved stability without emulating Cossacks or even Fred Astaire. The stone above should go across the gap between the stones below. We watched the brickies work and followed that principle, only we left a wider gap. This placing of stones stabilises the rock work and also hinders erosion of the soil.

The stones themselves sloped back. If they don't, they will slip out. If they slope back the rain will run back into the soil, and not off. If they slope back they hold and anchor the soil. If they slope back the depth of soil for planting is increased. So we sloped them back.

Having dug, we trod the bottom firm and placed the first course of stones so that the bottom was to the edge of and level with the house path. That edged the path and kept the gravel where it was meant to be. Round the back and the sides of each stone we worked the soil well in with a hand fork. This made sure too that the peat was well mixed in. The heaviest stones were for the bottom course and the smaller as we progressed up.

Except not all the heaviest, because we had to make steps up from opposite the back door at the place we never got round to calling a patio. For these steps big flat stones, a rake back of a slight angle only, say, five degrees, no digging below the stones; we used the hard consolidated earth. We put the front of the one on top just over the back of the one below so that it held it. And so on. The steps had not to be too steep. We used the broad shallow stones; not worrying if they were not exactly flat. Frankly, it's wonderful how good it came to look.

So by Easter we had about five yards from the east to these steps up from the place we have never even thought of as a patio. The rock garden was about three feet deep. The stones looked fine, wire-brushed and when necessary chiselled, to take off the mortar. It almost seemed a pity to cover them with plants.

We had begun!

Discussion Week-End 1975

THE UNIVERSITY OF EDINBURGH

POLLOCK HALLS OF RESIDENCE

HOLYROOD PARK ROAD

EDINBURGH EH16 5AY

SATURDAY 20th and SUNDAY 21st SEPTEMBER 1975

PROGRAMME

Saturday:

- 12.30 p.m. Lunch
- 2.15 p.m. Address of Welcome
- 2.30 p.m. The W. C. Buchanan Memorial Lecture
"Cultivation of Alpines in Screens, Walls and Troughs"
by Joe Elliott, Esq.
- 4.00 p.m. Tea
- 4.30 p.m. "In Search of Rare Bulbs" by Brian Mathew, Esq.
- 6.00-6.30 p.m. Dinner
- 7.45 p.m. Auction, Talk and Slides on "American Alpines"

Sunday:

- 8.30 a.m. Breakfast
- 10.00 a.m. "Dwarf Rhododendrons" by H. H. Davidian, Esq.
- 11.15 a.m. Morning Coffee
- 11.45 a.m. "Plant Collecting in Nepal Himalaya" by Dr. George
Smith
- 1.00 p.m. Lunch
- 2.30 p.m. "Other Scottish Plant Collectors"
by Dr. B. Burbidge
- 4.00 p.m. Close of Proceedings
- 4.15 p.m. Tea and Disperse

The University Residences are modern, having been built between 1960 and 1970. There are several blocks surrounding a central refectory. Throughout the site are Public Halls of varying sizes. The private rooms are comfortable and well fitted, but most are single. Extra beds may be added if requested.

The Halls are situated in a pleasant part of Edinburgh below Arthur's Seat and are readily accessible from most quarters.

Accommodation can be booked for the duration of the Conference only or for the whole weekend. Members may wish to come for the day only, in which case appropriate charges can be made.

Charges, including VAT and Conference Fee:

For the Conference, from Saturday Lunch till Sunday	
Tea, including full board	£8.50
Full board from Friday dinner till Monday breakfast ..	17.00
Full board, Friday dinner till Sunday Tea	12.50

Day Charges:

Saturday—Lunch, Tea, Dinner	3.50
Tea, Dinner	2.40
Sunday— Coffee, Lunch, Tea	2.50

Applications should be sent initially to the Registration Secretary:

MR. J. HARLEY A. MILNE,
15 Merchiston Place,
Edinburgh EH10 4PL

enclosing the appropriate remittance before SATURDAY 16th AUGUST 1975. Documentation will be issued at the Conference.

An interesting and instructive programme has been arranged and following the success of the auction last year it is intended to repeat this entertaining and amusing fund raiser. Donations of plants would be much appreciated.

The Autumn Exhibition Show will be held in conjunction with the Conference.

A meeting of the R.H.S. Joint Rock Garden Plant Committee will be held at 12 noon on the Saturday of the Show.

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Plant Notes

SAXIFRAGA OPPOSITIFOLIA

IN GENERAL gardeners consider plants from other countries more desirable than those from their own. The rock garden enthusiast is no exception, for British natives are often relegated to second place in preference for imported exotics. *Saxifraga oppositifolia*, however, must be considered an exception, for it is a choice alpine by anyone's standards.

Saxifraga oppositifolia is widespread throughout the Northern Hemisphere in arctic regions and in high mountains in Europe, Asia and North America. It extends into Britain, being found growing in stony soils or on damp rock faces, either acid or alkaline, on hills and mountains of Wales, Yorkshire, Ireland and Scotland, where it comes down to sea level on the North Coast. It can be absent from some areas but locally abundant in others, so much so that at flowering time a pink lawn can be formed.

The purple saxifrage has been popular from the very beginning of rock gardening as a branch of horticulture. In 'Alpine Flowers for the English Rock Garden', published in 1870 (surely one of the earliest books on rock gardens), William Robinson wrote: "It is impossible to speak too highly of the beauty of this bright little mountaineer". It was being cultivated at least a century earlier, for it is recorded in Volume VII of Miller's Dictionary, published in 1768. Earlier records have been difficult to trace because of the uncertainty of its name, for in 1671 Caspar Bauhin, an early botanist, had given it the name of *Sedum alpinum ericoides purpurescens*. In the thirties of this century it appears amongst the top six alpines in a survey and yet today it seems to be little grown.

Forming mats, or even cushions, its prostrate stems are crowded with tiny oval leaves rarely exceeding a quarter of an inch, with hairs around the leaf margins. As the specific name suggests, the leaves are opposite, being of a medium green, although on limestone these can become bluish or even silvery. The terminal flowers appear in cultivation in March or April but in the wild soon after the snows or even as they are melting, whilst on Scotland's north coast there can be flowers as late as August. Although the common name is purple saxifrage, flower colour is more pink with considerable variation from a pure white albino to crimson. There are numerous naturally occurring

forms and some of these as well as selections from seedlings have been given cultivar names.

For some reason, perhaps as has already been said, imported plants have been considered more desirable than our own natives and yet these are just as good if not better in habit, flower colour and size. As Farrer records in his 'English Rock Garden': "Far better varieties can be found in a day on the Yorkshire Fells than in weeks if not years of the Central Alps".

This plant requires cool moist growing conditions during the summer and so is easier to grow in most of Scotland than in England. It should be planted in full sun in a well-drained soil, either acid or alkaline, but one which does not dry out during the summer; often it is grown on a scree or in a sink garden. It may be grown in a pot or pan for decorating the alpine house in the early Spring, when it is kept growing in a north-facing frame until flowering begins.

Although a native, this is an attractive plant and it requires some skill to produce a first class plant.

Kew

B. H.

CISTUS LADANIFER L.

BEFORE I get into trouble with the Drug Squad may I plead with the type-setter not to interpolate a letter 'u' between the second and third letters of the specific name. The specific denotes the resin-bearing character of the plant: an interpolated 'u' would give it the characteristics of the opium poppy, with which it has no connection. The name is normally spelled *ladaniferus* but the form above is now generally accepted. Bean's *Trees and Shrubs* gives the reason in a footnote on p. 622 of the current 8th edition.

Nobody would suggest that this is a Rock Garden plant. Both Bean and the R.H.S. Dictionary give its height as 3 to 5 feet. My experience is that this is an underestimate. I first acquired a plant over 20 years ago, and having read what was to hand decided that this native of Iberia and Morocco would like a dry and sunny position, planted it in the most appropriate place, or so I thought. Alas, it was not to be, for a violent gale twisted it round on its roots three times and broke the stem at ground level. I took some cuttings and one rooted, which is now my one plant. I set it in the most unlikely position about 3 feet from the door leading to the garden in somewhat peaty soil. It faces S.W., but a belt of Forsythia about 11 ft. high is five feet south of it, so in effect it never sees the sun until about 4 p.m.

Nevertheless it still flourishes in spite of catching the full force of south-westerly gales which over the years because of the rebound effect of the wind have caused it to grow at about 45° to the vertical. It is about 5 ft. 6 ins. high and eight feet across; if erect it would be seven to eight feet high.

As is well known, all the rock-roses have fugacious flowers: this does not much matter with *C. ladanifer* as it produces buds with such abundance that at the merest sign of sunlight the day's ration appears and they are indeed spectacular; five-petalled, three inches across, white with a yellow dab at the base and then a crimson mark, as if done by a Japanese brush.

The proximity of this plant to the garden door means that it is daily the recipient of tea leaves and coffee grounds, which it seems to enjoy. Despite the warnings in the reference books I have never entertained doubts as to its hardiness; after all, it came safely through the winter of 1962/3 when we had two feet of snow lying for over three months. Perhaps it was that infusion of tea and coffee that gave it strength.

Newcastle upon Tyne

F. C. B.

HEBE HULKEANA

THIS very beautiful member of the veronica group is a shrub about 18 ins. high with few leaves and upright stems tipped with loose spikes of lilac-blue flowers. It will grow in any good garden soil but while it can stand fairly low temperatures it is very susceptible to cold winds, so a sheltered spot in winter is essential. It transplants readily, so could be transferred to an open frame till the spring. The stems are easily broken at the joints so it should be handled with care. Any pieces which break off should be used as cuttings which strike readily.

Giffnock

A. C. S.

TWO FOR THE AUTUMN

Polygonum vacciniifolium

ONE OF the plants that help to justify the claim that the rock garden can provide colour throughout the year. It is a very desirable plant from the Himalayas with completely prostrate evergreen foliage. In September and October it produces numerous upright 3 in. spikes of pink flowers. However, it should not be planted where space is limited. When I found it encroaching on its neighbours I shortened the leading

stems with the unfortunate result the plant died. That the pruning was the cause was confirmed by another member who had a similar experience. It is easily propagated by layers or cuttings, so it would be desirable to keep a stock of young plants available for replacing the original plant when it shows signs of growing too large.

Schizostylis coccinea

A BULBOUS plant from South Africa resembling a small gladiolus with deep scarlet cup-like flowers which bloom in succession over about a month. It is said to like a moist situation, but in the west of Scotland I find it needs good drainage and grows well in a gravel path next to a south-facing wall. Blooming into November, as it does, it is liable to damage by wind and rain, so some shelter is desirable. It can also be grown in the cool greenhouse where it should never be allowed to dry out. The varieties 'Mrs. Hegarty' and 'Viscountess Byng' are pale pink and rose respectively.

Giffnock

A. C. S.

MISNOMERS

WOULD someone with the time and knowledge care to sort out *Lewisia brachycalyx* and *L. nevadensis* for me? I have had seed from three exchanges of *L. brachycalyx* and all have turned out to be *nevadensis*. Similarly *Silene hookeri* comes in a variety of guises, but never *hookeri*. I have tried both these plants from seed over a number of years, and from widely varied sources, and suspect that there are many people with my trouble.

Dundee

J. H.

HYPERICUMS

I WAS interested, and surprised, to read Dr. Henry Tod's note on Hypericums in the *Journal* for September 1972 as it had never occurred to me that they were not completely hardy, given the right treatment.

What I have found to be the 'right treatment' here is planting in walls, or very sharp screes. Grown thus I find they seed themselves, most of them very freely. The self-sown seedlings seem nearly always to establish themselves in crevices or in gravel paths, most of which have a foundation of cinders = 'sharp scree'. Many of the plants must be over a dozen years old and in that time have survived some very hard winters. Two Scottish natives, *Hh. androsaemum* and *humifusum*, are naturally hardy here. The other dwarf species which

I grow are *Hh. calycinum*, *coris* (not entirely hardy in a very hard winter), *fragile* (very, very sharp scree), *minutum*, *olympicum* and *olympicum* var. *citrinum*.

Pitlochry

M-L.

THREE GOOD LONG-FLOWERING ROCK PLANTS

THE PLANTS of which I shall write here are not among those rare, beautiful and often difficult alpine to which I, like many Club members, act as willing nursemaid-cum-valet. They are, however, none the less beautiful for being easy and to those of us who can really look at a plant and see it for what it is there is rejoicing to be had in their almost indecent good health and will to survive. Each of them can be expected to provide a more or less continuous crop of flowers throughout the summer and into the autumn and in the true nature of good plants our affection for them grows rather than wanes with continuing acquaintance, or at least this is the case as far as I am concerned. If your first reaction on seeing the names below is to smile and pass on to richer fare, I would only ask you whether you have examined the flowers of any of them really closely. If you have not, then a real pleasure awaits you, since it is only in the closest scrutiny, with a hand-lens if necessary, that the full beauty of their flowers can be appreciated. In a world of labour-saving gardens with little manual assistance available, it is only too easy to spend one's time gardening without ever really having time to do more than examine superficially the results of one's labours. To be in this situation is, to my mind to miss the greatest of all gardening pleasures, that of penetrating to the core of a plant's beauty and making its secrets one's own.

Epilobium glabellum, *Sisyrinchium bermudiana* and *Diascia cordata* are all easy-going plants in any well drained, sunny situation, and while the last of these is still a relative newcomer to our gardens, the other two are very well known if not always very widely grown.

Epilobium glabellum is a dwarf New Zealand willow-herb found commonly in the mountains of the south island up to 1,800m (5,900 ft.) in screes, stony river beds, and among rocks or grassland. In cultivation it produces upright stems 6 ins. to 1 ft. high clothed in glossy leaves varying from green to bronze, which bear a summer-long succession of pure white flowers which are pretty en masse and amply repay close inspection. The petals have a smooth creamy texture and the stigma, also white but of a more glistening crystalline texture,

hangs gracefully at the corolla tip, rather as in *Rhododendron campylogynum*. This plant does not possess the invasive character of so many of its relatives, but I nevertheless remove the attractive seed pods in order to be safe rather than sorry. *E. kaikoense* and the hybrid between this species and *E. glabellum* known as 'Broadwell Hybrid' in recognition of the nursery in which the chance hybridisation occurred, are also both excellent easy plants, the hybrid having the dwarfer character of *E. kaikoense* with the larger flowers of *E. glabellum*. However, my personal preference is for the pure white flowers of *E. glabellum* as against the pink flowers of the other species and the pink-flushed white flowers of the hybrid.

Sisyrinchium bermudiana or blue-eyed grass hails as its name suggests from Bermuda. Like the other well known members of its genus, *S. brachypus* and *S. angustifolium*, it has the appearance of a pygmy iris, spreading by creeping rhizomes. Over a long period many of the "leaves" show themselves to be leafy stalks which erupt at the tips into bunches of small satiny six-petalled flowers. The petals are of a rich violet-blue, darkening to purple at the base, setting off the ring of bright yellow stamens held tightly in the centre. The great beauty of this plant to my mind is that as a result of the great sensitivity of the flower opening mechanism to light intensity, the briefest glimpse of the sun from May to November brings about a sudden focus of colour where hours, or even minutes before was what appeared to be a plant past its best. This species is apt to be invasive, although I have never had any real problem in removing it when required. It is a very good plant for crazy paving, provided foot traffic is not too heavy, or rather indiscriminate!

The last of my three plants, *Diascia cordata*, comes from Botswana, but despite this fact all the evidence points to its being completely hardy here. This is a very good plant for planting among such old faithfuls as aubrieta, alyssum, dryas, etc., but should not be planted amongst choice slow growers where its freely produced underground stolons might be difficult to remove. Elsewhere, however, it will run happily without becoming a nuisance. The inch-high mat of rounded, glossy leaves produces throughout the summer and into autumn a succession of wiry 6 in. stems, each bearing several flowers of an unusual and attractive salmon pink. These have the appearance of an elf's hat, but with twin spurs and are borne in an appealing fashion. In my experience this plant looks particularly well grown intermixed with *Dryas octopetala* 'Minor' and *Chrysanthemum haradjanii*, some of

the smaller campanulas also making very happy associates. Propagation by division or 'Irishman's' cuttings is simple at almost any time, and all the attention an established patch requires is the usual clip over with the shears to tidy it up when the long flowering period finally draws to a close.

Bonnyrigg

J. E. G. G.

Book Reviews

The Peat Garden and its Plants, by Alfred Evans. Published by Dent. 176 pp. plus 16 pp. in colour and 40 pp. in monochrome. Price £6.50.

This book fills a gap in our horticultural library. It is a specialist's book on a specialist subject and will undoubtedly be the standard work for many years to come.

The author is our leading authority on peat gardening and the peat garden of the Royal Botanic Garden for which he is responsible is adequate proof of his ability. The garden has long been the information centre for peat gardeners, but many of us can visit it only infrequently. We now have an alternative. Alfred Evans' book is a more than adequate substitute for "learning by example" and will undoubtedly reach and be the *vade mecum* of a wider circle of gardeners than can visit the R.B.G.

We are given a brief history of peat gardening from its beginnings in the Logan Gardens to its introduction and development at the R.B.G. This is a happy introduction to the expert's advice on the making of peat gardens. Among other things he tells us the ideal size of peat blocks to use, though nothing, unfortunately, of the varying nature of peat either as regards its structure or its mineral content. What type, one wonders, is used at the R.B.G.? In the next edition—and there will surely be more than one if only to keep the plant lists up to date—perhaps Mr. Evans will enlarge on this. Many gardeners besides knowledgeable plantmen (for whom the author admittedly writes) will read this book and would welcome—and need—advice on such points.

There are chapters on plant arrangement, on planting, and on maintenance, and few will fail to benefit from the advice given. Most readers, however, will value the book mainly for the author's descriptions of "peat garden" plants of which a comprehensive list is given. Many of the plants are illustrated in either colour or monochrome. Both are quite superb. The plant descriptions and cultural hints are patently written by a gardener who both knows and loves his plants. Much of his enthusiasm will inevitably be passed on to his readers.

At £6.50 the book is not cheap, but it will undoubtedly prove to be a fine investment.

J. H.

Kamuti—A New Way in Bonsai, by Willi E. Bollman. Published by Faber & Faber. Price £3.50.

When I first glanced at the title of this book my reaction was that it would be of little interest to Club members. Having read it, I have had second thoughts. The author deals mainly with what are usually called large-leaved trees, but he has

something to say about conifers and it is here that, I think, the book may appeal to our members. As we all know, many so called dwarf conifers would be more correctly called slow growing so that after twenty years or so the effect may be very different from what was envisaged, e.g. *Chamaecyparis lawsoniana* 'Elwoodii' may have reached six to eight feet high. If our little trees are grown in pots for exhibiting at Shows and supplied with fresh soil periodically the roots are probably trimmed a little each time. This together with a cramped situation tends to restrict growth and this might be described as fortuitous Bonsai.

In the book the author describes a method which he has carefully worked out, starting with plants at the seedling stage. He claims that he can produce better proportioned trees in three to five years than those produced after fifty or more years by traditional Bonsai methods. He gives very clear instructions with step by step illustrations of his methods and much attention is given to the principles of design to be aimed at. Chapters are added on suitable containers, on maintenance and on displaying the trees to advantage besides a suggested system of points for judging.

Finally, there is a table of comparisons between traditional Bonsai and the author's method, Kamuti. The name, meaning small tree, is from a language used in part of Rhodesia.

The author says he had no gardening experience whatever when he became fascinated by the idea of miniature trees and spent two years studying plant cells and plant behaviour and in intensive experimentation.

The book is very well printed on good paper, as one would expect from this publisher; it has 106 pages 8½ ins. × 6 ins., including plates, two in colour and twelve in monochrome besides numerous line drawings.

A. C. S.

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Joint Rock Garden Plant Committee

DUNFERMLINE—24th MAY 1974

AWARDS TO PLANTS

FIRST CLASS CERTIFICATE

To *Trillium grandiflorum* 'flore pleno', (A.M. as 'Snow Bunting'), as a flowering plant for the rock garden, introduced from the Montreal Botanic Garden and exhibited by the Regius Keeper, the Royal Botanic Garden, Edinburgh.

AWARD OF MERIT

To *Lewisia* 'Carroll Watson', as a flowering plant for the alpine house, exhibited by J. D. Crosland, Esq., Treetops, Torphins, Aberdeenshire.

AWARDS FOR EXHIBITS

CERTIFICATE OF CULTURAL COMMENDATION

To H. Esslemont, Esq., 9 Forest Road, Aberdeen, for a specimen ten years old plant of *Saxifraga florulenta*, grown from seed, and a well-grown plant of *Helichrysum plumeum*.

To J. D. Crosland, Esq., Treetops, Torphins, Aberdeenshire, for a well-grown plant of *Lewisia* 'Carroll Watson'.

LONDON—9th JULY 1974

AWARD FOR EXHIBIT

CERTIFICATE OF CULTURAL COMMENDATION

To J. B. Duff, Esq., Langfauld, Glenfarg, Perthshire, for a flowering specimen of *Saxifraga florulenta*.

EDINBURGH—21st SEPTEMBER 1974

AWARDS TO PLANTS

AWARD OF MERIT

To *Sorbus reducta* as a fruiting shrub for the rock garden, exhibited by Dr. and Mrs. I. Simson Hall, 93 Whitehouse Road, Edinburgh.

To *Celmisia hectori*, as a foliage plant for the rock garden, exhibited by G. I. Merelie, Esq., 45 Woodside, Darras Hall, Ponteland, Newcastle upon Tyne.

Show Report

EDINBURGH DISCUSSION WEEK-END 1974

THE AUTUMN SHOW was held in conjunction with the Discussion Week-end and drew a number of competitors from south of the Border as well as from the west.

Although a small Show there were a number of interesting plants and the standard was high.

The Forrest Medal was won by *Pernettya prostrata* var. *pentlandii*, a beautiful plant heavily laden with large lavender berries, grown from seed, and shown by Dr. W. C. Graham. The East Lothian Trophy, awarded for 3 plants of different genera, was won by Dr. John Good with well-grown plants of *Helichrysum selago*, *Androsace imbricata* and *Veronica bombycina*. Dr. and Mrs. I. Simson Hall won the Peel Trophy for 3 pans of Gentians, *G. sino-ornata*, *G. 'Elizabeth'*, and a *G. macaulayi* hybrid. Mrs. E. Hart's miniature garden won the Logan Home Trophy, and Mrs. B. B. Cormack's attractive arrangement of white heather, *Gaultheria cuneata*, and gentians was awarded the Wellstanlaw Cup in the class for flower arrangement.

Among other interesting plants in the class for Scottish Natives was *Wahlenbergia hederacea*, confined to the south-west and shown by Mr. J. D. Main. The class for silver foliage plants was well supported, and was won by Mr. Garth Merelie from Newcastle with a magnificent pan of *Celmisia hectori* in perfect condition. This plant was also awarded an Award of Merit by the Joint Rock Garden Plant Committee which met at the weekend. An A.M. was also awarded to a good plant of the non-suckering form of *Sorbus reducta*, with rose-pinkish berries, shown by Dr. and Mrs. I. Simson Hall in the class for dwarf shrubs.

Mr. David Livingstone won a First in the Dwarf Conifer class with *Chamaecyparis obtusa hypnoides*. The rare native fern *Asplenium septentrionale* was shown by Mr. J. D. Crosland, Torphins, Aberdeenshire. Of special interest in the class for Calluna or Erica, which was won by Dr. and Mrs. I. Simson Hall, was *Calluna vulgaris* 'Scolmov', sent by J. Grulich of Czechoslovakia, a dwarf form with good dark green foliage, but unfortunately not in flower. Sempervivums were well represented, always a good 'filler' for the show bench. In the class for a plant not eligible for the other classes, Mr. J. D. Crosland showed a beautiful plant of *Helichrysum frigidum*.

There was not great support in Section II; nevertheless there were some good plants. The Silver Cup awarded for the best plant in this section was won by Dr. P. Ryan of Middlesbrough with *Schizocodon macrophylla* with brilliantly coloured leaves. Surely the youngest competitors ever were the proud winners in two classes, Iain Main aged 5½ won with a sempervivum and Graeme Main aged 3½ showed a lovely Sunset Strain *Lewisia*. Keen gardeners at this early age augers well for the S.R.G.C.!

A raffle and plant auction were held in aid of the weekend funds. Many interesting and rare plants were contributed by the members, and Mr. J. T. Aitken proved to be an able and witty auctioneer, and the auction was enjoyed by all. The money raised was a great help towards expenses.

The Regius Keeper of the Royal Botanic Garden put on an informative and interesting exhibit showing the problems of plant collecting in the wild. This showed many aspects in the field including excellent photographs, herbarium specimens, and last but not least a pair of collector's boots added a realistic touch.

Mr. Lawrence Greenwood showed a beautiful collection of his flower paintings and Mrs. Edith Wilson also showed some of her lovely paintings.

Altogether this was a successful Show, and the Show Secretaries wish to thank everybody who so generously gave of their time and help. The 1975 Autumn Show is being held along with the Discussion Weekend at the University of Edinburgh Pollock Halls of Residence.

S. MAULE, B. B. CORMACK

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1975 Tours for Gardeners, Botanists and Flower-Lovers

SUMMER ALPINE TOURS

A very few vacancies are still available on Tours to ITALY and SWITZERLAND, leaving at the end of June and beginning of July, including Corvara in Badia from 25 June to 9 July. *Single rooms are waitlisted, but it is worthwhile applying in case of cancellations: £173*

FURTHER AFIELD

SITES & FLOWERS IN NEPAL AND KASHMIR—staying in Kathmandu, the Pokhara Valley, on the Dal Lake at Srinagar and at Gulmarg—the Meadow of Flowers: 1 to 19 May, with Miss Theresa Atkins: £505

THE WESTERN HIMALAYAS—An easy walking tour from 31 May to 17 June, also with Miss Atkins, from Manali in the Kulu Valley up the Jugatsukh Nullah, famous for the variety and profusion of trees, plants and flowers. This is planned for the very best time of year and is ideal for flower-lovers who like walking and do not mind sleeping under canvas: £415

A KASHMIR PONY-TREK—this begins with a few restful days on the Dal Lake in houseboats before continuing from Thajiwas in the Liddar Valley into the heart of the lower Himalayas on ponyback. Views are glorious, and rare plants are to be found at altitude. All equipment, including personal belongings, are carried by porters and pack-ponies, and nights are spent in tents. Mr. Polunin leads this trek for the seventh season, from 17 July to 4 August: £508

For details of these, and of a tour of THE FLOWERS OF CAPE PROVINCE and two fascinating FAR EASTERN JOURNEYS, as well as many others, apply to the organizers:

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