The Journal
OF
The Scottish Rock Garden Club

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

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Fig. 37—A Rock Garden and Scree

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VOL. VIII. PART 3 No. 32—April 1963

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Editor's Notes

ACCORDING to most people it is a well-known fact that every Spring—and many people say at all other seasons as well—farmers and gardeners produce their yearly tales of disaster and woe. The weather is seldom if ever just right ; it is either too wet or too dry, too hot or too cold, and what might conceivably be right for one field or garden is of necessity all wrong for the neighbouring one. It might just be possible that there is a grain of truth somewhere in this constantly recurring complaint —even though in the end nature seems to adjust things so that ultimately everything comes out pretty right.

However, we feel reasonably safe in saying that this year all who are connected in any way with gardening or farming must have the sympathy of the general public on their side ; what sympathy for others there is left, that is, after dealing with chilly homes, burst pipes, snow-drifts that blocked roads, rail delays and other travel hindrances. Surely few of us can remember such a long continued spell of frost and destructive weather with its spells of piercing winds, blizzards, extreme frosts and terrific drifts.

What we will find in our gardens when the last of the frost and snow is gone is anybody's guess. In many places where the snow experienced a daily part-melting in the sun and a nightly freezing up again it became converted into a deep, thick layer of solid ice in which rather unhappy looking plants could be somewhat faintly seen, but the state of their health only guessed at. As for the dwarf shrubs which poked their noses above the snow covering out into the cold air, they paid for their rashness by being shrivelled brown by the biting, icy winds. Now they look—and I am afraid that many are—completely dead. We can only hope that in some cases there may be a little life left at root level from which new plants may be built up again.

In the midst of our concern over our own losses we should spare a thought for all those in the nursery trade who must have been very hardly hit. Very few nurserymen or seedsmen can have done very much business since last October, but their expense and wages sheets have been going on as usual. And even now the outlook for most of them cannot be very rosy in the foreseeable future. It is almost certain that a great many people who would normally have been placing sizeable seed or plant orders will have made up their minds, after such a long hold-up, to write off most of their alteration or planting schemes for this year. Moreover, nurserymens' losses of plants must almost certainly have been proportionately as heavy as anyone else's, and they will have to do a lot of rebuilding of stock before they can get back into full swing again.

As was only to be expected, the very long spell of extreme wintry weather has had an exceptionally severe retarding effect on even the hardiest of rock plants, and consequently has caused considerable

perturbation on the part of the Club's Show Secretaries and committees. Already the Show at Penicuik has been put back a fortnight, and at the time of writing it is still difficult to imagine that after the extra fortnight's grace there will be any great galaxy of plants on view. This probable scarcity of show-worthy plants is liable to be evident to some extent at all this season's Shows.

Another possible problem which may crop up is that the schedules of our various Shows are based on what one expects should be in flower at the time in any normal season. It is quite on the cards that this year good specimens will only reach their peak of perfection after the Show at which they would normally appear and where classes for them are provided is past. We would therefore plead with all members to do all they can even if their plants are not quite up to their usual standard to support loyally our Show secretaries and their committees in what is so often a very trying and thankless task.

One finds on looking through the publications and literature of various kindred societies that invariably all these societies find it necessary to keep up a constant effort to stimulate members into taking an active part in exhibiting at Shows. This only goes to prove that the S.R.G.C. is not unique in its need on the part of Show secretaries for unflagging exhortations to the members to rally round with their entries and give hard working office-bearers their encouragement and support at the Shows.

Mention of kindred societies brings to mind some of the recent monthly bulletins of the Canadian Primula and Alpine Society—a very lively and enthusiastic body apparently centred on the Vancouver area of British Columbia. In their bulletin for June 1962 there was a very interesting article by Mr. A. Guppy on 'Erythroniums'—interesting because it was written from a place well within the erythronium area by someone obviously very conversant with these plants in their natural habitat.

The frontispiece in last year's two *Journals* have aroused so much favourable comment that we would like to make this a regular feature in future *Journals*. Whether or not this does prove possible will depend on Club members themselves. We earnestly invite members to submit half-plate black and white photographs of their gardens, or what they regard as the most attractive part of their gardens, for reproduction in the Club *Journals*. If sufficient favourable response to this request is forthcoming we should be able to look forward to an added interest in our publications.

Once more we are very happy to be able to welcome newcomers to the list of contributors who do so much to broaden the interest of the *Journal* for their fellows. We give to them, and to all other members who have contributed to the ensuing pages, our most grateful thanks.

St. Andrews, *April* 1963.

Group Convener for Kirkcudbrightshire

FOR THE benefit of Club members in South West Scotland, we announce that the new Group Convener for Kirkcudbrightshire is Brigadier G. F. Hutchinson, Tarlillyan, Rockcliffe, Dalbeattie, Kirks.

Perth Show, 5th June, 1963

SINCE Mr. R. G. Dow, for reasons of health, was obliged to give up the Show Secretaryship for Perth, the Club has been unable to obtain a successor to him, so that for the interim the **Hon. Club Secretary, S/Ldr. J. J. Boyd-Harvey, Boonslie, Dirleton,** has agreed to act as Show Secretary for Perth. All entries should be sent to him ; and it is our earnest hope that they will be well up to time and in full strength. It is to be hoped that members, particularly local members, will rally round and do what they can to help in what cannot be other than a difficult task for S/Ldr. Boyd-Harvey.

It so happens that this year, too, the Joint Awards Committee is due to meet at Perth on the first day of the Show ; whether their visit is to be worthwhile or not will again depend on members and the plants they present.

Club Christmas Cards

THE FOUR colour plates in this *Journal*—figs. 38, 39, 40 and 41, are to be the Club Christmas Card for 1963, and it will be seen how attractive they are. They will be supplied in lots of NOT LESS THAN ONE DOZEN, either all of one kind, or mixed, as desired. It will be sufficient to give figure numbers when ordering, which should be **as soon as possible** to the HON. TREASURER : D. ELDER, Esq., JESSAMINE, KIRKHILL, PENICUIK, MIDLOTHIAN, enclosing the necessary remittance. The price, including envelopes, is 9/6 per dozen, post paid.

Costs of production and postage of the *Journal* can be offset to some extent by your active support and participation in this Christmas Card scheme. Please place your orders as EARLY as possible.

Slide Library

DR. JAMES DAVIDSON, Hon. Curator of the Club's Slide Library, has built up a collection of approximately 1000 slides which are available for the use of members who may wish to give talks on the various aspects of rock gardening. Rules governing the application for the use of slides are to be found on page 10 of the *Year Book*. It would be very interesting to know how many members really realise that this fine service is so readily available and that a list of the slides can be had on request.

It would be equally interesting to know how many members ever think to make use of the list of books available in the Club Library and listed on page 7 of the *Year Book* for 1962.

Dolomites Tour 1963

THERE MAY still be vacancies for this Tour when this *Journal* is published : it is obviously impossible to guarantee anything of this nature some weeks in advance. The details are as given in the 1963 *Year Book* (page 11), except that travel between Basle and the centre will be by private coach each way : the return journey will be by a different route ; both ways it is about 300 miles of scenic interest.

The basic cost is £59 Newcastle to Newcastle (£61 for superior rooms). Anyone interested is invited to sound their chances straight away by getting in touch with : F. CYRIL BARNES, 55 Jesmond Park West, Newcastle-upon-Tyne, 7. Telephone 81-1819.

Peebles Discussion Week-end

19th and 20th OCTOBER 1960

PEEBLES HYDRO HOTEL

PROGRAMME

Saturday 19th :

2.30 p.m.	Opening Address
2.40 p.m.	William C. Buchanan, Esq. : "Plants in my Garden"
4.00 p.m.	Tea
5.00 p.m.	Discussion on Ericaceae, opened by a short paper with slides by Miss E. M. H. King
7.00 p.m.	Dinner
8.30 p.m.	Members' Slides. Members are asked to bring 6-12 slides and talk about them, with a discussion by members present

Sunday 20th :

10.15 a.m.	E. B. Anderson, Esq. : "Wild Flowers of California and Nevada"
11.30 a.m.	Break
1.00 p.m.	Lunch
2.30 p.m.	Major-General D. M. Murray-Lyon : "My Garden in Atholl"
4.00 p.m.	Tea
5.00 p.m.	Close down

CHARGES

Full Week-end	£3 5 0
All meals (except breakfast) and Lectures ..	2 5 0
Single Lectures	0 3 6

SUNDAY MORNING BREAK

During this time it is hoped to arrange for visits to one or two local gardens.

Reservation Forms may be obtained from Mrs. C. E. Davidson, Linton Muir, West Linton, Peeblesshire, and should be completed and returned to her, with the appropriate remittance, as soon as possible.

Those who wish hotel accommodation either before or after the official week-end should book direct with the hotel management.

HENRY TOD
JAMES DAVIDSON

Seed Distribution 1962-63

ANOTHER increase in the number of members who contributed to the Distribution made it possible to offer a greater variety of seeds than ever, and there was a considerable increase in the number of orders from Overseas members. On the other hand, orders from Home members dropped slightly. About 500 orders were sent out, as well as 130 requests for surplus seed.

These numbers represent an enormous amount of work in collecting seed, and packeting and dispatching orders, and most sincere thanks are given to all who have helped with the Distribution. Willing helpers came to send out orders all through the worst of our winter weather.

Naturally there is seldom enough of the rarer seeds to satisfy all requests, but there is plenty of very good and interesting seed. It is hoped that more Home members will take advantage of this way to increase their stocks of plants and to gain the satisfaction of growing from seed plants worthy of the Show bench.

The arrangements for next season's Distribution will be the same as previous years. Seeds must reach Mrs. B. B. CORMACK, 199 St. John's Road, Corstorphine, Edinburgh, 12, **not later than 1st November 1963.** Full details will be given in the September *Journal.*

B. B. C.

Hamburg International Horticultural Exhibition

MANY OF our members must already be aware that an International Horticultural Exhibition is to be held this year at Hamburg, commencing on 26th April and continuing to 15th October. There may at the

same time be members who have not happened to see notices regarding this exhibition in our various horticultural journals and many more may not be conversant with the actual details of the exhibition itself. This is the first horticultural exhibition to be registered with the Bureau International des Expositions in Paris, and with fifty countries taking part it promises to be a most spectacular and interesting event.

The site of the exhibition covers an area of 760,000 square yards, with 27,000 square yards under cover in exhibition halls. The planting started two years ago of such items as herbaceous and woody plants, bulbs, etc. ; and the section on the theme—"Home Gardens of the World," typifying the garden styles of eighteen countries, was nearing completion before the end of 1962. The Royal Horticultural Society are showing a large display in the form of a 'Woodland Garden' which will include many rare species of rhododendrons, azaleas, and other perennials including many novelties still almost unknown on the continent ; while Japan will show many of those 'Bonsai' trees in miniature gardens. Japan's wonderful gardeners have long been known for their unrivalled skill and patience in growing and training these 'Bonsai' trees, for which in recent years there has been a great revival of interest.

Throughout the duration of the exhibition six displays will be held in the halls, the first from the opening day on 26th April till 1st May, the second from 14th to 16th June, the third from 19th to 21st July (roses), the fourth from 1st to 4th August, the fifth from 22nd to 25th August (during the International Horticultural Congress), and the sixth and last from 10th to 13th October.

The industrial show running throughout the exhibition—"Technique in Horticulture"—with its ranges of glasshouses, all with automatically controlled heating, ventilation, watering and shading, should be of particular interest to all engaged in any form of gardening, whether amateur or professional. It presents a unique survey of the present state of horticultural technique and demonstrates the great advances made in post-war years.

The Seed Distributor

AN APPRECIATION

I WONDER how many of us, when we open our packets of seed, pause to think what an enormous amount of work has been done before it arrives with the postman, all so neatly packeted, and bearing the words "with the compliments of the Seed Director" ?

I need not go into details to emphasize what a mammoth task this is : upward of 5000 packets are sent out all over the world, and I am sure we all wish to thank Mrs. Cormack for this wonderful service, which enables so many people to grow plants in many cases unobtainable elsewhere.

ANON.

Obituary

(Contributed)

THERE WILL be many hundreds, if not thousands, of horticulturalists —not only members of the Club—who will feel the loss of Charles McDermott as a personal one. The University Botanic Garden at St. Andrews has long been noted for the friendly welcome it always gives to gardeners, whether expert or novice, whether expected or unannounced. An important part of that welcome was the unfeigned warmth of the reception of the resident maestro of the potting bench whose quarters it is necessary to pass en route to the first floor curatorial heights. A conversation about plants broken by the imminent necessity to catch a train was always resumed, be it a week or six months later, as if nothing had intervened. Of his knowledge he was unsparing, whether in the way of advice or in judging or lecturing.

He was perhaps fortunate in finding a congenial milieu in St. Andrews : the local Group of the Club is outstanding in both its friendliness and blunt (or barbed) criticism. This he must have found congenial, and indeed it is so true to his character that an outsider must feel his influence still. Completely without malice, the only thing he enjoyed more than one of his own witty sallies was a retort which left him (momentarily) without a reply.

To belong to a Club is an exercise in faith of one's ability to get on with others : many of us in frustration or irritation are apt to utter an unkind word about others : this was never Charles McDermott's failing, for he had the uncanny knack of converting the foible of some personality who had raised some backs into a diverting story, the inevitable laugh of which dissolved the animosity of years.

There will be many in the Club who look back with pleasure on a more or less brief acquaintance with the stocky figure always immaculately groomed even though performing the dirtiest of gardening operations ; there will be a large number who feel that a void has opened in their lives.

It is a sad reflection that to comfort Mrs. McDermott and the children in their loss we can proffer few words : to mourn a friend is one thing, to mourn a husband and father is a very much more intimate matter. However inadequate they may be, the Club tenders its heartfelt condolences and though rejoicing that Charles McDermott was for so long a member who gave so much to the Club, grieves that he was not spared to give more of the much that was in him to his family, his friends, the Club, and to the world in general.

F. C. B.

CLARK MEMORIAL LECTURE

Plant-Hunting in Iran and Turkey, 1962

By PAUL FURSE, F.L.S.

My wife and I and our beloved Land Rover, The Rose of Persia, set off from Kent this year in February to collect in Turkey and Iran ; we were supported by the Royal Horticultural Society for whom we collected plants and seeds, by the Royal Botanical Gardens, Kew, for whom we collected herbarium specimens, and by the Percy Sladen Trust. Iran has never been thoroughly botanised, and at the present moment new Floras are being written for Turkey, for Iraq, and for Iran and Afghanistan, so that material is badly wanted.

We had to start early to catch the Spring in the southern ranges ; we expected the winter drive to be tough, and it certainly was! For 1900 miles we rode wild storms across Europe and Anatolia with continuous ice, snow and blizzard ; we slept inside The Rose in the drifts, and lived happily on tea and self-heating soups and cold food.

After three weeks' driving we entered Iran from Baghdad, and our first foray was on Noa Kuh, which is a mountain from which a lot of interesting plants have been recorded. It was very early Spring with snow lying down to about 7000 feet, but already a little white or ice-blue Juno Iris was in flower before the leaves showed ; perhaps a form of *I. persica*, but without blotch or veining. Later we found it in several places, with colour varying through to mauve-blue. *Crocus aerius* was flowering in the oak scrub, and *Anemone coronaria* up among the rocks where *Fritillaria persica* was already in bud.

On steep slopes, often among the roots of scrub, there were large clumps of bulbs of *Ungernia*, an amaryllis whose leaves look like spiralled daffodil leaves.

Near Kermanshah we found *Iris bakeriana*, but only in very small quantity ; it was a form with large pale flowers, the falls blotched with violet velvet, and with a yellow crest. It is interesting that a couple of hundred miles to the north-west we found an *Iris reticulata* with a very similar pale flower. This is probably the same as one from still further north which Patrick Synge and I collected in 1960 and which flowered at Wisley.

Widespread over the western areas was a bunch-flowered *Colchicum*, probably *C. szovitsii* (fig. 42), with about six pink or white flowers, often in quite large quantities, and usually where the ground was sodden and sticky from the melting snow.

We pushed through to Teheran to get our "Security Permits" and to make our number with the Government, and then hurried over the snowy Elburz range to see the early Spring in the Caspian forests. These were bare and black, their clearings white with plum blossom ; Cyclamens were over, and a nice little white *Allium* was in flower which grew with a handsome *Scilla hohenacheri*. But far the most

exciting was the glorious yellow *Dionysia* (?) *aretioides*, which was common on the cliffs of the Chalus Gorge ; it grows in sun or shade, always on vertical or overhung places, and usually out of reach, and in the sun it makes tidy cushions while in shade and where it gets spray from the stream it hangs in mats. It grows between 2500 and 4000 feet on the Caspian side, where it is wet with cloud and rain for most of the year. In July we had to clamber to collect its seed, and it is nice to hear that this is already germinating.

Next we headed for the south, down through the lovely Khorramabad Gorge with its sides deep crimson-purple with Judas trees in full flower, and with kingfishers in their branches. On cliff ledges several hundred feet above there was a large and exquisite Juno Iris, about fifteen inches high, white with a faint blue tint and yellow crest. Below the cliffs were anemones, crimson *Ranunculus asiaticus*, and aristolochias. After the long gorge we were close to the Persian Gulf and it was already hot, with sheets of bright red *Gladiolus segetum* flowering in the corn, and in the hills we began to see scarlet *Tulipa systola* of the *oculus-solis* group.

On this stage of the journey we met the Khashgai tribe going up to summer pastures ; very picturesque, mile after mile of them with their great herds of sheep and goats, donkeys, horses, cows and camels. But it's horrifying when you think of all the plants they are going to eat ! The country is desperately over-grazed and the ecology is a precarious balance between the ingenuity of the plants in devising ways of escape and the determined voracity of the herds. The tribe was going our way, past Darius's old capital of Persepolis and up past Cyrus's older city of Pasargade.

When we re-crossed the Zagros down south near Shiraz we were only about 300 miles clear of the tropics, but it was high and cool. The Zagros is a vast range, made up of rocky ridges hundreds of miles long, all parallel and separated by flat valleys ; the rainfall is rather small and often the mountains and valleys are bare and barren. The only trees are along the watercourses (which are usually dry), and in places on the western slopes.

In this southern part there are a number of dionysias, of which we found one—*D.* ? *diapensifolia* (fig. 43)—growing on arid limestone in full sun, and usually on sloping or flat rocks and slabs instead of cliffs. It made small cushions entirely covered with deep yellow flowers like small primroses. Dionysias are lovely and exciting plants, but whereas we found a total of four known species, in the audience today are Ian Hedge of the Edinburgh Botanic Garden and Per Wendelbo from Bergen, who together this year made a journey in Afghanistan and collected four entirely new species of Dionysia ; that's real collecting !

On the high ridges with the dionysia, where wild "Ibex" replace the goats, there was a lovely little white tulip with yellow centre which is a form of *T. polychroma*, though its narrow shape is more like a Clusianae. The common tulip here was a large-flowered but low form

of the *oculus-solis* group, *T. stapfii*; it had pointed segments and broad undulate leaves, and the blotch was usually dark purple with no yellow margin. Their bulbs had thick woolly tunics, and when these were peeled off they made lovely soft packing material for Juno Irises.

We went east over part of the desert to Schir Kuh, the Lion Mountain, which is the only place where the pink or white *Dionysia ianthina* and *D. curviflora* have ever been found; this was collected by E. K. Balls in the thirties, and still grows well in pots here. It grows on vertical cliff-faces, often overhung and almost always in shade, among the most unpromising barren-looking mountains.

Isfahan was a lovely change, with its beautiful buildings and fascinating markets, and we would have needed weeks to take it all in; but Spring was hurrying northwards and we had to keep pace with it. The winter and Spring had so far been almost rainless, the country was parched, and the tiled domes of Isfahan were dusty and the colours softened.

The northern end of the Zagros is exciting, with very high snowy mountains and more green, and it had wonderful flowers in greater quantities than we were used to. From the valleys you look up to emerald slopes which seem out of place in this bare, wild country; but when you climb to them they are not lovely turf starred with gentians, but deep beds of onion leaves so coarse and musty that even the goats leave them uneaten, and so they provide shelter for tulips and fritillaries. A thrilling sight was Crown Imperials growing in masses, all coppery crimson, and with them four-foot almond bushes covered with silvery pink blossom.

Fritillaria persica also grew here, a graceful pinkish form with widely campanulate flowers. We found this species in three areas, with considerable variation of colour, shape of flower and capsule, and rigidity of stem. Under these tall swaying fritillaries there was another, the small blackish *F.* "zagrica," which is probably a form of *F. armena*, though its narrow curled leaves are distinctive. We found this plant in scattered areas throughout the Zagros, and possibly later in Kurdistan, but when in capsule it is indistinguishable from *F. kurdica*.

Another marvellous plant in this part was *Anemone biflora*, just a couple of inches high, with large flowers of white, pink, old rose, or vivid magenta-red and crimson. We only found it over a smallish area, but it would be a wonderful addition to our gardens if it survives. There was another exciting species of anemone over a wider stretch of the Zagros, with drooping bells which do not open fully, in shades of crimson, bronze and gold.

We collected quite a lot of *Fritillaria* (*Rhinopetalum*) *gibbosa*, both bulbs and seeds, but we only found a single flower of it; in early Spring we had marked two slopes where it grew together with the small ice-blue Juno Iris, and we returned to them when the fritillaries should have been in flower and the Juno bulbs in good condition for

collecting ; but in both places we were defeated by the wild pigs, who dug every bulb ahead of us.

High on a rocky ridge at about 10,000 feet we found *Tulipa violacea* ssp. *pallida*, which looked very like *T. clusiana* externally, but had dark anthers and a yellow base to all segments ; its leaves had been well eaten by tortoises.

Now the drought was broken by weeks of violent storms ; the passes and slopes were under snow again, and the valleys under water ; villages were swept away and the roads eroded and collapsed under lorries. We had plenty of excitement, including a flash flood in a dry water-course from which we just managed to scramble in time. But at least the drought was finished, and we had a splendid summer for flowers.

The worst danger is that if water gets into the precious boxes of dried specimens they get dreadful attacks of mould, a rainbow of red and yellow and green and black horror. So we found our way back to Teheran to dry out, to get the specimens into order, and to send a large consigment of bulbs home by air ; some friends, Mr. and Mrs. L. H. Baxter, let us use their house to dump our gear, and didn't mind us festooning the balconies with drying presses and hundreds of sheets of wet paper, and their help let us keep the collection in fairly good order and was absolutely invaluable.

While waiting for things to dry, and for the roads to be cleared up, we managed to explore some of the little Elburz valleys. This range runs along the southern shore of the Caspian and is very high and steep ; its northern slopes get the Caspian clouds and rain and are damp all the year round, while the tops are bare crumbling volcanic rock and the southern slopes face the central desert and are hot and dry. But in Spring the valleys were green and lush, a wonderful change after the bare Zagros.

Tulipa montana is very common all along the range in shades of crimson, scarlet and flame, and with pale yellow forms as well which grow either in separate colonies or mixed with the red ; in some places a pink tulip grew with them, probably a form of *T. polychroma*. There was one valley with a lot of the very elegant *Tulipa sylvestris* in it, a beautiful sight among blackthorn and scrub. The pale olive-green form of *Iris caucasica* which grows in the Elburz was over, but we were able to collect its bulbs.

Next we set out for Kurdistan, starting in the north end of the Zagros again to tackle ''unfinished business' which we had had to abandon when we were swept out by the storms. From then onwards we were mostly in volcanic rock areas, but actually the question of lime or acid seemed to have much less effect on the ecology than whether the soil was open or caked, how stony it was, and the amount of water. Most of all, how badly grazed the place might be.

Shutuhrunkuh was one of the splendid mountains, and many interesting plants have been reported from here, where the bears are said to be ''as large as horses, and as yellow as the sun.'' Rivers

were still in flood and unfordable, and we could not search the mountain properly ; it was from here that the almost mythical *Fritillaria chlorantha* was collected and described, and the only specimen so far as I know was lodged in the Berlin museum, where I believe it was blitzed. Alas ! we did not find it, nor the perhaps equally scarce *F. straussii* or *F. reuteri.*

The first of the Oncocyclus Irises (fig. 48) which we found in flower was near here, though we had collected several batches of non-flowering plants further south ; this one was a gem, only 6 or 8 inches tall and making good large clumps covered with flowers, and growing sometimes in masses. Both standards and falls were greyish-white, closely lined with purple-maroon, rather on the lines of a dwarf *I. susiana.*

On granite boulders up high and in full sun we found our fourth dionysia (*D.* (?) *caespitosa*) ; it made very small hard cushions in the rock where one could see no crevice at all, and covered itself with yellow flowers which looked curiously like a yellow Jasmine. Plants often set out to deceive collectors, and on the same granite rocks there were exactly similar yellow cushions which turned out to be a particularly lovely draba.

Roads were still a bit unpleasant, with landslides and erosion, and we got jammed on the Razan Pass for a little ; to us this was "The Pass Where No Bulb Blooms," because although during two long forays we found a lot of bulbs of fritillary and tulip, they were all small one-leaf bulbs and we never found a single one of flowering size. This was so unusual that we still faintly hope that when the small fritillary bulbs grow up at Wisley they may turn out to be *F. straussii* instead of the more probable and common *F. zagrica* !

The next stretch, from Khorramabad to Kermanshah, was curious ; it began with swarms of locusts and went on to swarms of gypsies who were extremely picturesque, but awkward neighbours in the dark.

Our next big excitement was Kuh Alwend, another legendary mountain for flowers, which E. K. Balls has described very well. It is hard granite which weathers down into a delicious coarse grit like "Cornish sand" ; this is very unlike the fine caking dust which comes from the more usual "compressed-volcanic-ash" type of rock out there ; it was splendid for plants, and on the high ridges close to the snow were lovely little rock gardens with *Tulipa montana,* blue and purple Borages, and yellow Crucifers. We searched all day for *Fritillaria olivieri* which comes from here and is said to grow close to streams and waterfalls ; at last, when we were forced to plunge across a flooded stream which had swept away the track, and when we had wiped out our eyes and wrung out our clothes, we found that we had blundered onto a slope waving with them, a superb sight. Two or three different plants have been grown under this name during the last thirty years, and it is nice to get a genuine re-collection from the original locality.

After that we were in Kurdistan, with rolling foothills piling up to the snowy wall of the Kurdish range between Iran and Iraq ; wide spaces, soft colouring, gorgeous horsemen, and beautiful flowers on

the hills and in the fallows, which were less heavily grazed than in the south. It was late Spring now, and though most of the tulips and all the fritillaries were over, there were masses of other plants coming out.

The fallows had the original *Rosa persica*, now called *Hulthemia berberidifolia* ; it is only a foot high, very spiny, with yellow flowers blotched with red like a cistus. Its roots run far and wide and seem ineradicable, but make good fuel in a treeless land. On the same fallows were pink alliums in flower, and in seed a Giant Juno Iris, two unrecognisable fritillaries, and several tulips of the *Eichleres*, *Oculus-solis* and *violacea* groups. The great feature, however, were the muscaris, using the term broadly to include Bellevalia and Leopoldia ; these were of many sorts, in great numbers, and often of extremely unusual and interesting form. The commonest was probably a form of *M. caucasicum* which we found throughout Iran ; here it grew about 15 inches tall, with a long raceme of olive-green and purple closed-mouth flowers, and an amethyst top-knot of infertile flowers.

Similar in appearance to this was another, which differed by having wide-open flowers, and it shook out olive pollen—or possibly smut—by the sackful.

Our favourite, however, was one which we called the "Blue-hot Poker" ; it grew up to three feet tall, with an immense spike of green and purple flowers, and had pink onion-sized bulbs. This is another of the plants which we would dearly love to see commonly in British gardens.

With all this wealth and confusion our morale began to crumble, and the last blow below the belt was a group of gargantuan Muscaris ; the original bulb had split into three turnips, each had three stems, each three feet high ; the pedicels were six inches long and the whole mass was a frightening olive-purple tangle three feet high and four feet across.

Then we had a delightful spring-marsh community to enjoy, beginning with a little meadow full of *Gentiana olivieri* ; this grows up to 12 inches tall, with several sapphire blue flowers with a shade of violet in them, a white throat, and pointed segments. It is a very attractive plant and we brought back a good lot of seed. Then in the grassy marsh there were storks walking among pink *Primula auriculata* to hunt for frogs ; this is a strong-growing Farinosae primula, with tight heads of mauve-pink flowers, and it grows in large quantities wherever there are suitable marshy fields.

Others of the marsh flowers were the tall sulphur yellow *Pedicularis comosa*, *Orchis laxiflora* and one close to *O. dactylorrhiza*, slender crimson *Gladiolus persicus*, *Fritillaria assyriaca* in large quantities with capsules, and tall shimmering sky-blue *Scilla persica*.

On rocky slopes we began to find "spiny horrors (figs. 44 and 45), which are frequent throughout the Iranian and Turkish ranges ; they are of many families, often with exquisite pea-flowers, and the plant is a porcupine-cushion for protection against goats and collectors ; the

spines can be strong enough to puncture Rose's thick tyres. We also began to find *Dianthus* growing on stony slopes or in rock crevices ; they were often large bushy clumps of hundreds of 8 inch stems, each with a single pink flower about half an inch across, and making a lovely sight.

Then we plunged back into a plethora of dwarf Oncocyclus Irises, about 6 inches tall ; they were so rich and varied that it was like having too many chocolates ! We learnt quickly to treat them with respect, because there were often four or five small bees underneath the styles, who hated being ejected. The first was *Iris meda*, the "Medes and Persians" Iris, though to us it was always "Honey-gold," It is a lovely plant, pale yellow, veined and stained bronzey to varying extents, and with a purple blotch on the falls. The latter are small, and the standards are very tall.

Next, over about thirty miles there was a confusion of two species, small and varied ; each could be any shade of yellow, orange, brown, mauve, or grey, with varying veins or spots, and a wide range of signal-blotches. The differentiating feature between the two was the beard ; one had the usual small diffuse beard, though it might be white, blue, yellow or orange ; the other may be *I. polakii*, and had a neat patch of black moleskin stuck inside the haft and in the throat, a solid mat of minute hairs. This is rather like *I. paradoxa's* moleskin falls, but the shape is quite different. As we went north into Azerbaijan "Moleskin" ceased to be variable, and was always a lovely deep satin-violet. It looked as though in the southern limit of its range it may possibly have formed a hybrid swarm with another Oncocyclus, possibly *I. meda*. We look forward with great interest to the determination of these Irises (fig. 46).

After that we found a delicate ash-grey Oncocyclus, sometimes in big clumps, with lanceolate segments veined all over with dark purple. The clearest feature was a very small and neat signal-blotch of purplish-brown on the falls ; these appear to be *I. acutiloba* (fig. 47). We found them over a wide range, including both the great mountains Kuh i Sahand and Kuh i Savalon.

It was on the former that we found a very nice little fritillary, which has suffered under four godfathers who christened it "*grossheimiana*," "*kurdica*," "*foliosa*" and "*karadaghensis*" ; it grows about 6 in. tall with one or two flowers of dark purplish-brown merging into yellow at the tips of the segments.

We plunged down 5000 ft. through forest to the Caspian, a charming little road along the Russian barbed wire fence ; we saw a wild black pig infiltrating the border, and The Rose picked up a puncture opposite a Russian frontier post, so that we suspected sabotage ! The forest is thick all along the north side of the range, with big trees and a mass of medium-tall species such as Parrotia, Carpinus and Crataegus. We slept close to the shore on sandy flats overgrown with acres of Pomegranate scrub in full flower, before climbing up into the central Elburz.

Photo—James Aitken

Fig. 38—Daphne striata and Gentiana acaulis (see page 209)

Photo—James Aitken

Fig. 39—Geum reptans (see page 209)

It was early summer now and the harvest was being cut ; there are many wild pig here, so that the cornstacks are raised off the ground, and are built in trees which are pruned into shapes like comfy armchairs to receive them. On the high tops *Iris denavendica* was in flower, 10 ins. tall, with large shimmery violet flowers ; the last of *Fritillaria crassifolia* and *Tulipa humilis* were flowering, and lower down were banks of Oriental poppies and *Eremurus bungei.*

The bare southern slopes were dry and hot in July, with many "spiny horrors" ; the acanthphyllums were lovely, entirely covered with a froth of pinky-white flowers. The battle of wits between animals and plants went on ; the goats had learnt that they could vacuum-clean the flowers off the cushions without pricking their tongues, and the plants had organised so that if this happened the seed remained buried in the prickly calyx after the petals had been guzzled.

There are rather few interesting saxatile plants in the Elburz, other than the dionysia ; but on one cliff at 10,000 ft., facing north, we found plants like a white potentilla hugging the vertical rock ; dark glossy leaves and glistening flowers, in irregular cushions a foot or more across. On examination they proved to be shrubby and very old, the branches thick and rugged, eroded by weather and looking like fossil bones. Near it, still on the vertical cliff face, was beautiful saxatile *Viola spathulata* ; clumps of softly hairy oblong leaves and soft violet flowers with a dark throat and white hairy whiskers.

After that we sent off our last consignment by air and headed homewards ; the first stretch was a thousand miles through Kurdistan to collect seeds and well-ripened bulbs in the places where we had already been, and to explore some new places. It was hot burnt summer at the end of July, the harvest being brought in by donkeys and thrashed by oxen, and there were few flowers except for tall salvias and Compositae. The loveliest plant was *Trichodesma molle*, a prostrate borage with large opalescent blue flowers and semi-prostrate mats of woolly grey leaves.

A few miles east of the Iraq frontier you get into scrub-oak woods, and it was here one evening while we were looking for our bedroom that my wife said "look at that enormous dog over there !" ; but it was a dirty great wolf out looking for his supper. There was plenty of room for both of us. Rose chose a nice site among the trees, with a nightjar's nest beside her, and in the morning we found the ripe capsules of a very exciting fritillary within a couple of feet of her wheels, and a pink acanthus about 8 ins. tall. On the open stony slopes above we found an amaryllis in flower, the same probably as the one we found in leaf during our first walk in Iran in March. It flowered without leaves, about 10 ins. tall, with a dozen pinkish-yellow flowers which almost matched the earth ; probably it is *Ungernia flava.*

We crossed into Turkey close to lovely Ararat, in soft evening light ; along that stretch of road where you cannot diverge from the main road we met a number of Land Rovers with student and other parties, and there was one very nice all-Scots party heading eastward.

In high Armenia it was cooler and greener, with more flowers ; there were beautiful cushions of acantholimons in varying shades of pink and red, usually very prickly, though one or two were softer. In the high hay-fields the most exciting flower was a yellow gentian like a *G. septemfida* ; sometimes erect, sometimes procumbent, sometimes soft sulphur, sometimes streaked with purplish externally.

Each evening a convoy of ox-carts would come up, their solid wooden wheels wailing a musical accompaniment to their drivers' unearthly songs. They would load with hay under the full moon, sleep a couple of hours, and start down again to their village at dawn.

The Araxes valley was full of wildfowl calling ; Ruddy Shelduck growling and croaking, and a high-pitched cry which we thought must have been from the Cranes whom we had been seeing. The low country was burnt orange-brown, and *Iris iberica* and *I. sari* were clumps of withered crisps an inch high, but a just-deeper orange and they could still be found.

In the coastal ranges we collected another fritillary which we hope will turn out to be *F. latifolia* var. *nobilis*, and then we were down to the Black Sea at Trebizond, the last capital of the Bysantine Empire.

The Black Sea slopes are soaked in cloud and rain and the very steep mountains are heavily forested with beech and firs and pines, and the glades are rich with flowers, including *Lilium szovitsianum*, which was in seed ; under the spruce trees in dense shade we found the last withering remains of cyclamen with unmarbled leaves. A dark mauve form of *Campanula lactiflora* grew in masses, mixed with inulas and *Geranium psilostemon*, and there were tall blue willow gentians just like Switzerland. The flora of this corner of the Black Sea has curious links with the Balkans, the Alps and the Pyrenees. For instance, *Gentiana pyrenaica* and *Geranium subcaulescens* are represented by closely related sub-species or forms on the three areas.

There is a lovely steep little road over the Soganli Pass east of Trebizond, which scrambles up nearly 9000 feet in about 10 miles as the Lammergeier flies, and we slept in a ravine and a blanket of cloud, with indigo swertias and orange impatiens round us. The tops are rolling grass country above tree-level, half hay and half-grazed turf ; the hay is lovely with flowers, though these were going over now and were being scythed. Several species of campanulas, *Gentiana septemfida*, deep pink astrantias and bistort, and many more.

The only known species of yellow autumn-crocuses come from the grazed slopes up here ; *C. scharojani* and *lazicus*, possibly two forms of a single species (fig. 49). There is also the curious white *C. vallicola*, which has close affinities to *scharojani* in its cuspidate apices and leaf shape. It was a late season and we knew that we were too early and could not stay longer, but we searched for days ; on our last possible day, our last walk on the tops, the first clumps of *C. lazicus* and the very first *vallicola* appeared. When we "dug blind" round them we were able to collect a lot whose buds had not reached the

surface ; among them was a nice bonus of spring-flowered crocus corms, and a very few tubes of the minute cyclamen which the Russians call *C. parviflora.*

Colchicum bornmulleri or *speciosum* was coming out now, and in the western beech woods we managed to find a lot of *Cyclamen* "*ibericum*" or something of the sort just coming up. We had a new competitor here, a bear who had dug lovely yard-long scrapes in the leaf-mould, each claw showing clearly.

After 17,000 miles and seven months we reached Wisley to unload our last consignment, and only then heard that we had escaped the ghastly earthquakes in Iran by just two weeks.

A Quarry Garden

By SHEILA MAULE

As THE heading suggests, we live in an old whinstone quarry, the working of which was given up about fifty years ago. The quarry is ringed by cliffs ranging from about twenty to fifty feet. The area is five acres, of which one acre is pond, part of the old workings fed by springs and water from the higher land, and fairly deep ; it drains away under the main road to the Water of Leith in the valley below. The quarry bottom is like road metal, small stones and areas of solid rock. Soil is a problem ; there is none in the quarry, so it has all to be imported. In spite of this a natural cover has grown up over the years, chiefly whins and coarse grass, but there are some trees, mostly stunted—ash, hawthorn, willow and one or two sycamores—also a few conifers.

When we came here fifteen years ago there was no garden to speak of and the former owner kept a few geese to keep down the grass, so we started from scratch. The biggest snag is that the drainage is bad, so the first rock gardens we made were of the "billiard table" type to give the necessary drainage. We were amazed how much stone was needed to build the walls, and unfortunately the jagged lumps of stone at hand in the quarry were unsuited to our unskilled hands, although quantities of it were used for later work. Fortunately there was a good supply of stones near at hand in disused and derelict walls, which we hauled in the car and the wheelbarrow.

We are lucky to have a large and irregular mound in a good position in the garden, made when the quarry was being worked. The previous owner had an air raid shelter built in to this. This slight "eminence" seemed to us to be the best part to make into the main part of the rock garden ; it is composed of quarry refuse, by which I mean sub-soil and stones of all sizes, but mainly smallish stuff. In builder's jargon this site seemed to be "ripe for development." So one Easter holiday we started. The biggest problem was to disguise the air raid shelter, which has a large slab of concrete on top and a shaft down in to it. Short of getting a demolition squad in to blow it up, we had to disguise it as best we could. We blocked up the entrance door and off we started on the nettles, docks, whins and other weeds.

The work went on well : we built up walls, made paths and steps, levelled and terraced, then barrowed in the soil, always the hardest and least interesting part of the work. We covered the top of the shaft with wire netting to prevent anything falling in, built a wall round the hideous concrete "chimney," and in due course planted a *Clematis tangutica* and Virginia creeper to grow over and cover it, and plants in the wall. The concrete slab we had to incorporate as best we could, and do not now notice it unduly, as it has mellowed with age and weather.

The first part of the rock garden we planted with the easier plants to give interest and colour—helianthemums, iberis, gentians, spring and autumn varieties, pulsatilla, dwarf brooms, and so on ; as time went on we became more ambitious and made a peat wall at the bottom of the mound, facing north-east, and put in it, among other things, some of the smaller rhododendrons, *Salix wehrhahnii*, which has grown into a nice bush with beautiful silver catkins in spring, and the most lovely lemon yellow leaves in autumn. We have also in this border some orchis of various kinds, mostly wild ones we have brought in from different places, some primulas, *Gentiana sino-ornata*, *Iris innominata*, ferns and other shade-loving plants.

At the side of one of the paths leading up the mound we made a saxifrage "ledge," with a fair selection of different kinds, except "mossies." On top we made two borders (I call them this for want of a better word), one a scree mixture, very poor soil full of grit from the roadside mixed with leafmould from under a nearby oak tree. This has proved surprisingly successful, growing a number of plants well. There are some of the *daphnes* here, *Dd. retusa*, *collina* and *cneorum*. *Campanula allionii* roams about, all mixed up with *Stachys lavandulifolia*, and it flowers well, *Douglasia laevigata* and *D. vitialiana*, *Crepis incana* and *Boykinia jamesii* which flowered last year for the first time. A good form of *Syringa palibiniana* also grows here, bought at Chelsea years ago and now not exceeding two feet and very free flowering, due maybe to the spartan diet. The other bed is rather shady, facing west, and in it grow some of the nicer gentians, *farreri*, *sino-ornata alba*, not really so nice as the blue, and some hybrids. *Gentiana sino-ornata* grows in different parts of the garden and does well here.

As the years went on we took in more and more ground ; two years ago we made another peat bed with dwarf rhododendrons, phyllodoce, cassiope, *Jefferson dubia*, *Arcteria nana*, *Leiophyllum buxifolium*, and the usual peat lovers. Also made at this time was a small built-up bed for species bulbs, with extra rapid drainage, and last year an iris bed was made, chiefly for the peat-loving kinds from western America, *Ii. innominata*, *tenax*, *gormanii* and the like.

Our method of gardening is rather unorthodox, chiefly because our problems are rather different from the usual ones. When we made a scree bed, instead of digging down we made a "fender" of large stones and filled it up with a scree mixture. This arrangement seems to be quite successful, although it has only been made for two years, and the plants seem to like it. Excavating and barrowing is very hard work, and over the years we have learnt how to save work as much as possible. Several of the nicer campanulas grow in the scree, *Cc. aucheri*, *tridentata*, *bellidifolia*, and a great favourite of mine—a Peter Davis species, white and fairy-like. Also in the scree there are the smaller phlox, *Pp. caespitosa*, *hoodii*, *diffusa* and the like, the cushion dianthus such as *D. microlepsis*, *myrtinervis*, *Celmisia argentea*, *Convolvulus nitidus*, *Euryops evansii*, and *Myosotis explanata*.

Under a hawthorn tree we planted a group of cyclamen, the usual "easy" kinds, *Cc. neapolitanum, europeum* and *repandum*. We got, among others, some dry imported corms and they have been slow to establish, but each year there are more leaves and flowers. When they don't grow as they ought, I get anxiety neurosis and wonder if I have planted the corms upside down.

Just before I finish I should like to say something about a north facing border we made recently. It is right against the north cliff, actually part of it faces slightly north-east and so gets the morning sun. The front is built up with peat blocks, so nice and easy to use after heaving heavy stones, then filled up with a mixture of old leaves (not real leaf-mould, but well decayed), what soil we could scrape up, and plenty of peat. The site is good because at that point the quarry walls have deep vertical grooves, deeper and wider than cracks. We wedged peat blocks into them, filled in the back with good humusy soil, and planted them with ramondas, *Pp. bhutanica, gracilipes aureata* form, and haberleas. There were also two huge boulders jutting out like buttresses, with a space between them, and on top of one we planted a *Cypripedium calceolus*. An old wall provided a supply of lime rubble, and as I collected it with a brush the passers-by stared at me. One woman said to me, "quite right to get all you can for nothing the way rates are going up"! The rubble was mixed with leaf-mould and the cypripedium planted, and I hope it likes the mixture and flourishes.

There are some nice things in this border, *Glaucidium palmatum, Primula griffithi* hybrids, dodecatheon, trillium, which hasn't yet flowered, *Lilium pyrenaicum*, which we got in a ruined cottage garden in the Highlands, *Helleborus orientalis*, the parent plant which came from my grandfather's garden in East Lothian.

As I write I look out on an Arctic landscape, snow at least a foot deep masks the whole garden. The snow has lain in varying depths for over ten weeks, and we have been snowed in on one occasion. However, I have a small greenhouse, grandly called the alpine house, and already spring has come there. *Pp. edgworthii*, 'Pandora,' *bhutanica* and *edgeworthii alba* are all in flower, also *Ranunculus calandrinoides*, bulbs of various kinds, *Lithospermum rosmarinifolium*, which has been in flower since November, with beautiful blue flowers, and other things just about to flower, so perhaps we ought not to grumble, but hope that the end of winter is really in sight.

Some Androsaces

By D. M. MURRAY-LYON

As our Editor pointed out to me some time ago, the genus Androsace has been somewhat neglected in our *Journal*. Considering what a large number of species there are, and what a lot of lovely plants they contain, this is rather surprising. At the instigation of the Editor, I am therefore going to attempt to rectify this omission, to at least a small extent. Species vary from the very easy to the very difficult. Some can be grown by the veriest novice, and some will test the skill of the most experienced plantsman.

Being no botanist, and an amateur of limited experience, I am not qualified to write an authoritative article on Androsaces in general. I shall only try to describe the species which I grow myself, and to explain how I grow them here in Perthshire 600 feet above sea level. As I do not have an alpine house, all my plants are grown in the open, and without glass or other artificial winter protection, with the exception of a few grown in pots in a cold frame.

The genus Androsace belongs to the natural order Primulaceae. The genus has been divided into four sections, now reduced by botanists to three.

When one hears the word Androsace, the word Aretian seems automatically to come to mind. At one time these Aretian Androsaces were allotted to a section of their own, but now they are included in the section chamaejasme. The members of the sub-section Aretia mostly carry their flowers one to a stem, the rest of the section chamaejasme are cluster heads.

These two old sections tend to run into each other, hence the dropping of Aretia as a separate section and its relegation to the status of sub-section. The greater number of Androsaces in cultivation belong to the Chamaejasme section, and are to be found in northern regions of both the old and the new worlds.

Section Pseudo-primula contains the species most nearly akin to their cousins the primulas. They mostly come from the mountains of India, Tibet and Western China. On the whole they are of more loose and softer growth than are species of the Chamaejasme section.

The third section is Andraspis, and its members mostly come from comparatively low altitudes. They grow in rather dry, poor sandy soil, and they are largely annual or biennial, or at least short-lived.

Cultivation :

Most of the species of the Chamaejasme section are best grown in screes or walls in full sun. The more difficult ones, mostly high alpine Aretians with hairy foliage, appreciate some cover from winter rains. This may consist of an overhanging rock, or, if you can bear it, a piece of glass. Alternatively, of course, you may grow them in pots in frame and alpine house.

The compost should be very well drained, with up to 50% sand and grit. The other 50% could be roughly equal parts loam and leaf-mould or peat. Unless otherwise stated, it may be taken that they are indifferent to lime.

Section pseudo-primula species like a cooler, richer mixture with more humus in it. It must, however, be well-drained, in short, the kind of soil dwarf rhododendrons enjoy.

Andraspis, the last section, requires scree conditions in full sun. Under these conditions they will seed themselves freely.

I shall take the Chamaejasme section first, starting with the most easily grown species and working up to the more difficult.

Androsace carnea has a wide distribution, being found from the Pyrenees to the Tyrol. As might be expected of a plant with such a wide distribution, it varies quite a lot. It grows in small tight rosettes about three inches across. The dark green leaves are narrow, more or less upright, and slightly serrated. The flowers, pink or rose-pink, with a yellow eye, are carried in small clusters clear of the leaves on three-inch stems. It is charming and easy, seeding itself quite freely in scree. There is also a white form which is rather rare.

A. carnea var. *brigantiaca* is confined to the Cottian Alps. The rosette is slightly more spreading and the flower scapes a little taller. Flowers may be either pink or white, but white seems to be the more common in cultivation. Personally, I do not remember ever having seen the pink-flowered form.

A. carnea var. *halleri* has longer leaves recurved at the tips, and less upright than those of the type. They are, too, a deeper green and more shiny. The flowers are perhaps rather a deeper pink. This variety is sufficiently different to have been at one time considered a species in its own right, and it may still be found in some catalogues as *Androsace halleri.*

A. sarmentosa (syn. *primuloides* in some catalogues ?). This is probably one of the best known androsaces, and the most frequently found in gardens. It is a really good doer given good drainage in wall or scree. It has a wide distribution—Himalayas to N.W. China. Some botanists, however, now consider the Chinese forms to be separate species. The type has hairy leaves arranged in largish rosettes two or three inches across, from which many long runners issue, each with an embryo plant at the end. As a result it is a natural spreader, and in time it may cover some square feet. In every way it is an attractive plant and very good value.

A. sarmentosa var. *chumbyi*, or merely *A. chumbyi*, is a native of the Chumby Valley in the southern slopes of the Himalayas. It is a smaller, neater version, with the leaves more silky and the flowers of a richer pink than those of *A. sarmentosa* itself. Some authorities think it is a natural hybrid of *Aa. villosa* and *sarmentosa.* Whatever it is botanically, it is a very attractive plant.

A. sarmentosa var. *watkinsii* has been promoted to specific rank and named *Androsace limprichtii.* It is one of the Chinese forms

referred to above and comes from Szechwan. Its rosettes are tighter and much smaller than those of *A. sarmentosa*. The scapes also are shorter, but carry good flowers of bright pink. It is just as easy as *A. sarmentosa*, takes up less space and is a very pleasing plant.

A. sempervivoides, from the North-western Himalayas, resembles *A. sarmentosa* in its habit of producing runners, but is much smaller. another difference is that the dark green leaves are glabrous and not at all hairy. The flowers, on short scapes, are rose coloured.

A. microphylla is sometimes described as being the same as *A. sempervivoides*. Clay, however, says "*A. microphylla* is really *mucronifolia*, but in gardens and catalogues is *sempervivoides*." It seems doubtful if *A. mucronifolia* is in cultivation.

Androsace lanuginosa differs from *A. sarmentosa* in not having the network of stolons with their little rosettes. Rather it forms a loose mat of branching trailing stems with silvery woolly leaves. Umbels of crimson-eyed rose-lilac flowers are borne on four-inch scapes. Unlike other members of the section which flower in the earlier part of summer, it flowers from July to October. It makes a good wall plant. Farrer suggests violet and lavender autumn crocuses growing through the mat. It sounds a pleasing combination, though I have not yet tried it myself. I have heard doubts expressed regarding the hardiness of this species. The explanation of losses might well be drainage. I have had no trouble with it growing in wall or scree.

A. lanuginosa var. *leichtlinii* is similar except that the flowers are white. In both the eye of the flower starts as yellow but changes with age to crimson. Androsace species L. & S. 4507 is very similar to *A. lanuginosa*.

Androsace villosa is one of the most widely distributed species, being found in many of the mountain ranges of Europe, Asia and North America. As might be expected, this wide dispersion has resulted in quite a large number of variations. What might be considered the 'type' forms a fairly compact mass of narrow leaved silky rosettes. The flowers are about the size of a sixpence, nicely shaped, and a good white with a centre of yellow fading to red. They are carried just clear of the rosette of leaves.

The form most frequently found in gardens and catalogues is var. *arachnoidea*. It is a native of the Eastern Carpathians according to a later authority, though Farrer gives it another location. Whatever the correctness or otherwise of his location, his description is very apt—"A smaller, neater, compacter thing even than the type, and even more fluffily silver." The flowers, three or four to a stem, are similar to those of the type, possibly a little larger, and are carried on short hairy scapes.

What is supposed to be a still finer form is *A. villosa* var. *arachnoidea superba*. All these forms are hardy here, and quite easy in really sharp scree in spite of their hairiness. They are, too, very free-flowering, usually in May.

A. jacquemontii was at one time considered to be a variety of *A. villosa* ; it has now been given specific rank, however. In appearance

it is more or less intermediate between *Aa. sarmentosa* and *villosa*, though perhaps closer to the latter. The flowers, white, pink or lilac-pink, are freely produced, and it is a very attractive plant for wall or scree. In *Journal No.* 19, page 196, "Glass cover in winter is recommended, but I have not found that to be necessary here. The same applies to *A. villosa arachnoidea superba* (see *Journal* No. 16, page 269).

A. obtusifolia is widely distributed over the European Alps, and is easy in richish scree. It is very variable, and some forms have rather poor, dirty white flowers. Other forms are quite attractive, though not in the same class as most of the species in the Chamaejasme section. It forms a looser, taller rosette of glabrous green leaves and does not produce runners.

A natural hybrid between *A. obtusifolia* and *A. alpina* is, I think, a more attractive plant. It forms mounds of small rosettes about two inches high with flowers of bright pink. It, too, is quite easy in scree.

I will now start on the members of sub-section Aretia of Section Chamaejasme.

First, *A. alpina* (syn. *glacialis*), one parent of the hybrid mentioned above. This is one of the less easy species to satisfy. It is another of the hairy ones, forming low, woolly rosettes carrying good-sized soft pink flowers singly on inch-high stems. I have seen it in the Engadine flourishing in very stony scree literally running with water from the melting snow. These are not conditions easy to reproduce in a garden. However, I have had it now for three years, growing, increasing and flowering in boiler ash scree in full sun. During what I think corresponds here to the time of its snow water baths (May/June), I try to remember to give it a good canful of water each morning. I know it is also flourishing in a Barnton scree (Edinburgh) on what the owner calls his wind-swept top. It also makes a good Alpine House plant, I believe, in gritty soil and kept moist.

A. mathildae is a crevice plant of the Gran Sasso in the Abruzzi Mountains of Italy. The rosettes consist of inch-long glossy green pointed leaves, with single white flowers on short stems in May. It is quite a pleasant plant if not very exciting, and it is easy in scree or crevice.

Androsace pyrenaica is a cushion aretian from the central Pyrenees, and one of the easiest of its sub-section, being quite happy in ordinary scree. The flowers are white with a yellow eye, and more or less sit on the rather pumped up cushion. Flowering time is late March or April.

The next two are also Pyreneeans—*A. ciliata* and *A. cylindrica*. The former is a delightful little plant with the largest flowers of the Aretian sub-section. They are borne in ones or twos on half-inch scapes, are a really good rose-pink, and are a third of an inch in diameter. It grows in the form of a mat of small prostrate branches, covered in their upper parts with spoon-shaped leaves a quarter of an inch long. In the wild it is, I believe, a plant of limestone crevices, and it is flourishing with me in a lump of hyper-tufa in a cold frame. It is doing equally well in a pot of acid scree mixture. It has seeded

itself in sand in the frame, a sign of contentment, I always imagine. Some of these seedlings will be planted out in spring, and I have hopes of their doing all right in the open. I find it very free-flowering in May and off and on till quite late summer.

Androsace cylindrica, unlike the last one, has soft downy leaves—a warning against excessive wet. A crevice under an overhanging rock is therefore indicated. It grows in rather the same way as some of the European Primulas, i.e., a stem like a column (or 'cylinder' hence its name) covered in dead leaves, with a bunch of grey-green leaves at the top. It is unwise, I understand, to pull off the dead leaves, so I have left them alone even if they look a little bit untidy. From the top bunch of leaves emerge, in May, thread-like half-inch stems, each carrying an attractive white flower about half an inch across.

A. muscoidea var. *longiscapa* was introduced from Nepal by Colonel Donald Lowndes in 1950. It grows in little mossy tufts, and is looking quite healthy here growing in scree. It has not yet flowered, however, though I have had it for three years.

Androsace imbricata (syn. *A. argentea*). "This is surely the most delightful of the Aretian Androsaces of Europe, with its dense silvery-white closely rosetted cushions and domes starred over with nicely rounded milk-white flowers"—I cannot better that description of Will Ingwersen's.* It is a plant of cliffs and crevices. The best plants I have seen were on a small cliff at Saas-Fee growing under overhangs, or in small south-facing caves or recesses a yard or so square, and perhaps eighteen inches or more in depth. As many of them grew in the roof of the recess, they would get no direct sunshine on them, unless possibly very early or very late in the day. They could have got no water either, except what seeped down through cracks in the rock. Some young plants are doing quite well with me in south-facing caves, copying as far as possible the Saas Fee ones. They are in a very gritty scree mixture and far enough back in the cave to avoid the mid-day summer sun. Flowers are freely produced in Switzerland in June/July, here perhaps a month earlier.

The only one of the Pseudo-primula section which I grow is *Androsace geranifolia*, a native of Garhwal, Tibet and Szechwan. Although it is stoloniferous, I do not find that it produces many runners. The heart-shaped leaves and the flower stems are hairy, but rain does not seem to worry it at all. Up to a dozen flowers are carried on the six-inch scapes. The buds are deep pink, but the open flowers are a good deal paler. It likes what might be called Primula conditions, which is quite fitting considering the name of its section. With me it is happy in 'humusy' soil amongst dwarf Rhododendrons in sun or part shade. When planting, I give each plant a double handful of gravel to ensure good drainage.

Of the Andraspis section also I grow one species only. This is *Androsace lactiflora* (syn. *coronopifolia*), a biennial or possibly a short-lived perennial. However, as it seeds itself freely in scree, without

*Ingwerson's 'Androsace Handlist ' is full of useful information if you can get hold of it.

being a nuisance, this is not any real disadvantage. It grows in rosettes up to three inches in width, the leaves being linear and dentate. The rosette is neat and shapely, and from it arise sprays of six inches or more bearing numbers of flowers of a good clean white with plenty of substance in the petals. It flowers most of the summer and is most attractive and good natured.

Androsace spinulifera belongs to Section Chamaejasme, but I have kept it to the last, as to me it seems quite different to any other member of that section. It is an inhabitant of dry mountain meadows in Yunnan and Szechwan. It is in winter that its special peculiarity is seen. In autumn it forms a tight cone of overlapping spikey bracts, and looks like *Cotyledon spinosum* or a spiny sempervivum. In spring long narrow spikey leaves form a tuft, from which arise flower scapes of ten inches or so. At the end of each is a cluster of attractive rose-pink flowers with yellow eyes. A fairly rich scree in full sun, but not too arid, suits it. It is frost hardy, but winter wet is a danger. A position below an overhanging rock is therefore indicated. It is also a good idea to scratch away as much of the soil as possible from round its neck in the autumn, replacing it with gravel or chips. It does not produce stolons, but in time forms a good clump. This might, I suppose, be divided, though I have not tried. Seed is probably the best way to increase it.

Lime : In books and catalogues many of the species I have tried to describe are shown as requiring or preferring lime. None of them get it with me, however, and seem to be quite happy without it.

Propagation : In the case of the stoloniferous species this is no problem at all. If the rosette at the end of a runner has not already rooted itself, it will do so very quickly if held down with a stone or piece of wire, especially if given a little sand and peat to root into. They are grown, too, quite easy from seed. The non-stoloniferous ones can either be raised from seed or cuttings. Seed is probably best sown in January/March, using a very well drained sharp sand, or sand and vermiculite 50/50. Finish with a final layer of fine coal chips (*not* dust) and sow the seed on top of these and water in. Exposure to frost and snow seems to be helpful. Seed may also be sown as soon as ripe. In an unfavourable season, however, the seedlings may not have developed well enough to withstand the rigours of winter in a cold frame. They may also be raised from cuttings taken in summer. Cuttings from most species are small and fragile, and it is probably safer not to attempt to remove any dead leaves. They are most likely to strike if inserted in sharp sand round the edge of a pot and put into a polythene bag or covered with glass.

A. villosa may be divided in summer after flowering. The resultant plants are best kept in a frame over the winter.

I have only attempted to describe the species I grow myself. I do hope, however, that other members will contribute something about the many other species of this fascinating and lovely family. Their experiences with the species I have mentioned, where they differ from mine, would also be interesting.

From the High Hills—Part III

Plants of Shingle Slip and Rock Debris

By A. W. ANDERSON

THE PLANT hunter who roams among the mountains of the South Island need not do very much climbing to see how profoundly the climate moulds the vegetation of any particular area. The western ranges lie across the prevailing winds and force them to disgorge their moisture so that they are dry and parching by the time they reach the eastern mountains, which have to make do with about a tenth of the rainfall. So the western ranges support a rich flora which enjoys a high rainfall, while those on the eastern side are often dry and barren, and in some parts of Canterbury and Marlborough are no more than desolate slopes of rock and stone.

Bare, barren and desolate, these shingle slips, as they are called by shepherds and mountaineers, have come into being because the processes of natural erosion have shattered the brittle rock into such quantities of stones that the low rainfall can neither carry them away nor produce enough vegetation to colomise them. Conditions are hard in the extreme, with the stones too hot to handle in the summer sun, while a few inches below there may be a trickle of icy water coming from melting snows far above. The weather, too, goes in for extremes, from the scorching winds that may turn to snow and sleet within an hour or two, even in mid-summer, to the bitter frosts of winter and the avalanches of spring that roar down the mountainsides carrying all before them.

I have given such a detailed description of the shingle slips because those who are unfamiliar with them could scarcely imagine conditions so unhospitable to plant life and so different from the moist alpine herbfields only a few miles away to the west. No doubt many of these scree slopes have been extended during the past century or so through over-grazing and injudicious burning, but nevertheless they must have long been an integral part of the New Zealand scene, because although seemingly quite devoid of all vegetation they are, in fact, the home of a highly specialised flora.

No fewer than thirty-three species have succeeded in adapting themselves to life on the shingle slips and, although the majority are botanical curiosities of little interest to the gardener, a few are so striking as to create interest whenever they are seen, and would be much sought after if they could be persuaded to forsake the rigours of camping on a shingle slip for the respectability of a suburban garden. They include some highly original members of some of our best known plant families. The daisies, buttercups, bluebells, veronicas and convolvulus are all represented, as well as the carrots, peas, cress and chickweeds.

The fact that these members of widely different and quite unrelated families have managed to find a living under such inhospitable conditions and to develop a characteristic type of growth-form shows how environment moulds the various species into a pattern. All are of a

peculiar greeny-grey colour, almost exactly the same hue as the rocks around them, and consequently are very difficult to discern from a short distance. This peculiarity would appear to be linked with the necessity for some protection from the burning sun rather than camouflage from grazing animals, as nature could scarcely have foreseen the advent of the sheep about a century ago.

The shingle slips are in constant motion and there is little competition among the inhabitants, which have all developed highly specialised root systems to cope with the constant danger of being buried or torn out. Those which do manage to survive are never found in any abundance and you may search for hundreds of yards without finding a single plant of any description, and any specimens you do find are almost invariably growing in isolation. In fact, it rarely happens that one can find more than a few species on any one shingle slip, although most of them actually occur in the district. One would think that these plants should be quite easy to transplant, but on the contrary their long fleshy roots always seem to die back to the rootstock and it is difficult to provide that combination of moisture and exposure that they demand.

As might be expected, the commonest and most widespread is a chickweed, but nothing could be less like the common chickweed of our gardens than *Stellaria roughii*. Having raised itself a little above the moving shingle to escape mutilation, it is a turfy little succulent with fat, narrow leaves among which the flowers may be seen. Their white petals tend to be overtopped by the prominent sepals, so much so that at first glance the flowers appear to be green. *Stellaria roughii* bears the name of Captain D. Rough, who discovered it in the Dun Mountain in Nelson about a hundred years ago. He also found *Lobelia roughii*, which seeks protection by going underground and forms many creeping stems that spread through the shingle so that only the leafy tips are showing and they, with their thick, purplish, toothed leaves look more like something cut out of seaweed than relatives of the familiar lobelia. The white flowers are quite pretty but the plant is very striking when the stems lengthen to hold aloft the large purple seedpods.

Most conspicuous of them all is *Ranunculus haastii*, a very sturdy, fleshy plant, more of a blue-green than the other members of the association. The wide four-inch leaves are very much cut up and the stout flower-stem has a leafy frill to protect the young buds, which may be up to three together, and open to show handsome golden buttercups that are nearly two inches across. Most people have heard of the penwiper, *Notothlaspi rosulatum*, a biennial or perhaps monocarpic species that forms compact little rosettes of pointed leaves which look exactly like the old-fashioned penwipers that used to be on every desk. When ready to flower they send up corpulent six-inch stalks that are crowded with fragrant, creamy-white flowers, and when the seeds ripen the whole plant breaks off to become a tumbleweed and, as the sport of the winds, is carried far over the stony wastes, scattering seeds as it goes.

Islands of rock often rise out of the shingle and have their own population of rock plants, and if they are big enough to break up the flow of shingle may make oases in this moving desert. Here the vegetable sheep, *Raoulia eximia*, may form pale cushions up to six feet across and so conspicuous as to be mistaken for sheep from a distance. They appear to be soft and mossy but are hard and unyielding. Growing with them may be various celmisias and small aciphyllas. Where the rocks are cool and damp with a southerly exposure grows *Cheesemania fastigiata*, better known under its old name of *Nasturtium fastigiatum*, a very attractive cress with its rounded nine-inch mounds of scented white flowers rising from the rosettes of dull, glossy green.

By the edges of the oases where the debris is finer grow two red-stemmed epilobiums. The more or less upright *E. pycnostachyum* with large stalkless white flowers, and the prostrate *E. crassum* with pale oval leaves and blossoms that vary from pink and red to purple. With them may be the yellow woollyhead, *Craspedia incana*. The whole plant is clothed in shaggy snow-white wool and the rosettes are very attractive, and in summer when the woolly stems rise six inches or more to bear their ball of lemon blossom the plant ranks high among our more decorative alpines. In such places and among the rocks are large, low cushions of the North Island edelweiss, *Leucogenes leontopodium*, which comes so far south as Mt. Peel in Canterbury, while the South Island *L. grandiceps* is widespread.

The black daisy, *Cotula atrata*, is very hard to see because the fine ferny foliage seems to blend perfectly with the shingle. Its broad patches of foliage seem to be too fragile for such places, but it is protected by dense tomentum. The rayless daisy heads are black or dark purple, but I have heard rumours of more colourful ones having been seen. On windswept slopes where the snow lies long and the ground is firm and poorly drained, above the shingle slips proper, one can expect to find great mats of *Celmisia viscosa*, sometimes yards in extent. It is easily recognised by its stiff, upright habit, dark green leaves that are white beneath, and the stickiness which gives it its name.

The dry hills of Marlborough harbour several beautiful species which do not wander farther south. They include the well-known *Helichrysum coralloides*, the handsome *Convolvulus fracto-saxosa* with its silvery leaves and inch-wide white flowers ; a very attractive white myosotis with silvery leaves, and *Wahlenbergia cartilaginea*. The rigid rosettes, usually grey-green but sometimes purplish, look more like some crusty saxifrage than a wahlenbergia. The rosettes are enhanced by the thickened margins, and when bearing their pale blue flowers on two-inch stems are quite outstanding.

One of the most remarkable things about the shingle slip plants is that they are to be found all over the South Island where conditions suit them, although separated by miles of bush and tussock. They must have been connected up at one time and it would appear that these are the remnants of an ancient flora which covered great tracts of shingly country.

More Meconopses

By G. E. BARRETT

THE EDITOR has asked me if I would write a few notes as a kind of sequel to the article describing my first attempts to grow Meconopses in my Surrey garden which appeared in the April 1960 number of the *Journal*. I am very happy to do this, as my interest in meconopses continues unabated and I have had sufficient success, especially with the monocarpic kinds, to be really encouraging. In particular I have been agreeably surprised by the ability of these plants to withstand the very dry conditions which normally prevail here during the summer. In the winter, of course, these conditions are reversed and the weather is often damp and mild, so that although many plants have survived without covering, the beautiful woolly rosettes are better for the protection of a piece of glass.

Since the making of the small raised bed in the corner of the garden which was described in the article, the area devoted to growing meconopses has been considerably increased, although it is still not large, of course, by "big-garden" standards. Special beds for these plants have been made alongside the garden path. These beds, which are only slightly above the general ground level, have some shade during the day and are protected on the East by a wattle fence. They have been prepared in the same way as the original bed by digging in stones, manure, garden compost and leaves and then finishing off with a mixture of peat, soil and small gravel. Plants grown in these beds this summer (1962) provided a fine display one or two of them reaching a height of about six feet. Other plants, however, have been planted out in the more shady parts of the garden without any special soil preparation and so far seem to be growing satisfactorily ; indeed, my wife has now taken over some of these monocarpic species for her herbaceous border, where they are doing quite well although they have not yet flowered.

In fact the plants themselves have taken a hand in this distribution as a number of them have seeded themselves into my heather garden, where they are menacing the gentians which also have their home there. Some, too, have appeared in my "woodland garden" (six feet square), which is some considerable distance away, and one unfortunate plant has been growing for nearly two years on the top of the tufa rock garden and is now about four inches across. It will be very interesting to see if it flowers and if it does whether the flower will be in proportion to the rest of the plant.

One or two special meconopses are being tried out in the new primula garden, which has a cupped sheet of black polythene buried beneath it. This seems to be very promising and Primulas *nutans*, *viali*, *alpicola*, *secundiflora* and *polyneura* have made good progress. No doubt these plants grow like weeds in Scottish gardens, but here

Photo—James Aitken

Fig. 40—Saponaria ocymoides (see page 210)

Photo—James Aitken

Fig. 41—Thlaspe rotundifolia (see page 210)

they have to be fought for. It may be that this artificial semi-bog garden will become too damp in winter, in which case it will have to be covered with glass substitute or something similar, but we shall see !

I have continued to take advantage of the Scottish Rock Garden Club seed distribution and most of my best plants have come from this source. I am indeed grateful to the members who have supplied the seeds and to those who carry out the hard work of sorting and despatch. This year I have raised a good number of seedlings of *Meconopsis superba*, a plant I have not tried here before, *M. integrifolia*, with which I have had little previous success but which now looks quite happy, and *M. betonicifolia alba*. From the earliest months of the year innumerable bees seem to visit the garden. My own plants therefore set a great deal of seed and I was delighted this year when a quantity of this was accepted by a very famous garden for their own needs and for distribution. The activity of the bees, however, has caused the intermingling of many of my S.S. & W. varieties, and possibly *M. regia* also, in a most unscientific way, but the results have been very beautiful. In previous seasons these plants have given me a "pink year" or a "yellow year." but this summer I had white, yellow, pink and dark red flowers blooming together, which in combination with the blue of *M. betonicifolia* made a lovely picture. Some plants with fine dark red flowers formed very stout stems and reached a height of about six feet.

Seed from my own plants germinates very readily, so much so that I have had a considerable surplus of young plants and these have been distributed fairly widely in the neighbourhood, so I am hoping that these beautiful plants will soon become more common here. I have a feeling that plants repeatedly grown from home-saved seed can somehow gradually adapt themselves to local conditions. If so, we may yet raise our own race of drought-resistant meconopses ! In all cases seed is planted (generally about the end of February) in standard outdoor seed beds made with an upper layer of sieved soil, peat and stones (and possibly a top dressing of John Innes seed compost) and results in spite of occasional chaos caused by the misdirected activities of moles have mostly been very good.

Of the individual species of meconopses not previously mentioned here, *M. betonicifolia* still grows and flowers well and my three plants of *M. grandis* are also still with me, although they have not increased very much in size or set much seed. I have had practically no success with the *M. simplicifolia* types, which is a pity as they are among my favourites, but if I can obtain seed and raise more plants of these I shall try them in other positions. *M. quintuplinervia* still proves unexpectedly difficult. I now have one plant which is growing on slowly, although it has not yet produced a flower. *M. dhowji* has done quite well and is a lovely plant both for foliage and flower. It seems to stand fairly dry conditions and is at home among the rocks. I noticed that one plant at least which flowered this year still has a fresh green

rosette of leaves. *M. horridula*, as might perhaps have been expected, is no trouble at all and seeds itself freely about. It will even grow on the hottest parts of the rock garden. Some fine large forms have emerged which would almost appear to have betonicifolia blood (?) in them. Weeds have not proved to be as serious a problem as expected and only an occasional onslaught has been needed to keep them under control. The plants have had a light mulch twice a year and a "clean-up" at the back-end of the year. This autumn, which has been even more than usually wet, the fallen leaves have rotted quickly and contaminated some of the outer leaves of the meconopses. Strange this, when leaves seem to take so long to break down on the compost heap !

Finally, I must mention that when my wife and I visited the Pyrenees last year we were delighted to come across a fairly large colony of *M. cambrica* growing among the rocks near Gavarnie. It was a nice surprise, especially as I had not seen it reported from this district before.

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 Edgar L. Totten, 1220 Everett Way, Hendersonville, North Carolina, U.S.A.

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

Notes on Some Plants of the Atlas Mountains

By JAMES C. ARCHIBALD

THE FOLLOWING paragraphs contain some comments on a few of the plants which were collected during an expedition to the mountains of Morocco in 1962, and of which I was glad to be able to spare a little seed for the S.R.G.C. Seed Distribution.

One of the few joys of going to collect seed in the wild, which means that one must often forego any sight of the flowers, is that one can visualise the possible appearance of the plants in cultivation. Though one's imagination may sometimes tend to over-estimate the value of a particular species, many fresh and pleasureable surprises outweigh any disappointments awaiting those whose skill and curiosity find an outlet in raising new or unknown plants from seed. I hope that these lines may give you an insight into those pleasures and exictements and that those of you who may have received some seeds from the distribution, as well as my patient subscribers, will find the long wait until the seeds finally produce flowering plants shortened by reading of my sanguine hopes. I can but mention some of the species which I found and these are not necessarily all of the best ones ; such possible delights as the little yellow *Erysimum wilczekianum*, *Gentiana verna* ssp. *penetii*, the white or scarlet daisies of *Chrysanthemum atlanticum*, *Arabis erubescens*, *Erodium atlanticum* and the almost stemless, mushroom-pink scabiouses of *Pterocephalus depressus*, as well as many others, must be left to a more comprehensive account of the alpines of the Atlas Mountains.

It is now past time for us to leave the comforts of Britain and to go to that small land of many faces—of high, barren, snow-streaked mountains and empty, oven-hot desert wastes ; of cool forests of oaks and cedars and lush oases of date-palms and fig-trees—Morocco. If we find some of our plants hard to discover, as they are no longer wearing their hearts upon their sleeves, surely our excitement at finding them at all will be the greater and intensified by the anticipation of how they will behave in our own gardens. The first plant we shall come across, however, will give us no such difficulties.

Aconitum lycoctonum ssp. *neapolitanum* ? var. *rerayense*, J.C.A. 155. The first surprise that the plant-collector experiences in investigating the flora of Morocco is the discovery that a very high number of Central and Southern European occur there. They do so, however, usually in distinct forms or sub-species, evolved gradually as a result of the long period of separation from their homeland in the neighbouring continent ; in fact, for the botanist, as well as for the geologist and zoologist, the Atlas Mountains, while one of the great ranges of Africa, must really be considered as part of Europe. Hooker tried to draw some interesting comparisons with the Abyssinian flora and John Ball sought to find some affinity with the plants of the Canary Islands,

but the close relationship of the Atlas flowers with those of South and Central Europe, especially Spain and Portugal, cannot be disputed; such plants as *Gentiana verna* in its lovely sub-species *penetii*, *Paeonia corallina*, *Arabis alpina* var. *caucasica*, *Digitalis purpurea*, *Aquilegia vulgaris* var. *ballii* and a host of others all point out this fact. Such a plant is the *Aconitum* sp., which I found at 8,300 ft. in the Djebel Erdouz massif of the High Atlas.

We had jolted up the valley of the Oued Anougal on top of a load of pit-props in a rattling lorry, going up to an isolated mine right at the foot of Erdouz. The track had been too rough to risk taking the car unnecessarily, so that the opportunity of utilising the lorry, which made a daily journey up from Marrakech to collect the load of lead and zinc-bearing sludge, was too good to miss. We camped in the valley below Erdouz and but a few hundred yards from our tents grew a single vast colony of the aconite, stretching ribbon-like down the length of a single, tiny rivulet, rushing down to join the river below. The plants were almost six feet high and their branching spires, rising above the dark, palmate leaves, were closely packed with the creamy-yellow flowers. Nowhere did it extend more than a few feet on either side of the narrow stream, which supplied the rich alluvial clay with abundant moisture. I see no reason why this should not prove an easy plant to grow in our cool damp climate, and it should certainly be worth growing as it is utterly distinct from the small, often sparse-flowered, Yellow Wolfsbane of the Alps.

? *Anacyclus* sp., J.C.A. 129, is one of the daisies of the Atlas. As a non-botanist, I have always been thoroughly confused by the current classification of *Chrysanthemum*, *Leucanthemum*, *Anacyclus* and so on, and I cannot definitely assign this one to any particular genus. In any case the plants from which seed was collected were not in flower. They were low-growing with much-dissected, grey foliage and short lax stems, bearing what doubtless had been a white flower but which, from the appearance of the dried ray florets, had turned pink or red as it had aged. This may be better or worse than what we have in cultivation as *A. depressus* and *A. atlanticus*, but it should at least be worth a trial.

The plants from which seed was sent to the distribution grew below Djebel Erdouz at about 8,500 ft. but I discovered an envelope on my return without a number and which probably contained the same species. I remembered that I had collected more seed at a higher altitude so that the same plant probably extended to 10,000 ft. It grew in dry crevices and pockets, filled with gravel and hard-baked clay and usually in west- or east-facing situations, often shaded by an overhanging rock, so it will need full sun and a well-drained soil in cultivation.

Arabis ? *josiae*, J.C.A. 277, if it proves to be this species, should be quite a good plant, but its true identity must remain unknown until the seeds germinate and flower in cultivation, because it was not flowering when I collected it at 6,500 ft. on Mischliffen in the Middle

Atlas. This area of the range is a volcanic plateau, above which rise the rounded hummocks of extinct volcanoes, covered over with a vast cedar forest. Mischliffen is one of the most impressive of these craters—an enormous bowl down whose interior ski-runs and roads have been made and where a number of exciting plants grow in quantity. Right up on the southern lip of the crater I found a strange, outcropping, little cliff, facing due north and of much-weathered limestone, which was covered with sedums and saxifrages, *Endymion hispanicus* var. *algeriensis*, Ornithogalums and Muscari, along with two species of *Arabis*, whose long capsules were just releasing their twin rows of minute lentils. All the plants seemed to revel in the deep pockets and holes in the limestone, filled with pure leafmould, and, while its August face was dry and crackling-brown, in April or May it must rejoice in a sheet of pink and blue and white.

One of the *Arabis* spp. formed neat rosettes of very dark green leaves, raspingly rough with a few pale hairs, and had a few erect stems to about six inches. This also grew at the margins of the woodland, among stones in the rich, leafy soil, and this I deduced was likely to be *Arabis josiae*, a Moroccan endemic with flowers of a penetrating violet. Shade and leafmould are not what one would always expect to be the best recipe for cultivating the genus *Arabis*, but such are the conditions under which several species grow.

? *Armeria allioides*, J.C.A. 188, is a doubtfully named collection from a plant out of flower at 7,300 ft. near the Cirque d'Arround below Djebel Toubkal in the High Atlas. I can say little about this other than that the plants grew in heavy clay and sent up tall, wiry stems to 1 ft. from small, neat rosettes. Whether or not it will be of any value will depend on the flowers, but I suspect that the clusters will be too small in proportion to the height, even if something is planted in front of it to hide its gawkiness.

Asphodelus sp., J.C.A. 204, grew in an imposing colony at 7,300 ft. on a level, grassy meadow beside a dried-up stream a few miles north of the Tizi n'Tichka pass across the High Atlas. The winters up there are worse than even a 1963 British one is and the barren pass is often closed by the snow even longer than Soutra Hill in Scotland has been this year ! In summer no rain falls and the clay in which the plants grew was baked hard, but when the snow melts in spring they must be submerged in water. This is a tall plant of four or five feet in height and rather like *A. cerasiferus* in habit.

Calamintha granatensis, J.C.A. 248, is possibly more correctly *C. alpina* ssp. *granatensis* (or *Satureia alpina* ssp. *granatensis*). It is the Spanish and N. African counterpart of the well-known European plant and altogether very similar with many little bright-violet mint-flowers on semi-shrubby clumps of about six inches. It was collected at 6,000 ft. near Mischliffen, growing at the edge of cedar forest in a sunny place in gravelly clay overlying limestone.

I am very fond of *C. alpina*, which is a much neglected plant. It seeds itself about quietly in the garden and never fails to bloom for

months on end from midsummer onwards. If planted in a hot, dry place in poor soil, it will remain compact and floriferous and, if the frost does not do the job, clip the plants back almost to the root in spring. This African one will need the same treatment, I am sure.

Campanula ? *filicaulis*, J.C.A. 93, is one of many collections made under the name of this species. Some of the Moroccan Campanulas form a very puzzling group of plants and the multitude of similar-looking herbarium specimens will give the botanists much to chew over. Many of my '*C.* ? *filicaulis* ' collections will no doubt prove to be of other species, but as far as the gardener is concerned all are on the same design. From a central, tap-rooted rosette of grey-green leaves radiate several procumbent stems of varying lengths, bearing at their ends flowers which may be anything from pale, bluish tones or rosey lilacs to a deep violet-purple. This collection was made at 4,000 ft. near Bab bou Idir in the Djebel Tazzeka massif of the Middle Atlas. The flowers were mostly of a pale to medium violet in flower and grew in the heavy clay of very hot, turfy pasture-land, between limestone boulders and lumps of volcanic scoriae. I collected this or a similar species as high as 10,500 ft., but it varied little in habit or habitat. It was always a plant of stony pastures and very seldom as saxatile as the one (which is very typical) illustrated in Clay's ''Present Day Rock Garden.'' I did not once see anything in the least resembling the plant depicted in Crook's ''Campanulas'' under this name.

Campanula ? *mairei* var. *atlantica*, J.C.A. 117, may not be this species at all. The collection was made at 8,600 ft. from the hill above our camp-site in the Djebel Erdouz area. In the long grasses by a bubbling mountain stream a gorgeous campanula hung out its flowers of imperial violet on long, lax, wiry stems, twining among the grass stems ; it was in full flower and the seed had not yet matured, but a few feet away, on the drier, shady ledges of a basalt cliff I found some campanulas in seed. The latter were dwarfer but otherwise appeared more or less similar to the typical ones by the water, so I collected seed from one and herbarium specimens from the other, giving them both the same number, presuming that differences in habit were caused by the situations. However, my guess may be far out and, if the seeds produce something totally different from the plant described, you will know why.

Carduncellus pinnatus, J.C.A. 162. I am uncertain as to whether I like this more or less than *C. rhaponticoides*, much publicised lately. I may be biased in favour of it, as it is a truly alpine species, whereas *C. rhaponticoides* is a sub-alpine meadow plant from much lower altitudes, but it must be conceded that the latter is generally a more striking plant, especially in the flower colour ; I can view the case almost objectively as I found both.

This genus of strange thistles harbours many mediocrities, but *C. pinnatus* is a good one. I believe it has been in cultivation from lower altitude Algerian collections, but I collected it only at its highest altitudinal reaches in the distinct, absolutely stemless form which

occurs there. On our way up to the Djebel Toubkal from the village of Imelil, I first noticed it not far from the mule-path at around 7,000 ft. and, thereafter, every so often I would catch sight of it until we pitched the tent at 10,500 ft. Nearby, it grew in what was probably its highest station, in the drier areas among sparse turf and lumps of igneous rock. The flat, symmetrical rosettes adhere very closely to the ground and the leaves are spiny and pinnate (unlike those of *C. rhaponticoides*). Tight in the centre of the rosette sits the stemless head of blue flowers with cream anthers ; this is smaller than that of the lower altitude plant, but on the other hand the whole plant is smaller (about 6 ins. across) and very much less leafy and lush-looking. Exactly how they will compare in cultivation remains to be seen, but as I collected the seed and specimens of *C. pinnatus*, I thought, "Now, that would really look rather well sitting in a pot on the show-bench !"

The Middle Atlas is a particularly good area for shrubs. Much of it is covered with supremely beautiful forests of cedars, with a dense undergrowth in places of evergreen oaks. Apart from the cedars, the vegetation is extraordinarily similar to that of Provence or other parts of Southern France. Exactly in keeping with this similarity is that stalwart of so many Mediterranean 'maquis' areas, *Cistus laurifolius*, here in the Moroccan var. *atlanticus*. I had already seen this growing in the Rif Mountains and on the Djebel Tazzeka further north, where it covered acres of hillside, but here on the Djebel Hebri it grew in the rich volcanic clay at 6,500 ft. in a clearing among the cedars. It is certainly an indestructibly hardy shrub and one of the best of the genus with clusters of large, white, gold-centered 'roses' on 4 ft., leathery-leaved shrubs.

A little lower down on the hill grew that most spectacular of North African endemic shrubs, *Cytisus battandieri*. Large specimens from 10 to 12 ft. in height were dotted about in the open, grassy spaces between the cedars. They must have been covered in bloom earlier in the year, judging by the masses of seed-heads. The vision in one's imagination of the dozens of these huge, blue-green-leaved shrubs, covered with the large clusters of golden, pineapple-scented flowers, backed by the glaucous tones of the cedars and with hundreds of rosy pink paeonies strewn in the fresh, spring-green grass at their feet, makes the plant-collector's heart ache and his feet itch to be off again. It is worth noting that both of these shrubs are calcifuge species and did not occur on the nearby crater of Mischliffen, where there were limestone outcrops.

Not far from the Cytisus and in a similar situation grew occasional bushes of *Cotoneaster nummularia* var. *fontanesii* (syn. *C. fontanesii*), erect six-foot bushes spangled with small, glossy leaves and crimson berries.

In winter a ski-lift operates to the top of the Djebel Hebri, giving a clear run of 525 ft. down the steep slope. In August right in the middle of the ski-run, six-foot high clumps of the Dwarf Elder, *Sambucus ebulus*, were laden with massive cymes of translucent-crimson

berries. The lush, large-leaved stems grew among lumps of lava and I presumed that it was the herbaceous form which occurred—unless, of course, the snow-fall was sufficient to cover the shrubs entirely. This is hardly a choice plant but one which I should like to grow, given an area of rough woodland to 'wild garden' in.

More interesting is *Daphne gnidium* var. *lanata*, J.C.A. 181, which I collected on cliffs and sunny, dry slopes in the Cirque d'Arround of the High Atlas at 7,000 ft. I had seen the plant some weeks earlier in the Rif Mountains, in the var. *sericea* (the High Atlas collection *may* be this also). It is not spectacular, but rather pleasant, forming yard-high shrubs with erect stems, clad evenly in grey leaves and bearing clusters of smallish, cream-white, scented flowers to be followed by squashy, orange berries.

My strange activities while collecting *Sempervivum atlanticum* and subsequently the berries of the Daphne, while perched high on a cliff-edge, were watched with considerable interest by two Berber boys, who were passing by with their cattle. Their charges continued on their way and, while I had an audience for over an hour, I never saw the animals again ; I suppose they knew their way around. In due course one of the boys vanished, to re-appear below me offering up handfuls of Daphne berries. I knew enough by that time to decline, as accepting would only have meant some return remuneration and the more disconcerting fact that I should have had embarrassing companions for the rest of the day. Perhaps I was ungrateful and the offer was just a kind gesture. I doubt it, though.

Draba ? *hispanica*, J.C.A. 145, and *D.* ? *oreadum*, J.C.A. 174, are two high-alpine cushions from similar situations at 10,000 ft. on Erdouz and 12,500 ft. on Toubkal, respectively. Neither of them was in flower when I found them, so that my tentative naming may be wrong : they may both be forms of the same species or the names may even have to be changed round. However, as these are two out of the only three really high altitude Drabas recorded from the Atlas, I can be fairly certain that one of the names at least will be applicable.

Draba sp., J.C.A. 145, occurred in crevices on cliffs of a black, igneous rock, possibly a basalt, facing north-west. I came across it while searching for a route up to collect seeds of a mossy saxifrage, whose clumps I could see high above my head on the sheer, black cliffs. The plants has ceased to flower, but the many seed capsules evidenced that it was a most floriferous plant. The capsules were in just the right condition for gathering—an all too rare occurrence when one is collecting in the wild—and I was delighted to find myself with a good quantity of seed of this species. The genus *Draba* is all too often parsimonious with its seeds. If it is *D. hispanica*, it will be good with large clusters of golden flowers—Farrer will tell you all about it ; if it is not, I think that it is promising in any case.

Draba sp., J.C.A. 174 is from porphyry cliffs on Djebel Toubkal, where it grows in tight fissures and is one of the highest species. *Draba*

oreadum, if this it be, is a Moroccan endemic with white flowers instead of the more usual yellow.

Both of these plants will need similar conditions in cultivation, such as are accorded to the other cushion Drabas, like *D. polytricha* or *D. mollissima*. While I only found them on igneous rock, I think that the tufa method of culture would suit them admirably. If attempted on the open rock-garden, it would be advisable to plant them on their sides in a narrow, west-facing crevice and to put a pane of glass over them during our wet winters, as I am sure that they will resent stagnant moisture wholeheartedly.

Euphorbia sp., J.C.A. 151, may be *E. nicaeensis* var. *demnatensis*, but this matters little as it played a most evil deception on me by failing to produce more than a few dozen fertile seeds out of a very large collection of capsules. So there was not enough to spare any for the Distribution.

Lavandula sp., J.C.A. 101, was collected at 4,500 ft. on the Djebel Tazzeka, the northernmost mountain of the Middle Atlas. The bushes were 18 ins. high hummocks of grey leaves, whose rounded, compact habit was, I surmised, due to the activities of goats. There is no reason, however, why the gardener should not also act the goat and clip over his plants after flowering. It may be a form of the fine *Lavandula stoechas*, which occurs here and there in the 'maquis' around the Mediterranean, but of this no-one can be certain until it flowers. It should be easy in any warm, sunny place, while its hardiness should be fairly well ensured as its home is snow-covered for much of the winter.

Linaria tristis ssp. *lurida*, J.C.A. 171, brings us to one of the more exciting things. The porphyry screes of 13,665 ft. Djebel Toubkal and 13,415 ft. Dj. Ouenkrim, for all their magnitude, yielded only two species of real interest to the gardener, but two very remarkable species indeed. The more fantastic was *Viola dyris*, but almost as extraordinary is this linaria. It is a pity that the botanists have reduced this to a sub-species of the inferior and dowdy *L. tristis* from lower altitudes ; surely the plants from these high screes show such a distinct and inherent environmental adaptation as to merit specific rank. Along the surface of the scree it sends out several, prostrate stems, grey-leaved and bearing at their ends a cluster of weird flowers. Lurid these are, indeed, bloated and livid Toadflaxes, in shades of dusky apricot and pale-slate with a lip of maroon velvet and a short fat spur striped with maroon in a manner both bizarre and spry ; a little Richard III this—the sinister hunchback clad in a king's clothes and, I fear, like that unfortunate monarch, the Lurid Toadflax too is heading for an untimely end.

Every summer more and more goats are grazed on these high screes, eating every available scrap of vegetation, except the spiny shrubs, and, even worse, moving the screes downhill at an alarming rate. All day and every day from June until October, one can hear the sound of falling stones rattling down from hundreds of feet above. Some-

times a hissing roar will make the animals rush headlong across the slopes as tons of stones dislodged by their ill-fated activities cascade down the mountain. No plant can withstand all this. Centuries of evolution have adapted this linaria and the viola to the scree-conditions of these mountains so that their growth proceeds downhill with the slow, natural movement of the stones ; now with the increasing numbers of goats, those plants that are missed by the animals stand but little chance of furthering the species, as the rapid movement of the stones beneath the hoofs of the herds makes it almost impossible for the young seedling to anchor itself in the loose scree ; they must either adapt their mode of growth rapidly or face extinction. They are altering their habits and taking to growing beneath the larger, stable rocks, under overhangs where the tough mouths of the animals cannot reach them, but I doubt if they can adapt themselves quickly enough. The viola is not a profuse seeder and is obviously slow of growth ; the linaria is more generous, but it still took several hours of zig-zagging up and down the slopes of Ouenkrim and Toubkal before I could collect sufficient capsules of it. In this time I did not see one large plant of the species. All the curses and energy spent trudging about on these screes, which move downhill with each step almost as quickly as one moves uphill—a very aggravating affair at over 11,000 ft., will be well spent if I can see these two plants in cultivation, but, alas, I am afraid that they will prove awkward customers.

Orchis ? *munbyana*, J.C.A. 120, was collected for the curious, because it is unlikely that it will germinate under ordinary conditions, but sowing in a pot of one of our British *Dactylorchis* spp. may produce some plants. It grew within a few yards of our camp at 8,300 ft. in the valley below Erdouz, luxuriating in the squelching, stony alluvium among grasses by a stream and sending up tall stems to three feet. It is closely related to our native *O. incarnata* (syn. *O. latifolia*) and has been described as a variety of it, but it is certainly a giant version.

Paeonia corallina ssp. *coriacea* var. *maroccana*, J.C.A. 242. I should not say much about this as a crate containing the majority of the seed-bags of this and other heavy seeded species seems to have vanished without trace somewhere between Gibraltar and Glasgow. As a result, hardly a seed could be spared for the Distribution, although I had anticipated a good supply. Notwithstanding this catastrophe, I must say a few words about the plant.

I collected it between 6,300 and 6,500 ft. on both the Djebel Hebri and Mischliffen in the Middle Atlas, where it grew in light shade among the cedars, revelling in the rich volcanic clays or in pure leaf-mould. It provides one of the most notable floral spectacles of Morocco when it blooms and, judging by the large numbers of plants present, it must certainly be a wonderful sight. I have made a mental note to return one day to see the grassy clearings blooming with paeonies and to find the multitudes of bulbs and orchids in the more inaccessible parts of the range. I wonder if I ever shall do so, but the prospect will be an incentive for a very long time.

Papaver ? *rupifragum* var. *atlanticum*, J.C.A. 132, is a lovely little lady whom some of you may have met already. I found her among rocks and wispy grasses at 8,500 ft., near Djebel Erdouz, facing north-west and with her feet firmly planted in the stony clay. Although she seemed to like dry feet, she was very shy about showing her face to the sun and, unless you rose as early as she did, you might pass her by unnoticed because she fled from the heat long before midday. But what delicacy there was in her crinolined skirt of muted-tangerine, silken petals, dancing at the end of a fragile stem above the close clump of roughly hairy, notched, grey leaves ; and what a multitude of fat, modest-headed buds pushed up, eagerly awaiting for their turn to burst out to kiss the dawn of each successive day.

Polygonatum odoratum, J.C.A. 265, is, of course, the valid name for what I had in my field-notes as *P. officinale*. I hope that I may be forgiven for carrying coals to Newcastle by bringing back seed of a rare British native, but how many gardens contain this, although it is certainly one of the best of the dwarfer Solomon's Seals. To find it in Morocco, we must return to the Djebel Hebri, where its stems pushed up here and there among the turf and lava-lumps at the feet of *Sambucus ebulus*. The foot-high, arching wands were hung with bloomy-black berries, as they had been earlier with the creamy flowers. Nearby grew a lush form of the evil-looking Henbane and, with all these familiar wildflowers about, one quite forgot that one was in the 'Dark Continent.'

Ptilotrichum spinosum, J.C.A. 125, is another old friend, but in a slightly more worthy dress than the dirty-white flowered plant of our gardens and Southern France. The Spiny Alyssum is one of the commonest plants of the High Atlas and a thoroughly goat-resistant fellow too, whose low, jaggy hummocks I found from 8,300 to 10,000 ft. on Erdouz, dotted about on dry stony slopes and fixing unstable screes most efficiently. Higher up many plants still had a modicum of flower on them, varying in colour from a washy blush to a surprisingly deep carmine-pink. I collected from what appeared to be the deepest forms, but how many will retain this good colour in cultivation, when raised from seed, remains to be seen.

The two *Rosa* spp. I shall dismiss cursorily as I cannot say much about either except to correct an error on my part. Both species grew on shales—not basalt, as appeared in the Seed Distribution List ; an unaccountable mistake for which I apologise. Neither of them was in flower but the taller one (J.C.A. 97) from the Djebel Tazzeka looked extremely interesting.

Salvia taraxacifolia, J.C.A. 105, is a good plant. I am told that there was quite a demand for this in the Distribution and all my subscribers received it, so that I can now only hope that it will live up to my expectations. It was in cultivation before the war, but I have not seen it nor do I know of any plants still surviving. To save your reading unnecessary words of description, there is an excellent photo-graph of this, growing wild, in Clay. When I collected it at 5,300 ft.

in a gorge of the Oued Anougal, just north of the village of Azegour on our way up to Erdouz, few flowers remained but seed was almost matured. The six-inch high spikes of blush-pink flowers must have combined most attractively with the coarsely cut, grey leaves.

A word of advice is necessary, however. The dwarfer plants grew on east-facing crevices in gravelly sand, but a few plants had seeded down into the damp mud by the river ; there they grew to more than twice the height and much leafier, while still relatively attractive. So, if we want to preserve the compact character of this, it will be necessary to starve it in a poor compost and to expose it to full sun ; keep it dry both in winter and in summer, as I do not think that it will be able to stand much moisture at any time.

Salvia sp., J.C.A. 224, was what I had in my field-notes as being possibly *S. battandieri*, which I now find is likely to be an invalid name. Although I did not see it in flower, I am still sure that it belongs to the same rather confused aggregate as this name. It is one of the few plants from the Cirque de Jaffar in the Djebel Ayachi area which was collected in a fair quantity. I found it down at the bottom of the bowl-shaped Cirque at 6,900 ft., growing in turfy clay among lumps of limestone. The flowers were long past but the seed-heads, from which much seed had already dispersed, were profuse on the stems of eight inches or so, above the rosettes of crinkled, dull-green leaves. It looked as if it might be quite a good plant so we spent some time gathering it. I shall make the guess that the flowers will be anything from pale-blue to deep-violet, which leaves me a good margin for inaccuracy.

Saxifraga ? demnatensis, J.C.A. 175, introduces us to the 'mossies' of the High Atlas—a fine, large-flowered plant from the highest reaches and not to be despised or treated with indifference. In fact, I can say that it was without doubt the most spectacular plant which I saw at the peak of its flowering in Morocco.

Away up on Djebel Toubkal I found it growing right at the tops of sheer, dark cliffs, at 12,500 ft.—blotches of white dabbed on to the sinister rock away above my head. Another species of the *Dactyloides* section had already led me a fine dance on the cliffs of Erdouz, so it was with seemingly familiar steps that I climbed up towards the plants. However, the wayward beauties remained out of my reach, but a few feet of smooth cliff, wet from the afternoon hail-storm, separating them from my grasp. I foiled their defences by managing to poke a couple of clumps loose with my walking-stick (a trusty and indispensible aid, which I always tried to have with me no matter how awkward the terrain) and, having watched where they fell after plumping dizzily down, I made a scrambling descent to seize them eagerly. There at 12,500 ft., flowering was almost over and I was able to pick a fair number of mature capsules from the two plants ; 200 ft. higher it was still at its best.

At 12,700 ft. on the highest mountain in North Africa, in the last days of July, the great sticky, bright-green clumps of this saxifrage

are dressing themselves in bridal garb of billowing white. How their marriage is consummated I cannot say. The pollination of high-alpines is always an interesting affair, but I shall not trouble too much over this, as long as we can see the children of this immaculate bride in our gardens. Treat them gently and keep their heads cool in hot weather, because we do not have here any sun-loving African ; she is no kindred spirit to your *Asphodelus acaulis* nor your *Ranunculus calandrinoides* nor your *Carduncellus rhaponticoides*, but dwells more than a mile above their heads, among the Oreads, not the Cook's tours. There she shyly hides beneath the mountain's snowy cloak from October until May, and even then so loves the purity of white that she must produce her own cloak of snow in summer ; there where the air is becoming thin and cold she lives, seemingly bursting the very rocks apart with her vitality, gay in spite of the nightly freezing and the battering with hail every other afternoon, quivering with laughter as the cold winds whip her dress about. Who fears that she will sulk in Britain's cold and wet ; of course, she would not think of any such thing, but she may leave us in disgust because the life is too soft a one for her.

Sedum sp., J.C.A. 198, is a modest sedum but is certainly not *Sedum modestum* ; it is rather more likely to be *S. atlanticum.* I found it on north-west facing slabs of crumbling shale (again not basalt) at 7,300 ft. near the Tizi n'Tichka, hanging from crevices in close mats of tiny, metallic-blue leaves all sprinkled over with starry flowers of pinkish-grey—a subtle colour combination but one which I find an anticlimax after writing of the saxifrage. I have no great love for sedums, but 'chacun a son gout.' Where would we gardeners be if we all liked the same plants ? What is more, where would the plant-collector be ?

Counterblast to a Critical Conifer Expert

With reference to the December[1] Bulletin,
In which some, it's said, are guilty of sin,
A reviewer, while condemning some innocent chaps,
Condones the behaviour of barbarous Japs,
Who practise their fell art like "comprachicos" of old—
What these are, in a book by Victor Hugo[2] we're told.

Now why should he make such complaints vociferous
Against poor collectors of dwarfs coniferous,
When Far Eastern sadists stunt and starve,
And twist with copper wire and carve
Their trees to stop them growing tall ?
We do *our* dwarfs no harm at all,
But try our best to grow them well,
Care for and cosset them, not give them hell !

[1]Dec. 1960 A.G.S. Book review by Miller Bradfield.
[2]" L'homme qui rit."

I suspect the reviewer is a sadist too,
A would-be inquisitor, holding the view
That heretics against the catholic faith
Of orthodox purists revering Farrer's wraith,
Should from the A.G.S. be cast
Into outer darkness, there to breathe their last.

The diseased freaks he so much despises,
In their different colours, shapes and sizes,
E'en when evolved through causes pestiferous,
Are still akin to tall trees coniferous,
And surely give pleasure in the garden scheme,
When languorously we laze and dream
Of mountains and woods we once enjoyed.
Why dig them up and leave a void ?

What does it matter if they *are* funniosities ?
We'll continue to grow our delightful monstrosities,
For if they're abnormal, they're beautiful too,
Even when named wrongly at W—— or K——.[3]
Thus say I, as a dwarf conifer fan,
And I won't be put off them by any man !

So let us all not be too fussily serious,
Whether we like dwarf conifers, cacti or wisterias.
Let all true plant-lovers set aside prejudice
And engage in the culture of anything nice,
Be it juniper, cypress, cedar or pine,
Or other dwarfs in the conifer line,
And rejoice in the cones, or sniff at the juice
Of cryptomeria, thuya, sequoia or spruce.
And please don't think that I try to be funny,
But to some they're "sour grapes," as they cost too much money !

ANON.

[3]And they are too !

A Useful Hint ?

"ROCK-WORK of artistic and imposing character may be formed without any hard materials at all. The base of the rockery may be formed of earth only, and these earthy masses cased over on the spot with cement. This can be moulded into any desired forms, and pinnacles and stalactites worked in or on for effect where desired. How much can be very well done in this way with a very slender expenditure of time and money cannot be known without making trial of the system."—1893 *From an old Book on Gardening.*

New to My Garden – Part V

By D. M. MURRAY-LYON

Silene laciniata greigii comes from the Rockies in Western U.S.A., and is quite hardy here in Perthshire. It has a rosette of pale green leaves two inches or so in length, and flowers carried on rather floppy six- to eight-inch stems. These flowers are quite large, vermilion scarlet in colour, and very showy. They are produced over a longish period in summer. It requires deepish soil to accommodate its tap root, the soil should be light and well-drained (rich scree). It sets plenty of seed which germinates well.

Caloscordium neridifolium is a cousin of the Alliums and looks like them, but without their onion smell. The rose-pink bells are carried in umbels on stems six or eight inches high. They are produced in late summer. It is doing well in scree.

Sisyrinchium grandiflorum album (syn. *S. douglasii*) is a North American like the violet type form, and like it it has rush-like leaves. The large bell-shaped flowers are white with a pearly sheen—dainty and lovely. Both forms require a moist soil with plenty of humus in it, but well-drained. The flowering time is February/March and it is really hardy. It increases fairly rapidly and is easily divided after flowering.

Syringodea lutea-nigra belongs to the Iris family, and is rather like a small yellow crocus with black markings. It flowers in September/October and seems to be quite hardy. It is a South African, but comes from high up on the Drakensberg. It has come through two quite trying winters here, growing in sharp but not too poor scree in full sun.

Saxifraga brunoniana is one of the Trachyphyllum group and a native of the Himalayas. It grows in small spiney rosettes of bristly leaves of pale green. From these rosettes grow long, thin red runners which arch in all directions. Where the tip of the runner comes to earth a new plant develops, so propagation is no problem. In late summer dainty yellow flowers are produced on four-inch stems. It likes cool, humusy soil and is happy growing amongst dwarf rhododendrons and other plants enjoying similar conditions. This may give the impression that it might be invasive, but I don't think it could be accused of that.

Amsonia salicifolia, while not startingly showy, is nonetheless an attractive plant. It comes from North America and is perfectly hardy. It disappears below ground for the winter. Its description in the catalogues of the nursery from which it came is quite apt, so I will just quote it : "Graceful, willowy wands of pretty Periwinkle-like flowers." The flowers are of a soft blue and carried on stems of twelve inches or so. Late summer is its flowering time.

Ranunculus insignis is rather like the better known, but more difficult *Ranunculus Lyallii*, but it has large golden-yellow flowers. The leaves are kidney-shaped on stems of a foot or so, but not carried

erect. The flower stems are about eighteen inches or a little less. It is another plant for the cool peat border.

Another plant which likes similar conditions, but as ground cover, is *Rubus fokianus*. It is a native of the Eastern Himalayas up to 14,000 feet, and perfectly hardy. It is quite prostrate and roots as it goes ; it might well have been named 'radicans.' It has dark green, crinkly leaves ; what the flowers are like I do not know, as so far it has produced none for me. Even without flowers, though, it is worth its place wandering around below dwarf rhododendrons, etc., in a peaty border.

Vicia pyrenaica is a neat little prostrate scrambling pea with violet-purple flowers and small shiny green fern-like leaves. It does well in the crevices of a sunny wall.

Edraianthus dinaricus (syn. *Wahlenbergia dinarica*, the family still seems to be in rather a muddle taxonomically !) is rather like a looser growing form of *E. pumilio* with rather smaller violet-purple flowers. It is, however, quite a pleasant plant for the scree.

I shall finish this instalment with a dwarf shrub suitable for a wall or a sunny bank. It is *Spiraea japonica bumalda nana*, which is only eight inches or less in height, but may grow to two or three times that in width. It is covered in summer with flat corymbs of bright crimson flowers. Cuttings taken in summer strike quite easily.

(To be continued)

Letters

EXTRACTS FROM A LETTER TO HON. TREASURER, D. ELDER, BY HENRY FULLER

". . . . The little plant coming up through the corpse of your little "Pyxie" is almost certainly the *Hudsonia ericoides*, the "Heather" of the Pine Barrens where it is a common sight in open patches of white sand completely covered with golden blooms in Spring. Less than a foot tall, an interesting little plant and reputed to be impossible to move—though I find that small plants in damp sand move easily. You may have the only specimen in Scotland—or Europe !

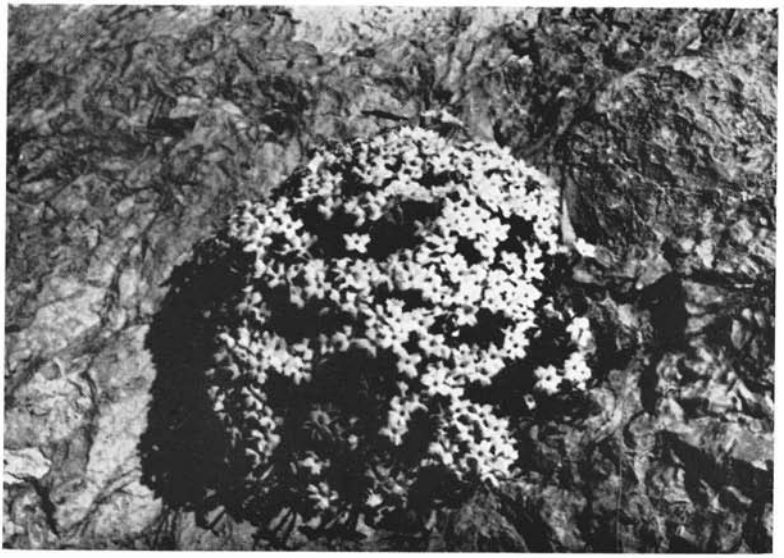
I will be delighted to send you a fresh set of "Pyxies," though I think success will be more likely if we wait for cool weather in the fall. Also, by then, they should be fully budded and ready for spring bloom.

In the meantime, let us look for inhibiting factors. Chief, of course, is disturbance of the roots in digging, shipping, handling—and we will simply have to try to minimize that the best we can.

How about your water ? Could it have seeped through lime stone ? I cannot believe you killed your "Pyxie" with too much water unless there was something in the water it did not like.

Photo—P. Furse

Fig. 42—Colchicum sp., possibly C. szovitsii (see page 162)



Photo—P. Furse

Fig. 43—Dionysia diapensifolia (?), near Shiraz (see page 163)

Photo—P. Furse

Fig. 44—" A spiny horror," Papilionaceae (see page 167)

Photo—P. Furse

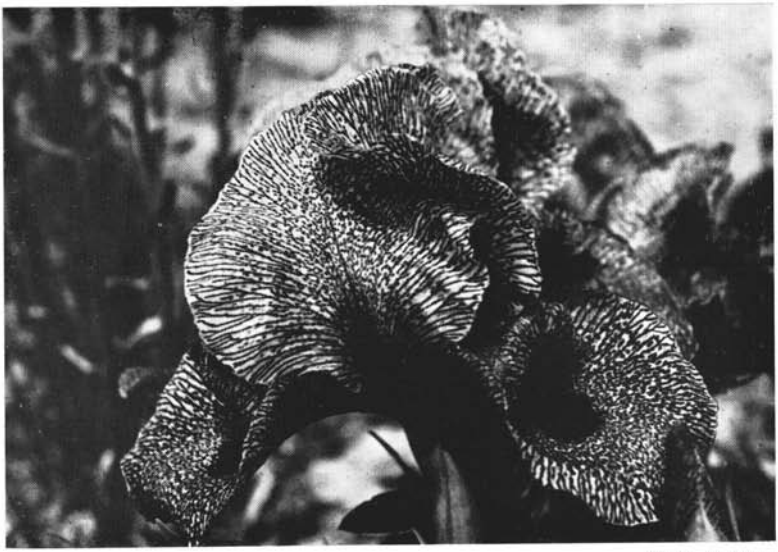
Fig. 45—" A spiny horror," Acanthophyllum sp. (see page 167)

Photo—P. Furse

Fig. 46—Oncocyclus Iris sp., close to I. meda, from Kurdistan
(see page 168)

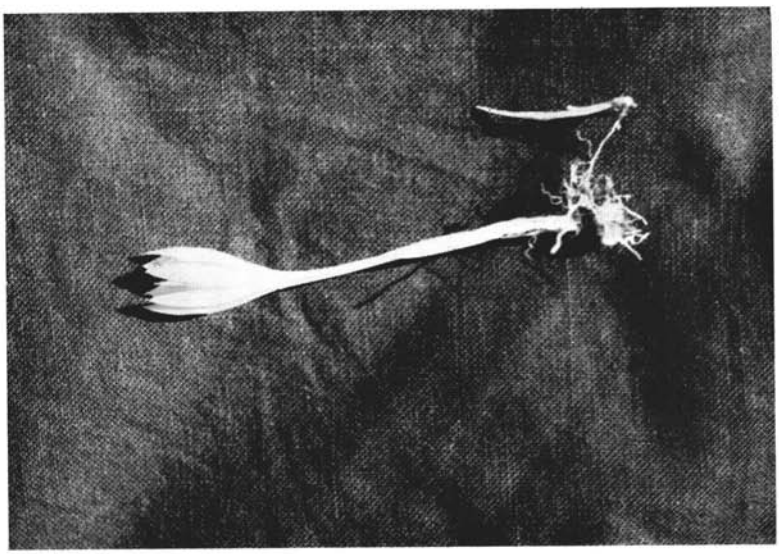
Photo—P. Furse

Fig. 47—Iris acutiloba, in Azerbaijan (see page 168)



Photo—P. Furse

Fig. 48—Oncocyclus Iris, possibly I. lycotis, Azerbaijan and Kurdistan
(see page 166)



Photo—P. Furse

Fig. 49—Crocus lazicus, showing stolon (see page 170)

Photo—D. M. Holford

Fig. 50—Viola calcarata (see page 203)

Photo—D. M. Holford

Fig. 51—Campanula allionii (see page 204)

Photo—D. M. Holford

Fig. 52—Gagea liottardii (see page 204)

Photo- -D. M. Holford

Fig. 53—Silene longiscapa (see page 204)

Photo—D. M. Holford

Fig. 54—Campanula cenisia (see page 205)

Photo—D. M. Holford

Fig. 55—Viola cenisia (see page 206)

Photo—D. M. Holford

Fig. 56—Campanula barbata (see page 206)

Photo—D. M. Holford

Fig. 57—Primula pedemontana (see page 207)

By all means you must read Guy Nearing's article on the "Pyxie," "Moving a Famous Miff," in the July-August 1951 issue of the American Rock Garden Society Bulletin, Vol. 9, No. 4. (If this is not available to you or Mr. Mowat or Dr. Tod, please let me know). It is the best. Nearing has also written about the Pine Barrens for the Alpine Garden Society, but my copy was burned and I have forgotten the date. As Guy points out, the dry-seeming Barrens are interspersed with swamps and bogs. "A few inches down we find perennial dampness, fed and drained by winding streams the color of strong tea, that flow through a million acres of sphagnum moss."

You need not try to duplicate such conditions, nor those I described in my last letter—but you can see that the ordinary rock garden will not meet its needs. More shade will compensate for the underground streams—which my situation lacks completely except for one small artificial pool and its overflow. One "Pyxie" only is planted by this overflow—and it is growing rampantly. It also has quite a lot of shade. Near it is a luxuriant seedling of *Saxifraga* 'Beauty of Letchworth,' a *Rhododendron racemosum*, and a small Leiophyllum from New Jersey—all happy. The overflow goes into a tiny rock-lined ditch on the banks of which the plants are planted—but the drainage is good, as the whole thing is above a section of the rock garden with a steep fall.

But below this is one small section of the rock garden, like a small high valley enfolded on the side of a mountain, a curving scree coming down to it on the right, a little ravine running gently down to the floor on the left. The floor is filled deeply with Pine Barren soil and here three large "Pyxies" are doing fine. They have morning sun but afternoon shade—and the finest plant is the one with most shade. It is dense, compact, deep green, beautiful. The other two, so near, in such nearly identical conditions, are healthy but bronzy red from more sun. Leiophyllum, Hudsonia, and the even more heather-like *Corema conradii*, fill the little ravine. In the valley with the "Pyxies" several *Viola pedata* have been blooming since spring; they too are from New Jersey near the Barrens and like the soil. But going toward the scree the very next plant is a white Alpine poppy, blooming now from seed sown last winter—and the very next plant at the base of the rise is our Club symbol, *Dryas octopetala*, happy in sun and gravel only slightly elevated above the valley floor and the "Pyxies." I had never grown it before, and last spring put the small plant there in fear and trembling. I gave it a different soil mixed with egg shells—saved from our breakfast eggs! And let this be a happy augury: it has grown prodigiously and the third set of blooms are preparing to open, though we earlier took off ten divisions and cuttings, all of which have rooted. It is happy—about fifteen inches from the "Pyxie."

A little further up the scree in a pocket above a small rock are several *Erodium chamaedryoides* which bloom constantly in the sun—but we must winter them in the greenhouse. Next up the slope two *Raoulia* (*australis* and *lutescens*) look completely at home and have

more than doubled their size since they came from their small pots in May. I had never grown (or even seen) them before, and I don't know if they can stand our winter . . . But the "Pyxies," though very near, have very different conditions from the scree plants, their own quite different soil, and the water runs naturally down to them and they get plenty of it. Most of my "Pyxies," as I think I have written, are in a more shady wood garden, or Pine Barren garden, at the western edge of pine and fir, and the best and most compact of those plants are the ones that get the most sun. They have gone through this very dry summer with little attention, but with water fairly often—but only fairly—from the hose. They have shade (but some sun, of course) and pine needle mulch and friendly neighbours—including two new ones, two little *Cassiope lycopodioides*, which seem to be doing fine. I had never grown them. But last spring after reading an article about them I said to myself, "Aside from being more Northern, their likes and dislikes seem to be much like those of the "Pyxie"; I will try them together on the edge of my Pine Barren Garden." So I did, and so far they seem happy together. If you are growing Cassiope, or *Viola pedata*, or *Epigaea repens*, why not try the "Pyxie" nearby ? Yesterday, after meditating on your possible water problem, I went to a nearby sphagnum bog-pond, and got a bucket of live sphagnum and brown fern root, or sedge peat maybe—I am not sure—and soaked some of it in water and poured the water on some of my more exposed "Pyxies." You might try this, or commercial sphagnum moss or sedge peat if you have no handy bog.

Robert Lemmon once told me of a planting of trailing arbutus that mysteriously died although the location and soil seemed perfect. But he found that water had been seeping down to it from a limey section up the hill. He replanted, and followed the advice of an old country woman ; he boiled rhubarb in a quantity of water and poured the resulting tea around the plants, which flourished. Later, I believe, a chemist told him why—but my memory goes vague here. Maybe Dr. Tod would know.

* * * *

I already feel greatly in your debt because of the pleasure and excitement we have drawn from the *Journal*, and the wonderful seeds from the Seed Exchange. But some day I will surely ask your help in getting a plant I want and cannot find here. Next year I hope to make a serious new beginning with Gentians—having had enough tentative successes or tries to start with more confidence.

For two years we had blooms of startling beauty on a single plant of *Gentiana* 'Inverleith'—surely the most beautiful I have seen, but I haven't seen many. But the third year it petered out and died—and this spring I could not find an American source for it. If I can't find it here next spring I will let you know.

G. acaulis did bloom for us this spring—only two big blooms, but on a small plant we had grown from seed—and it is slowly spreading

out and getting bigger this summer. The one I have completely failed with so far is our own beautiful native, *G. crinita*, the fringed gentian. Three miles from here I know a beautiful field of it.

* * * *

Last night after going to bed I re-read Mowat's article on 'The Heath Garden' in the Bulletin of the A.R.G.S. with great interest, as this spring we commenced building ourselves a new Heather Garden. In this article he says : "Our soil in general tends to be on the alkaline side . . .", and it seems reasonable to me to assume that your water would be the same. I will bet you a "Pyxie" that that is the source of your trouble.

Incidentally, there is great confusion here about "King George" (*Erica carnea*). I may have it, I may not. Can you tell me, does the "Springwood Pink" have darker foliage than "Springwood White" ? If so, how distinguish between true "King George" and "Springwood Pink" ? I suspect the nurserymen have them mixed up.

We are in the country, no public water supply ; have our artesian well—our digger had to bore through 170 feet of unbroken grantite to find water. No lime."

Yours, etc.,
HENRY FULLER

EXTRACTS FROM A LETTER TO A MEMBER—JULY 1962
By D. HOLFORD

. . . . OUR TRIP was a terrific success and I will try to give you an outline of it. A good journey, night flight to Geneva, on by bus to Grenoble, a few hours wait, then on by another bus to Lautaret, where we arrived in time for supper. The Hotel des Glacier is most comfortable, with good food. There were no baths that we discovered, and one sleeps and eats in separate buildings. But there are lots of hot water and the central heating on most nights. And didn't we need it, too, very cold with hard frost ! But bright sun by day, if mostly cold winds ! No rain at all ! The mountains were very dry, and flowers short-lived but wonderful.

We did several expeditions on to M. Combeynot, part of the Meije group. There we found *Eritrichium nanum* at under 7000 ft., having obviously come down on its rock from the heights where it grows. *Viola calcarata* (see fig. 50) was growing as daisies would on our lawns and of all shades—purple, yellow, white, etc., a lovely sight. *Primula rubra* and *P. viscosa*, mostly over, *Geum reptans*, *Aquilegia alpina*, *Daphne striata*, the likes of which I have never seen, including an albino form, were very lovely. Everywhere *Dianthus neglectus* was just coming into flower and quite a few were out by the time we came away. Unfortunately, large flocks of sheep played havoc with these and many other things. *Gentiana verna*, *G. brachyphylla* and *G. acaulis* were all super. A few *Pulsatilla vernalis*, *Saxifraga retusa* were out,

but most *Saxifraga oppositifolia* over. There were many orchids. *Campanula allionii* (see fig. 51) was quite magic a mile or two down the Pass Briancon way. *Ononis cenisia* was here, too, and *Campanula thyrsoides*. The meadows were a sight with *Narcissus poeticus*, St. Brino's Lilies, *Anemone narcissiflora*, and asphodels. Vast seed-heads were on *Pulsatilla alpina*. I never dreamt that the narcissus would still be out, and in fact, on the La Grave side of the Pass, they were over, but on the other side and below the old Galabier road they were at their peak.

However, the really wonderful place for flowers was simply alongside the Galabier Pass road. There was no bus, so we had to walk it, but how worth while it was and an easy gradient for a good five miles. And a hot day ! We first came on a patch where the snow was only just going and a mass of *Crocus albiflorus* was coming into flower, surrounded by lovely fat plants of *Pulsatilla alpina*. With glorious views of the Meije just in front, it was a most exciting sight. Douglasia abounded a little higher up, and *Gageas* (see fig. 52), *Gentiana verna* and *G. acaulis*, and *Ranunculus pyrenaeus* carpeted the ground. *Primula viscosa* was still out in shady nooks, and a lot of *Daphne mezereum*, including a rare white form. Towards the top of the Pass *Silene longiscarpa* (see fig. 53) began. This I could hardly believe, the flowers are so huge. The screes at the top were covered with a beautiful little Brassics—I don't know its na,e, but possibly *Diplotaxis humilis*—also *Saxifraga oppositifolia* and *Linaria alpina*. Our aim was to find *Androsace pubescens*, but we failed ; our instructions were not good enough.

There was still a lot of snow and we had a long walk back, this time down the old Galabier Pass road. Not a great deal of interest was here except a most unexpected plant of *Eritrichium nanum* on a rock, again quite low down, and the wonderful meadows at the bottom I have already told you about. We came up the Pass again one afternoon towards the end of our stay and did manage to get a bus this time, and so had a bit longer on the top. We still didn't get the *A. pubescens*, but we found an albino *Gentiana brachyphylla*—wonderful ! —*Ranunculus glacialis*, Draba spp., a good pink form of *Androsace carnea*, and lovely views before we had to set off home again. No bus !

We had seen M. Ruffier-Lanche on our first morning, but he then had to go off to Grenoble and only returned the evening before we departed, when he came and dined with us and was most charming. His Lautaret garden is interesting, with not only the native plants, but others from all over the world. I think that during our rambles we found all the plants we set out to locate ; it was only the *A. pubescens* that defeated us. And that was more lack of time and energy !

To get on to M. Cenis was quite a problem, as no bus went over the Galabier, except, it seemed, when it felt like it ! But an estate car taxi was organised from Briancon. To our horror, to the door rolled up a perfectly ordinary five-seater. The estate car eight-seater had "had a little accident"—a puncture, I believe ! But in we got somehow, two in front with the driver, the remaining four in the back. The lug-

age, all twelve pieces, not to speak of cameras, coats, sticks, etc., was in the boot and on top ! To go over two major mountain passes too ! A Citroen, by the way, and what a car ; she never murmured, although we wondered if she would even be able to start ! It was a lovely drive and truly Dauphiny and Savoy are really beautiful. We got to M. Cenis at lunch time, which was wonderful, and gave us a day we had rather written off as one for the journey by bus, and probably train and then bus again. And it only cost us £10 between the six of us.

I fear I had heard so much of the beauty of M. Cenis that I must say I was a bit disappointed, although the meadows as one ran down to the Hotel from the top (it's about 1 mile down towards Italy) were wonderful. Quite a different flora was here, with blues predominating, *Campanula rhomboidalis*, large white daisies and sainfoin mostly, and masses of vast pulsatilla seed heads and martagon lilies. The Hotel is fairly rough, but with comfortable beds. Good food again, and hot water (not always so hot) was brought over. Living and eating were in two separate buildings again. Everyone was Italian and I must say most charming and kind, after they got to know us. There were great jokes about the "cold" British and hot-water bottles produced for us to take to bed. The weather was just the same—bone dry, hot sun, cold winds and icy at nights. Peggy and I looked out on to the farm muck heap ! But one got used to it and the wind didn't always blow that way. How fond of it all we got and it's a 'must' to be visited again before it goes under water. The lake level is being raised about 200 ft. within the next ten years and many of the lovely meadows and plants that are now on the shore will disappear, also the wee, so very poor looking village and the Hotel de la Post. That obviously is why it is in such poor repair, and they intend to retire to their winter home in Susa when they have to close down.

We spent the afternoon of our arrival just exploring nearby and trying to get our bearings. One felt so strongly that nothing had changed since Farrer's day, and this was borne out as we visited his old haunts during the next ten days. *Campanula cenisia* (see fig. 54) we found at the South end of the lake and again masses of *Campanula allionii*, a very deep purple form, as well as the usual one. *Dianthus neglectus* here was full out, quite magic each time one saw a clump. One plant had over 70 flowers out and many still in bud. There was that wonderful cherry colour, not all with buff backs by any means, and we think we found a *D. neglectus x sylvestris* hybrid. A sweet cream-coloured rose and *Saxifraga diapensioides* were our first finds of note and, oh yes, *Saponaria lutea.*

One of us had come from Lautaret with a bad "tummy" ; this I had next day, but all the same we set off for the Lac Clair and M. Lamet, it sounding the most exciting thing to do and it being a good day. It was a fair trudge, or possibly I wasn't at my best. Not a lot was to be found on the way up to the screes, but the screes were lovely. *Campanula allionii* was growing like a weed and *Campanula cenisia*, though still not quite out up here. There were a beautiful little wall-

flower, possibly *Cheiranthus alpestris*, the best *Saxifraga oppositifolia* I have ever seen, and—joy !—at last, but only growing in a very restricted area, *Viola cenisia* (see fig. 55), quite the sweetest viola imaginable, and I have a very great love for the family too. They varied a little in colour, some rather pinky purple, others darker with a deep purple eye. I think I found a *V. cenisia x V. calcarata* cross, if this is possible, and have a slide of it. *V. cenisia* varied also in size, some were tiny, other large fat chaps.

After lunch on the screes we then set off for Lac Clair, and I must say found it almost as elusive as did Farrer. We almost gave up in the end, when we got to the glacier, much reduced since his day. But, my goodness, the *Saxifraga oppositifolia* was unbelievable, just like heather on a Scottish moor ! I have a photograph to prove it ! *Gentiana imbricata* was in large clumps, a startling blue. Just one more hump to look over in case it should hide the lake, and it did ! I took a photograph to prove we got there, but must have nearly dropped the camera ; it's all lop-sided ! *Ranunculus glacialis* and *Petrocallis pyrenaica* were growing on the shore as in Farrers day. We met with *Saxifraga biflora*, purple and white forms, on the way down, *Thlaspi rotundifolia*, and a heavy rain storm—the only one we had all the time. We got a nice photograph of the Lac do M. Cenis and M. Cenis itself from high above it, all looking most dramatic, and one of a rainbow, and saw another large colony of *Campanula allionii*—a good day.

The next day we did the round of the lake. Saponaria, calamintha and *Prunella grandiflora* were in sheets on the lake shore, and carpets of *Gentiana campestris* including albino forms, martagon lilies, *Campanula barbata* (see fig. 56) and, a most exciting find, a tiny very pale blue *Campanula pusilla*, which we think is the one Farrer found and named "Miranda." There were a semi-double *Ranunculus pyrenaica* also mentioned by him, *Pulsatilla alpina*, pulmonaria, and *Aquilegia alpina*, a good colour form, but with rather floppy petals and hopeless to photograph in the wind, which was always with us. Beautiful *Silene longiscarpa* was here too, and *Veronica escarpa*, a lovely plant. Fields again of *Viola calcarata* were almost all yellow here, and *Gentiana verna*.

The following day we went up to the old fort at the south end of the lake. The whole area is a rather depressing reminder of the last war, a mass of forts, mostly ruined, and the vast hospice—which must have been a lovely building—just a shell. It was a pleasant, easy day, with nothing new in the way of flowers, but a mass of them. In the afternoon we went up into the mountains on the west side of the lake, but it was strangely lacking in flowers. The snow was too recently gone, I think.

Next day we took a taxi to Col di Petit M. Cenis to look for *Primula pedemontana*. Lovely views, a super day and wonderful wild country ! And an eagle ! Most of the primula was over, but we suddenly came on a magic colony of them still out, one seemingly a rather different thing to the others. I have never seen such a primula, very large flowers. A small plant was collected and luckily the photo-

graphs were quite good. I am sure I found the Primula Rock of Farrer's, the one there is a painting of in "Among the Hills." *Primula pedemontana* (see fig. 57) and *P. viscosa* seemed to grow alongside each other and must, when at their best, be a wonderful sight. *P. pedemontana*, unlike most primulas, seems to be a sun lover and almost always was on the sunny side of the rocks and cliff faces. It was a lovely but long walk back—about seven miles.

I suppose the most exciting day of all was up to M. Malamot and the *Eritrichium nanum*. We did the first three miles by taxi and then walked up a long way, but it was a wonderful old army road and easy going. Unfortunately it was a dull day. There were carpets of *Silene longiscarpa* (see fig. 53) and lovely *Aster alpinus* ; this mostly had suffered from the drought and, on the whole, wasn't good. We saw *Alyssum alpestris*, a sweet plant, *Petrocallis pyrenaica*, *Gentiana imbricata*, *Leontopodium alpinum*, *Saxifraga retusa*, *Lychnis alpina*, *Primula pedemontana*, and then, at last, *Eritrichium nanum* on every rock and all over the ground. One wouldn't believe it. It was good on the Rolle, as you will remember, but nothing like this ; it covered acres, as our photographs will prove. I haven't got the colour and have failed to show it up properly in my efforts to get it against a mountain background. Then down we went to the Lake Blanc (Farrer seemed to have come up from the P.M. Cenis side) and all over the shores grew my beloved *Androsace glacialis*, *Ranunculus glacialis*, *Geum reptans*, and a deep purple *Thlaspi rontundifolia*. The day was bitter cold and very dull, but slides were fairly good on the whole. It was a terribly long trudge home, eight miles or so. Plenty of cars were on the road, but they won't give one a lift; very mean ! I will never forget that Eritrichium.

The following day we went up to the Col de M. Cenis and saw a wonderful meadow full of *Campanula barbata* (see fig. 56) on the way up. But the clouds came down and spoiled things. The last day we had another trip to M. Lamet screes ; clouds down at times again. By now the way up had turned into a mass of yellow—rock roses, allyssum, *Potentilla grandiflora*, a yellow Linaria—and the dianthus were out now on and around all the rocks. *Viola cenisia* was better than ever, and *Campanula cenisia* now out in all its glory in masses.

Well, I know that I have missed out many flowers. I kept no records. This is all from memory and I know I haven't mentioned a lot of the more usual alpine plants. M. Cenis is certainly a wonderful place ; of that there is no doubt ; and obviously it would be better still on a less dry year.

We had the usual adventure on our way home. The bus from M. Cenis to Geneva got us as far as our stop for lunch and there it broke down ! Luckily we were the only passengers apart from one, fortunately small, Italian. After about one hour's delay there was a car, this time a six-seater, but there were eight of us with the driver, and all our luggage. But in we all piled. It was a lovely drive, really, if only we had not been so cramped. We flew home at 10 p.m., by Swiss Air jet, in one hour and twenty minutes.

Letters to the Editor

Dear Editor,

I have just been taking time to read *Journal No.* 31 of the S.R.G.C. and have heeded your plea for letters, etc.

My rock garden consists of three window-boxes which have given me great pleasure over the years but are a bit frustrating as there is so little room, and some plants start to spread and take up too much room—yet I want to see a sizeable plant when it is in flower. I would welcome ideas as to how I might make the best of my boxes—two are stone and one a metal one which latter faces north and in which I have two winter-flowering heaths, cyclamen corm, one or two tiny daffodils, and three dog tooth violets which took offence apparently when I moved them around a year or two ago and didn't flower last year, but sent up a lot of leaves !

I like the idea of visiting neighbouring gardens and would be glad if any members in my area of Edinburgh would invite me to see their rock plants.

Yours sincerely,
ELIZABETH L. MCCARTNEY

65 Spottiswoode Street,
Edinburgh.

Dear Editor,

I have recently been beguiled into joining the S.R.G.C. and I am very pleased that I have done so as the *Journal* is intensely interesting and I hope one day soon to visit Scotland and see some of your glorious gardens.

Now I have just been perusing an article in the April *Journal* entitled "Discussion Week-end at Pitlochry," and was very surprised to read the opinion of Miss King that *Anchusa caespitosa* (of gardens) syn. *Anchusa angustissima* can only be propagated from root cuttings. I raise plenty of these plants from seed every year, in fact they sometimes sow themselves. Possibly you might be interested to see colour slides and I enclose two ; one is a self-sown seedling in stone steps and the other is a very small form which occurred in a batch of seedlings. It looks extraordinarily like the true *Anchusa caespitosa* ; this little plant flowers well but sets no seed, so I am trying a root cutting with a little bit of top growth, but I am not really very hopeful that it is going to root.

I have collected quite a lot of seed already and could easily send you some if you or your friends would care to try it.

J. A. M. SMALLWOOD

Plant Notes

DAPHNE STRIATA

THIS CLOSE relative of *Daphne cneorum* is probably the most plentiful daphne of the European Alps and is found growing over a very wide range stretching from West France to the Carpathians. Although it must be admitted that *Daphne striata* is not quite so fine a plant as *Daphne cneorum*, it is still a very worth-while plant and quite deserving of a place in the rock garden.

It is a dwarf evergreen, semi-prostrate shrub—rather like its very near relative *D. cneorum*—with smooth, thin, twiggy shoots and small, shiny green, narrow leaves less than an inch long and about quarter of an inch wide. Its flowers are sweetly scented and are carried in terminal clusters of a dozen or so and purplish pink in colour. Its long tap-like roots make it rather difficult to transplant except in a fairly young state, but once established it does very well in a good open mixture containing peat or leaf-mould. It is essentially a sun lover (see fig. 38).

GEUM REPTANS

SURELY everyone who has seen this lovely native of the European Alps at home in its wild habitat must have been immediately charmed by it, though perhaps those same people after trying to reproduce the same effect in their rock garden have become somewhat exasperated by the way in which it so often fails to appreciate what one would regard as the correct treatment for a plant of the bleak, stony screes of the highest, boulder strewn mountain sides.

The strange fact is that our scree conditions in the garden do not seem to suit this plant as one would expect, and though it may certainly live on more or less precariously in a somewhat stunted looking state for several years, it seldom produces more than an odd one or two of its beautiful flowers. On the other hand, when planted in the fairly fat soil of an open border it usually responds by producing fine healthy foliage and an abundance of flowers; the writer has a plant which under these conditions had fifty flowers open at one time last year.

These rich yellow flowers, one to one and a half inches across, are produced singly on stems about eight inches tall and look one boldly in the face ; no modest hanging of the head here. The closely set pinnatifid leaves (not quite prostrate but set at an angle), of a very pleasing green, are about eight inches long and are produced in tufts at the ends of short creeping stems which in time ramify into a clump two or three feet across. The fluffy seed heads, too, after the flowers are over, have their own particular charm. This is certainly a plant which is well worth its place in the garden, and a little extra effort, perhaps, to give it what it wants. (See fig. 39).

SAPONARIA OCYMOIDES

TO MOST Club members *Saponaria ocymoides* must be an old and popular favourite, having been introduced to cultivation about two hundred years ago and become a top favourite in the days of those ghastly Victorian rockery atrocities. The fact that it immediately proved itself so amenable to garden conditions was no doubt the reason for its early popularity, just as its never failing beauty and reliable wealth of flowering each year have enabled it to keep its place in our hearts in spite of all the thousands of new introductions of subsequent years.

It is to be found on the mountain sides, and even at lower levels, practically all over southern Europe. A sun lover, liking well-drained stony ground, it delights in trailing its long spreading stems over the warm stones or draped over a sunny rock. When it is in flower, its small, apposite leaves are often completely hidden by the glory of rosy crimson half-inch flowers which are produced in umbel-like clusters at the end of every branchlet and twig. Those who have grown *Saponaria ocymoides* must surely agree with Farrer when he describes it as—"in fact perennial to the point of being immortal." Several colour variants—white, flesh-pink, a deeper shade, and so on —have been recorded and are sometimes available in catalogues. (See fig. 40).

THLASPI ROTUNDIFOLIA

THIS SOMEWHAT variable member of the cress family can, in its better forms, be an exceedingly charming rock garden plant for well-drained scree conditions. Care, however, should be taken to get a good form, because those found in some areas are inclined to be rather poor and straggling compared with the compact, plump cushions to be found in other parts of the Alps ; this variation of form is, of course, not unusual in plants with a wide distribution.

Thlaspi rotundifolia is a plant of the highest screes and rubble slides throughout the Alps, usually on sandstone or limestone, where it anchors itself by a deep-going taproot—a fact which makes it a rather difficult plant to collect easily. This problem, however, is more than balanced by the wealth of seed it produces and the ease with which it can be propagated by cuttings. It forms neat little tufts of from two to four inches high and across, with broadly ovate little leaves of less than half an inch. The numerous flower heads at the ends of the shoots are densely packed with sweet-scented rosy-lilac flowers rather in the manner of a rosy-pink little candytuft. In the garden slugs are very fond of *Th. rotundifolia* and, since it is not naturally a long-lived plant anyhow, it is always a good plan to have some young plants coming on either from seeds or cuttings. (See fig. 41).

CHRYSANTHEMUM ALPINUM

THE 'collected' plant, mentioned in the last *Journal* on page 103, after flowering profusely and setting seed, just withered away and died, I cannot think why. I wonder if the donor of the seed of *C. alpinum* to our Seed Exchange 1960-61 would say what the source of the seed was—home or collected. The plant raised from that seed is still looking quite healthy.

Perthshire. D. M. MURRAY-LYON

A "MICRO" GARDEN

ONE OFTEN hears the expression "Micro-climate." I have what might be called a "Micro-garden." It is a plateau 8 ins. × 8 ins. near the top of a five-foot scree wall. In a vertical crevice in front of and below the plateau grows *Helichrysum selago* with its white, green and grey whipcord shoots. On the plateau itself is a rosette of *Draba oligosperma* var. *andina*, grey/green with pale yellow flowers. These two plants were planted, but *Androsace carnea* has self-sown itself beside the Draba, and they bloom together in April and May, making a very pretty little picture. The plants on the plateau are only about an inch and a half in height.

The picture might be improved, and the flowering period lengthened, by adding to the group *Sedum dasyphyllum*, with its succulent leaves and bunches of pale pink flowers. The same grouping would be most suitable for a small trough.

Perthshire. M-L.

LEPIDIUM NANUM

SOME of you may recall seeing the very fine plant of *Lepidium nanum* shown at the Conference Show by Mr. Roy Elliott. At the time, Dr. Worth chuckled when he saw it, which seemed slightly rude to me until last August when, at Little Antelope Summit in Nevada, I saw why he was amused. Mr. Elliott's plant was a nice, compact cushion, perhaps an inch or so thick, but in its native habitat *Lepidium nanum* forms pads rather less than half an inch thick and, literally, as hard as wood. One plant was about a foot in diameter (fig. 58A) and after I had felt it with my hand, I stood on it on one heel. When I stepped off it, all that was to be seen was a chalky-white heel-mark, with no visible or palpable depression—and I weigh about 160 lbs. dressed as I was then.

Lepidium nanum grows in a very hot, bone-dry limy soil under virtually desert pavement conditions. Good mats are up to twelve to eighteen inches across, but many show signs of severe "die-back." In the illustration (fig. 58B) the intact pad would have been about twelve inches in diameter (the open knife on top of the plant is six inches from end to end) and the other one in fig. 58A shows how com-

pletely the pads break down. This die-back is fairly common on most of these cushion plants ; *Eritrichium elongatum* and the smaller species of Phlox seem to be especially prone to it. It occurs both under arid and normally damp conditions.

It is odd that I saw no plant of *Lepidium nanum* smaller than about one and a half inches across, though the mature plants set good seed and there were a fair number of these younger plants to be seen. Dr. Worth thinks that perhaps under its habitat conditions the seed germinates, grows rapidly and makes pads of about that size in the first year or so. Thereafter growth probably slows down, for the very large pads are obviously of considerable age. It may well be that the die-back is due as much to age as to anything else, though one does see a fair number of smaller plants showing the same trouble.

HENRY TOD

A THING OF BEAUTY—

SEEING the note on *Taraxicum officinale* in the September issue of the S.R.G.C. *Journal*, I am tempted to send you the following story from my family tradition.

My grandfather, who spent most of his life in Malaya, on one of his trips home brought his Malay "boy" with him—"boys" in Malaya being house servants or personal attendants. (Incidentally, the Malays are very fond of flowers and appreciate their beauty most thoroughly). When calling on a relative who had a large and beautifully kept garden, the hostess invited the "boy" to go all round and pick the most beautiful flower he could find. To her horror he came back with a large specimen of *Taraxacum officinale* !

Duns. H. M. BROWN

CREPIS INCANA

NOTES on the propagation of *Crepis incana* generally recommend sowing seed (T. C. Mansfield, 1945 ; L. D. Hills, 1950). L. D. Hills also recommends propagation by division. I can find no reference to propagation by root cuttings, therefore my experience with a plant may be of some interest. A large established four-year-old plant had to be transplanted to a new garden, and it was with some misgivings that I dug all round the plant in an endeavour to get it up in the spring, with as much soil as possible. There were some broken roots but the depth of the ball was nine or ten inches. On tidying up the old garden in July, I was amazed to find seven new plants in the original place. I dug these up with six inches of root (but not intact), potted them, and they all grew. In September two more plants came up in the original place. No seed has ever been set on any of my plants, nor have I had a germination from other seed.

Pitlochry. M. R. S.

DOUBLE PRIMROSES—IN THE WILD

WANDERING through a rather unfrequented area on the borders of Berwickshire, I was delighted to discover a large and superbly robust plant of the wild primrose with fully double flowers. On inspection it appeared to have at least 30-40 buds and flowers—those in full bloom being a pure sulphur yellow tinging to green in the depths of the flower—and growing very erect. Unfortunately, the accompanying colour photograph, from a slide transparency, has not portrayed the true colour, probably being due to it having been taken in early evening light. The leaves would appear to be more rounded, shorter, and a darker green than is usual in the single common primrose. The entire plant was perfection in growth, colour and form, but at the same time I feel Nature knew best, artistically, when she gave us the single primrose in quantity to delight the eye and ensure increase. Both Kew and Edinburgh Botanic Gardens say the fully double form is of considerable rarity and Kew suggests this is probably due to a recessive character which very occasionally manifests itself in the wild. The garden double primroses must owe their origin to a chance find in the wild ; and a double wild primrose is mentioned in literature as far back as the 16th century.

Not expecting to be in that vicinity again, I dug up the plant, replaced a fair share, and hope to retain the rest and increase it in cultivation. Dried cow dung and wood ash seem to be the answer—so far !

Darlington. JEAN THOMPSON

LEWISIAS

IT MAY help D.J.B. (September 1962) to know that, here in Edinburgh, I find the above easy in the scree. They are in full sun facing the South, and the slope falls 1 inch in 3 inches. The scree at that particulzr part has 9 inches of broken brick for drainage, topped by 1 to 2 inches of partially decayed leaf-mould and then 9 to 12 inches of soil mixture (3/5ths weathered boiler ash, 1/5th peat and 1/5th loam). This soil mixture is interspersed with tennis-ball sized stones (rather like a fruit cake). The surface is a two-inch layer of whin and granite chips. A crop of self-sown seedlings appear each year !

I also have a few growing on their sides at the base of a low peat wall, but they cannot compare with those in the scree.

Incidentally, I seem to recollect reading in a *Journal* of The Royal Horticultural Society (March 1959, I think) of a Fellow who had much success with *L. howelli* in a similar mixture with a covering of an inch or so of shingle. He, too, found self-sown seedlings appearing in the shingle.

Edinburgh. M. M. RUSSELL

LONG-LIVED PLANTS

Morina longifolia.—I sent seed home in 1927. I planted several seedlings (of which only one survived) in my rock garden in 1930. It died in the winter of 1961-62, aged approx. 30 years, and then largely from neglect, since owing to illness I was unable to cut away all the dead leaves round the crown in late autumn. I only once succeeded in getting seed to germinate, but these, and perhaps more surprisingly, self-sown seedlings, have over the years all predeceased their parent.

Ranunculus calandrinoides. My wife (who first actually spotted the plants) and I were fortunate in being able to collect a very good form of *R. calandrinoides* coming up (and flowering like Soldanellas) in the Middle Atlas Mountsins in Morocco. The flowers, unlike the wishy-washy white ones one usually sees on show benches—on the rare occasions when one does—were like apple blossom, a lovely pink and white.

I only learned the name of the plant by accidentally seeing one on the A.M. bench at Vincent Square on the day we brought the plants home—I was assured by the owner of the plant's head gardener (no names, no pack drill) that the one on show was the only one in England. To this I unkindly replied that I had four, not adding that they were at the moment in a crate with my baggage at Euston Station !

I planted the four plants in an almost pure scree in my rock garden. Three plants survived until sometime in the 1939-45 War, when I was again soldiering. The fourth, though for the past three years showing signs of going back, only expired in the winter of 1961-62—age at least 27 years. Until the War I used to put a sheet of glass over the plants, not because they weren't hardy, but solely to protect the flowers which insisted on appearing from early December to March.

S. Perthshire. JAMES C. DUNDAS

P.S.—I never succeeded in getting a pot-grown plant to flower.

A DWARD NARCISSUS

ONE OF the smallest of the Narcissus family is *N. hedreanthas.* In spite of coming from Andalusia in Spain, it is quite hardy. The leaves and flower stems are only about two inches long, the latter lean forward holding the flowers just clear of the ground. The leaves are rush-like and dark green, and the flowers, large for the size of the plant, are pale yellow. The flower is given rather a quaint look owing to the style and stamens projecting beyond the corolla, as if the flower was putting out its tongue at you. Here it flowers about the end of February or early March. I have said it is hardy, but that perhaps should be qualified by adding—if grown in gritty, really well-drained soil. Being a dwarf, it is one of those plants better grown near eye level. In, or on top of, a wall in a position sheltered from the coldest winds suits it, and of course it is most suitable for the alpine house. The bulbs increase slowly, but it sets seed which germinates well.

Perthshire. M-L.

OXYCOCCUS PALUSTRIS

Oxycoccus palustris . . . "little value from the point of view of garden beauty." That is a quotation I made a note of lately, but I forgot to write down where I saw it. Anyhow, whoever said it, I definitely disagree. If he had said it was not showy, no-one could object, but the whole plant is neat and attractive. It used to be known as *Vaccinium oxycoccus*, and in English it is Cranberry.

The plant is quite prostrate and the slender wiry stems root as they creep along. The evergreen leaves are tiny and egg-shaped—rather like a pointed egg. The flower, borne at the end of a comparatively long slender stem, has its corolla reflexed, and looks like a tiny red cyclamen. The flowers are out in June/July, and are followed by bright red berries. The berries used to be used for cooking, and were also made into wine, I believe. I doubt if people bother to collect the berries at all now. Picking them would be a long, tedious job, they are so small. It is said to be uncommon, but possibly that is partly because it is difficult to see, growing as it does in boggy places in sphagnum and in heathy moors. I know one place where it grows in really wet bog, literally by the acre almost.

To illustrate how unobtrusive it is, I remember, when staying at a house near Inverness, looking over the garden fence on to the adjacent uncultivated moor. There, within a foot or two of the fence, was the cranberry, and the owner of the garden had never noticed it ! It is quite easy to grow in the garden, and it would be no crime to collect it. Where it does grow, it grows by the square yard and there are plenty of Irishman's cuttings. One of our Edinburgh members has had it in a large pot for years. The pot stands in a pool in the garden. I have it in my "Native Department" growing in the bog mixed up with *Linnaea borealis*, *Andromeda polifolia* (from Glen Garry), *Pinguicula*, *Drosera*, *Saxifraga stellaris*, sphagnum, etc.

Perthshire. EMELL

County Activities

NORTH NORTHUMBERLAND

ON Wednesday 17th October, a large number of members visited the estensive gardens at Howick Hall, by kind permission of Earl Grey and Lady Howick. Lord Grey conducted the party round on a beautiful afternoon and the display of autumn colour was magnificent. Especially admired were small trees of *Cercidiphyllum japonicum*, which is none too easy or hardy in the north. A big display of the Kniphofia "Lady Roberts," a lovely coral-coloured form, will remain long in the memory.

On Tuesday 30th October, Dr. James Davidson gave a talk, "Wandering in Search of Alpines," in which he took as his subject

a visit to Yugoslavia. This was accompanied by wonderful coloured slides and the more unusual plants shown proved very interesting after many talks on the Alps.

On Thursday 8th November, Dr. Henry Tod, F.R.S.E., gave a lecture on his recent trip to "The Rockies" with Dr. Worth. This was the first time that this Group has had a talk on American plants, so that it was a very welcome subject.

On Tuesday 4th December, Mr. Jack Drake made the long journey from Aviemore to lecture on "More Plants at Inshriach," with very lovely coloured slides. The many fine and often rare Alpines shown made it a talk of most absorbing interest and it was very well attended.

On Tuesday 19th March, Mr. David Livingstone gave a talk on "Saxifrages" in the Blue Bell Hotel, Belford.

Show Reports

GLASGOW

10th and 11th April 1962, in the McLellan Galleries*

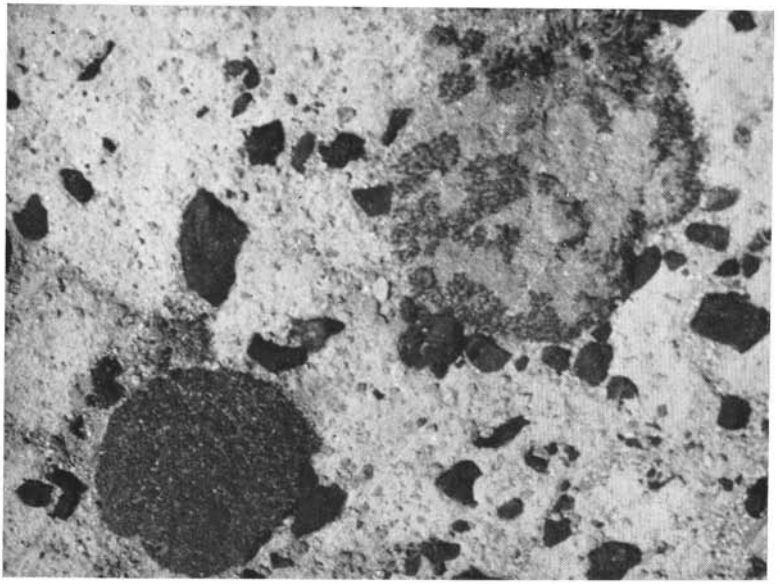
NEVER a bad but there's a worse ! Last year before our Show we thought our chances were at the nadir. This year the depression was even deeper. Frost, wind, snow, sleet, frost in permutation, and all the old men of forty could tell us that 'Never in living memory . . . or as long as I hae-mind, etc.' But we have had our Show despite of jeremiahs. Not bad at all, in fact quite good, och ! real good, although a month behind. *Saxifraga oppositifolia*, at least six pans such as Mrs. A. Allan's or Mr. D. Livingstone's, really fine though just lifted for the occasion.

There were 273 entries. Mr. Norman M. Brown and Dr. M. E. Gibson, from Dumfries and the Solway respectively, brought generous, colourful entries of high quality and Mr. J. Archibald was no whit behind.

The Rhododendron Section was rescued from extinction by Mrs. Naomi Mitchison and Mrs. Neil Rutherford. Their beautiful exhibits had been literally gleaned from the havoc wrought by wind and frost. Though Mrs. Mitchison was denied the full opposition of her peers, she did not unworthily carry off the Urie Trophy. At this late stage we record our pleasure that Mrs. Mitchison should open the Show and speak her appreciation of gardeners, encouraging us to be adventurous, creative and zealous in the quest of beauty.

Not least important are the members who compete in Section II. Many others could enter plants in this section. It gave us pleasure to see the delightful surprise of Mr. Neil Morris to learn that he had

*By an unfortunate error this report was omitted from the September *Journal* and replaced by the report of the previous Glasgow Show. For this mistake apologies are tendered.



Photo—H. Tod

Fig. 58A—Lepidium nanum (see page 211)

Photo—H. Tod

Fig. 58B—Lepidium nanum (see page 211)

won the Wilson Trophy and Bronze Medal for most points in Section II. Mr. Morris, Port-Glasgow, began three years ago and, with hard work, has built a fine rock garden on a site where "everyone" said it was impossible. With limited resources and much enthusiasm and thought, the purchase of Hill's book on propagation, and Mr. Darling's fatherly interest, he has worked wonders. All in three years !

The principal awards were :—

1. *George Forrest Memorial Medal* for the most meritorious plant in the Show : for a beautifully flowered and healthy *Cassiope lycopodioides* by Mr. Norman M. Brown.
2. *Dr. William Buchanan Memorial Rose Bowl*—6 Pans Rock Plants : Mr. William Urie (*Anemone pulsatilla*, an arabis, *Primula gracilipes*, *Sanguinaria canadensis*, *Pleione pricei* and *Omphalodes verna*).
3. *Henry Archibald Challenge Rose Bowl*—3 Pans Rock Plants : Mr. William Urie (*Pleione formosanum*, *Primula rosea* and *Shortia uniflora grandiflora*).
4. *Crawford Silver Challenge Cup*—for most 1st Prizes in Section I : Mr. Norman M. Brown.
5. *The Urie Trophy*—for most points in Section V : Mrs. Naomi Mitchison.

Trade Medals : Large Gold—William B. Boyd, South Arthurlie ; and Jack Drake, Inshriach. Gold—Edrom Nurseries and Knockdolian Nurseries.

Certificates of Merit were awarded to Mrs. MacDonald, Bearsden, and Miss J. Woodrow, Killochries, for delightful exhibits of greenhouse plants which added arresting masses of colour to the Show.

A *Certificate of Merit* was also awarded to Mr. William Urie for a varied and interesting display of dwarf and berried bushes and of primulas, anemones and *Narcissus bulbocodium.*

Among plants which deserved attention were : *Draba dedeana*, *Celmisia hectori*, *Prim.* "Blairside Yellow" amd *Prim. marginata*, "Pritchard's Form" (N. M. Brown), and *Polygala rhodoptera* (Dr. M. E. Gibson).

In Conifers there was nothing outstanding, but there was a good display of nice plants.

In Section II not a few plants of *Narcissus minimus* (*asturiensis*) left the Show as *N. minor*, but still beautiful.

The Scottish Orchid Society were again with us and staged an enthralling display which attracted much attention. Perhaps this exhibit was seen to better advantage by daylight, which did more justice to the delicate colouring of many of the blooms.

Mr. J. S. Groome presented a very instructive series of pots with clear notes to explain them on Growing Daffodils from Seed. Pans showed plants at 1st, 2nd, 3rd, 4th, 5th and 7th year stages. A pickled grub of Narcissus Fly and a live fly, adequately caged, were accompanied by a clear statement of this creature's destructive powers and

the preventative measures available. Altogether a very valuable demonstration.

Our Show is always indebted to the Trade Stalls which cheer us, stimulate us and coax us to be spendthrift. Newcomers were Canis-Eskan Farm Nurseries, Helensburgh—a new venture with a nice range of shrubs, heaths and trees. We wish them well.

It would be invidious and too protracted to descant on the variety of the exhibits of Knockdolian Gardens, Jack Drake's, Edrom Nurseries, William B. Boyd's Barrhead Nursery and Ponton's of Kirknewton. Mention might be made of *Corylopsis willmottiae* (Edrom), *Salix wehrhanii* (Ponton's), *Cassiope rigida* (Knockdolian), *Croeus chrysanthus* "Cream Beauty" (J. Drake) and the brave show of azaleas and dwarf primulas (W. B. Boyd).

In a special class was *Leucogenes leontopodium* (Drake), which received a Preliminary Commedndation from the Joint Rock Garden Plant Committee.

Other valued Trade Stalls were John Smith & Co. (Glasgow), with a large and representative display of books on plants and gardening ; Floral Handicrafts (Jewellery) ; Miss D. M. Anderson (Floral Pictures and Drawings) ; Bute Potteries, a new visitor with a fine display of high class pottery ; and not least, Grant's of West Calder, with their invaluable composts, etc. We would thank all these holders of Trade Stalls for their presence and the interest of what is more than a peripheral part of the Show.

W. H. M., *C.R.*

NORTH BERWICK

6th September 1962

THE FIRST impression of an Autumn Show at North Berwick is one of gaiety and colour, for the Sun Parlour in which it is held is a long room with plenty of windows on either side, so that the plants are seen in their true colours and without any of those unnatural effects that occur where artificial light has to be used.

There was an increase of exhibits over previous years and twenty-one members brought one hundred and sixty-nine plants, and much of the success of the Show was due to several new members, to Mr. Esslemont and Mr. Crosland, who brought such a large number of their treasures all the way from Aberdeenshire, to the splendid contributions from Berwickshire and Edinburgh, and to the invaluable support given by the two Trade stalls furnished by the Edrom Nurseries and by Mr. Ponton on a day when they were also showing in Edinburgh.

The Forrest Medal for the best plant in the Show was won by Mr. and Mrs. Richard Baillie (Longniddry) for their splendid *Crassula sarcocaulis*, well over a foot in diameter, with its large head of pinky-red flowers. The runner-up was described as a superb *Sedum pluricaule*, very medal-worthy, but it was not quite out and was given a Certificate of Merit.

The East Lothian Trophy for the three best plants, each of different genera, went to Mr. J. D. Crosland for his *Campanula morettiana*, his *Petrocosmea kerrii* and his *Helichrysum confertum*.

The Peel Trophy for the three best pans of Gentians was won by Mr. and Mrs. W. R. Cairns (Berwickshire) for their Gentian hybrids —'Devonhall,' 'Hexa-farreri' and 'Macaulayi.'

The Logan Home Trophy for the best Miniature Garden was won by the Hon. Miriam Pease for a small garden with several plants in flower.

The Mary Bowe Memorial Trophy for the highest aggregate number of points in Section I was won by Mr. Esslemont with $\frac{1}{2}$ point more than Mr. and Mrs. Baillie.

In Section II (Novices) the Silver Cup for the best plant went deservedly to Mr. William Scott (Gullane) for a very fine *Calluna vulgaris* 'J. H. Hamilton' and the Club's Bronze Medal for the highest aggregate number of points in the section was won by Mrs. Waller (North Berwick) who showed five prize-winning plants.

There were four good entries in the class for 3 Rock Plants of Different Genera, in which Mr. Crosland took first prize and the East Lothian Trophy, while Mrs. Tweedie was second with *Astilbe simplicifolia*, the curious *Teucrium subspinosum*, and a large pot of *Gentiana asclepiadea*. The first prize for 3 Distinct Rock Plants of the same family was won by Mr. Esslemont's *Androsace pyrenaica*, *A. imbricata* and *A. helvetica*, while Miss Pease's two large pans of *Cyclamen neapolitanum* and *C. neapolitanum* album were first in the class for 2 pans of plants of the same family.

The class for New, Rare and Difficult Plants is always one of the most interesting and Mr. and Mrs. Baillie won the first prize with *Dionysia curviflora*, a rare plant from the highest Alps of Persia. Mrs. Boyd-Harvey was second with *Anarthrophyllum desideratum*—the Patagonian scarlet-flowered gorse the seeds of which were brought back by Mrs. Tweedie in 1961—and which had not previously been seen in Europe. Mr. Esslemont was third with an *Anchusa caespitosa*, from the hills of Crete.

There were other rare and difficult plants in the Show which might have been shown in the above class but which preferred their native qualification, including Mr. Esselmont's first prize *Sagina x boydii*, Mrs. Cormach's bright little *Lycopodium selago*, and a delightful *Loiseleurea procumbens* (so difficult to collect and to acclimatize), beautifully presented by Mr. and Mrs. Cairns.

The entries for Silver Grey Foliage Plants were good, with Mr. Archibald's *Celmisia hectori* heading the list. Mrs. Boyd-Harvey won first prize with *Corydalis rupestris* in the Autumn Tinted Foliage class, and it was noted that this plant was truly Autumn coloured and owed its tint purely to the season of the year.

Of the Rock Plants in Fruit the eye was immediately caught by a Dwarf Rowan—*Sorbus reducta*—with its large bunch of berries, which won first prize for Mrs. Boyd-Harvey.

The Draba Cushion Plants were good in Class 9. Mr. and Mrs. Baillie were first with *D. imbricata* and Mr. Esslemont second with *D. polytricha*, but the Cushion Saxifrages in Class 10 were a very worthy exhibit and of particular interest. The best three were Mr. Esslemont's *Sax. burseriana crenata*, Mr. and Mrs. Baillie's *Sax. valdensis*, and Miss Nancy Bowe's *Sax. cochlearis probinii*. There was another very fine cushion plant—*Gypsophila acaulis*—shown in the class for Caryophyllaceae, but it had to take third place to Mrs. Tweedie's *Silene* species and Mr. and Mrs. Baillie's *Dianthus* hybrid.

The Astilbes and Campanulas were good and the first prizes in these classes were won by Miss Nancy Bowe's *Astilbe simplicifolia* and Mr. and Mrs. Cairns' *Campanula sartorii*. In the class for Compositae a *Raoulia lutescens* shown by Miss Pease was first.

There was, as is usual at this Show, a wonderful entry of Cyclamen and some superb plants were shown. The largest pan, with flowers all out and leaves just showing, belonged to Miss Pease and was given first prize, but the most attractive pan was a smaller one shown by Mr. and Mrs. Cairns for the leaves were dark and pointed and encircled effectively the upright white flowers, while Miss Mancy Bowe showed her renowned cyclamen of great size and age—for it is known to be over fifty years old. All the six exhibits in this class were of *Cyclamen neapolitanum album* and it is hoped that we may see some pink *neapolitanum* next year. It is curious that the variety should be easier to grow than the species.

In contrast to the above, the entries of Heaths and Heathers were disappointing, especially as there are delightful gaultherias and vacciniums in full fruit in the Autumn and, though there are soil difficulties on the East Coast, the greater part of East Lothian should grow them well.

The Gentians made up for the Heaths—they were superb, with many excellent ones in all three classes. The most outstanding exhibit was Mr. and Mrs. Cairns' three hybrids, which won the Peel Trophy, but Mr. Crosland's and Mrs. Tweedie's three pans were also quite lovely. Mr. Crosland's second prize winners were *G. x freyniana*, *G. x* 'Macauleyi' and *G. x* 'Caroli,' and Mrs. Tweedie's third prize winners were *G. x* 'Drake's form,' *G. x* veitchiorum, and *G. x* 'Kidbrook Seedling.' In the Species class Mr. and Mrs. Cairns were first with *G. saxosa.* and Mrs. Meyer (North Berwick) was second with *G. lagodechiana.* In the 1 pan hybrid class all three winning pans consisted of *G. x* 'Inverleith,' shown by Mr. and Mrs. Baillie, Mrs. Boyd-Harvey and Mr. Esslemont.

Mr. Esslemont won the first prize in the Geraniaceae or Oxalidaceae class with an *Erodium corsicum rubrum.*

The Sedum Classes contained some fine plants and both Mrs. Cormack and Miss Pease showed attractive *Sedum pluricaule*, the latter of which was given a Certificate of Merit, but the Sempervivums were not as good as those seen at most Shows, though the first prize

winners in two classes—Mr. Esslemont and Mr. and Mrs. Baillie—showed very good plants.

There were some charming entries in the Amaryllidaceae, etc., class. Mrs. Hinton's *Allium cyaneum* with its attractive blue flowers was first and Mr. Sanderson showed a *Leucojum autumnale* which was exquisite with its lovely white drops at the end of delicate slender stems. Mr. Esslemont showed an Aroia originating from the heights of Mount Hymettus.

There were two well-filled classes of Dwarf Conifers. Some of the plants were very good, but others were not so good, as they had a tendency not to remain truly dwarf. The first prize winners were Mrs. Tweedie and Mr. and Mrs. Baillie, and Mr. Esslemont and Mr. Archibald each won two prizes.

The Class for Rock Plants not eligible for 18 previous classes contained some very interesting entries, including Mr. Crosland's *Conandron ramondioides* and Mrs. Hinton's *Helianthemum* var. *coccineum.*

The Dwarf Shrubs included Mr. and Mrs. Baillie's Forrest Medal *Crassula sarcocaulis* previously described, Miss Pease's smaller one, and a Potentilla shown by Mr. Esslemont.

It is exciting to see what members have been able to grow from seeds. Mrs. Boyd-Harvey won in this class with *Nardophyllum bryoides* from seed collected by Mrs. Tweedie in Patagonia. Mr. Esslemont had *Lupinus* 'Worth, from the Powder River Pass,' which is 9,600 ft. high, and Mrs. Tweedie grew some *Gentiana septemfida.*

There were only three miniature rock gardens shown. Miss Pease was given the Logan Home Trophy and Mr. and Mrs. Baillie won the other first prize with their rock of Tufa growing saxifraga and sempervivums.

In Section II the exhibits were better than usual and it may be emphasised that plants in two of the classes were better specimens than their counterparts in Section I. Mr. William Scott won the Silver Cup for the best plant in the Section and this was a *Calluna vulgaris* 'J. H. Hamilton,' with its lovely double salmon pink flowers in much better flourish than anything in the other heath and heather classes. Lady Miller's *Raoulia lutescens,* which won a first prize, was a much better specimen than the prize winner in the other Section.

Mr. Scott showed a fine pan of *Gentiana x* 'Inverleith' which deserved its first prize, but rumour had it that he had even more lovely *Gentiana saxosa* in his garden but had not the heart to dig them up.

In the Grey Foliage Class Mrs. Stephen (Phantassie) had a very nicely shaped *Euryops evansii* and the Rev. E. M. Ivans (Dunbar) cheered up the Show with an effective long trough of colourful *Colchicum autumnale,* and both received first prizes, as did Mrs. Waller for her large *Sedum spectabile.* Other Sedums were Mrs. Waller's *cauticolum* (first prize) and Mrs. Bayne-Jardine's *S. spathulifolium* (second

prize). There were three Sempervivums of which Mr. Scott's was the best. Both Sedums and Sempervivums are easy to grow and there might be more entries in these classes.

In the Dwarf Shrub class Mrs. Waller's *Crassula sarcocaulis* was first and Mr. Scott's *Helichrysum* was second.

Mrs. Waller was congratulated on winning the Club's Bronze Medal for the highest number of points in Section II.

All the three winners in the Photographic Section had yellow Meconopsis as their subjects and the most attractive picture had been taken of a border of *Meconopsis integrifolia* in Miss Christian Nisbet's garden at Stobshiel.

Mrs. Hinton was the only exhibitor of Table Decorations of Flowers and Foliage and was given a first prize for her very charming exhibit. A few more entries in this class would help the Show.

A feature of the afternoon which everyone crowded to see was Mrs. Boyd-Harvey's non-competitive display of Cyclamen sequence, which was most interesting and instructive to everyone who likes to grow these attractive flowers. The exhibit consisted of specimens to illustrate the life-history of *Cyclamen neapolitanum* from the moment when the corolla falls from the fertilized flower. Specimens were shown of the coiling pedicel, ripened seeds falling out of the capsule, tubers a fortnight old, up to a fifteen-year-old plant in full flower and leaf. Warnings were given of common mistakes in cultivation by showing a young plant growing on top of its parent, a tuber which had been planted upside down, and some shrivelled tubers bought for a few pence and which showed no signs of either roots or shoots at a time of year when they ought to have been in full growth.

PENICUIK

THE PENICUIK SHOW is always something of a gamble with the weather and in this case the weather won, for, the winter having been the worst for very many years, in mid-February it was decided that there was no hope of holding it on the original date of 9th March and it was accordingly postponed to 23rd March—with quite remarkable results. The entries were up by a third on last year and were up by nearly a tenth on 1961 (which had a record entry), as this year they passed the hundred mark.

The standard was uniformly high this year, whereas in previous years there were a fair number of somewhat "scratch" entries—shown up, perhaps, by the very high standard of the best ones. This year the competition for the major award, the Forrest Mesal, was very close, the winner being *Primula whitei*, exhibited by Mr. Dudgeon of Liberton, with a Certificate of Merit awarded to a magnificent pan of *Sax.* x 'Cranbourne' shown by Dr. James Davidson, one of a pair with a very fine pan of *Sax. burseriana sulphurea.*

The Midlothian Vase was retained by Mrs. Maule with a very good plant, in most beautiful condition, of *Primula marginata* 'Drake's

form,' and the Midlothian Bowl for the most points in either section—but not both—was won by Dr. and Mrs. Tod. In many ways the best feature of the Show was that there were only eight points between seven out of the seventeen exhibitors—in other words, the competition was close and keen, with no "run-away win."

Quite a few of the plants showed signs of having suffered from the winter weather and the serious lack of sun last year, for there were rather more blind bulbs than are normally seen and a certain amount of uneven development as well, but the Crocuses and Irises were extremely good and the Asiatic Primulas were of very good standard —though definitely on the late side. Some of the Saxifrages showed signs of "one-sidedness," again probably due to lack of sun last year, and bird and slug damage had affected some entries, for a number of competitors had found that the slugs had been working under the snow. In general, however, the Kabschias were very good, if not, perhaps, quite up to the standard of some previous years. The winter cold had held back the tulips so much that there was only one entry—from Mr. Aitken—in the two classes.

Some of the new Middle-Eastern bulbs from the Davis and Furse collections had already reached the benches, for Mrs. Boyd-Harvey and Mr. Esslemont had, from Furse's collecting, the engaging little *Fritillaria zagrica* on show, and Mr. Esslemont had also *F. kurdica* (?) which is rather similar, but taller, both being in shades of brown, yellow and green, and several of the Davis Cyclamens were in the "bulb, corm or tuber" classes. One magnificent pan of the rare *Iris winogradowii* just missed being entered for the competitive classes as about one-third of the blooms were past—but it was there in the Non-Competitive Section from Mr. Esslemont.

We were, incidentally, delighted to have the support from Aberdeen of Messrs. Crosland and Esslemont, and from Wishaw of Mr. John Archibald, all with very fine exhibits. Mrs. Boyd-Harvey and Mr. and Mrs. Baillie brought their plants from East Lothian and we are grateful to all these competitors who come from afar to support our Show, and we were glad to see Miss Pape and Mr. MacGregor from Northumberland and Glasgow respectively at the Show—may we hope in future years for more members from afar to visit us.

The Judges were Mr. J. L. Mowat, Mr. K. C. Corsar of Cairniehill, and Mr. J. R. Ponton, and Gold Medals were awarded to Mr. Ponton for a display of Rock Plants in pans—a delightful exhibit which included many fine bulbs—and to Mr. John Ross of Seafield for a Floral Display of some exceptionally good Cinerarias in a most unusual range of colours which backed the Penicuik Bulb Classes, while Mr. Ponton's stand backed the Club's two sections.

The Show this year was held in a new hall, at Eastfield School, Penicuik, which is a really magnificent bright hall where the plants could be seen to their best advantage. The light in our previous hall was good, but this is infinitely better. The Ladies of the Industrial Section of the Penicuik Society had a most successful series of Bulb

Classes with increased entries also, and they as usual supplied teas which were much appreciated. Altogether it was a most successful Show, judging from the comments made to the Show Secretary and Mrs. Aitchison, who was of such enormous help in all the "clerical work."

HENRY TOD,
Hon. Show Secretary.

Discussion Weekend—Pitlochry

29th to 30th September 1962

INSTIGATED by the Chairman, Major-General D. M. Murray-Lyon, D.S.O., M.C., with 'malice aforethought,' two subjects for discussion were introduced respectively by Dr. James Davidson, F.R.C.P., West Linton, and Mr. F. Cyril Barnes, Newcastle. These were (*a*) 'Feeding a Rock Garden, especially Scree' and (*b*) 'Most allegedly Dwarf Conifers are 'Phoney' and more 'Bonsai' subjects than Rock Garden Plants.'

The discussions were very well attended and participation was general. Much useful information was elicited, though, as was anticipated (hopefully), not without the generation of a gentle, but warming heat.

Some of the highlights are summarized as follows :—

FEEDING OF ALPINES

DR. DAVIDSON opened the discussion and drew attention to the conflicting advice and practice which confronts the gardener, particularly the grower of the more 'difficult' alpines.

Mr. Esslemont advised great caution in feeding the high alpines, especially the Androsaces. Mrs. C. E. Davidson observed that high alpines in their native habitat appear to subsist on very little nourishment, but when one considers the tremendous shattering and crumbling of the rocks at high altitudes and the consequent release of minerals which must be carried to the roots of the plants by melting snow, one begins to wonder if they are not, after all, enjoying a very rich diet there and that, in the 'poor scree' mixtures in our rock garden, they suffer from starvation.

Mr. and Mrs. A. M. Brown instanced the use of ashes and burnt shale refuse from coal mine bings to assist in the culture of gentians as seen in a rock garden at Pinwherry, Ayrshire.

Miss D. C. Pape digs in farmyard manure when replanting *Gentiana acaulis*—also bonemeal, but has tried 'Plantoids' without much success.

It was generally agreed that bonemeal can be dangerous if used on lime-hating plants, while the use of 'hoof and horn' is quite safe.

Dr. H. Tod dealt authoritatively with the following questions and summarised the information in a concise manner :—

What method of feeding should be used for a scree ?

Various fertilizers were suggested for use on a scree by previous speakers, but probably the best thing to do is to apply finely sifted dry soil and leaf-mould, around and between the plants, working it into the top layer of the scree mixture. What natural feeding is present in a natural scree, i.e. in the mountains ?

The weathering of the rock fragments produces a large amount (relatively) of freely available nutrient salts and these tend to be washed down into the depths of the scree where they collect in the "juvenile" soil forming there. This consists of fine rock particles mixed with decomposing organic matter (which provides nitrogen) from plant debris (leaves, roots, etc.), animal remains and the like. Thus *at depth* in a scree one finds quite rich feeding, but not very much of it, which the plant roots can reach. This can be observed by digging down into any scree on our own hills as much as in the Alps, where this dark layer of newly-formed—and forming—soil will be found from nine to eighteen inches or so down from the surface.

What is the position with relation to trace elements and their possible shortage for rock plants ?

Any decent soil such as an average garden soil contains an adequate supply of trace elements, quite sufficient to keep ordinary plants going well. The uptake of trace elements may be upset by over-dressing with fertilizers or lime, but otherwise it is unlikely that any deficiency will occur. In the case of heavy crops, for example cabbages or potatoes, it is possible that they may remove a large amount of trace elements and if the supply is marginal, deficiencies may then occur. In the case of rock garden plants the demand is so low that deficiencies are extremely unlikely. Probably the importance of trace elements has been somewhat exaggerated as an advertising "gimmick" in ordinary gardening practice.

The use of Seaweed Extracts.

These may contain all that is claimed, but it is likely that some of the nutrients are lost in the methods used to extract the alginic acid which is the commercial product obtained from seaweed. Seaweed meal *will* contain them, but may possibly be harmful if there is too much salt left in it, and it is difficult to remove the salt without washing out other salts at the same time.

Bone Meal.

This has a high lime content and may be harmful if used on lime-haters. On certain *very* acid soils little harm may be done, but it is always risky.

Hoof and Horn.

This should be only a nitrogen source if it is of good quality and does not contain any bone. Bone itself is a lime and phosphate source.

Feeding the Rock Garden in general.

As a rock garden ages, the level of nutrients must gradually fall through the years, and one hears it said that it is no longer possible to grow the plants that used to do well.

One garden seemed to be much drier than 25-30 years ago and plants were failing that had previously done very well. Here probably the nutrient levels had gradually become low and the organic matter had gradually been oxidised and used up. This had resulted in a decrease in the water-holding capacity of the soil, and hence the increasing dryness.

Another famous garden quite frankly uses feeding in the shape of farmyard manure, decomposed silage, compost and large quantities of old, well-decomposed sawdust. This is more for primulas, meconopses, lilies, etc., than for strict rock plants, however. One striking example of this question of feeding is shown by *Iris pumila* and allied species. These root almost vertically downward below the rhizomes, and if they are left in one position for some years they will tend to stop flowering and to become much reduced in size. If they are lifted and moved to fresh soil, they will resume normal growth and flowering. In this case most probably they have exhausted the soil below themselves as the roots do not ramify outwards to any very great extent.

The problem of feeding really consists in providing a balanced but very low level of nutrients which will maintain a reasonable level of feeding without providing any excess or luxury levels which would result in a marked stimulation of growth, as this would have the effect of the plants developing quite "out of character," as one often sees in plants grown in pots in a mixture that is just too rich.

Finally, Mr. Darling brought us round full circle when he recounted how two Glasgow members in a party in the Swiss Alps stood engrossed at a meadow covered in sheets of blue *Gentiana acaulis*. They asked their guide to explain the profusion and he pointed to the herd of cows grazing nearby. There lay the secret. After some hestitation, one member shook her head and said regretfully: 'I'm sorry I couldna get a coo through my garden gate.'

DWARF CONIFERS

Opening remarks by F. C. Barnes

THE TERM 'Dwarf Conifers' is a ragbag which holds various odds and ends of plant life. 'Bonsai,' which are normal trees artificially dwarfed, make little appeal to the rock gardener whose aim is to grow plants true to character. There are to be found in nature relatively few species

such as some Podocarpus, Microcachrys and a Juniperus or so, which are true dwarf plants and which can be safely planted in even a small rock garden. The great majority of plants classified and offered as Dwarf Conifers are in one fashion or another variations from the norm which, but for man's intervention, could not survive or even have an existence. Some have arisen from the diseased growths known as 'Witches' Brooms,' others as seedlings which display serious malformation, and yet others from the vegetative propagation of juvenile growth which rarely achieves its normal maturity. Whether it is justifiable to perpetuate these diseased, monstrous 'Peter Pans' is a moral rather than a horticultural question which is for the grower's individual conscience to decide.

Mrs. J. L. Neilson replied with a vigorous defence of the plants, which she maintained justified their inclusion in the garden because of their varied and beautiful foliage, and considered that the person who calls them 'phoney' or 'Bonsai' was ill informed. They are not 'phoney' because a rock garden requires green-growing plants in it to harmonise with so much colour from the rock plants. For this purpose there is nothing better than a dwarf conifer which is true to scale.

Since the war many conifers have been offered for sale which are not true dwarfs on their own roots, but grafted plants, often not true to name because of confusion of nomenclature.

The true dwarf conifers originate either from seed collected in a nursery or are grown from cuttings taken from a 'witches broom' on an arborescent tree. They should never be clipped at the roots, given fertilizers, or re-potted less than every five years or so. As well as being an ornament to any rock garden, they are a definite asset. Some people talk of rock gardens as being true to nature, but the gardens are as artificial, perhaps more so, than dwarf conifers grown from forms of the forest trees.

Mr. Reginald Kaye pointed out that his firm grow all their large collection of dwarf conifers on their own roots, except Cedrus and Pinus. 'Why,' asked Mr. Kaye, 'criticize dwarf conifers as artificial products ? All gardening is an artificial interference with nature.'

W. V. Miller.

Conifers should be grown in the open in the rock garden and not in pots. They are not, in general, *dwarf* conifers at all, but are *slow growing* conifers. I have got dwarf conifers on the west coast of Ireland possibly stunted by the weather which have remained dwarf after a period of seven or eight years.

Identification of these conifers is a problem which is very difficult to solve.

There is no doubt that they help to furnish the rock garden and we should not be without them.

Stewart Mitchell.

I agree that, except for a handful of true dwarfs, most of these conifers are only slow growing. Of annoyance to ordinary gardeners is the problem of dealing with them when they grow to five or six feet in 15-20 years. Could our experts today put on record some really dwarf conifers ?

Mr. W. C. Buchanan provided the following list of true dwarfs :—

Abies balsamaea hudsonica
*Abies koriensis**
Pinus pumila
Pinus lapponica
Juniperus nana
Dacrydium laxifolium
Tsuga canadensis nana

*Mr. Kemp said that *A. koriensis* would grow eventually to 20-25 ft.

Mrs. E. Taggart instanced *Abies delavaya*—30 years old, 18 inches in height.

Book Reviews

" Rock Garden Plants of the Southern Alps," by W. R. Philipson and D. Hearn. Pp. 167, with 105 illustrations, 11 of which are coloured. Published by The Caxton Press, in New Zealand, 47s. 6d.

Professor Philipson, in his latest book, in collaboration with Mr. D. Hearn, has performed the outstanding achievement of producing what is not merely a good text book on New Zealand alpine plants and their botany, but also at the same time a most engrossing book for all lovers of interesting and unusual plants and the mountain regions which they inhabit. This is a book not only for the plant connoisseur, always interested in those rarer and presumably difficult plants and eager to try his skill with them, but also for everyone with a love for the high hills and those plants which have adapted themselves to eke out an existence in the harsh conditions of those hills. This is no mere catalogue of plant names and descriptions but a lively and invigorating description of the surroundings and conditions in which these interesting and often unqiue plants grow and the reasons why they have been compelled to adopt the modifications so many of them have done to survive these conditions.

The rugged hills, the screes, and the deep, narrow valleys and ravines, come vividly alive before our minds' eyes till we can almost feel the hard, bitter winds cutting us after we have in imagination forced our way up through the dense forest growth of the lower valleys to reach the higher slopes above.

After dealing with the general topography of the South Island and with descriptions of some of the sub-antarctic genera and species found in extreme alpine conditions in the far south, along with certain outlier representatives of more temperate families, the book continues with a chapter on screes, their character and composition, and the extremely rare—not to say unique—plants which inhabit them. Chapter 3 brings

us to descriptions of many of the Ranunculi, of which New Zealand contains forty or more species, and of Myosotis, of which twenty-six out of the country's thirty-four species—three-quarters of the world's total—are in the Southern Alps.

It is not a book of which one cay say that certain chapters are of particular interest, because all are equally fascinating. Who, for instance, would care to weigh between the section on gentians and ourisias and that on the " Hebe Complex " or between " Fruits and Foliage " and " Sheep, Carpets, and Coral " ? The final chapter, " The Portrayal of Alpine Plants," by D. Hearn, is of the same exceedingly high standard as the rest of the book and Mr. Hearn is to be congratulated on being able to make such a complex subject so easily understandable to one with so little technical knowledge as the reviewer. A very complete and useful index makes it a simple matter to refer to any plant or illustration at a second's notice.

One can only say of the illustrations, either coloured or black and white, that they are quite superb, while the printing and production of the book are excellent, typographical errors being so trivial and so few as to be unworthy of mention.

J. L. MOWAT

" ALPINE GARDENING," by Roy Elliott. Pp. 320, with 68 black and white photographic illustrations. Published by Vista Books, London, 1963. Price 52/-.

This is an exceedingly refreshing and stimulating book, with an approach to its subject entirely different to anything to which we have been accustomed. Right at the beginning of the book the author declares his determination to break away from the usual run of books on the subject of rock gardening, which often consist of a few introductory chapters (on construction, etc.) followed by a long list of plant names and descriptions so that the subject loses all the thrill it ought to have and becomes dreary. And how well Mr. Elliott has succeeded in his purpose !

All through the book we never lose that close personal touch—never a plant mentioned but what it is accompanied by some personal experience, an amusing anecdote, or some interesting reference. This knits the book so closely together that once one has picked it up it requires considerable effort to lay it down again.

The illustrations are all beautifully reproduced from the author's own photographs. How delightful it is to see such fine and artistic pictures of so many choice favourites seldom illustrated. In addition to their artistry every detail is so sharp and clearly defined that one has no difficulty whatever in appreciating the obvious charm and fascination of the plants concerned. But surely an error has crept in with regard to plate 12 on page 52 which would appear to be of *Hordeum* rather than *Briza*.

After beginning by telling how he first became involved in alpine gardening and how its fascination grew, the author deals with such important details as setting, types of stone, the requirements of the plants themselves and how they grow, and then goes on to " Character in the Rock Garden." This interesting chapter is followed by a short but helpful one on the naming of the plants, and then one on 'architectural plants' in which the author deals with a number of dwarf conifers and other plants of architectural use in the rock garden. Then follow chapters on plants in their seasons and other important aspects, each chapter of the same engrossing interest, the book ending with a very complete and useful index.

The publishers merit all praise for the fine format of the book and the high standard of its reproduction—a very worthwhile book for all garden lovers, not rock gardeners alone.

J. L. MOWAT

SLUGIT PELLETS

Simply scatter the pellets among the plants so that they fall about 6 ins. apart. The pellets are irresistible but deadly to Slugs and Snails.

Size 1, **1/6** ; *Size* 2, **2/6** ;
Size 3, **4/6** ; *Size* 4, **7/6**.

SLUGIT LIQUID

Dilute with water and apply to both soil and plants. The treated area becomes lethal to the pests.

4 *oz. bottle* **2/9** ; 8 *oz. bottle* **4/-** ;
1 *pt.* **9/6** ; 1 *qt.* **18/-** ; ½ *gall.* **35/-**.

LINDEX

GARDEN SPRAY

Lindex kills Aphids (Green and Black Fly) and most other insect pests. It can safely be used on most garden and greenhouse plants.

4 *oz. bottle* **3/6** ; 8 *oz. bottle* **6/-** ;
1 *pt.* **13/-** ; 1 *qt.* **24/-** ; 1 *gall.* **77/6**

MURPHY

ALDRIN DUST

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Small Pack **1/6** ; *Large Pack* **3/-** ;
Puffer Pack **3/9**.

MURPHY LIQUID

ANT KILLER

Use 1 fluid oz. in 1 gallon water and water on at the rate of 1 gallon per 6 square yards wherever Ants are seen. Used in this way it is harmless to plants.

4 *oz. bottle* **3/6**

MURPHY

SEQUESTRENE

Murphy Sequestrene may be used to enable lime-hating plants such as Lithospermum diffusum, Erica and Gentian to be grown on chalk and limestone soils. Write for leaflet.

FREE—The Murphy Pest and Disease Chart can be had on request

Obtainable from Seedsmen, Ironmongers and Chemists

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