Editorial Copy

The JOURNAL of THE SCOTTISH ROCK GARDEN CLUB

VOLUME XI, Part 1

APRIL 1968

Editor—A. EVANS, Royal Botanic Garden, Edinburgh

Obtainable from Mr. D. ELDER, Hon. Treasurer, Dalmara, Carslogie Road, Cupar

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Editor's Page

THIS ISSUE of the *Journal* starts a new volume, something which happens once in every two years, and because the style and layout of magazines change and old settings become outmoded and dated, this April edition of Volume XI has been given a small face lift. It is hoped the change will be accepted by most members as an attempt to lift our publication out of the past and bring it at least into the second half of the Twentieth Century. Other small additions or modifications may be incorporated into future *Journals* if it is thought that by their inclusion a more attractive and useful publication will result, for always it will be the aim to present the larger contributions and smaller notes in as informative and interesting a way as possible.

Letters to the Editor are usually invited with a view to publishing them in full or abbreviated form, in the hope that some controversial point may stimulate discussion and comment from other members. In this instance, however, although the Editor welcomes the normal letter for possible publication, he would appreciate correspondence from members, not for publication, suggesting subjects they feel have been neglected in the past and which, if discussed in some future issue by a knowledgeable person, might be of benefit to other Club Members. Remember this is your magazine and, although you may feel diffident about penning an article, a club with more than 3,000 members must harbour lots of good ideas. So if these are recorded in a note and posted to the Editor he will consider each proposal and decide on a course of action.

A Club is an association of persons for social and friendly purposes, a company bound by common interests where an exchange of ideas and experiences, by their discussion, not only provides talking points but helps others to enjoy their hobby. Let us therefore make this a true Club.

The appreciation of rock gardening is manifest in many ways and notes from a number of well-known personalities are included in this issue, but most encouragingly it also contains names new to these pages. Rocks are discussed with authority at great length, stimulated by an article included in a previous *Journal*. Searching for plants in the eastern Mediterranean countries with the hazards involved, and plants to be seen on holiday broaden the interest. All the authors have done their work well and their efforts are here for your enjoyment and information.

Plant hunting is a fascinating hobby and while this search must, in many instances, be confined to plant spotting, there are still surprises in store for the observant enthusiast. To illustrate this point more forcibly it has been recorded recently that a Scottish native, *Phyllodoce caerulea*, until last year known only on one hill in central Scotland, has been found in two other stations. What is more, from the reports, these locations boast healthy colonies. Can it be, then, that other rarities of our native flora are to be found in greater quantities and will the known distribution of *Diapensia lapponica* in Scotland be increased one day by more thorough botanising ?

Club Christmas Cards

IT IS hoped to include colour illustrations in the September *Journal*, and in that issue an intimation will be made of the blocks to be used for the Club Christmas Card.

Slide Library

THE CURATOR would receive most gratefully 35 mm. colour transparencies of members' gardens, especially of their rock gardens, screes and peat banks. Views of the Alps would also be very welcome.

MEMBERS IN THE UNITED STATES OF AMERICA AND CANADA PLEASE NOTE :

Tape-recordings, with slides, of the lectures :—

"Early and Late Flowers for the Rock Garden" by Major-General D. M. Murray-Lyon, D.S.O., M.C.

"Adaptation to Environment" by Mrs. L. C. Boyd-Harvey

are, or shortly will be, in the possession of Mrs. Henry G. Clarke, Bear Swamp Gardens, Ashfield, Mass., 01330, U.S.A. Members of the S.R.G.C. who are interested in hiring these lectures should write direct to Mrs. Clarke.

The Discussion Weekend 1968

HOTEL DUNBLANE (THE HYDRO), DUNBLANE
19th and 20th OCTOBER 1968

PROGRAMME

Saturday :

1.00 p.m.	Lunch
2.30 p.m.	Opening Address
2.40 p.m.	The W. C. Buchanan Memorial Lecture ''Hardy Ferns for Rock Garden and Woodland'' Reginald Kaye, Esq.
4.00 p.m.	Afternoon Tea
5.00 p.m.	''Natural Screes and Scree Gardening'' C. Graham, Esq.
7.00 p.m.	Dinner
9.00 p.m.	Ciné Film—''Scotland's Gardens''

Sunday :

10.00 a.m.	''The Alpine House, or Rock Plants in Protective Custody'' John B. Duff, Esq.
1.00 p.m.	Lunch
2.30 p.m.	''Plant Hunting with a Camera'' Harold Esslemont, Esq.
4.00 p.m.	Afternoon Tea
5.00 p.m.	Close Down

HOTEL RESERVATIONS FOR RESIDENTS :

All bookings for the Weekend must be made *direct* to the Hotel Dunblane (The Hydro), Dunblane, Perthshire, mentioning membership of the S.R.G.C. The special Conference rate for the hotel is again £4 10/- per person. This quotation is for accommodation and all meals from lunch on Saturday to afternoon tea on Sunday. The service charge is also included.

NON-RESIDENTS :

Non-residents who require meals will be charged 13/9d for lunch, 20/- for dinner, 1/9d for morning coffee, and 1/9d for afternoon tea and biscuits. These prices also include the service charge. Tickets for meals may be had at the Reception Desk.

CONFERENCE CHARGE AND IDENTITY BADGES :

In order to cover the overhead expenses of the Weekend, there will be a Conference Charge of 10/- for each person. Non-residents will be asked to contribute 5/- each for one day, or 10/- each for both days. Members are asked to pay the above charges at the Conference Office on arrival at the hotel, when they will be given Identity Badges.

Notice

The ANNUAL GENERAL MEETING will be held in the Carlton Hotel, North Bridge, Edinburgh, 1, on **Thursday 7th November 1968, at 2.15 p.m.**

In accordance with Rule 5, para. 2, members are notified that nominations are required for the President and other Office-bearers, and for Members of the Council, and must be received *in writing* by the Secretary on or before 20th August 1968. Nominations should be signed by two members of the Club, and should be accompanied by the nominee's consent *in writing* to accept office if elected. These nominations will be published in the notice calling the Annual General Meeting.

In accordance with Rule 4 (*a*) all Executive Office-bearers retire annually, but are eligible for re-election.

In accordance with Rule 5, para. 1, the following Ordinary Members have served for three years and are not eligible for re-election as Ordinary Members for one year : Mrs. J. Aitchison, Dr. L. M. Dean, P. J. W. Kilpatrick, Esq., Miss D. Pape, A. Todd, Esq.

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Mrs. L. C. BOYD-HARVEY,
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East Lothian.

Plant Hunting in Turkey

by S. D. ALBURY

The Clark Memorial Lecture given at Glasgow on 1st November 1967

THIS BRIEF account of the first six months of the "Flora of Turkey Expedition, 1966", organised and led by John M. Watson, is based on the lecture given to the S.R.G.C. As the lecture consisted of a considerable number of colour slides showing not only flowers, but also things of general interest, it has been necessary to dispense with much of what was viewed and to give greater detail in certain cases for the benefit of the reader.

This Expedition, which commenced in February 1966, must be one of the most comprehensive and longest of recent years, as at the time of the lecture, November 1967, the Expedition was still going on, there being three members working in the field in Turkey. The title is somewhat misleading as the Expedition extended into Syria and the Lebanon in 1966, and into Persia in 1967.

Turkey has become rather popular with plant hunters in recent years ; this is because the more remote parts in the east have only recently been opened up again to the foreigner. Even now it is necessary to obtain permission from the local Governor of the province to move around his domain and, in particular, to visit mountain areas should they be within a certain distance of any frontier.

The arrival of the first three members in Turkey, John Watson, Martyn Cheese and me, coincided with an early season—it was stated to be the earliest spring on record—so, consequently, it was found that many of the bulbs we expected to find were over before we could get to them. By contrast, the spring of 1967 was late and it was reported that *Iris reticulata* was seen in flower on the first day of July. It had been planned that the first objective would be a journey through the south of Turkey, visiting the Taurus Mountains on the way to Syria, the Lebanon and Jordan, where our primary concern was to be the collecting of Oncocyclus irises. However, our plans went awry when the author managed to turn the Land Rover in which the party were travelling, upside down. This involved considerable repair work, the loss of the vehicle for a month, and the party having to stay put in one area for that period.

Luckily the choice of venue fell on Iskenderun, where the Expedition found a good friend in the British Vice-Consul resident there. Suitable storage facilities were offered which enabled us to have a base for assembling stores, equipment and later on, bulbs, seeds and herbarium material. Iskenderun, formerly known as Alexandretta, is a port situated in the Bay of Iskenderun, and whilst around the shore one finds a Mediterranean type flora, together with vegetation ranging from garigue to maquis, one does not have to travel far from the coast to reach the mountains which are the southernmost extension of the Amanos Range. Here, during our enforced stay, we had the opportunity of thoroughly botanising a small area, which proved to be a never ending source of interest ; so much so that when we were mobile again we were loth to leave.

Our first really exciting find was *Cyclamen pseudibericum* which, although long known in cultivation, was, according to Dr. Peter Davis, only rediscovered about a decade ago by Turkish botanists, but on that occasion much further to the north. Considering that only a comparatively small area was botanised, it was interesting to note the wide range of colour seen in this species, graduating from deep red through to almost white. In this same area but at a somewhat higher level we discovered quantities of *Wulfenia orientalis* growing on rocks on the edge of steep wooded slopes. Here, too, among the trees, scillas grew so thickly as to remind us of our native bluebell woods. They mingled with pink and white primroses, *Primula vulgaris* subsp. *sibthorpii* being one of these, various ground orchids and occasional clumps of paeonies.

Another area near Iskenderun to which we paid many a visit was situated at Belen about ten miles to the south. It was in this region that we found our first Oncocyclus Iris of the season and that only a very small colony of what later proved to be *I. susiana* forms. The lengths we went to in order to protect the very few flower buds from being eaten by the goats and sheep—generally to no avail—really requires a series of photographs. Protective cairns of boulders, barricades of thorny bushes and clumps of asphodel, disliked by those voracious quadrupeds, failed to keep them at bay. Millions of sheep and goats are steadily eating their way through the Turkish flora, causing pathetic areas of desolate erosion. Perhaps the one family of plants to be found both in this area and, generally, wherever we went, was Leguminosae. From the "Judas Tree", *Cercis siliquastrum*, down to the hundreds of astragali, there are sufficient to give the botanists headaches for many a day.

Apart from the sheep and goats eating up the plants and flowers, we also experienced the loss of a photograph, herbarium specimen and a collection, due to other livestock such as caterpillars, tortoises or natives. In the last case we learned that the bulbs of *Fritillaria acmopetala* were edible, but at present day commercial prices a plateful of these would be something of a luxury. This district yielded so many fascinating plants, among them a quaint Aristolochia and various orchids, including a selection of Ophrys similar to those found at home, that we found it difficult to tear ourselves away when our vehicle was returned. It was now late in April and the party had been joined by Miss Margaret Merritt, our artist and head cook ! We set off with the best intentions of getting to Syria and the Lebanon but, as we were forever stopping the vehicle to investigate plants by the wayside, progress was slow. At times a halt would mean a couple of days' stay if something special were encountered. One such halt, caused by seeing a splash of scarlet tulips, introduced us to a quaint *Biarum* and another magnificent Oncocyclus Iris growing within a stone's throw off the roadside. The latter was shown to us by some small boys who, unfortunately, picked great armfuls of the flowers—in fact, all that were fully opened—and as we particularly wished to photograph the plant *in situ* we duly camped nearby to await the opening of the next crop of blooms.

Due to a rather unpleasant meeting with the military, a somewhat hurried journey had to be made through Syria but, prior to the "incident", a stop in one area revealed fields of that quaint orchid, *Serapias pseudocordigera* and, in a nearby wood, the rare *Platanthera holmboei*, *Fritillaria alfredae* and *Cyclamen orbiculatum* var. *coum*. A few days were spent in Beirut while further repairs and replacements were carried out on the Land Rover. This was followed by a trip to Mount Lebanon to see the famous Cedars. On the journey we noticed the brilliant scarlet *Ranunculus asiaticus* along with *Cyclamen persicum* growing by the roadside. *Cyclamen persicum* is the parent of our greenhouse Cyclamen but, when encountered in the wild, one sees that the graceful charm and delicate hues of the true species have been bred out in order to obtain bigger and more colourful blooms.

Around the area of the Cedars many interesting and colourful plants were to be found. A delightful form of *Prunus prostrata*, only an inch or two in height, scrambled over the rocks, and later in the season stemless scarlet fruits about the size of holly berries developed. Tulips, the scarlet *T. systola* and a particularly desirable dwarf form

of *T. humilis* were found. The former, in common with most tulips of that colour, was difficult to collect as it tended to send its bulb nine inches or more down into stony terra-rossa. Below ground level the stem is white and brittle so that it snaps off easily and one loses track of the whereabouts of the bulb. *Tulipa humilis* was rather easier to collect as it preferred to grow in well drained banks where only six inches or less of soil covered the bulbs. It often shared these sites with *Fritillaria crassifolia*. Another Oncocyclus Iris, *I. sofarana*, has its habitat near the Cedars, and there the small colony was just coming into bloom. How much longer it will occupy its present site is problematical, as the location of the Cedars is popular as an attraction for both the tourists and native population. At the weekends trippers arrive by the charabanc-load. Building also is going on apace and, unfortunately, the Iris station is within sight of the road.

On the steep mountain sides away from the village grew *Corydalis rutifolia*, with deep red and white flowers. *Aubrieta libanotica* helped to create the impression of a magnificent rock-garden when growing over tufa-like rocks, and the sweet-scented *Viola libanotica* tucked itself into cracks under overhanging rocks. A snow blizzard and torrential rain, however, rather took away our initial enthusiasm for the area and sent us scurrying down to the coast again to thaw out and get dry.

After our return to Turkey from Syria and the Lebanon, we turned our attention to the east. We intended to make straight for Lake Van, but study of the large-scale maps indicated many interesting mountain formations and remote valleys which probably hadn't been botanised in recent times, if at all. Such a place was Halkis, where we found yet another Oncocyclus Iris in great quantity. This is probably *I. gatesii*, but it was found to have a great deal of variation in colour, the throat or beard ranging from darkest maroon to a reddish orange usually on a cream ground. Among plants of interest seen here were an apricot-pink Onosma, *Papaver tauricola*, various bulbs, including irises of the Reticulata and Juno sections, tulips and a varied range of fascinating orchids, including *Orchis comperiana*—the "Spaghetti Orchid". This unusual common name was applied to this species on account of the long filaments hanging from its lip. Ophrys in variety, including the rich mauve and purple *O. reinholdii* and the variable *O. scolopax*, a form of the "Lizard Orchid", and others similar to those which one could meet with nearer home were also observed.

When Lake Van was reached, we were at 6,500 feet facing an expanse of water nearly 80 miles in length and surrounded on all sides

by snow-capped mountains. We were warned that we might be confronted with bandits in this part of Turkey and on occasion we even spent the night watched over by soldiers, encountered everywhere throughout the country. Around the lake we found yet more Oncocyclus irises. *I. sari* shared one mountain side with a yellow form of *I. persica* and various plants familiar to our rock-gardens such as Aethionema, Campanula and *Stachys lavendulifolia*. Somewhat unfamiliar, however, was a member of the Boraginaceae, *Rindera lanata*, with its hairy corolla which is so constructed as to give the impression that from it protrudes a bird's pink beak.

Continuing the journey around the lake, the next stop revealed that *I. sari* had now been replaced by *I. barnumae*, so very different in appearance to the former. *I. sari* has flowers in shades of cream, brown and mahogany, while in *I. barnumae* the shades range from mauve through to deep purple reminiscent of *I. pumila* or *I. chamaeiris*. It is in appearance equally dwarf ; in fact, one wonders how so small a plant in leaf and stem can produce such a fine flower. Nearer to the town of Van this Iris was replaced by a form of *I. paradoxa*, which is sometimes listed as *I. paradoxa* var. *choschab*, and bears flowers quite unlike anything previously encountered. It has typical standards of white veined with blue, but the falls have completely altered their shape so that they look like long tongues made of deepest purple velvet or moleskin. The various species or forms of Oncocyclus irises we saw always had their own particular territory and never encroached onto their neighbours' land.

Turning south-east from Lake Van, an exploration of the more remote parts of the province of Hakari followed. Our first major stop was Ispiriz Dag where, at over 9,000 feet, we were at times nearing the melting snows and, although thousands of miles from home, a certain amount of home-sickness and nostalgia was felt at the sight of such familiar flowers as *Gentiana verna* and a bird's-eye Primula, *P. capitellata*. On the lush wet slopes, fed by the melting snows, drifts of *Primula auriculata* in their thousands were interspersed with a fine large buttercup, *Ranunculus obesus*. This species looks far more like an Adonis. In this area all types and conditions of terrain existed, from the previously described wet slopes to rock faces studded with Draba and *Androsace villosa*. Screes abounded in plants like *Scutellaria orientalis*, worthy of the show bench, and meadows were full of bulbs. Fritillarias, including *F. kurdica* and one with open-faced flowers of a tawny orange colour, grew in these pastures.

Among the plants which can provide interest and beauty, are the various parasitic types which were often encountered. Species of Orobanche ("Broomrapes") were seen in a variety of forms and colours which included pale blue, cream, golden yellow, orange and apricot. But probably the most spectacular was *Anoplanthus coccineus* (syn. *Phelipaea tournefortei*), parasitic on various members of the Compositae, with velvety red flowers often the size of gloxinias.

In the more remote parts of Hakari we found many plants of interest, sometimes amid scenery of grandeur, but at other times of desolation, where bears and wolves still roam. Fortunately we never came face to face with either of these carnivores, but we certainly heard them at night and often came across signs of their proximity. It was somewhat unnerving to listen in the dark to the roar of the bears ; we were lying out in the open at night as it was far too hot to exist under canvas. At least we had a wonderful view of the various man-made satellites as they sailed across the sky on their endless journeys.

These regions proved rich in fritillarias from the great *F. imperialis*, so well known to our gardens, to species of the *F. armena/caucasica* group which bear deep maroon flowers and are dusted externally with a grape-like bloom. The fascinating *F. michailovskyi* with rich mahogany bells and bright yellow tips was also recorded along with a variable green and brown chequered Fritillaria, but probably our most charming find in this genus was a rose-pink form with wide open bells. Quite a large number of bulbs of this last mentioned Fritillaria have been distributed, so that it may soon be seen on the show bench and, if it takes kindly to captivity, may become available commercially. The pink Fritillaria was found in late June near melting snowdrifts at a height of over 9,000 feet. This and the other species mentioned tended to keep themselves apart and aloof, a habit so often met with when travelling around that part of the world in search of flowers. Although certain species and forms are restricted in their distribution, when one finds something fresh it is usually seen in great quantity.

Many plants, so well known to the herbaceous border, are common around Turkey. The oriental poppy smothers the hillsides, Anchusa grows by the acre, and it was interesting to observe that in the eastern parts of Turkey the usual deep blue form was replaced by one with pale Cambridge-blue flowers. Echinops, Eryngium and Galega were all plentiful, with some forms superior to those in cultivation. Many thistle-like flowers were seen, some suitable for the border, and others dwarf and ideal for pan culture in the alpine house and for the show

bench. Such a plant is *Jurinea depressa*, a huge pink thistle with stemless flowers poised on a mat of sage-green filigree leaves.

From the eastern provinces, the party journeyed northwards over the Zigana Pass and through the Pontic Mountains. Near the pass lilies, in full bloom, were seen ; these were the "Turkscap" *L. ponticum* and the lovely, pale yellow *L. szovitsianum*. At the pass the alpine turf was full of interesting plants. This helped to banish the gloom of the mist, rain and cold which came as rather a shock to the constitution after the cloudless skies and high temperatures we had experienced during the previous weeks. Here *Daphne glomerata*, a charming dwarf shrub with red and white clusters of flowers, grew side by side with *Viola altaica* in its purple and yellow forms. The very dwarf *Cyclamen parviflorum* studded the turf, whilst *Campanula aucheri* grew in great drifts. It was a pity that more time could not be spent in this area but it was necessary to make for Trebizond and the road to the west, as we had to be back in Istanbul to meet the last two members of the 1966 party on the 1st July. The journey through the Pontic Mountains was marred by thick mist which obliterated the view, but every now and again the visibility cleared sufficiently for us to behold the sight of hillsides covered in *Rhododendron luteum* in its full glory.

After Istanbul the party, having been joined by Dr. Cain and Miss Jo Darrah, set off for Iskenderun to sort out the material which had been collected, but on the way called in at Goreme to view the valley of rock cones, many of which in past days had been hollowed out to form dwellings. An early Christian community had lived in these strange surroundings and it was reputed that no fewer than 365 churches were to be found in the area. In some of these beautiful murals are still to be found, although in the past most have been defaced.

Before reaching base, a visit to Ilgaz produced several new flowers, but perhaps the one which was most fascinating was a Lamium. A dead nettle is not a plant I would normally warm to, but this species grew in a very steep, loose scree with its one-inch high crinkly foliage covered in large blooms of a striking shade of pink. Judging by its situation and habitat, it is unlikely to keep its neat habit in cultivation, that is to say if, in the first instance, it can be raised from the limited number of seeds which were later collected.

It was now mid-July and in order to see any flowers one had to climb to considerable heights. After seed collecting sorties to the Lebanon and the east of Turkey as far as Urfa, a tour of the west was

made. This part of Turkey contains much to interest the tourist, having been colonised by the Romans and Greeks and by other great civilisations. These may have faded into ancient history, but evidence of their greatness is left in the remains of what were once great cities. Between trips to the mountains short visits were made to such places as Hierapolis and Ephesus to see the ruins and to Pammukale to see the spectacular, glistening white, solidified waterfalls formed by the calcareous waters of thermal springs. At Kaz Dag, Dianthus were, seen in quantities that were almost unbelievable. Both mat and cushion-forming species were found. Acantholimons were plentiful, but after the excitement of spring and early summer the flora was becoming more and more limited as the season advanced. It was around this time that my health started to give concern and when we finally reached base at Iskenderun, at the end of the trip to the west, it was discovered that I was suffering from infective hepatitis, a flowery sounding complaint, better known as jaundice. Obviously, as I was in need of medical care and a strict diet, I was of no further use to the Expedition in Turkey. Soon I found myself flying home to recuperate and await the arrival of the bulb collection for sorting and distribution.

Simple Propagation of Alpine Plants

by A. DUGUID

(Lecture given at Dunblane on 15th October 1967)

IN PREPARING this talk I have borne in mind that most of you listening to me this morning are not interested in raising large quantities of plants from seed or by any other means. More than likely you will want to propagate a small number for your own use and perhaps a few extra to give to friends. Lectures are difficult enough but demonstrations are many times worse, for not only must plant material be brought into the hall but, unless the audience has good eyesight and the seats be arranged in tiers, only those seated near the front can see what is going on. Because of this I asked Mr. and Mrs. Cairns of Gordon if they would be kind enough to come along to Edrom and take a series of colour transparencies illustrating the methods of propagation with which I propose to deal. I am most grateful to them for their help and, by the end of this morning, I feel sure you will agree that the results of their efforts have added much to the value of this talk. Straight away I must ask you to excuse the state of the pots and boxes used. I know they are dirty but, as we had to take advantage of the first calm sunny day to have the film exposed, there was no time for cleaning up.

Propagation is a wide subject and I could not possibly try to cover it in one brief talk. I therefore propose to discuss it in an informal way and to pass on little bits of information which I trust will be easily understood and, at the same time, be of practical value.

The majority of modern composts are based on those recommended by the John Innes Institute and they are readily available from most horticultural sundriesmen. It must be borne in mind, however, that those soil mixtures were devised mainly with the raising of vegetables and bedding plants in view. They are good general composts, but I find that whereas, one to which more humus in the form of peat or leafsoil has been added is good for primulas, a compost containing an extra part of sharp sand may suit high alpine plants better. One can only advise on this matter as the composition and texture of soils vary so much in different parts of the country. A correct balance is only arrived at by trial and error.

Nature has evolved many methods to ensure the dispersal of seed and one of the more common agencies employed is wind. A good example of this is to be found in *Pulsatilla vulgaris*, long known as

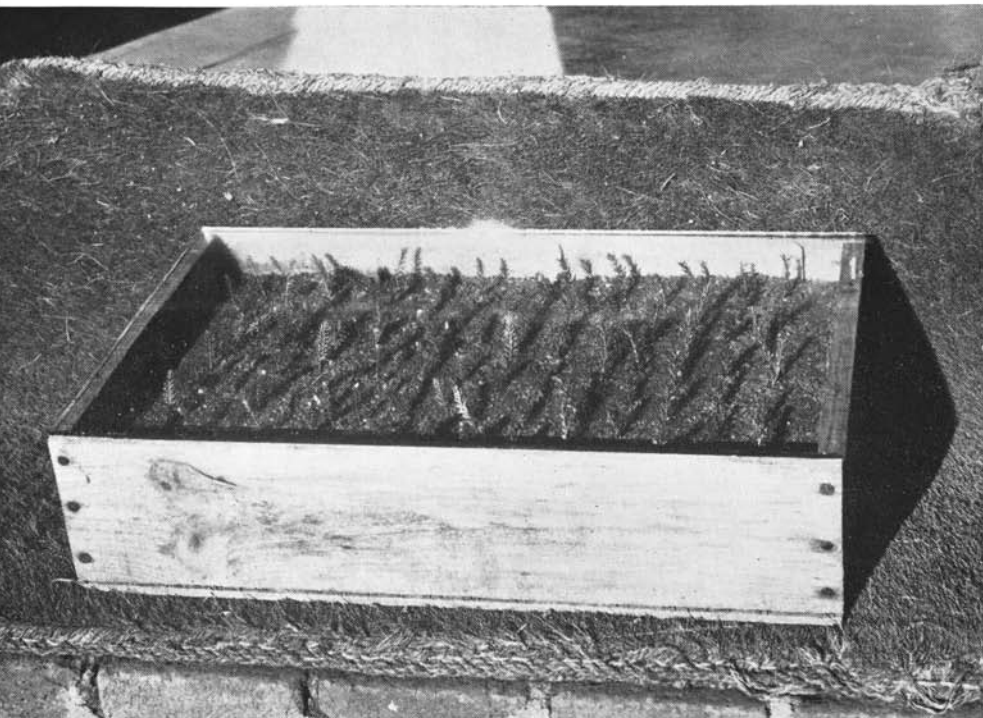
Anemone pulsatilla. Here the seed has a feathery tail and is carried by wind until it falls to earth seed downwards. Where it alights on suitable ground the seed buries itself in the soil, being driven into the earth by the spiral action of the tail, so that, in the end, this appendage is left sticking up. One other function carried out by this tail is to direct moisture trapped by the hairs to the seed and so assist germination. Seeds may be sown in pans or boxes, depending on the quantity required, and regardless of the medium used good drainage is vital. In a receptacle filled with compost, and with the aid of a match-stick, make little holes into which individual seeds may be inserted tail upwards. If the match-stick is slightly dampened it is quite easy to pick up each seed and sow singly. This may seem a finicky job but, with practise, it is comparatively easy and does give better germination. One further point about Anemone seeds is that germination is improved where the seeds are sown fresh, therefore seed sowing should be carried out as soon as possible after ripening.

There are quite a number of plants with seeds which need to be sown while still green and amongst them are some of the primulas, particularly those belonging to the Petiolaris section. This includes *P. sonchifolia, P. edgeworthii, P. aureata* and others, although the last mentioned species rarely sets seed. *Primula rosea* belongs to the Farinosae section of Primula and in this instance too the seeds must be fresh. Some seeds of this species, which were sown as soon as gathered, germinated in ten days and most of them were through within three weeks. Seed is usually available for sowing in June and the resulting seedlings grow so fast that they are ready to be pricked out by August. On the other hand, seedlings of Petiolarid primulas are slow to develop and it is usually better to leave them in the seed pan until spring. In January, if they are brought into a greenhouse which is maintained at a minimum temperature of 45° F., they will quickly start into growth and soon be ready to be pricked out into a peaty compost. The seeds of hellebores and anemones are better sown in the green state, but germination will probably not take place until the following spring.

I should now like to deal with another method of sowing seeds, this time using sphagnum moss as the medium. There are many species of this moss, but in my view the best kind for this purpose is the one which grows on the high moors. I refer to this as red sphagnum although in some instances it may have little or no red colouring at all. After the moss is gathered it is spread out in the sun to dry ; turning it, as a farmer turns his hay, speeds the drying process. It is then rubbed through a sieve until it is the texture of a fine peat, after which

▲ *Photo—W. R. Cairns*
Fig. 1—Paeonia lutea var. ludlowii
Seeds sown in sphagnum

Fig. 2—Seed box containing cuttings covered with glass
Photo—W. R. Cairns ▼



▲ *Photo—R.B.G. Edinburgh*
Fig. 3—Gentiana ornata

Fig. 4—Gentiana lawrencei
Photo—R.B.G. Edinburgh ▼

▲ *Photo—R.B.G. Edinburgh*
Fig. 5—Gentiana loderi

Fig. 6—Soldanella alpina
Dolomites, 1967
Photo—D. Holford ▼

▲ *Photo—D. Holford*
Fig. 7—Gentiana acaulis var. clusii
Dolomites, 1967

Fig. 8—Gentiana verna
Passo Tremalzo, 1967
Photo—D. Holford ▼

it may be stored until required. Before being used as a seed sowing medium it must be immersed in water until thoroughly soaked. It is then packed into pots or pans, which should be crocked as for other composts, and if small seeds, such as those of Rhododendron, are to be sown, the receptacle should be filled to within half an inch of its rim. Seeds are sown thinly and evenly and, lastly, using a fine rose, they are watered into the surface of the sphagnum. This slightly buries the seeds and no other covering is necessary. All the Ericaceae, which includes Cassiope, Phyllodoce, Erica, Gaultheria, Rhododendron etc., can be raised in this way. Germination usually begins in four to six weeks but the seedlings should not be handled the first year. They are better left undisturbed until the following spring, when they may be pricked out into a compost made up of equal parts of loam and peat, with enough sharp sand added to give the mixture a gritty feel. When sowing larger seeds the pots are only half filled at first but, after sowing, they are topped up with sphagnum.

This method is ideal for raising the hardy lilies and, if sown thinly, the seedlings may remain in the seed pot into the second year, by which time the bulbs will have developed sufficiently not to suffer a check on being moved. All lilies do not germinate in the same way, however, and, while some may appear through the sphagnum in a few weeks, it may be the second season before the leaves of other species are visible. During the first year the embryo bulbs and roots are forming within the compost. Nomocharis and Notholirion respond to this treatment and both germinate quickly and grow steadily. When they are ready to be moved I fill a ten-inch pot with a fairly rich, well drained compost, make a hole in the middle big enough to take the potful of bulbs and, without disturbing the ball in any way, tip the whole lot out and replant them firmly in the larger pot. I then remove the pot with its small bulbs to a shady border where they are left to grow on until they are large enough to be planted out into the garden. Nomocharis respond well to this treatment, for in this way their roots remain intact.

Paeonies (fig. 1) grow well in sphagnum but it must be borne in mind, that as they take up to fourteen months to appear, patience must be exercised. Furthermore, as paeonies resent root disturbance, the young seedlings should be potted individually or, at the end of the first season on which the leaves appeared, they should be planted directly into their permanent sites.

Lilies may also be propagated from scales and these are obtained by first carefully lifting a mature bulb and from the outside gently easing away a number of the outer scales. The bulb may then be

replanted with no ill effects. A layer of sphagnum should be placed in a well crocked pot and into this the scales are placed, thick ends down. They are then lightly covered with moss and moved to a frost-proof place where the sole treatment is to ensure they do not become dry. Most of the scales will produce at least one small bulb and these should be ready to pot-on approximately six months after the scales are inserted.

From time to time we often see in other gardens shrubs we would like to have and, if we know the owner, it is likely that cuttings may be offered. Most books say that these should be inserted in a north-facing border, excellent advice if one has such a place but, as a rule, in the smaller garden, there is little ground to spare. There is no need to be discouraged because of this, as the method I am about to suggest is both easy and practical ; it takes up very little room and is recommended to anyone wishing to raise a small number of shrubs from cuttings. Any container will do, from a nine- or ten-inch pot to an old bucket in the bottom of which a hole has been punched. Over this drainage hole, a four- or five-inch clay flower pot should be inverted. A two-inch layer of crocks should then surround the upturned pot and over this a further two inches of compost should be spread. This should consist of equal parts of sharp sand and horticultural peat. The cuttings are then prepared by making a straight cut immediately below a bud and cutting off, not tearing, all leaves excepting two or three at the tips. The cuttings are then inserted in the pot so that the cut ends rest squarely on the rooting compost and, once they are all in place, the pot should be filled to the brim with the mixture already mentioned. A thorough watering is then given. Finally, in some convenient corner, perferably facing north or west, take out a hole deep enough to hold the pot of cuttings up to its rim. Treated in this way the cuttings need to be watered only occasionally in dry weather and by the end of a year young plants with good roots should be available.

Cuttings of most alpine plants may be successfully rooted by using one of the following methods. First let me describe what I term the pit method ; this is where soil is removed to a depth of nine inches from a previously marked out area. Surrounding walls of brick or concrete are then constructed to prevent the soil falling in, but they are only built up to ground level so that the glass frames, which are to rest on the top of these walls, are almost level. It is important to see that the lights fit closely. Even a large wooden box with the bottom knocked out and sunk in a pit makes a suitable place in which to

insert a few cuttings. The box too should have a sheet of glass to fit closely over the top. The pit should then be filled to within four inches of the top with a mixture containing equal parts of sharp sand and peat and be firmed particularly well around the edges and in the corners. The compost is then soaked with water and allowed to settle. A guiding line should be drawn from top to bottom of the frame and after inserting the prepared cuttings they should be watered in and have a sash of glass placed on top. The secret of success is not to let the frame dry out. Cuttings taken during the summer months may need to be shaded during the hottest part of the day, but all shadings should be removed by late afternoon. Shading will not be necessary for cuttings taken late in the season, but these may not strike until spring ; they will root all right so long as they stay fresh. It cannot be repeated too often : do not neglect the watering, and a little every day in hot weather will help to keep the frame moist and humid. The young plants should be removed and potted up as soon as good roots develop and not left too long in the propagating frame in case they starve.

The second method is a very simple one. First, gather together a few fishboxes, or fairly deep seed boxes, and have sheets of glass cut so that they fit exactly over some of them (fig. 2). Other sheets should be trimmed so that they slip neatly inside the boxes. The boxes are then filled with compost, to within an inch and a half of the top, after which they should be soaked with water. When the compost has been thoroughly drained the cuttings are inserted and watered in. It is recommended that cuttings of the winter-flowering heaths, dwarf rhododendrons, dwarf conifers and Kabschia saxifragas have the glass laid flat on top of them inside the box, while in the case of Calluna and woolly-leaved plants it is better if the glass rests on the top edge of the box. When filled, the boxes should be removed to a north-facing site in full light, but they may also have to be shaded during bright sunlight and be kept well watered. From time to time the cuttings must be examined and when rooting is well advanced the glass should be placed diagonally across the box to admit a little air. It can be removed entirely in ten days. As previously stated, well-rooted cuttings should be moved into pots or boxes. Daphne, Cytisus, Lithospermum and Syringa root well in the sunken pit and June and July are good months for taking the cuttings. These should be young shoots taken at the junction of the old and the new wood. Erica, dwarf rhododendrons, Cassiope, Kalmia and Vaccinium root best in boxes with the glass close to the cuttings. This traps the heat and prevents the rapid loss of moisture so that suitable conditions for the forming of roots are

provided. Suitable material of *Erica carnea* cultivars, Cassiope, Kalmia, Rhododendron and Vaccinium is usually available from late April to early July, while Calluna cuttings strike more easily from August to late September and, oddly enough, for a short time in March when growth begins again. Rooting times vary from six weeks for certain species to six months in others.

Certain Petiolarid primulas may be propagated from leaf cuttings and this is an easy method of increasing stock. *P.* 'Pandora', *P. gracilipes*, *P. edgeworthii*, *P. boothii* and *P. bracteosa* are suitable and to a lesser extent *P. aureata*. The best months for this are June and July. If the soil is cleared from around the base of the plant the leaves are more simply removed ; they come away easily if given a slight tug. It is important to see that each leaf has a bud in its axil as this is the embryo plant and the leaf cutting will rot away if this bud is not present. A box should be filled to within one inch of the top with a peat and sand mixture and be thoroughly soaked with water. The bases of the leaves are then inserted in the compost so that the part with the bud is just below the surface. Only sufficient is buried to hold the leaves firm in the soil, after which they should be watered in. A pane of glass is then placed flat on the leaves, but if this is not available a sheet of clear polythene will serve the same purpose. The box of cuttings should then be placed in a frame or cold greenhouse. Rooting will take place in approximately one month but once again, as with other cuttings, the medium must not be allowed to dry out. When rooted, the young plants may be transplanted into boxes or be potted individually.

Some plants grow better under a certain set of conditions than they do under others and I find that *Calceolaria darwinii* will grow more satisfactorily, and will flower much more freely, if sown directly into a gritty compost in the place in which it is to flower. In my experience I find a northern aspect suits this Chilean species best. Primulas belonging to the Soldanelloides section, of which *P. reidii* and *P. reidii* var. *williamsii* are well known, die back in autumn to a resting bud with little or no root and remain in this state all winter. If pricked out during their first year they rarely recover properly and invariably die off. I find it is better to leave them in the seed pan until growth starts in the following spring, when they should be pricked off into boxes or pans where they should grow away freely. If Meconopsis are sown in autumn and treated in the same way one gets far better results than by sowing in spring. Loss from damping-off, so prevalent in soft spring sown seedlings, is often avoided. Certain plants rarely

set good seed in this country and, over the years, I have had little luck in raising species of Celmisia from seed gathered in British gardens. Fortunately these plants strike from cuttings. If a hole, made in the open ground, is half filled with sharp sand, and the base of the cutting placed in this and made firm, it will root eventually but it may take some time.

Certain species of Meconopsis do not set good seed, *M. grandis* (Sikkim form) and *M. simplicifolia* (perennial form) being examples, but if one looks carefully at the stems, one may find that small viviparous vegetative buds have developed in the axils of the stem leaves or even at the base of the flower bud. If these are removed and treated as cuttings they will eventually root and produce plants. Gentians may be raised from cuttings, indeed this method is to be preferred to seed as Gentiana species hybridise freely. Plants for propagating are best kept in a greenhouse, not necessarily heated, to get growth started early. To be successful, cuttings should be taken in late March or early April to give the small plants time to develop crowns before dying back for the winter. Cuttings taken later do not do this and invariably die off completely when the annual growth withers in autumn.

Primula denticulata, *Crepis incana* and *Morisia monantha* are but a few species which may be increased by root cuttings and the operation is a simple one. First, choose a well developed healthy plant and, after exposing its outer roots, cut a few plump roots from the base. Long roots may be cut into sections of an inch and a half in length. These should be laid on the bench, always with the tops pointing away from the operator ; this is to distinguish between the top and the bottom of the cutting. If the part of the root nearest the plant is always cut transversely, and if that part of the root furthest away from the plant is given a cut which is slightly sloping, there should be no confusion. It is important to insert the cuttings the right way up otherwise they will be useless. A five- or six-inch pot is a good size to use as a receptacle. It should be crocked and over the crocks some roughage should be placed. This is followed by a sand and peat mixture to within an inch of the top and finally made firm and watered. The cuttings are then inserted in the mixture by making a hole just large enough and deep enough so that the top of the cutting is level with the surface of the compost. Once all the root cuttings are in, a little fine sand is sifted over them to cover the tops. The pots are then placed in a greenhouse or frame. It is important that the compost is not allowed to dry out and when the cuttings produce two pairs of leaves they may be potted off into small pots and placed in an ash frame.

One final reference I should like to make concerns seed distribution. Many plants rely on insects, birds or small mammals to broadcast their seeds. To encourage this method of seed dispersal the seeds are covered with a juicy pith or a sweet sticky substance. To a great extent daphnes rely on this method and field mice play an important part in the distribution of this genus. The berries are carried away and those which are not immediately consumed are stored in the ground. These are not always reclaimed so that small caches of seeds germinate, but in the course of time the weaker plants are suppressed and, in the end, only the more vigorous ones remain. If this example is followed in the garden and the fruits of many shrubs are sown in quantity midway down a pot they will germinate satisfactorily and, if handled at an early stage, can be easily separated and dealt with individually.

Sticky seeds are carried away by mice, ants, etc., and in most cases the viscid substance is licked off. The seeds, by this time, are widely scattered and abandoned. Given reasonable conditions they will germinate. *Oxalis laciniata* and Cyclamen have this type of seed. In this instance nature has thinly sown the seed and, in due course, widely spaced seedlings will result in strong healthy plants developing.

I have now reached the end of my talk and I trust what I have said will be of practical value to you.

GROWTH TRIALS ON SPHAGNUM COMPOSTS

by HENRY TOD

WHEN Mr. Duguid was developing the ideas he has described above, he asked me to run some trials of these composts. This I did using mustard as the trial plant.

In the first trial, water was withheld after germination had fully occurred and only those seedlings that were growing in the pure chopped sphagnum remained turgid, although they were very stunted compared with those in mixtures of sphagnum and John Innes Seed Compost. The great majority of the seedlings in these latter mixtures were dead after three days without water, while those in pure Sphagnum were still alive and turgid.

In a second trial, after three days without watering, the seedlings in the pure J.I.S.C. collapsed but revived when watering was resumed. Four days of no water caused the seedlings in the boxes filled with

macerated sphagnum and J.I.S.C. to collapse, while it was five days before those sown in chopped sphagnum and J.I.S.C. wilted completely. After six days without water the seedlings in sphagnum alone were only just beginning to show signs of starting to collapse. After this, all seedlings were grown on and, after eight weeks, were cut and weighed. The average weight of the seedlings from the pure sphagnum boxes was less than half the weight of those from the mixed composts.

The third trial was carried out with full replication but with no water stress from deprivation of water supply. The treatments were straight J.I.S.C., J.I.S.C. plus chopped sphagnum, J.I.S.C. plus macerated sphagnum (in both cases a 1 to 1 mixture), J.I.S.C. plus the water extract of an equal amount of macerated sphagnum, and finally pure chopped sphagnum alone. The seedlings were grown on for six weeks until they were much the same size as were those in the second trial, after which they were cut and weighed. Analyses of the composts showed little difference in nutrient levels other than a "dilution" effect brought about by the added sphagnum in the second and third treatments. The analysis of the dried sphagnum showed rather unexpectedly good nutrient levels but in all probability, due to the extreme acidity of the material, the availability of these would be greatly reduced.

A statistical analysis of the results showed a very highly significant reduction in growth in pure sphagnum as compared with the sphagnum-J.I.S.C. mixtures, a marked reduction when the sphagnum was "macerated" as compared with "chopped" in the mixtures, and a significant increase in growth where the *extract* from sphagnum was added to the J.I.S.C. ; this suggested that some active substance had been extracted from the sphagnum.

To summarise, most probably the greatest effect of sphagnum is in controlling the water supply to the plant, whether it be a seedling or a cutting. This would seem to give results rather analogous to those obtained by mist techniques. Secondly, there would seem to be some increase in growth produced by some factor in the sphagnum ; this may well be a growth factor of some kind of the auxin type. Thirdly, the total breakdown of the physical character of the sphagnum by maceration had an adverse effect. This was almost certainly due to a disturbance of aeration in the compost as the water-retention of the sphagnum would not be seriously affected by maceration but, as its physical size was broken down, the compost tended to be "claggy", i.e. the capacity to hold air was decreased.

In Quest of Gentians

by A. EVANS

(Lecture given at Dunblane on 15th October 1967)

WHEN first I was invited to give this talk on gentians and to suggest a title for it I was uncertain how best I should approach the subject.

"Gentians" alone conveys little and "Gentians in Cultivation" or "Gentians in the Garden" restricts one to the species and varieties available today. To me gentian means more than that and, in my search for material for this talk and for illustrations, it occurred to me that this was really a *hunt* and so "In Quest of Gentians" seemed a fit title.

The gentian is a flower about which most rock gardeners are enthusiastic, in fact the gentian is almost synonymous with the plantsman's first conception of a rock garden. One could even go further and say that a gardener's interest is often channelled to rock gardening after he has seen his first gentian.

The gentian derives its name from Gentius, King of Illyria, who was credited as being the first to discover its medicinal properties. Because of his treatment of Rome's ambassadors, his country was invaded and after his capture he was taken to Rome and marched through its streets. Another story tells us that during the reign of the pious King Ladislas of Hungary, his country was afflicted by a plague. This good king shot an arrow into the air and prayed that the Lord would guide it to a plant with properties which would help combat this pestilence. The arrow was reputed to have landed in the heart of a plant of *Gentiana cruciata.*

Gentian Root consists of the dried fermented rhizome and root of *Gentiana lutea* ground to a powder. Gentian Violet, on the other hand, is got from *Viola crystalina* and is in no way connected with Gentians.

Gentiana is a very large genus and it is estimated that well over 400 species exist. Add to this figure the number of hybrids which have arisen in the wild, have appeared accidentally in gardens, or have been produced by design, and that number is much more than doubled. This multiplication may make this an interesting genus to collect and cultivate, but it also makes it a very difficult one taxonomically. Specific and varietal names have been freely used so that many synonyms exist and, before the rigid application of fancy names for

cultivars applied, Latinised hybrid names were given. This all adds to the confusion met with today and although it may be a simple matter to find out if a name is a true specific epithet or not, that is to say valid, (apart from some very definite clear-cut species), it is not so easy to say that the plant grown under a certain specific name is authentic.

Let us for a moment look at the gentians of today. Perhaps the first gentians to find their way into gardens are *G. acaulis*, at least plants of that group, *G. sino-ornata* and then, perhaps, in a fit of enthusiasm after a show or a visit to a garden, *G. verna*. Now these are all very lovely individuals easily separated one from the other, and if Gentiana were composed of these three species classification would be simple. But when to *acaulis* one adds *alpina*, *kochiana*, *dinarica*, *angustifolia*, *clusii*, *latifolia* and *excisa*, the picture becomes less clear and when *verna* is mentioned along with *angulosa*, *brachyphylla*, *tergestina*, *pumila* and *favratii* one's spectacles really start to steam up, until finally *farreri*, *x macaulayi* and *x macaulayi* 'Kidbrooke Seedling', *x hexafarreri* and *x hexaferrari* 'Abercalder', *x bernardii*, *x stevenagensis*, *sino-ornata* 'Praecox' and its climbing form are voiced along with *sino-ornata* itself and one searches for a white stick. Confusion ! Confusion ! Confusion !

To my knowledge no one as yet has dared to make a key for gentians as a whole. Too many characters are involved and today with so many unrecognised hybrids about there is very little hope for the future. One will just have to accept this state of affairs and enjoy the gentians of gardens. If a species collection is to be contemplated, in most cases, only a trip to the wild habitat of the species will ensure that authentic material is grown.

Gentians generally speaking are raised from seeds. I know many of the popular garden varieties and a number of species are propagated vegetatively but the bulk of them are got through seed sowing. The source of the seeds is important and the best source is the wild. Although natural hybrids are not uncommon the chances of raising the true species from wild collected seeds are very high. Unfortunately it is not now possible to collect in the areas where many of the very fine gentians grow. This may be due to the inaccessibility caused by the physical features of their habitats or simply that the country to which they are native is out of bounds.

It is now that one must resort to seed lists. These may be from Botanic Gardens, Societies such as the A.G.S. and our own, nurserymen, and smaller interested amateurs. The Botanic Garden, if it is

interested in the genus, probably grows most. This can be a hazard, of course, as theoretically cross pollination is more likely to take place. Societies rely on the seed from their subscribers and, while some members may be knowledgeable, others just hand on seeds of species received under that name and so make the seed list a lucky dip.

Nurserymen, interested in these plants, because of the growing together of a number of species can suffer in the same way as the Botanic Gardens but, as their plants are usually the selected garden-worthy species, the chances here are that even a hybrid will be worth while.

The interested amateur, on the other hand, with his enthusiasm and single-mindedness, may be the best bet. It is possible that he has selfed his plants and maybe even bagged the flowers so that his seeds are probably most likely to come true to the plant he grows.

Hybridisation in the garden, however, is the ever present danger, and that we must accept.

Amongst the sages I am still a boy too young to remember the first introduction of many of the newer Asiatic species. What I can vividly remember, however, is being told by those who did know that this or that planting of *G. farreri* was not quite true. It did not have the light greeny-blue of the original plant or *G. ornata* (fig. 3), with its dumpy corolla, was either too narrow in the trumpet or the blooms were too long. Plants of *G. lawrencei* (fig. 4) and *G. prolata* were similarly spurned. I now often wonder how good these memories were and whether in fact the best form of *G. farreri* was not just a clone of that species selected because of its attractive colouring or was the greeny-blue just as greeny-blue as they remembered ?

The striving after these legendary species and forms, however, must go on, but to that list might I add two of my own—two which I am sure many here will remember. First is the upright *Gentiana trichotoma*, from the region where China and Tibet meet, and sent home by K. Ward. The club-shaped corollas are usually borne in clusters of threes and the colour is a rich bright blue. The second is *G. gilvostriata*, another K. Ward plant from upper Burma and a species which was shown regularly at the North Berwick Show. This is a neat compact species with a tight rosette of leaves surrounded by blue open tubular flowers. The blue may be streaked and dotted with light and darker shades.

(Slides of many species and varieties were shown and in some instances transparencies of plants still popular today were compared with illustrations of the original introductions.

Gentians from the Old and New World were discussed and described, so that the wide diversity of growth patterns of this genus were obvious.)

Despite the range of slides projected, this has been a very sketchy look at gentians. It is a most interesting and fascinating genus which I trust, one day soon, may have its depleted ranks refilled from the storehouse of China.

As it is, going on written descriptions, illustrations bad and good, and hearsay, is a hard and dangerous way to learn about plants. I only hope that those who knew all about gentians at 2.30 p.m. this afternoon are now almost as confused about them as I am.

A Day on Tremalzo

by DENISE HOLFORD

(27th May 1967)

THE TREMALZO PASS lies to the west of the northern end of Lake Garda but unfortunately all this fascinating country is difficult to explore without a car. One can get a taxi, at a price, at Riva (or, rather, one could—the currency restrictions would make it out of the question now). Riva is an attractive old town with a really wonderful avenue of *Magnolia grandiflora*. It lies at the northern end of Lake Garda and is a good centre, but it does become crowded and also can be very humid at times. Preferring a smaller place, we chose the little village of Storo as a possible centre in which to stay.

We were to find, however, that Storo is without an inn at the moment and therefore were directed by the local postman to Casa Rossa, about a quarter of a mile further on, where the road joins the one from Brescia to Tione. Here in the locanda (village inn) we stayed very happily for the next few days. Maybe I had better add that those who really like their comforts might find it a little primitive and might do better to stay in Riva.

To reach Tremalzo one motors up the Ampola valley which reminded me very much of the gorges of the Alpes Maritimes. A deep pink broom, *Cytisus purpureus*, was a lovely sight in this valley, as was *Vinca minor*, which was a particularly good form of a lovely blue. In marshy places an acaulis-type gentian grew—not a very good colour, with heavily veined long narrow leaves of an unusually thin texture. Up one side of the valley the cliffs were covered in *Phyteuma comosum* only just coming into bud.

After a few miles one turns off to the right for Tremalzo, mounting steeply up a very narrow road with numerous hairpin bends. There are next to no passing places and one prays one will not meet a car, much less a 'bus or lorry ! *Vinca minor* and the mountain honesty, *Lunaria rediviva*, were about the only plants we noticed. It is not the sort of road where one wishes to distract the poor driver's attention by too much flower-spotting !

Getting towards the end of the wooded area we saw a nice colony of *Polygonatum officinale* and were luckily able to pull off the road a short way on to get some photographs. This small, most attractive Solomon's seal I collected a few years back. It flowers every summer

but, alas, never increases or sets seed. We were to see a lot of it later in the Ampola valley and on the lower slopes of Monte Baldo.

Just before getting on to the alps the woods open out and parking the car no longer becomes a problem : and what a lovely sight this open woodland was ! *Helleborus niger* was everywhere. What amazed me were the colour variations—the familiar pure white, rosy pinks and many of a brick-red colour. The snow had not long gone and the hollows were a mass of *Soldanella alpina* (fig. 6). Another attractive little woodlander was *Dentaria enneaphylla* (*Cardamine enneaphylla*) with yellow, pendulous flowers : also *Pulmonaria angustifolia*, such a lovely blue on first flowering—sad that after a day or two the flowers become rather a dull pinky purple.

Out on the alps themselves, even as early as this, the display of flowers was glorious : *Polygala chamaebuxus*, *Erica carnea* in some lovely colour forms, including a white one, *Gentiana acaulis* var. *clusii* everywhere (fig. 7). Even although we are among the lucky ones in that there is hardly a day in the year when there are no beautiful blue trumpets braving all weathers in our garden, I really think that a mass of *Gentiana acaulis* on a mountain alp is one of the most magical sights I know. All the same, on that day I must admit it was *G. verna* (fig. 8) that took pride of place. It's a strange thing about *G. verna* up there on Tremalzo for it comes in so many colours ; not only in the glorious blue shade one expects to find in this species, but also in a wide variety of purples and, in one group covering several feet, purest white. *Muscari botrioides* was in flower and we saw an orchid which we think was *Orchis laxiflora*.

It was hard to tear ourselves away from these alps, but one of the main reasons for visiting Tremalzo is *Primula spectabilis* (fig. 9), which grows higher up the pass. That day we left our car at the higher of the two refugios and after having a bowl of soup set off to explore the heights to the south.

This is the most beautiful country, remote and quite unspoilt by man ; not high snow-mountains, of course, though one has these, too, in the distance. In the north are the Brenta Dolomites and to the east of this range the Adamello group and over on the far side the snow peaks beyond Garda and Monte Baldo. Here on Tremalzo, somewhere between 5,000 to 6,000 feet, one looks down on a maze of tree-clad valleys with great jagged outcrops of rock that had been thrown up during some distant upheaval.

The Old Italian-Austrian Frontier ran close to this area and old military roads run to most vantage points and one at least crosses the

hills and goes down to Lake Garda. It is possible that one could still get along some of them in a jeep, but most of those we came across were pretty crumbly in places.

Once again every snow-hollow was a mass of *Soldanella alpina* and *Gentiana acaulis* was even more wonderful here than it had been lower down. Both yellow and red forms of *Orchis sambucina* were dotted about on one hillside ; this is a lovely orchid, especially the red form. Soon the turf, the rocks and even the track were covered with masses of *Primula spectabilis*, the flowers varying in colour from deep rose to pale pink, and all of them beautiful. Although a thrilling sight indeed, had we but known it then, this was nothing to the display we were to see a few days later just below the summit of the Cima Tombea. Strangely enough, I do not remember seeing any *Primula auricula* on this side of the pass, but both *P. auricula* var. *albo-cincta* and *P. auricula* var. *balbisii* (syn. *P. a. ciliata*) grow in fair quantities on Monte Tremalzo itself. *Ranunculus thora*, a very large flowered form, also grew along this track. Usually I consider this rather a dull plant, but these large brilliant yellow flowers were beautiful.

Away to our left a large hollow showed white and on investigation it turned out to be a most glorious display of *Crocus vernus* (fig. 10). They were mostly white, some a delicate lilac and others striped mauve and white ; but although the blooms were large and sturdy this in no way detracted from their beauty.

Once more it was hard to leave this lovely spot, but we wanted to climb to the top of the peak ahead to see if we could catch a glimpse of the elusive Cima Tombea and pick out the route Reginald Farrer must have taken to it, as described in "Rocca Longa" in "Among the Hills".

The old military track zig-zags up to the top of this hill which then drops away in a most alarming precipice. Away in the distance we thought we could just pick out Tombea, and were glad we were not going to follow in Farrer's footsteps. We hoped that Magasa on the southern side would prove an easier approach. Reluctantly we turned for home, paying another visit to our crocuses and primulas on the way.

All day the weather had been perfect and unbroken sunshine without too much heat had made walking easy. This is as it should be at the beginning of a holiday. In fact, I think we all felt that this had been one of the most enjoyable days we had ever spent in the mountains.

Notes on Some Recent Dwarf Rhododendron Hybrids

by PETER A. COX

THERE ARE surprisingly few really dwarf Rhododendron hybrids. With all the hybridising that has been done over the years, the true alpine species have been largely neglected. The small numbers that have been used have mostly been crossed with larger species, resulting in plants of intermediate size. So, for the creeping and very compact varieties, it is the dwarf species on which we must still rely. Because of this, I will have to mention some plants which ultimately reach four, five or even six feet, but I will only mention cultivars that have been registered since 1940.

Most of the recent hybridising of dwarfer species and hybrids has been done abroad, especially in the United States where rhododendrons have become really popular only in the last few years. As is usual in that country, once they start on something they get filled with enthusiasm about it. Their gardens are on the small side, so it is obviously the dwarfer types that are most useful to them, and it is on these that they have chiefly been working. Unfortunately for years they have suffered from a lack of many of the better species and good forms of them, so their progress has been rather hampered. But now that this is in the process of being rectified, we are already seeing some very fine results coming from there.

Hybridists in Holland and Germany have been working on similar lines to produce dwarfer varieties. In Holland, the nurserymen are trying to produce compact trusses on dwarf plants and we shall certainly see shortly some good low-growing hybrids from there. In Germany, vast numbers of crosses have been made using *R. forrestii* var. *repens* and *R. williamsianum* with reliably hardy hybrids. Unfortunately a number of inferior seedlings have been distributed instead of plants propagated from only the best selected clones. This is a great pity for, despite the fact that some excellent clones have been produced, it has given these hybrids a bad name.

The first rhododendrons to flower in the spring or late winter, depending on the season, are a gamble. Some people will not plant anything which flowers before April or even May. Granted, if one's

garden is very small, there is not room for more than a few rhododendrons and therefore there is the tendency to concentrate on later varieties which are more likely to escape frost. But surely most people love to have a gamble and enjoy having plants that encourage them to think that spring is near. Again, the extension of the flowering season with early and late varieties is desirable in every garden. Many early varieties look lovely when underplanted with a carpet of early flowering bulbs.

There are now quite a few hybrids in this early flowering group and, during a mild spell, some open their buds in February or early March. The majority are in themselves quite hardy and it is only the flowers that are liable to be harmed. All are very free flowering from an early age. *R.* 'Tessa Roza', a most attractive mixture of shades of deep rich pink, is a promising, fairly new introduction. Perhaps the habit is not as good as its parent, *R.* 'Praecox', but the colour is infinitely superior. It looks very pretty with early yellow Narcissus. From across the Atlantic comes the new pure white *R.* 'Snow Lady'. Its flowers are open funnel-shaped and it has attractive hairy leaves. Planting blue scillas under this would be most effective. Two new yellows, raised in Cornwall, are *R.* 'Golden Oriole Talavera' and *R.* 'Golden Oriole Venetia'. Although not yet available, these very fine yellows have a good future.

A gap has recently been filled by a cross of my own called *R.* 'Ptarmigan'. There has been a great shortage of dwarf whites up until now. This hybrid can come out rather early in a mild spring, i.e. towards the end of March but, if held back it can carry on into May. Starting as a loose-growing little plant, it soon produces a mass of closely knit shoots and covers itself with pure white flowers so that the foliage is completely hidden. It received a First Class Certificate from the Royal Horticultural Society in 1965. As it does not look like exceeding a foot in height, but may reach three feet across, it should be very suitable for the rock garden.

Another of my own raising, *R. pemakoense* x *davidsonianum*, has followed the compact habit of the seed parent, *R. pemakoense*. It is exceptionally free flowering and, depending on the season, has nice pale mauve-pink flowers from late March to early May. Unfortunately the swelling buds are as easily frosted as those of *R. pemakoense*. Four seedlings now remain, although many have been discarded, and shortly I hope to select one to name.

Considerable interest in the so-called blue species has been shown by hybridists. The newer hybrids to appear are *R.* 'Songbird' A.M.

▲ *Photo—D. Holford*
Fig. 9—Primula spectabilis

Fig. 10—Crocus vernus
Passo Tremalzo, Dolomites
Photo—D. Holford ▼

▲ *Photo—D. Holford*
Fig. 11—Crocus vernus
Passo Tremalzo, 1967

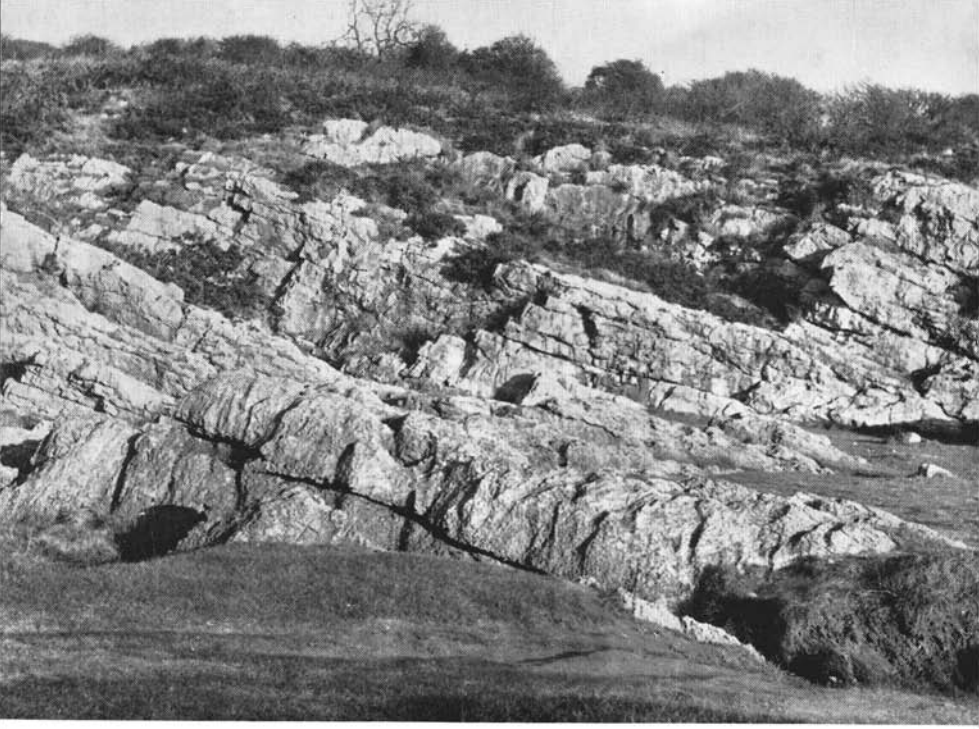
Fig. 12—Rhododendron keiskei
Photo—R.B.G. Edinburgh ▼

▲ *Photo—R. Kaye*

Fig. 13—Westmorland Limestone, Silverdale (illustrating a natural outcrop)

Fig. 14—Water-worn Limestone Pavement, Westmorland

Photo—R. Kaye ▼



▲ *Photo—R. Kaye*

Fig. 15—Westmorland Limestone, Silverdale (showing lines of strata)

Fig. 16—Shale or Mudstone

Photo—R. Kaye ▼

and *R.* 'Songster', raised in Britain by Sir James Horlick. Both make nice compact little bushes of up to three feet, smaller than the older *R.* 'Blue Diamond' and *R.* 'Blue Tit'. They are both good and *R.* 'Songbird' sometimes flowers in the autumn. Their normal time of flowering is late April to early May. *R.* 'St. Tudy' A.M., and *R.* 'St. Breward' F.C.C. have lovely blue flowers and are larger growing than the last two hybrids mentioned. They were raised in Cornwall and are perfectly hardy.

R. racemosum itself, a very free flowering and useful plant in its various forms, has a bad fault in that the old seed heads, sticking out above the leaves, are very ugly. It passes on this failing to many of its hybrids, along with an inclination towards sparse foliage and straggly growth. A good pink *R. racemosum* hybrid is *R.* 'Fittra', raised by the famous nursery firm of Hillier. The flowers, as in all forms and most hybrids of *R. racemosum*, are produced all the way up the stronger young shoots. It is sad to think that it will always be scarce, as it is hard to propagate. It grows to four feet and flowers from late April to late May. The flowers last well. The Americans have made two crosses between *R. racemosum* and *R. pemakoense*, namely *R.* 'Pera' and *R.* 'Rose Elf'. The latter is most attractive, being a very free flowering cultivar with blooms which are white, flushed with pink and violet. Neither is obtainable in Britain. Taking into account their parentage, they should be dwarf and compact.

Early April brings out the first of the red or scarlet *R. forrestii* and *R. chamae-thomsonii* hybrids. There is a multitude of these cultivars, some good and some less so. As with many others which, in an early season, open their buds in April, they are liable to be frosted. Recently, however, crosses have been made between these two and later flowering species and hybrids, to give us plants which will flower in late April, May and even June. Amongst the best of these is *R.* 'Elisabeth Hobbie', raised in Germany. It is a neat round-topped bush of about three ft. in height, rather more in width. The flowers are freely produced, although not many are in a truss, but this does not spoil the overall effect as they open very wide and smother the bush in a marvellous glowing red. It is a first class plant, extremely hardy, and has flower buds that, when half opened, are able to withstand a fairly severe frost. Another cross from Dietrich Hobbie is *R.* 'Ems'. This has a free flowering neat habit, with flowers which are a deep cherry-red ; it is better in some years than in others. While this shade is not to everyone's taste, it is popular with some people.

Poor clones of this are said to exist, but we have certainly been lucky with our plants.

The third and last member of this group I will mention was raised in Scotland by the Gibsons of Glenarn, Rhu. This is as yet unnamed' and is still growing under its parentage of *R. didymum* x *R. chamaethomsonii*. It is taller growing than the rather similar *R.* 'Carmen, and may reach five feet. In June, the campanulate flowers appear. These are dark red in colour, waxy and tubular, and glow like vast rubies when caught by the rays of the sun.

Many hybrids of the round-leaved, compact, pink bell-flowered *R. williamsianum* have been raised in Britain, U.S.A. and Germany. All are nice, but most have the disadvantage that their lovely bronzy young growths develop early in the season and are liable to frost damage. Even if the leaves are cut, however, a second batch is freely produced and all that may happen is that less flower buds set so that flowering in the following season will be impaired. Two good strong growing but tidy hybrids from the U.S.A., which flower early in May are *R.* 'Olympic Lady' with large pale pink flowers fading to white and with nice foliage, and *R.* 'James Barto', with its masses of pink bells effectively decorating a rounded bush. *R.* 'Wilbar' was raised in Britain and has remarkable shiny dark green leaves and deep pink flowers. All of these cultivars will grow to at least five feet in height and measure more across.

Dwarf yellow species, while plentiful in number, are all rather lacking in vigour, hardiness or flower texture to be of general garden use, and so are better left to the specialist. In an endeavour to produce plants with wider appeal, I started crossing dwarf yellows as a first priority in my hybridisation programme and was very lucky in that an early cross turned out to be a winner. The first time that *R.* 'Chikor' was shown at Chelsea Flower Show in 1962, it received an Award of Merit and was later judged the best hardy hybrid of the year; it won for the raiser the Reginald Cory Memorial Cup. From an early age it completely smothers itself in comparatively large creamy-yellow flowers in May. *R.* 'Chikor' is neat and compact and so far has not grown more than nine inches in height. It is completely reliable and has already proved very popular. I only hope that some of my later crosses turn out as well.

Another hybrid with nice yellow flowers is the result of crossing *R. hanceanum* with *R. keiskei*. The very slow growth of *R. hanceanum* 'Nanum' has been speeded up slightly and the influence of *R. hance-*

anum has improved the texture of the flowers of *R. keiskei* (fig. 12). I, personally, do not use *R. keiskei* as a parent because of the poor texture of its flowers. It may be winter hardy but I reckon this is the only redeeming feature it has.

A very attractive new American hybrid called *R.* 'Tidbit' was sent to us a few years ago. It has a dwarfish compact habit, up to four or five feet in height and more across, and fine dark glossy foliage. The flowers on opening are apricot and flame but as they mature they change to yellow. As all the flowers do not open at exactly the same time, there is a combination of apricot, flame and yellow.

In time, *R. yakusimanum* is going to have many noteworthy descendants. The species itself will be hard to better and many people regard it as ultimate perfection in nearly every respect. On the other hand, some consider it to be so neat and well behaved that it looks unreal and artificial. No hybrids of this species have yet had a chance of becoming popular and it is questionable if any of the first generation will equal the merits of their parent in any way. It is from future second, third and subsequent generations, with a big combination of different blood involved, that something really striking may emerge. At any rate we can see by now that the majority of *R. yakusimanum* progeny will be compact, low growing plants with tight trusses; eminently suitable for the small garden.

R. 'Sarled', a compact shrub with pale pink flowers fading to cream, has the advantage that it is easier to grow than its parents, *R. sargentianum* and *R. trichostomum.* It is very dwarf with little daphne-shaped flowers and is pretty in late May.

Few late flowering dwarf hybrids have been introduced in recent years. Some old ones are certainly worth growing, such as *R.* 'Wilsonii' (syn. *R.* 'Laetevirens'), but they are few and far between. Much scope remains to the hybridist to extend the season for low growing hybrids by using the later flowering species as parents.

To sum up, the post-1940 period has brought us many good new varieties, often improvements on older ones but, as little was done during and immediately following the 1939-45 war, most of the hybridising done since then has not yet had time to produce results. In the next few years I can foresee many new dwarfs and semi-dwarfs becoming available, suitable for the small garden and the rock garden.

In Defence of Rocks

by REGINALD KAYE

HAVING READ with great interest the article by "Vide" in the last number of our *Journal* I felt impelled to redress the balance by a dissertation on rocks. After all this is a Rock Garden Club and it seems only fair that the Rock part of the title should have its supporters.

It is true to say that the majority of rock gardens are made merely with a view to providing congenial homes and backgrounds for rock plants, but a rock garden can be, and in my view should be, an expression and interpretation of natural scenery. It should be built in such a way that it presents a balanced and artistically satisfying composition whether it be adorned with plants or not. In fact, when I have constructed such a rock garden, I have frequently thought it a pity to clutter up its lines with a lot of plants. How often have I contemplated some ancient boulder adorned, perhaps, with a fascinating variety of lichens—the first rock plants—and found its lines completely satisfying.

The British Isles are particularly rich in types of rock all of which have their own special characteristics. Some of them may not lend themselves to use in the garden but there are far more suitable kinds of rock to be had than those which are commonly used.

It is often said that rock is an expensive luxury, but so is a new car, and the rock will still be there long after many new cars are worn out and scrapped. The price of one new car would easily cover the cost of a well constructed rock garden made with selected stones and complete with pool, electrically operated waterfalls—the lot. Anyhow, what is wrong with electrically operated waterfalls in these days of water conservation when large corporations prostitute our heritage of natural beauty to obtain water for their commercial undertakings? Incidentally I have just learned that a valley near here, full of interesting and beautiful rock, is to become a new reservoir.

When an important decision has been made such as the making of a rock garden, surely it should be possible to take a day off and personally select the stones to be used instead of leaving the choice to the contractor. He cannot be expected to do other than deliver, what is nearest to hand. It may cost a few shillings more per ton to get just what is wanted but it would be money well spent.

Rocks are classified under several categories so let us consider a few of the different kinds that can be used. Those most often employed

are of the sedimentary type. They have been formed, usually in deep water, and are the result of the erosion of older rocks by wind and rain, carried down rivers and deposited in the sea where they become mixed with the harder remains of once living marine organisms of which corals are an obvious example. These rocks are the mudstones, shales, fine to coarse sandstones, conglomerates, chalks and limestones laid down over thousands of years and eventually, as hard rocks, heaved up above the sea by earth movements and again subjected to the influences of erosion by wind and rain.

Originally laid down in horizontal beds under the sea, these rocks, when they appear above the surface again, have their bedding planes changed so that they are invariably tipped at angles from horizontal to vertical. They may also be fractured and bent and even inverted by the various powerful forces at work.

I think one of the most attractive rocks I know which can be found in all sizes from small pieces, just right for trough gardens, to immense boulders is the Cambrian Slate. As it is aged something like 500,000,000 years, and has been lying about since the last glaciation, it is becoming beautifully weathered. Its finely striated iron grey surface makes an admirable foil for flower and foliage. This is a true sediment not to be confused with the slates used on our roofs which are metamorphosed volcanic ash which cleave at considerable angles to their bedding planes.

The Silurian slates can also be found in beautifully weathered blocks. Quarried slate, if in decent sized blocks, can be built into quite an impressive job on somewhat angular lines, but it never weathers very much in one's lifetime.

I suppose the so-called mountain limestones are the most popular for garden purposes. They are found on our fells, silver-grey in colour and often fantastic in shape, and are indeed beautiful. There are several varieties of limestone, weathering in different ways, and each requires to be studied in the field before being used in the garden.

Unfortunately in town gardens and in areas where there is much atmospheric pollution the limestones quickly lose their colour and, through the action of sulphur dioxide which reacts with the limestone to form a surface layer of gypsum, become dead white. The crevices too become black with sooty deposits and the final result is far from attractive. In such areas it is better to use other types of rock.

The sandstones range from hard, fine-textured rocks, which often weather into rectagonal blocks, to very gritty types which form more

rounded boulders. The latter type can make a very attractive rock garden. Sandstones vary in colour from light biscuit, through various browns, to dull red. The soft greensands of the south are usually available as quarried stone and weather rapidly. They should be left to weather for at least a year before being used. While some blocks harden after exposure, others disintegrate into piles of sand after hard frost. Those which survive the frost seldom give trouble afterwards and they make a pleasing garden.

Although, as a rule, the harder sandstones are uncompromisingly angular and natural blocks are often too large to handle easily, it is sometimes possible to get pieces which have been rejected by the quarries because they are "feathered". This means they split irregularly because their bedding planes are at different angles, having been originally laid down in waters subject to strong currents. Such stones can be attractive in shape and lend themselves to rock garden construction. The Torridon sandstones of the western Highlands can be used to create quite dramatic rock pictures.

All sedimentary rocks should be built with their bedding planes or lines of stratification more or less parallel though not necessarily horizontal. A slight dip adds more interest and enables outcrops to be run to ground in a natural manner. In a fairly large rock garden one need not be slavishly bound by this rule as a slight variation of dip in different outcrops can be more attractive than the rigid adherence to mathematically accurate bedding. If this should sound like heresy it is certainly not untrue in nature. While it is correct that in the Yorkshire Pennines the limestone scarps may run for hundreds of yards in one straight plane, I know outcrops near me where the dip varies from horizontal to thirty-five degrees within a few hundred yards.

Quite different in character are the plutonic, volcanic and metamorphic rocks and they require to be treated differently when used for rock building. Again one should study them in their natural setting, to get the feel of them as it were, taking note of any particularly well proportioned groupings. Where the sedimentary rocks run together to make sloping beds, the so-called igneous rocks lend themselves to the construction of rocky knolls which may be balanced by isolated boulders appearing amongst drifts of heaths, dwarf rhododendrons and the like.

The plutonic rocks are the granites, gabbros, granophyres and basalts, crystalline in texture and weathering to many shades from grey to black. The more acid rocks are almost white. The gabbros in par-

ticular, after hundreds of years of weathering, tend to break up into convenient sized rocks and provide many examples of rugged scenery. The Cuillins of Skye are spectacular instances of this. By carefully selecting suitable pieces, rocks of this type can be built into very impressive rockscapes.

The volcanic rocks consist of lavas, ashes and breccias and are largely responsible for the more rugged scenery of the English Lake District. Many of the pieces which have broken away from the parent masses can be found well weathered. As a rule they are extremely hard and often green in colour.

The metamorphic rocks may be exemplified by the mica-schists of Perthshire and Angus. They are delightful in colour and texture and lend themselves to being arranged into miniature precipices. By carefully wedging rock upon rock, making every use of the natural lines of cleavage, many ideal planting crevices may be formed.

One feature of plutonic and volcanic rocks is the absence of bedding planes, so that one does not have to worry about lines of stratification, yet, at the same time, the general dip of outcrops in these rocks should be observed. The lines of cleavage in the metamorphosed rocks are often more obvious than the bedding planes. Though many of these rocks have been formed by sediments, the effects of heat and pressure in the past have so changed their character that one need not worry unduly about their stratification, although any obvious lines and faces should be related. Strictly speaking, the strike of outcrops, that is the line at right angles to the dip, should be taken into account when planning the rock garden, and if this is arranged at an angle to the boundaries of the area no suggestion of formality will be apparent.

If the full value of the material is to be appreciated, rock should be studied in its own natural setting before using it in the rock garden. In this way one can become familiar with it and also get the "feel" of it. After spending half a lifetime making rock gardens one acquires an instinct for these things and takes them into account almost without conscious thought.

Often I am asked to provide a plan for making a rock garden, but beyond giving a few basic suggestions this is well nigh impossible. No two rocks are identical and one must be guided by the material available on the site. Again, a rock garden is an individual expression and, given knowledge of the basic characteristics of the rock used, the construction becomes a matter of arranging masses in a balanced composition related to the possibilities of the site. One might as well request a plan for a sculpture or a painting.

Oh dear ! I see I have left out Tufa. This will never do. Nowadays this is about the most expensive rock one can get as deposits of any quantity are rather scarce. There are lots of small deposits in our Yorkshire limestones, but the main sources are in Derbyshire and N. Wales. This rock is formed by precipitation from saturated solutions of lime salts. It has no apparent structure and can be used any side up, whichever looks the best. There are hard and soft forms but the latter type must be handled with great care or it will readily break up into small pieces. It is possible to build up large knolls with lots of planting crevices and of course the rock can be drilled to provide homes for the special plants where they may send their roots far into the actual rock itself. Difficult genera, such as Dionysia, Jankaea, etc., often settle down very happily in holes drilled in the vertical faces of Tufa blocks.

As a nurseryman making a living (?) by growing and selling plants, I suppose I should not finish these notes without some reference to planting. When building a rock garden every opportunity should be taken to provide a variety of planting crevices between the larger rocks. These cracks should range from sloping to vertical. The outcrops and knolls should be so designed that they provide areas where the more spreading plants may revel without masking the construction.

By the erection of knolls, crevices with south to north facing aspects may be created. Screes, too, may be incorporated in the design and these should slope sharply away from the larger outcrops and merge less dramatically with the more level planting areas. The garden should be planted with discretion so that the planting complements and does not compete with the construction, then one will have something one can be proud of and which will give unending pleasure.

In an attempt to explain some of the technical names used by Mr. Kaye in his article, the following simple explanatory notes are given.—*Ed.*

Basalts are rocks formed by the consolidation of molten rock material. They are usually fine grained and dark in colour and can be seen as plugs and sills. Part of Edinburgh Castle is built on a volcanic plug.

Breccias in some ways are similar to conglomerates but in breccias the pebbles are angular, not rounded, which indicate that they were not removed far from the parent rocks from which they were derived.

Chalk is a soft limestone almost entirely made up of skeletal remains.

Conglomerates consist of various sized, round, water-worn stones cemented together and greatly varying in coarseness. The rounded nature of the stones denotes that they have been transported over great distances. They are generally shallow water deposits.

Gabbro is a type of igneous rock with certain mineral properties. It forms large sheets in certain areas of the world, with smaller ones in the British Isles.

Granites are usually considered to be mixtures of different rocks completely crystallised and are formed when the molten material of the earth's centre consolidates in the upper levels of the crust.

Granophyre is closely associated with granite and in this type of rock the ground mass is a microscopic crystalline mixture of the component minerals.

Limestones (figs. 13-15) are a group of rocks formed in the main from calcium carbonate. An important type is the organic limestone built up by the depositing of skeleton remains of sea organisms laid down under shallow water over a period of millions of years.

Metamorphic Rocks are those rocks which have been changed from their original form by being in close contact with the molten material from inside the earth. They may be found under beds of lava or on the inner faces of volcanic vents. Rocks may also be metamorphosed by heat generated through the exertion of great pressures.

Plutonic Rocks are those which are formed by the agency of heat at great depths below the surface of the earth.

Sandstone consists of cemented or compacted sand grains. It varies in colour according to the iron oxides or other minor constituents which are present. The binding or cementing material which changes a loose sand into a sandstone has usually been introduced in solution and often consists of calcium carbonate although other cements may be involved.

Sedimentary Rocks are often loose and disunited when laid down, but under cementation or pressure they become hardened. They consist of deposits and sediments and are laid down on land or under water.

Shale (fig. 16) is a laminated clay and consists of very fine debris and very small particles. It splits into thin layers corresponding to the original levels of deposition.

Silurian Slates (figs. 17-18). Slate is a general term for rocks that can be split into smooth surfaced plates of identical character and Silurian Slates are those which were formed in the Silurian era which geologically speaking dates from 350,000,000 to 320,000,000 years ago.

Torridonian Sandstone is the name given to a series of grits, conglomerates and red sandstones found in the north-west corner of Scotland, extending from Cape Wrath to Skye.

The American Rock Garden Society

Probably most members are aware of the existence in the U.S.A. of a Society comparable with our own. Some members may have wished to join this Society, but have been deterred by the apparent difficulty of transmitting their subscription.

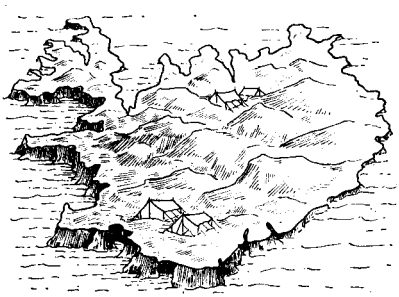
We understand that this difficulty is not insuperable. Permission has to be obtained from the Exchange Control in the first place and evidence has to be supplied of the existence of the Society and its membership fees. Having secured sanction, the member obtains a draft from his Bank and forwards it to the Society. In practice it would probably be best first to consult one's Bank, which could supply advice and the appropriate forms.

The annual subscription is 3½ dollars, or 10 dollars for three years if paid in advance, and the Secretary, who will send further particulars, is Lawrence Hochheimer, Ridge Farms Road, Norwalk, Connecticut 06850, U.S.A.

In addition to its *Quarterly Bulletin*, the American Society has a Seed Exchange in operation.

An Icelandic Journey

by R. McBEATH



IN MANY ways the Icelandic flora is similar to that of Scotland, but due to its extreme isolation from other countries by the sea since the last Ice Age, and also as a result of the cold climate, the number of species of wild plants recorded is less than 500. This figure includes over 100 dandelions and more than 100 Hieracium the hawkweeds. This leaves approximately 300 species of other plants, which is a very small number for a country one and one-fifth times the size of Ireland. The flora is north European, to which is added a few plants from North America. Eighty-five per cent. of the species, however, are found in Great Britain, so that anyone wishing to travel to see unfamiliar flowers would hardly choose to go to Iceland.

In July 1967 a friend and I set off for a three week camping holiday in Iceland. The main object of our trip was to see the wild flowers and to climb some of the mountains. We left Edinburgh on a cold wet day and travelled to Glasgow where we boarded the plane for Keflavik. When we landed the sun was shining, the sky was cloudless and blue, and straight away we were aware of the absence of large trees and the barren nature of the countryside. There was no patchwork pattern of cultivated fields and, where farming was carried on, grass was about the only crop grown.

Soon after landing we set off on a 300 mile journey to Akureyri, a town in the north of the island. The journey by bus lasted 11 hours and as the roads are not quite smooth it will be remembered for a long time to come.

There we pitched our tent at the base of one of the mountain ranges lying north-west of the town and for the next five days explored the area. The mountains were about 3,000 feet high and on the tops *Diapensia lapponica* was in places quite common. It was in full flower and the very rocky ground was studded with yellow mounds. As it

was quite cold and lots of snow was still about we were surprised to see that the open flowers were visited by small flies. *Harrimanella hypnoides*, closely allied to Cassiope, was a common plant and in places formed extensive mats. This too was in full flower and could be found from 2,000 feet upwards. Rare Scottish saxifrages such as *Saxifraga cernua*, *S. cespitosa*, *S. nivalis* (fig. 19) and *S. rivularis* were all frequently seen and *S. oppositifolia* (fig. 20) grew abundantly in moist places. A small plant of the extensive screes was *Campanula uniflora*. It grew at an altitude of between 2,000-3,000 feet, but it did not appear to be common. We were fortunate enough to find a few plants with just the odd blue flower on prostrate, 4-6 inch long stems. Also on the higher ground the partial parasite *Pedicularis flammea* with yellow and brown flowers was quite prevalent while, near the snow line, *Ranunculus glacialis* was widespread.

On the lower ground the moorlands were dominated by *Betula nana*, which grew well under both wet and dry conditions. *Vaccinium uliginosum* was exceptionally well flowered compared with the plants we usually see on our native moors. Other species which occurred frequently were *Dryas octopetala*, *Lychnis alpina*, *Salix lanata*, *Habenaria hyperborea*, the "Northern Green Orchis" of North American and North East Asian distribution and, in moist places, *Koenigia islandica*, a minute member of Polygonaceae. It could be found flowering with little more than a pair of cotyledons for leaves. There are no species of Erica in Iceland and *Calluna vulgaris* was never the dominant plant as it often is on Scottish moors. The peat on the moors is not as acid as that found in Scotland. This is due to the large amount of sand and soil blown about during dry spells and which eventually becomes incorporated with the peat. In this way nutrients are added and this may account for the wider variety of plants flourishing on the moors.

Our second camp site was at the base of some mountains to the west of Akureyri. This range was much more spectacular with sharp peaks and ridges up to 5,000 feet high. There was abundant snow and a small glacier and, while we were camped here, snowfalls at night reached down to 2,000 feet and frosts were widespread at much lower altitudes. In the river valleys the "Arctic Fireweed", *Chamaenerion latifolium*, added extra colour to the scene and grew in rocky outcrops out of the reach of sheep. In higher regions *Draba alpina* was in flower, but while this species preferred moist screes as a habitat it was never found in quantity. On one bare scree at about 3,000 feet we

found *Papaver radicatum*. This was probably our most attractive find, with beautiful yellow flowers carried on stems 2 inches long. The site was fully exposed to north winds and although, when in flower, plants must have been subjected to snow showers at night, they showed no sign of damage. Within a few yards of the summit of the Kerling, the highest mountain in the north of Iceland, we found *Saxifraga cernua* and *Ranunculus glacialis* almost in flower ; they must have an incredibly short growing season as at the end of July snow was still melting from some plants.

Akureyri is a town of about 10,000 inhabitants and is the second largest in Iceland. In it there is a small botanic garden in which there is a collection of native plants. The trees in the garden were about the largest we saw in Iceland, the tallest being approximately 30 feet. These were Rowan, *Sorbus aucuparia* and *Betula pubescens*. *Salix lanata* was used in the garden as a hedge to provide shelter for smaller species.

We then moved east to Lake Myvatn, an area which has had a lot of volcanic activity in the not too distant past. There are several extinct volcanoes, extensive burning sulphur fields, hot springs and geysers, and much of the land is desert or are lava fields. Both support a few plants. Around the lake many aquatic plants and bog plants grew and the "Cotton Grass", *Eriophorum scheuchzeri*, was particularly prominent. In a small sheltered wood in a lava field we found *Corallorhiza trifida*, the "Coral Root Orchis" ; this grows as a saprophyte, living on decaying plant material, producing no leaves and deriving its food direct from the humus without the aid of photosynthesis. Plants of the desert were few, but some of the more attractive were *Dryas octopetala*, *Saxifraga oppositifolia*, *Arabis alpina*, which is found in Scotland but only on Skye, and *Juniperus communis*. In an attempt to stop sand erosion "Lyme Grass", *Elymus arenarius*, has been extensively sown in very sandy places and it appears to be colonising these areas successfully.

Our final camp site was nearer the south coast and to get there we had to retrace our steps to Reykjavik and set out afresh. Our last stop was in the Great Geyser area near the Gullfoss waterfall. This is one of the finest waterfalls in Europe and is fed by the glacial river Hvita, the water of which is grey-white in colour. At the site of the Great Geyser the geysers are capable of forcing hot water 200 feet into the air. There are also several hot springs in the area. Two interesting plants of the marshes here were *Saxifraga hirculus* with

golden flowers 2-4 inches high, and *Ranunculus reptans*, a small creeping buttercup with grass-like leaves which is said to grow at Loch Leven in Kinross.

A number of annual gentians are quite common in Iceland, including *Gentiana nivalis*, which was often found abundantly by the roadside varying in height from one to nine inches. When the sun shone the open gentian flowers gave the short grass a blue sheen for, at times, there were as many as two or three dozen plants to the square yard.

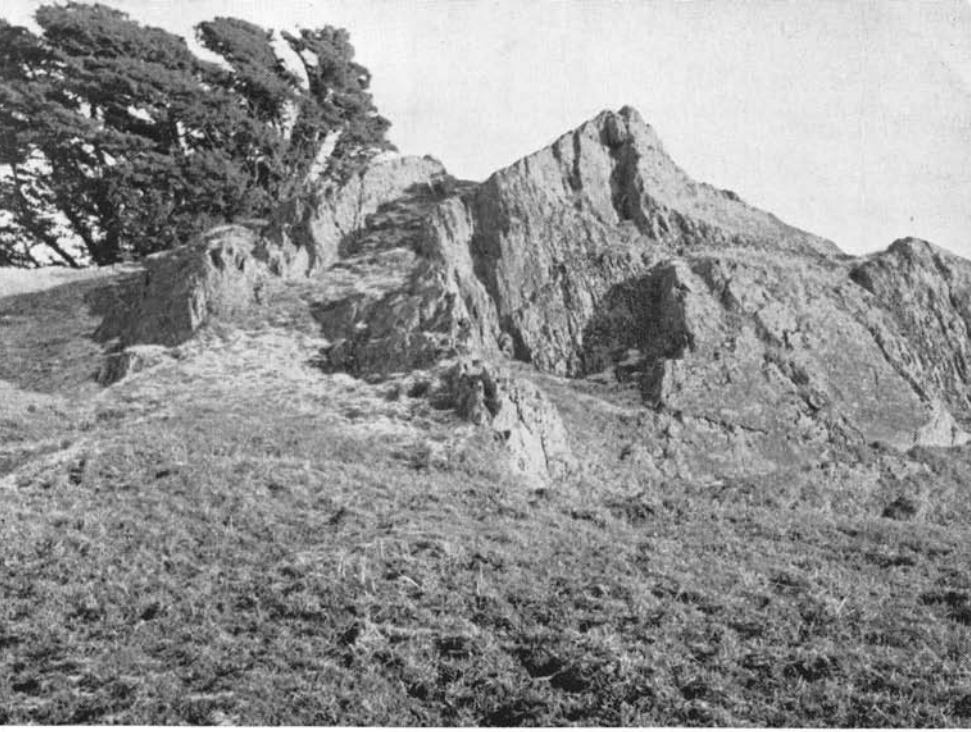
We concluded our holiday at Reykjavik where there is yet another botanic garden and the plants are laid out in formal beds according to their families. We had a most enjoyable time and all the people we met were very kind and friendly. Most Icelandic people speak English (except the bus drivers !)

My Garden in January

by W. A. BRUCE ROBERTSON

TO MANY people the garden in winter has little to offer, and spring, with its rush of colour, is eagerly awaited. This lack of interest, however, need not be so as there are always some plants which produce flowers in January and, even more so, in February. In my garden at Howgate, Midlothian, the winter conditions are somewhat severe, yet January sees a number of plants in bloom.

One plant which always flowers at the beginning of the year is *Galanthus corcyrensis*, the flowers lasting until about mid-January. No doubt this could be called an "old year" plant in a milder garden. *Galanthus corcyrensis* comes from Sicily and should be grown where it receives maximum sunshine. Apart from the fact that there are some additional green markings on the inner segments the flowers are very similar to those of *G. nivalis*. They are carried on short pedicels on top of three-inch high stems and as the flowers open the leaves begin to emerge from the ground. The foliage then elongates during and after the flowering period. *Galanthus nivalis subsp. reginae-olgae* blooms at approximately the same time and as it comes from Southern Greece needs similar treatment. In this species the flowers are usually over before the leaves appear, but even if the plants were not in bloom a silver stripe down the centre of each leaf distinguishes it from *G. corcyrensis*. *Galanthus nivalis* 'Poculiformis' and *G. x grandiflorus* make good growth during this month and invariably open some of their flowers. *Galanthus nivalis* 'Poculiformis' is quite distinct in having the inner segments long and pure white, similar to the outer petals. *Galanthus x grandiflorus*, the name given to the large-flowered hybrids between *G. nivalis* and *G. plicatus*, includes many good garden plants. One of the forms of *G. caucasicus* grown here pushes its fat spikes well through the ground at the beginning of the month and the first flowers usually appear ere four weeks have passed. The leaves of this species are glaucous, recurved and very wide and in some cases are as much as one and a half inches in breadth. At this stage the tubby flowers are carried on four-inch stems which later elongate to six or eight inches. This Galanthus is native to Persia and the Caucasus, has a very long flowering season and shows considerable variation in the green markings on the inner segments. The form grown here has green markings

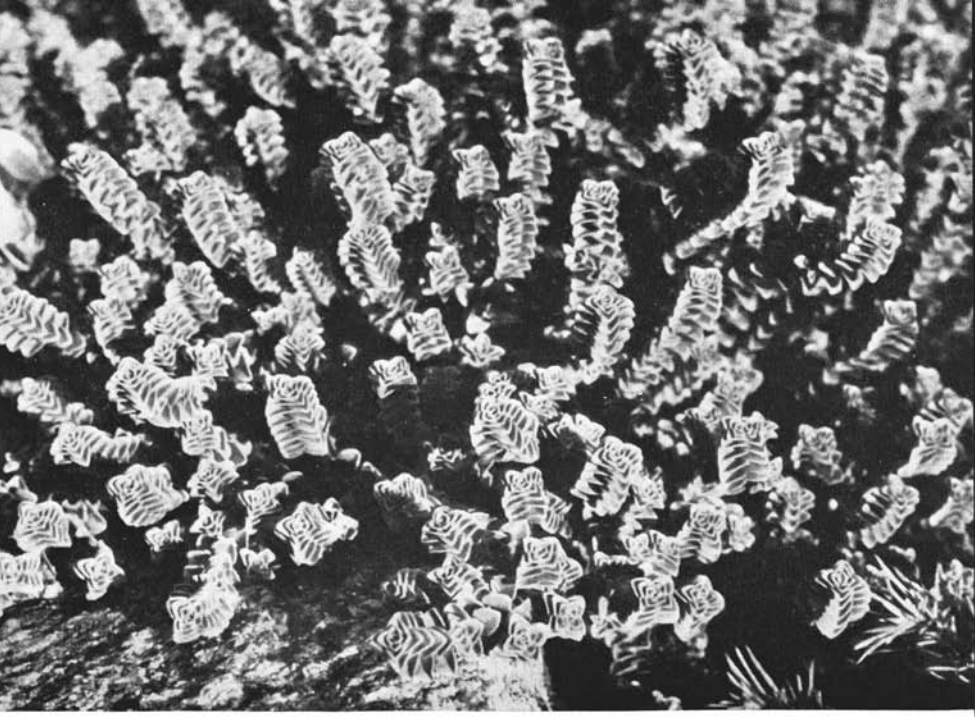


▲ *Photo—R. Kaye*
Fig. 17—Silurian Slate on crest of hill

Fig. 18—Silurian Slate
Photo—R. Kaye ▼

▲ *Photo—R.B.G. Edinburgh*
Fig. 19—Saxifraga nivalis

Fig. 20—Saxifraga oppositifolia
Photo—R.B.G. Edinburgh ▼



Photo—John C. Lawson
Fig. 21—Hebe epacridea

Fig. 22—Pygmaea thomsonii
Photo—John C. Lawson

▲ *Photo—R.B.G. Edinburgh*
Fig. 23—Codonopsis dicentrifolia

Fig. 24—Cyclamen neapolitanum, F.C.C. Form
Photo—H. Esslemont ▼

which look like a rabbit's head complete with ears. This year a new variety to the garden, *G.* 'Ketton', is up and showing its first flowers.

Three mat-forming ericas which give very good colour value at this time are *E. carnea* 'Springwood', 'Springwood Pink' and 'Winter Beauty'. In this garden these grow about six inches high and the branches root as they spread. *Erica carnea* 'Winter Beauty' tends to flower a week or two earlier than the 'Springwood' varieties. Both 'Winter Beauty' and 'Springwood Pink' are a good shade of bright pink, while the spikes of 'Springwood' carry pure white flowers. The cluster of exserted stamens looks like a protruding orange tongue.

Two other heaths which start to bloom before the turn of the year and generally give a good display this month are *E. carnea* 'Eileen Porter' and *E.* 'George Rendall'. The first cultivar flowers for a very long time and produces rich carmine flowers in abundance, while *E.* 'George Rendall', an improved form of *E. x darleyensis*, has deeper pink flowers. The plant sold to me as *E. x darleyensis* flowers in January, but in this garden not until the end of the month. A pair of garden-worthy selected forms are 'Arthur Johnson', very similar to *x darleyensis* but with deeper pink flowers, and the white 'Silberschmelze'. *E. carnea* cultivars blooming at this time are 'Aurea', 'Gracilis', 'Queen Mary' and 'Rubra'. *Erica carnea* 'Aurea' is doubly valuable in that it has golden foliage which offsets the fine deep pink flowers. *Erica carnea* 'Gracilis' is smaller than the type, makes a more compact plant with tighter foliage, and produces a fine show of pink flowers. *Erica carnea* 'Queen Mary' sometimes starts flowering in December but is at its best towards the end of January. This is a lax growing cultivar which does not appear to object to lime and has flowers which are bright pink. *Erica carnea* 'Rubra' has darkish foliage with deep pink flowers.

Towards the close of January a further group of ericas becomes prominent. These are the white *E. carnea* 'Alba', the dwarf and compact *E. carnea* 'Cecilia M. Beale', somewhat similar to 'Alba' but with much larger flowers produced on short spikes, the spreading *E. carnea* 'Mrs. S. Doncaster', which must be given ample room to develop as this is a lax form with light pink flowers, and *E. carnea* 'Praecox Rubra', which has darker foliage and flowers.

During the month a number of saxifragas come into flower and the first of these is *Saxifraga* 'Marie Louise'. This rockfoil has spiny rosettes tightly clustered together and each measuring half an inch in diameter. From the centres of these, on one-inch high salmon red

stems, expand single white flowers with yellow eyes. Not far behind *S.* 'Marie Louise' is *S. kellereri*, but this species is not so showy; the grey-green spiny cushions are not as attractive, and the small flowers open to lilac-pink from almost crimson buds. The flowering stems are two inches high, shading from green at the base to carmine at the top and each carrying about six flowers.

The bulk of January's flowering plants are small in stature and two kabschia saxifragas, *S. burseriana* 'Gloria' and *S. burseriana* 'His Majesty' push up their bright orange-red flower buds and open their first flowers before the end of the month. Both these cultivars have thick blue-green spiny leaves packed into tight cushions. *Saxifraga burseriana* 'Gloria' carries large single white flowers on red-green stems about three inches high, while *S. burseriana* 'His Majesty', a slightly smaller edition in everything except the flowers, has blooms which are large and white, deepening to pink at the centre and carried on two-inch stems.

Two other saxifragas in flower by the end of the month are *S.* 'Mother of Pearl' and *S.* 'Wheatley Rose'. *Saxifraga* 'Mother of Pearl' is a hybrid between *S. x godroniana*, itself a natural hybrid, and the west Himalayan *S. lilacina*, and with these as parents the progeny should be good. *Saxifraga* 'Mother of Pearl' makes a compact cushion of dark green spiny leaves on which sit an abundance of large pink flowers, each with a deeper eye, the whole flower colour tending to fade with age. The blooms are carried singly on two-inch high stems. *Saxifraga* 'Wheatley Rose' is grown in a trough where it is somewhat restricted but, notwithstanding this, it never fails to open its first flowers in January. The leaves are grey-green, closely packed in a tight cushion, while the small rose flowers are barely one inch above the rosettes.

The first of the primulas to flower outside is *P. vulgaris var. heterochroma*. This is a vigorous Primula with strongly veined leaves which are almost four inches long and have rounded ends. The scented flowers are large. They measure one and a quarter inches in diameter and are white with a tinge of lilac and deeper markings near the margins. The petals are deeply notched, while the flower centres each have five strong yellow markings. Following rapidly behind this variety is *P. woronowii* and its white form. In these instances the heavily veined leaves are dentate, the lower portions of the leaves being reminiscent of the "Sow Thistle". The flowers, about three-quarters of an inch across, are white, tinged lilac, and very sweetly scented.

Primula veris subsp. columnae always produces a few flower heads down in the rosettes of leaves. The flowers are not large, being less than five-eighths of an inch in diameter, but the colour, orange-yellow with deep orange centre, tends to compensate for the lack of size. The leaves of this subspecies could best be described as inverse boat-shaped, while the calyx is almost petaloid, giving a hose-in-hose effect. *Primula* 'Blue Horizon' also produces a few flowers at the end of the month. The first flowers are lilac-blue, but those developing later are of a better colour. These primroses have good sized contrasting orange centres to the flowers and are carried singly on reddish stems.

Helleborus niger can always be expected to show a few flowers at this time but, being unprotected, these tend to be damaged by the weather. The well known variety *H. niger* 'Potter's Wheel' has recently been established, but the four-inch wide flowers have suffered the same fate as those of *H. niger*. A hellebore, acquired under the name of *H. orientalis*, throws up stems carrying several very deep reddish-purple flowers in the centres of which are clustered the golden stamens. The flowering stems will grow to twelve inches in height and later will be followed by the foliage. This plant is of a herbaceous nature quite unlike any other forms of *H. orientalis*, which flower later and are evergreen.

A year or two ago *Eranthis hyemalis* was attacked by some form of mould to such an extent that the plantings were greatly reduced. There are still a few, however, which produce their large buttercup yellow flowers over the deeply laciniate, bright green foliage.

In this exposed garden the small bulbous irises do not commence flowering before February or March, but one *Muscari*, acquired under the name of *M. aucheri*, always has the first of its flowers showing in January. This plant has very dense racemes and in these the flowers start opening when the stems are barely one inch high. Subsequently they elongate to about four inches. The flowers themselves are of a much brighter blue than the recorded indigo-blue of *M. aucheri*, but they still have the white edging round the constricted mouth. The plant may well be a hybrid, but due to its earliness and length of flowering it is well worth growing.

The flowering trees and shrubs here tend to start a little late and the flowers of *Hamamelis mollis*, the "Chinese Witch Hazel", only appear in January. These are golden yellow, with strap-like petals and claret calices and show up well on the bare branches. The leaves develop later. These are hazel-shaped, dark green and downy below, and are

approximately six inches long. The other small tree which starts producing its flowers in January is *Prunus subhirtella* 'Autumnalis'. Here the flowers are very pale pink, fragile and scented. In a suitable location *P. subhirtella* 'Autumnalis' can make a tree thirty feet in height but in ten years the one here has put on about six inches of growth and tends to grow more on the side facing away from the prevailing wind. Because of the conditions existing in this garden this lovely tree is fully deciduous and when the flowers are out they can be clearly seen.

The Chinese *Jasminum nudiflorum* is grown on a north wall and is now well established, but the golden yellow flowers tend to be damaged by frost. Sprays cut in the bud and brought into the house give a display far superior to those outside. The flowers are sweetly scented, which is much appreciated indoors.

Plants in the greenhouse and propagating house are not grown specifically for colour at this time of year but a few stock plants occasionally flower. In the propagating house *Primula edgeworthii* is in bloom, while under the staging in the greenhouse a number of cyclamen in pots are flowering. The cyclamen are the varieties of *C. x atkinsii* 'Album', 'Roseum' and 'Rubrum', all quite distinct, and *C. orbiculatum var. coum* and *C. orbiculatum var. coum* 'Album'. These pot-grown cyclamen are used as house plants for short spells and do not seem to suffer any damage.

Although the aforementioned plants flower in the first few weeks of the year there are no doubt many others which would help to add interest and colour at this time. It is hoped to acquire some of these in the future.

Be in the Fashion

by JOHN C. LAWSON

(Continued)

SINCE THE last *Journal* was printed, I have found time to continue my notes on the alpines of New Zealand which have been grown with a certain amount of success at Inshriach.

The shrubby veronicas are widespread in New Zealand and, at one time or another, most gardeners in this country have come across some of them. Many are truly garden-worthy. Veronica belongs to the family Scrophulariaceae and these woody species have flowers which are identical with the common "Speedwell" in shape and formation of floral parts. They vary considerably in size but, apart from a few which have flowers in shades of blue or purple, they are mostly white.

These shrubby veronicas have been placed in a genus of their own, namely Hebe. Since this reclassification it has been discovered that the chromosomes in the New Zealand veronicas differ in number from the herbaceous type growing in the Northern Hemisphere, and present-day taxonomists agree with the decision taken by the earlier botanists in creating this new genus. Since then the semi-shrubby Veronica-like plants have been dealt with and are now known as parahebes, e.g. *Parahebe lyallii.*

A number of hebes are confined to the alpine regions and are dwarf plants very suitable for cultivation by alpine enthusiasts. *Hebe epacridea* (fig. 21) and *H. haastii* are two of these. They are both evergreen and have small white flowers. The leathery, very distinctive greeny-bronze leaves of *H. epacridea* are small and rounded and the arrangement of them on the stem gives it a square look. Although prostrate in the wild, *H. epacridea* will grow up to about a foot high and although it tends to become rather straggly, it can be kept very neat and compact by judicious pruning.

Hebe haastii retains its prostrate habit in cultivation. It has slightly larger leaves, rounded and paler green in colour than *H. epacridea.* Both these species are plants of the high screes where they grow in crevices which afford very sharp drainage. In cultivation this drainage is a most important factor, not only in the plants mentioned but in New Zealand plants in general. My experience through the years has taught me that alpines from the antipodes will grow and survive far better if they are supplied with ample water during the growing season ;

even in winter a little moisture is in order. This ensures that the roots are never dry at any time. I have also found that the plants growing in a peaty mixture have been much happier than those planted in an arid position where the soil is low in humus.

In general the propagation of hebes is not difficult and cuttings taken during July usually root very easily. An exception is *H. propinqua*, one of the smaller "whipcord" hebes, and up to the present I have found this species difficult to propagate vegetatively.

Another genus closely related to veronicas, in fact still listed under the name in many catalogues, is Pygmaea. This is a genus of six species, two of which are in cultivation in this country. *Pygmaea pulvinaris* is a plant from the high tops of the mountains in the northern part of the Southern Alps. In cultivation it forms densely tufted grey-green moss-like cushions sometimes as much as twelve inches across. It may be grown with success in a scree bed or in a well drained trough, where it will be encouraged to remain tight and compact. Cultivation in a pan is only satisfactory when the pan is kept outside in an open plunge. If this species is grown in an alpine house the leaves and stems become drawn and the plant loses its tight habit of growth. It is then more susceptible to damping-off. Even outside on the scree it is advisable, during the winter months, to place a cloche or piece of glass over the small cushions to protect the plant from too much moisture.

Pygmaea thomsonii (fig. 22) is another member of the genus in cultivation in this country. It too is completely prostrate, but the leaves are much more silvery and slightly larger. This species is not so common in the wild as *P. pulvinaris*. The cultivation and treatment of both plants are identical ; so, in fact, are the very small five-lobed white flowers but, alas, they are not very freely produced in either species.

A plant similar in habit to some of the dwarf hebes is *Drapetes dieffenbachii*, a member of the Daphne family (Thymelaeaceae), and closely related to the genus Pimelea. It is a low-growing plant, not more than two inches in height, and tends to have a trailing habit. The formation of the grey-green leaves on the stem is very similar to that found in Cassiope. This is a very common plant on the South Island of New Zealand. where apparently its fragrant white flowers are produced very freely. I might add that the plants grown at Inshriach from material sent from New Zealand have not yet produced a flower, although excellent specimens of *Drapetes dieffenbachii* have been grown in pans. Although rather slow growing, this species has the

advantage of rooting as it grows and cuttings strike very easily. Anyone wanting to increase his stock of plants need only select a shoot with roots already formed, detach it from the parent plant, and pot it up in the usual way.

The New Zealand geums are little known to gardeners in this country. There are a number of species, but one of the most beautiful and one that should appeal more than any other to the keen grower of alpine plants is *Geum uniflorum*. Its habitat is in the north of the South Island at a height of between 3,000 and 5,000 feet. It is usually found on the west side of the Southern Alps, in peaty soil, and very often in shade. The flowers of *Geum uniflorum* are produced singly, are white in colour and with a boss of crimson stamens. The polished green leaves are fringed with hairs and when ageing this foliage turns pinkish-crimson. The creeping, woody root stock is extremely slow growing in cultivation, and many years may have to elapse before an attempt to divide the plant can be made. Although this method of propagation is certainly possible, if one can encourage this alpine gem to flower and set seed, plants can be raised in this way.

Up to the present I have grown *G. uniflorum* only in a pan containing John Innes compost, but feel sure it would survive and grow in a peat bed with perhaps a cloche for protection in winter. A few "Slugits" as an extra safeguard may be placed among the plants in spring and summer.

All the species about which I have written in the foregoing article have been successfully grown at Inshriach. Most of them have survived the rigours of at least four winters, and some many more.

Frae A' The Airts

by CARLINA

"WHY ARE there never any berries on my *Pernettya mucronata*?" is a question which has reached us from more than one country. The answer lies quite simply in the ubiquitous word 'sex'. When the plants are bought from the nursery they are laden with berries—purple, pink or white—which last the winter through, but the following year not one fruit appears.

Here we must regretfully lay blame upon nurserymen, who seldom state in their catalogues that these plants are female and, being dioecious (male and female flowers on different plants), must have the insignificant male plant present to provide pollen for their fertilisation. Quite a small male in a harem of five or six females should provide a rich crop of fruit.

A number of other shrubs are dioecious, notably most of the skimmias. *Skimmia foremanii*, however, is self-fertile and we find that a solitary specimen produces red berries in quantity. These fruits last all winter, and this species makes a good background and is especially suitable for a shady border.

Of rock garden plants a few are unisexual. We had despaired of that tiny mat-forming shrub from New Zealand, *Coprosma petriei*, until we discovered that it yearned for a husband to help it produce the purple berries which are its chief attraction. We should suggest, therefore, that when buying an unknown shrub recommended for its fruit, one should make sure that it is self-fertile.

Growing in the crevice of a wall lewisias may develop large rosettes which are liable to be snapped off by a strong wind. A member who suffered from this when the hurricane swept Scotland in January asked what could be done about these broken plants. Whether the root will send out small side rosettes may well depend on the point at which it broke. We have known offsets to form round a damaged rosette but they are, of course, much smaller than the original one. The detached rosette can, however, be resuscitated very easily by pressing it into sharp sand and placing the pan in a frame, preferably with bottom heat, when it will form new roots and develop once more into a strong plant.

"I've caterpillars, millipedes and every kind of bug,
But weight for weight the greediest is, undoubtedly, the Slug."
(*Anon.*)

Horticultural chemists, trading on this greed, have produced during the past years a number of excellent types of "slug bait". Good as these are, most gardeners find that although slugs appear to have been killed, a number of them, unless definitely removed and destroyed, will eventually recover.

In wet weather this is quite likely to happen. The bait acts as a soporific and the slug, after crawling round leaving a slimy trail, will lie in an intoxicated stupor for some time before waking up and retiring to his lair. In hot, dry weather the sun will desiccate him before he has time to recover, but all too often one must go round the baited plants early in the morning and drop the dopey slugs into a pot of salt and water.

There is much to be said for the old-fashioned half orange skin, or inverted plastic pot rinsed out with milk, but these traps must be inspected at 10 p.m. or thereby, otherwise the slugs will have disappeared by dawn.

Plant Notes

CODONOPSIS DICENTRIFOLIA

Codonopsis dicentrifolia (fig. 23) belongs to the plant family Campanulaceae and is native to Sikkim in the Eastern Himalaya. Like so many other associated species, it develops carrot-like roots from the crowns of which spring slender but stiff stems up to 12 inches long. These stems become branched and bear numerous neat leaves and a number of bell-shaped, pale blue flowers. The overall effect is quite charming.

I have planted this species in a scree wall and a peat bed and, while it lives and flowers rather reluctantly in the scree wall, it grows much more happily in the moister, richer bed of peat. Its place in the garden should be carefully marked, however, as it dies down completely in winter and all evidence of its presence disappears.

Codonopsis dicentrifolia is still a rare plant but it is listed by one alpine nurseryman at least.

Perthshire M. L.

RHODOHYPOXIS

SOMEWHERE or other I read recently that Rhodohypoxis have to be over-wintered in a frame in Scotland. This has not been my experience, however, as I have successfully grown them out of doors for many years. In my garden at Pitlochry they are well established and flourish in a sharply drained rich scree mixture to which a little leafmould has been added. The area allotted to these plants is covered in winter with a stone. I put this protection on as soon as the Rhodohypoxis disappear below ground, probably in October or November, depending on the season, and remove it in March. I try to find a stone large enough to overlap the clump of bulbs by an inch or more.

Perthshire M. L.

PRIMULA AUREATA FROM SEED

THE CARE of plants in frames is an important part of the alpine plant enthusiast's hobby. The task of removing decaying leaves and forking the soil surface in pots and pans is routine work to us all and, at times, it can be dull, back-breaking and uninteresting.

One morning in the late spring of 1966 I was busy in our frame yard on just such work when, suddenly, my day was made. I found two capsules of seed on one of my plants of *Primula aureata*. That

afternoon my husband and I took the pan of *P. aureata* to Silverwells to ask advice from Mr. Alex. Duguid as to the time to harvest the seed. It is so seldom that *P. aureata* sets seed in this country, and as my plants were raised from the late Mr. Archibald's original plant by division, I wanted to be sure I did the correct thing. We learned that seeds of petiolarid primulas are best gathered and sown while green, so on 3rd June, when the capsule showed signs of splitting, the seed was harvested and sown immediately. In three weeks it was obvious that there was quite a good germination and on 18th July, as soon as the tiny true leaves appeared, the seedlings were pricked off into $1\frac{1}{2}$ in. long pots. These were then sunk in an ash bed in a shaded frame. By December the young plants were in their winter quarters in the Primula house with the pots again sunk to their rims.

The spring of 1967 saw the little plants slipped carefully into 3 in. pots in a leafy but gritty mixture and once more they spent the summer and autumn outside in a shaded frame.

Now as I write, February 1968, the young plants are in the Primula house and I have long since forgotten the aching back I had the day I discovered the swollen seed heads. Indeed, I thrill as I tend them and to myself repeat the description—"Leaves deeply and irregularly dentate, white, farinose on both surfaces", etc. (Fletcher)—for every plant but one is set to flower.

Berwickshire E. G. CAIRNS

PRIMULA KINGII

OUR FIRST sight of *Primula kingii* was in 1960 in the garden of the late Major George Sherriff at Ascreavie, where we were enchanted by a healthy planting of it in full flower. The pendant bell-shaped flowers of an intensely rich, dark, port wine colour, held on stiffly erect stems charmed us instantly. Immediately this plant became a "must have" on our current list of wants.

Home once more to read (Smith & Fletcher): "*Primula kingii*, section Amethystina, like other members of the section this desirable species is a difficult problem of cultivation. Seeds have often been collected but the resultant young plants generally die before reaching the flowering stage". Slightly crestfallen—but still hopeful—we felt lucky and honoured when Major Sherriff gave us a plant the following year.

By 1962 we were happy to report to Major Sherriff that we had flowered it, but, as the authorities predicted, although we sowed seed

in more than one year and germination was good, we failed to bring the seedlings through the pricking out stage. It seemed that despite every precaution the young plants just would not tolerate root disturbance of any kind. It was after these failures that I tried the following method and I am glad to say we have successfully raised a number of plants.

First, a good layer of drainage material was placed in the bottom of a small shallow seed box and on top of this some tiny whalehide lettuce pots were packed together. These were then filled with a seed mixture, after which the box was given a good knock on the potting bench to settle the soil. The seeds were then sown individually, but if by chance more than one landed in a pot, once germination had taken place the extra seedling was ruthlessly removed and only one plant was allowed to grow on. In this way the roots of the young plants were never disturbed. By the time potting on was necessary the more mature plants were able to survive the shift and showed no ill effects.

In finishing, might I add that our original plant is now a healthy specimen with several crowns. It is growing out of doors in one of our primula beds, in a peaty leafy mixture and in fairly shady conditions. We do protect the crowns of *P. kingii* from winter damp with a pane of glass and consider this is well worth the trouble.

Berwickshire — E. G. CAIRNS

A TOUR IN NORTHERN IRELAND

"A MEMORABLE holiday". This was the remark made to me by one of our members as we returned home last May ; and very gratifying it was after the work entailed in organising a visit to Northern Ireland for twenty-one members of our group.

We travelled by air from Edinburgh to Belfast, and there we boarded a large bus in which we all travelled for the rest of the week. We stayed at the Imperial Hotel at Donaghadee and drove out from there each day to visit gardens of interest. The Belfast members of the Alpine Garden Society were kindness itself, and to them we owe a great debt of gratitude for showing us their gardens and for their kind hospitality.

Ireland has many famous gardens and at Castlewellan, one of the many we visited, we were most impressed by the collection of conifers. There were some magnificent trees, many we had never seen before and others of a size that made them appear unfamiliar. There was a fine collection of pittosporums, including a particularly good specimen of the variegated form of *Pittosporum eugenioides*. *Drimys aromatica*

was used as a hedging plant, a large golden chestnut dominated the surrounding plants and there was an outstanding specimen of *Picea smithiana*, "The West Himalayan Spruce". These are memories that will not be easily forgotten.

One morning we visited the Slieve Donard Nursery where Mr. Slinger very kindly took us round. He showed great knowledge of the plants growing not only in his own nursery but in many of the private gardens throughout Ireland. He also very patiently and willingly answered numerous questions on the cultivation of the vast variety of plants we saw. We learned that due to the exceptionally mild and early spring those plants grown for exhibition at the Chelsea Flower Show were so far forward that to retard them they had to be taken out of their cold house. Unexpectedly a late frost cut the soft growth and the whole collection was ruined. This served to remind us that not only alpine gardeners suffer losses and illustrated one of the many hazards facing the nurseryman today. Among the many interesting plants we saw was a fine Embothrium which brought to mind wonderful specimens we had seen at Gigha two years before.

We were naturally impressed by the fine collection of Escallonia hybrids for which this nursery is famous, and in particular a lovely pink variety with larger flowers than *E.* 'Apple Blossom' not yet in commerce. Other plants of note included a beautiful yellow honeysuckle, *Lonicera* 'Gold Flame', *Cytisus* (Toome's form), a very lovely silver birch, *Betula albo-sinensis var. septentrionalis*, and the dwarf hybrid *Rhododendron* 'Scarlet Wonder'.

Another nursery visited was Daisy Hill at Newry where many excellent plants were to be seen. There was a very good collection of shrubby veronicas—hebes, I believe, is now their correct generic name —and a miniature one particularly appealed to me. It was *Hebe buchananii* 'Minor'. There was also a cultivar with interesting purplish foliage named *H.* 'Mrs. Winder'. It wasn't a rock garden plant, however, as even on the east coast of Britain it will grow to three feet in height and spread even more. Other notable plants were *Hypericum x moserianum* 'Tricolor', *x Gaulthettya* 'Wisley Pearl', *Polygonatum hookeri*, *Kirengeshoma palmata* and some marvellous eucryphias.

So much has been written about Rowallane that I feel it is unnecessary to write more and can only suggest that any reader who finds himself in Northern Ireland should not fail to visit this truly wonderful garden in County Down. The green glades with banks of rhododendrons cleverly spaced so that their full glory may be appreci-

ated, the orchard planted with many rare shrubs, the sheltered borders with their high walls, on one of which the lovely Chilean *Berberidopsis corallina* grows remarkably well, all demonstrated that the hand of a master had been at their planting. Near the glasshouse we saw a large clump of a salmon-pink Dimorphotheca, a colour form I had not seen before.

The rock garden is at present being renovated and replanted and a wonderful splash of colour was provided by a group of magnificent ruby-red *Primula tsariensis*. Walking back to the car park I noted two splendid conifers, *Thuja plicata* 'Zebrina' and *Chamaecyparis obtusa* 'Crippsii'. So we left this lovely garden with memories of all the fine camellias, magnolias, kalmias, eucryphias, azaleas and many other species, hoping that one day we might return.

J. BRUNSKILL,
Belford.

Northumberland (North)

The North Berwick Show

14th September 1967

ONCE AGAIN, after the Club's period of summer dormancy, the North Berwick Show was the occasion for a sociable re-union with old friends from other Groups. It was also described by visitors as being "a very happy affair". As far as the Show Secretary and his Committee were concerned, this was not altogether true, because they were greatly disappointed by the small number of entries. There were only sixteen members exhibiting, eight of whom were from other Groups. Of the eight from East Lothian, four were members of Mr. Mills' Committee. The organisers are most grateful to those exhibitors who give up their time to bring good plants from considerable distances as this gives members the opportunity of seeing plants completely different from those normally grown in the county.

The Forrest Medal was awarded to an exceptionally fine form of *Cyclamen neapolitanum* (fig. 24), which had been personally collected by Mr. Harold Esslemont of Aberdeen on Mount Parnes, Athens, in April 1962. Although a younger and smaller plant than other

specimens of this species exhibited at the Show, it was outstanding for its very definitely toothed leaf margins and silvery marblings, and also for the size and colour of its corolla. This plant subsequently travelled to a London meeting of the Joint Awards Committee where it was awarded a First Class Certificate. Mr. Esslemont also received the East Lothian Trophy for three pans of different genera. This entry was made up of *Cyclamen neapolitanum, Helichrysum confertum* and *Campanula reptans.* He was also awarded the Mary Bowe Trophy for the highest aggregate of points in Section I.

The appearance of most of the Cyclamen this year suffered through not having their flowers backed by their lovely leaves. This is quite natural plant behaviour, as the time for the leaves to unfold varies from year to year. Mrs. Simson Hall's *Cyclamen graecum* was noted as one of the most exquisite plants in the show, not only because of its well poised large flowers, but also for the velvety texture of its dark leaves.

In the class for three pans all of the same family, Mr. Crosland from Torphins was first with his New Zealand cushions, *Raoulia eximia, R. buchananii* and *R. mamillaris.*

In the class for two of the same family, Mrs. Boyd-Harvey's pink and white forms of *Cyclamen neapolitanum* received a first prize. Both plants were flowering precociously, before their leaves had unfurled. Second to this entry was Mr. Esslemont with *Aciphylla crosby-smithii* and *A. dobsonii.*

In the class for rare plants Mr. Esslemont's *Trichinium manglesii,* the Australian "Pussy-tail", was something quite new to this show.

The silver-grey foliage class always attracts a good number of entries and the prizes went to *Convolvulus nitidus, Celmisia incana* and *Celmisia hectorii* shown by Mr. Esslemont, Mrs. Cormack and Mrs. Boyd-Harvey. All these plants were glistening silver in contrast to the matt-surfaced grey of the other entries. September is usually rather early for leaves to assume their full autumn hues, but it is always interesting to see what plants are entered for their seasonal colouring. In the class for autumn foliage it was surprising to see Mrs. Boyd-Harvey's common-or-garden *Sedum betulifolium* beating Mr. Esslemont's rare and difficult *Pyxidanthera barbulata* for first place. It was just that its leaves were a better red, which was what the schedule required. In the class for Campanulaceae Mrs. Cormack's *Lobelia linnaeoides* was noted as a fragile little charmer, just the thing to provide autumn interest in a sink or trough garden.

There were good entries in the classes for three pans Gentiana and one pan Gentiana hybrid, but not a single entry was received in the class for Gentiana species. Many years ago the late Mr. David Wilkie predicted that the interest in good garden-worthy hybrids might lead to a lack of interest in the true species. It was on his advice that a separate class for Gentiana species was included in this schedule and it was hoped that this would encourage members to cultivate them. Now that *G. saxosa* and *G. bellidifolia* have met in gardens and nurseries, even they are no longer reliably "true".

Mrs. Cormack of Edinburgh was awarded the Peel Trophy for her three hybrids, *G. x macaulayi* 'Kingfisher', *G. x macaulayi* 'Kidbrooke Seedling', and an unnamed hybrid from J. Drake's nursery at Inshriach in Inverness-shire. In the single pan class Miss C. Nisbet and Mrs. Davidson showed the splendid garden-worthiness of *G. x stevenagensis* and of a hybrid of *G. veitchiorum.*

The miniature gardens always attract attention and we were glad to meet again Mrs. Baillie's famous tufa block encrusted all over with saxifragas and sempervivums, demonstrating well the decorative value of contrasting foliage colours, forms and textures.

The flower arrangement classes, too, are popular with visitors to the show and the Wellstanlaw Cup, awarded for an arrangement of flowers and foliage cut from rock garden plants, went to Mrs. Graham. She was closely followed by Miss Nancy Bowe and Mrs. Cormack.

In Section II the responsibility for making a worth-while display of easily cultivated rock garden plants fell on the shoulders of only four members. The Club Bronze Medal was awarded to Mrs. Mutch for the highest aggregate in this section, while the Group Silver Cup went to Mrs. Orr for the best plant in Section II.

Once again our faithful supporters from Edrom Nurseries had a good display of shrubs and rock garden plants in flower. It is to be hoped that those members who say they cannot exhibit because they "just have nothing worth bringing" took the opportunity of stocking up with autumn-flowering plants.

Mrs. Mencel's stand of hand-painted china has now become a very popular feature of the show, coming at a time when people are beginning to look well ahead for Christmas presents. Her cups, plates, bowls, etc., are decorated in highly individual styles with representations of rock garden plants, and in particular *Dryas octopetala*, the Club emblem.

L. C. BOYD-HARVEY

Obituaries

Major GEORGE SHERRIFF, O.B.E., D.L.

Major George Sherriff, O.B.E., D.L., one of the Club's most illustrious members, died at his home at Ascreavie, Angus, on 19th September 1967.

The Himalayas, and in particular Tibet and Bhutan, will always be associated with the name of George Sherriff. In company with Frank Ludlow he combed those regions for garden-worthy plants, and the success of these missions can be judged by the plants which we grow in our gardens today. We are all deeply indebted to him for the many beautiful and interesting species he introduced.

Major Sherriff, born at Carronvale, Stirlingshire, at the end of the last century, was educated at Sedbergh and at the Royal Military Academy, Woolwich, and after serving in the first world war went to India at the end of hostilities. There he was seconded to the Indian Political Service, first as vice-consul and later as consul.

In 1933 he retired from the army and from then until his final return to this country, almost 20 years ago, he became engrossed in collecting plants. It is by this period in his life that horticulturists the world over will best remember him. The normal method employed by plant hunters was to collect seed and it is recorded that 24,000 gatherings were made. In the case of plants which were difficult to raise from seed, however, Major Sherriff in his enterprising way used the transport of the 20th century and had dormant plants flown home. He had what might be termed a "flair" for a good plant ; in other words, that here was something special which just had to be introduced into cultivation, and, as a result, many British gardens can boast of a Himalayan flora.

While others could only admire from afar the man and his work, we in Scotland, however, have been much more fortunate. When finally he decided to return from abroad he chose to come back to this country. Here, on an open and exposed hillside at the base of the Grampians, he set out to construct a garden in which to grow many of his own plants. How successful he was will be endorsed by many members of this Club and similar organisations who were warmly invited and made welcome to visit his garden near Kirriemuir. From an area comprising a small wood and a few old shrubs of *Rhododendron ponticum* he carved out a garden of most pleasing design

and full of interest, in which he was aided by Mrs. Sherriff. Primulas and meconopsis grew as though at home. In particular, *M. regia*, *M. superba* and many of the other monocarpic species were outstanding. *Primula kingii* grew almost as a native, petiolarid primulas were used as ground cover plants, and rhododendrons, lilies and numerous alien trees and shrubs were all well established. It would require many pages to list the interesting plants as Ascreavie.

While gardeners the world over will read with sorrow of the death of Major George Sherriff, this is a much more personal loss to members of the Scottish Rock Garden Club. For it is as the friendly garden owner who loved to guide a party of gardening enthusiasts round his garden that he will be remembered.

Fortunately, too, while tending our plants in the garden, many of the species we grow today and which are directly due to his efforts, will keep his name evergreen. *Meconopsis grandis* (Sherriff's 600) is but one well known example, but it is also fitting that beautiful and difficult plants such as *Primula sherriffiae*, *Lilium sherriffii* and *Meconopsis sherriffii* should bear his name.

Mr. JOHN RENTON

By the death of Mr. John Renton, who died at his home in October 1967, age 76, the Club has lost yet another of its most outstanding members. Prior to the first world war he joined his father in his Land Agency business, which included the factorship of many large estates in Perthshire and Fife. He was also Chairman of the Eastern Agricultural Committee, an appointment he held until shortly before his death and in recognition of which he was awarded the C.B.E. in January 1952. His chief interest and hobby after office hours was gardening, in which he excelled. His enthusiasm was shared by his wife, who must have been amongst the first to join the Club after it was formed. Together, with great skill, they created a very beautiful garden at Branklyn, Perth. Not only was the garden wonderful to look at as a whole ; it had a great many rare plants which were exceedingly difficult to cultivate and maintain. All the more surprising, then, and of great credit to the cultivators, that the plants always flourished and it did seem quite natural, somehow, despite the wide variation in species, that only the best forms were selected for Branklyn. It is thanks to their efforts that so many of the recent introductions of alpine plants from many foreign countries are now established in our gardens.

W. G. KNOX-FINLAY

Mr. W. H. LAYCOCK

The Club has lost another popular, enthusiastic and knowledgeable member in the death, in January of this year, of W. H. Laycock, of Mirfield in Yorkshire.

A member and keen supporter of the Scottish Rock Garden Club for many years, he was a frequent visitor to our Shows and Weekends, where his wide knowledge of alpine plants, his generous and helpful advice, and his quiet humour made him an always welcome figure.

Primulas were probably his favourite plants and, from his alpine house at Mirfield, many outstanding examples of rare and difficult ones were taken to Shows throughout the country, and many awards found their way back to Yorkshire. Besides these, he found time in a busy life to grow and exhibit rhododendrons, dwarf conifers, and many other alpine plants, and to put in a tremendous amount of hard work in the development of the Harlow Car Gardens at Harrogate.

An outstanding plantsman, a wise counsellor, and a good friend, we shall miss W. H. Laycock.

To Mrs. Laycock, who was his constant companion, and to his family we extend our sincere condolences.

D. E.

KENNETH CHARLES CORSAR

The Club has suffered a grievous loss by the death of Kenneth Corsar on 26th October 1967. He had served the Club well for over thirty years, having been one of its earliest members.

Before the War he was one of the first Show Secretaries for the Edinburgh Show and was elected Vice-President in 1937—or even earlier. He was the first Editor of our *Journal*, a post he held from the first issue in 1937 until 1950, though he also produced "Publication No. 2" which preceded the regular issue of the *Journal*. He served as one of the Presidents—with the late John Renton—during the difficult period of the War when the Club had to "close down"—and yet be kept alive. After the War, when he demitted office as President he became one of our Vice-Presidents, an office he held from that time until his death.

I first met him some thirty years ago when, as an absolute tyro, I was confused as to the various categories of Auriculas. The late William Fleming, then the Edinburgh Show Secretary, referred me to him as one of the leading authorities on those lovely plants—which he

grew to absolute perfection in his garden at the top of Braid Avenue. I went to see him there and was enchanted by his beautiful rock garden. Needless to say, I left with a very clear explanation of the different "categories" of Auricula clear in my mind.

Some years later he left that garden and moved to Mauricewood, Milton Bridge, Midlothian, where, as was to be expected, he built another beautiful rock garden. When in that house he wrote his excellent and definitive little book "Primulas for the Garden", for he was one of the real authorities on the genus from the horticultural viewpoint. He was a notable grower of primulas himself and, to my delight, his plant of the very rare and extremely difficult *Primula cusickiana* was awarded the Forrest Medal at the Penicuik Show in 1957. It was a superb plant in full flower and this was one of the very few times this has been achieved in this country.

He was an Advocate, a specialist in genealogical matters and in heraldry, and was well-known as a writer on Regimental History, but in our field he was a grower of great skill and knowledge—and a fine Judge. A mishap many years ago seriously damaged his sight but, with monocle firmly in place and a few inches off a plant, there was very little indeed that escaped him. We shall miss him greatly as a friend and adviser and, indeed, in very many of the Club's fields of activity.

HENRY TOD

BOOKS offered on loan to members of the Scottish Rock Garden Club from the library of the late KENNETH CHARLES CORSAR OF CAIRNIEHILL.

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The books are issued to members by the Honorary Secretary in the same way as "Books on Loan" listed in the *Year Book*. Books may be retained for 14 days and the borrower pays postage **both ways.**

Some of the more valuable and rare books may not be sent by post but are available for reference only, by arrangement with the Honorary Secretary.

This notice was sent to the Secretary and it is published so that Club Members may be made aware of the deep interest shown in gardening by other organisations in Europe.

" THROUGH FLOWERS TO FRIENDSHIP " PRAGUE 1968

"Through Flowers to Friendship" is the motto of the International Meeting of the Decorative Plant Growers, organised by the Czechoslovak Society of Amateur Gardeners in Prague from 8th to 12th May 1968.

The programme will include :—

I. LECTURES (illustrated with slides) :

"Rock Garden Plants", by F. Hodac, Alpengarten Belvedere, Vienna, Austria.

"Outdoor Orchids", by O. Sadowsky, Czechoslovakia.

"Lilies", by Karl Feldmaier, German Federal Republic.

"Flowering Bulbs Appearing in the Wild", by A. Verins, from The Union of Soviet Socialist Republics.

"Annuals", by W. Mohr, Switzerland.

"Perennials", by H. Göritz, German Democratic Republic.

All lectures will be in English or German language.

II. DECORATIVE PLANT SHOW

III. COMPETITION :

First Nation-wide Competition of Slides, Coloured and Black and White, Photographs of Decorative Plants, and Garden Architecture with Foreign Participation.

IV. EXCURSION :

Two day visit to certain amateur gardens in Western Bohemia, to the Experimental Gardens in Pruhonice and the Research Station of Alpine Plants in Cernolice.

Detailed programme of the International Meeting, any information and entry forms for participation will be sent on request to the Secretary for Foreign Relations : Dr. Jirí Josífko, Novostrasnická 58, Praha 10, Czechoslovakia.

Book Reviews

"MINIATURE TREES IN THE JAPANESE STYLE," by Gillian E. Severn, N.D.H., illustrated with eighteen photographs, and thirty-one line drawings by Irene Hawkins. Published by Faber & Faber, Ltd., 24 Russell Square, London, W.C.1. Price 21s.

The subject of this small book, "Bonsai", is one which in recent years has undergone a great revival in Britain. This popularity is amply illustrated by the many attractive exhibits staged at the Chelsea Show. Bonsai, in its entirety, is a complete art and can provide a lifetime of study for a real enthusiast. What is more, the results of his care and labour can be passed on to a succeeding generation. In this book, however, Mrs. Severn does not seek to involve her readers too deeply, but rather she aims at providing the beginner with the basic knowledge required for its practice; although, in the end, the development in its more advanced stages is not neglected.

Chapter 1 explains what is meant by bonsai and how the small, twisted specimens are not truly dwarf but are in fact ordinary forest trees and shrubs artificially dwarfed by this method of cultivation. Some plants are known to have lived in perfect health for well over 100 years. The chapter finishes with a list of woody plants on which this art may be practised and notes the characters, shape, leaf colour, flower or fruit suitable for this purpose. Chapter 2 includes a classification based on the shape of the trunk or trunks and explains the treatment given to produce the various styles and shapes.

By the time this stage is reached it is assumed that the reader is ready to begin, and subsequent chapters tell how to set about training the specimens so that they assume specific shapes. Notes on seedlings, cuttings, collected wild plants; soil, potting, re-potting and choice of container; methods of dwarfing by pinching, root-pruning and training; watering, feeding and the treatment against pests and diseases are adequately explained.

This very useful book ends with a short list of suppliers and an index. It is freely illustrated with excellent line drawings and the publishers are to be congratulated on the clarity of the type and the format used.

J. L. M.

"MOUNTAIN FLOWERS," by Anthony Huxley, was reviewed in the September issue of the *Journal* but since then Mr. Huxley has asked us to publicise the fact that an unfortunate series of errors have been discovered. They occur on the Androsace plate on page 79, where some of the reference numbers have been transposed, and to correct these mistakes the numbers *against the illustrations* should be altered—499 should be 497; 497 = 498; 498 × 499; 505 = 506; 506 = 505.