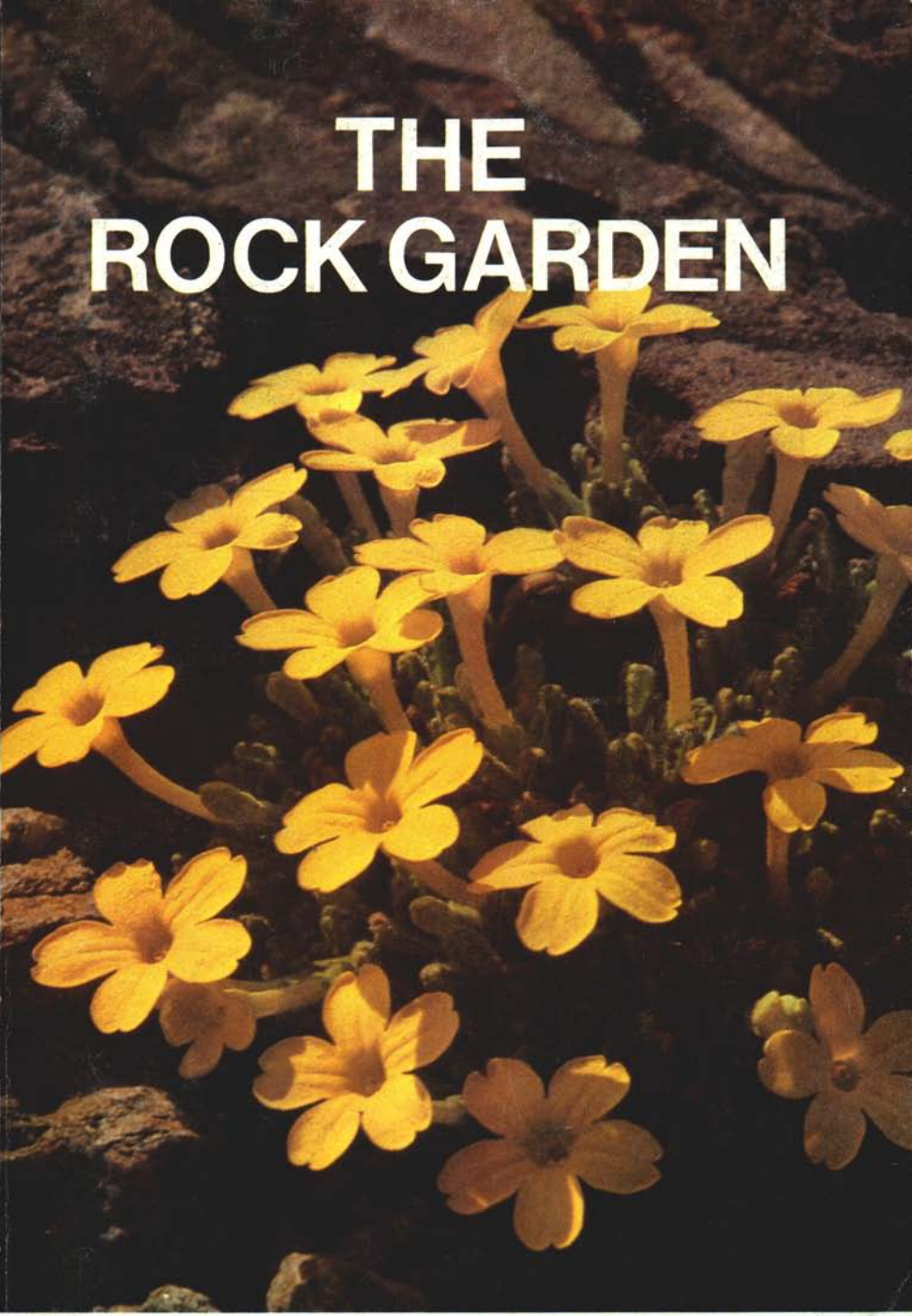
THE ROCK GARDEN



THE JOURNAL OF THE SCOTTISH ROCK GARDEN CLUB

Volume XVIII Part 4 Number 73

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The Rock Garden

THE JOURNAL OF THE SCOTTISH ROCK GARDEN CLUB

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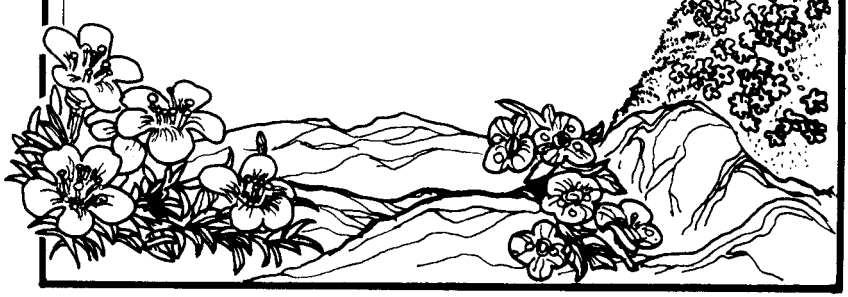

Front cover:
Dionysia aretioides in a raised bed needing only a pane of glass in winter
Photograph by DUNCAN LOWE

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Editorial

REACTIONS to the first issue of *The Rock Garden* were almost entirely favourable, judging from the large amount of correspondence. The recurring theme in most of the letters was how much the new style and contents suited beginners to rock gardening. This is extremely gratifying but we must never forget that advances in the art are by and large made by our experienced growers who rely on the *Journal* to keep them informed of new plants and of new techniques.

The front cover is an example of the format of each issue from now on – a different 'alpine' in full colour. In addition there will be two pages of colour in each issue.

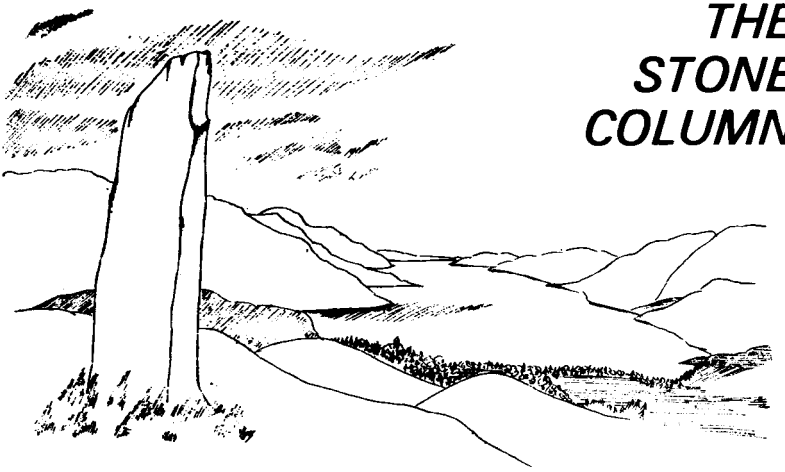
Included in this issue is a brief mention of the many activities of the Club during Jubilee Year plus a short account of the trip during the summer to Wengen.

One of the largest undertakings in Jubilee Year was the preparation of the *Cumulative Index* from *Vol. VI* to *Vol. XVII,* details of which can be found on page 321. The preparation involved many people in a lot of hard work in order to produce the 10,000 index cards required. There are still bound to be quite a number of mistakes for which the Editor takes full responsibility. The following example shows, we hope, some of the problems that were encountered.

The person accumulating names under the letter 'H' had written a card with the name *Huguenima tanecetifolia* on it. There was no real reason to stop when I came to this card; after all there were many strange names I had never heard of. However, something prompted me to check and I soon found that there was no trace of this name in any of my reference books. On looking back at the original text in the *Journal* I discovered the name given there was *Hugueninia tanacetifolia* and that it has been wrongly indexed. The article was an old one by Reginald Farrer in which he referred to the plant as a really beautiful yellow valerian. I eventually tracked the plant down as *Hugueninia tanacetifolia,* a 15 inch yellow crucifer, easy and pretty but of no great beauty. Thankfully not all 10,000 cards required so much detective work but this example goes to show the work involved.

In this issue there are a number of 'Plant Portraits' written by growers about plants they exhibited at this year's Shows. We want to encourage everyone with good plants to write to us about them. In this way, knowledge is spread around.

ALASTAIR McKELVIE



THE STONE COLUMN

The Stone Column

The drawing which heads our column is, as most readers will have suspected, an example of artistic licence on Poll's part. The view is more or less that of the village of Fort Augustus, with the Abbey Tower bottom centre, from Unagan Hill. This low ridge is a roche moutonnée left by the glaciers that carved the Great Glen along an ancient fault line or weakness in the Earth's crust, gouging in the process a basin for Loch Ness over 300m below sea level at its deepest. Unagan Hill bears on its summit, not a standing stone, but a concrete pillar for an Ordnance Survey 'trig' point. When Poll did the sketch, she had in mind an old stone gatepost which at that time was lying in a field about half a mile from our garden. Thinking that it would make an appropriate feature for the garden, we sought and obtained permission to remove it. Easy to say, but how does one transport a stone block over 2.5m long, and weighing about one third of a ton? The use of mechanical aid such as a tractor was not possible as the paths in our garden are only one metre wide.

The answer is, of course, levers and rollers and friends to help power them: An opportunity came in May 1983 when enough visitors were available to help. Now that the 'Young' have left home during University term-time, we have spare rooms available. Thus Margaret and Henry Taylor and their next-door neighbours in Invergowrie, Alice and Fred Hunt, travelled up together to see the garden. A walk around taking the best part of 6 hours, one of Poll's best dinners and a chat over slides in the evening, softened them up, so next morning we could put 'operation stone column' into effect. As we left our gate in the Land-Rover, Grendel by name after the monster in 'Beowulf', a domestic

dispute over which way to go (the scenic route or the quickest) nearly aborted the mission before it had properly started. This resolved, when we arrived at the field the helpers began to have second thoughts on seeing the size of the stone, but dedicated rock gardeners don't give up easily.

We had brought a strong crow-bar and a stout plank to act as levers. Fortunately there were ample large stones lying around so using one as a pivot we were able to lever one end of the gatepost up slightly, and insert a stone underneath to hold it. There arrived at this point a 'local', who, having questioned our sanity in the past, now verbally asserted he had adequate confirmation of his suspicions, or words to that effect! This did nothing to raise our spirits, but did wonders for the determination to prove him wrong in that, "You will never move it anyway." The lever was removed, the pivot raised and the gatepost levered up further. The packing underneath was increased, the lever removed and the process repeated. We call this the 'Easter Island' method, since we first saw it in Thor Heyerdahl's book, 'Aku Aku'. He describes how the famous statues on the island were raised by levering and packing. Eventually one end of the stone column, balancing precariously on a pile of boulders, was high enough off the ground to back the sill of the rear Land-Rover door, very gently, under it. The temporary packing was then removed, and the process started at the other end. This time we levered forward as well as upwards easing the column into the back of Grendle.

Once back at Askival, the procedure had to be reversed. Using a thick rope and the levers, the 'column' was eased out until one end rested on a pile of concrete blocks, the other on the door sill. Two further piles of concrete blocks were erected, one under the other end of the column and a third just beside this end. Lever up the end clear of the Land-Rover floor and insert a further block on the pile to hold it up. Then Poll could drive Grendle clear. To move the stone column the 40m from the drive to its intended position marking the end of a path joining the lawn, we decided to use rollers. Fred and I walked down to the local garage with a 5m steel pipe about 5cm in diameter, and they used the oxy-acetylene to cut it into 0.5m (18 inches) lengths. Fence posts were laid flat on the ground in two lines, about 30cm (12 inches) apart to act as rails starting on either side of the concrete block pillars holding the stone column. Lever up one end, using a third pillar as a pivot, remove one block and lower. Repeat at the other end thus lowering the column onto the rollers.

The next part rapidly settled into a routine. Henry, probably the strongest, heaved the column along. I risked trapping my fingers inserting the rollers at the front end, holding them until the weight

came onto them. Fred operated the crowbar to change direction when necessary. The 'girls' moved the fence-posts round from behind to relay the track in front. The worst part was going down the final slope. With only about 3m to go, the stone column rebelled, and slid slowly but remorselessly sideways off its rollers. There was much sweating and heaving in a confined space before it was moving again.

At the intended site, a hole was dug to take the base of the column, somewhat deeper than necessary. The thick end was dragged over the hole and, with some levering and others pulling on the rope tied to the top end, it was tipped in. It took earth and stones down with it; hence the need for an oversized deep hole. A few moments of co-ordinated effort, a great deal of adrenalin, then it was safely upright, standing in the hole. There remained only to ram the earth and stones firmly around the base, stand back and have our pictures taken, after four and a half hours of toil (Fig. 75).

The experience cannot have been so bad, however, as Margaret and Henry were back in Fort Augustus the following November. This time it was to help erect a fence around another half-acre or so we are adding to the garden. Now they have a stake in the garden at Askival; in fact 76 of them! We had been thinking, and dreaming about extending our garden backwards for over six years, mainly to get out of the frost hollow. Now, after four days of intensive labour, it is suddenly a reality. We can still hardly believe it. During the weekend while they were here we had four dry days, almost unheard of for November! A good omen, perhaps?

Dicentra peregrina from seed

Since we published our experience with raising this *Dicentra* from seed in the June 1983 issue, we have had several conversations with other growers, and a few letters on the subject. The consensus seems to be that it is usually a downright poor germinator, fresh seed being rather better, but stored seed can be viable. One correspondent states that on examining *Dicentra peregrina* seed from the exchange under a strong lens he found the seed-coat to be cracked. He suggests that this mechanical damage could be the reason why old seed sometimes fails. Another writes that he obtained six seeds from the AGS in February 1982 and three germinated in May 1983. He goes on to say the seed-leaves were single, lanceolate and a striking glaucous colour. His reaction was 'grass' and unmentionable thoughts about alpine seed-donors followed. In fact, like *Corydalis, Dicentra* is a 'monocotyledonous dicot' with only a single cotyledon. Shining glaucous grass is a good description of how *Dicentra peregina* appears. Perhaps we should have mentioned this point;

and also stressed that germination, even of fresh seed is rather erratic. A few seedlings will appear the first spring after sowing, but if the pan is left undisturbed, two or three times as many more usually germinate in the second year. Thus delaying pricking out, one gets rather more plants in the long run.

Sagina boydii

We have received a couple of letters from Mr and Mrs S. J. Heyward, of Worthing in West Sussex, on the subject of this supposed Scottish native. We sought permission to quote at length from one of them, since we felt that their experience at the other end of the country is both interesting and highly relevant. They write: "We obtained this plant from Jack Drake in 1978 during one of our visits to Scotland and have grown it in our garden near the Sussex coast ever since. At first it was outside on a raised bed, but we found that once it had started into growth in the spring it was very susceptible to damage from late frost. It has therefore been given cold frame, and, more recently, alpine house treatment, and has shown its appreciation by flowering much better.

In spite of the statements contained in both Clapham, Tutin and Warburg's 'Flora of the British Isles' and in 'Flora Europaea' that no ripe seed is produced, my wife began to suspect otherwise. In 1981 seed was collected into an open-topped plastic container and placed with scores of other similar containers which held contributions for the AGS seed distribution. Some time later I was asked for my opinion of the likely viability of the *Sagina* seed, and, having looked at it under a low-power microscope said 'One good seed, the rest is infertile'. The 'rubbish' was thrown away and the one good seed was sown. It germinated and produced a healthy violet plant. Anyone who has seen a violet capsule explode will understand how easily a seed could be thrown into a nearby pot. Since then, all pots containing violet capsules have been kept covered!

In 1982 seed was again collected and germinated on damp tissue, but difficulty was experienced in transferring the seedlings to a more nutritive medium and they were lost.

In 1983 we again experienced no problems with germination but it remains to be seen whether or not we can take the seedlings on to maturity.

In the mature plant the petal-less flowers with their white stamens show up well against the dark green recurved leaves. After fertilisation the capsules seem gradually to retreat beneath the leaves and can require careful hunting to find. Experience suggests that it is best to take the seed whilst the capsule is still slightly green (and more easily visible).

Once it has gone brown, not only is it more difficult to find, but there is a greater risk of seed being lost in the effort to locate and remove the capsule."

If the Heywards do succeed in growing on seedlings to flowering size, it should be instructive. If they are 'true to type' then it re-inforces the case for *Sagina boydii* as a 'good' species. We suggested that *S. boydii* could possibly cross with that pestilential weed of moist peaty soils, the ordinary pearlwort, *S. procumbens,* since they both have a count of 2n = 22 but the Heywards feel that this is unlikely. They reminded us that the 'Floras' cite self-pollination for most of the genus *Sagina*.

Aciphyllas again

How many readers, we wonder, are aware that there is even a cushion aciphylla, *Aciphylla procumbens*. Ken Gillanders included a slide of this species in his lecture on Tasmanian alpines at the Nottingham Conference, 'Alpines '81'. Later that year we were fortunate to receive a small rooted cutting which re-established successfully. We know nothing of its natural habitat; our only book on Tasmanian plants does not mention it. When in doubt we always err on the side of too lean a potting mixture, rather than too rich. Too spartan a diet may starve a plant but it won't die if kept watered. Too rich and it may well rot off. In the spring of the following year, 1982, it was planted out in a lime-free scree trough in full sun. Here it has formed a tight cushion of deep-green interlacing foliage, typical compound aciphylla leaves, but much, much smaller than any other we have grown, even *A. simplex,* and somewhat recurved.

Seed obtained at the same time as the cutting, was sown straight away. It germinated well the next February, and the seedlings were pricked out into rows in a single large seven inch square pot, using a lime-free gritty mixture. This year, 1983, they were re-potted individually. So far they have only one rosette of foliage and so have yet to develop the distinctive overlapping cushion form. They definitely did not like the hot weather of the 1983 summer.

While on the subject of aciphyllas, we would like to end with a request of our own for information. In December 1978, friends passed on to us seed from the Canterbury AGS Exchange of an aciphylla species marked, 'Collected Fox Peak'. Now, four years old, the plants have mostly trifid leaves only 3mm wide, but up to 30cm long. The colour is olive-beige, with a pale-yellow central stripe.

If any reader can put a name to this plant, we should like to hear from them.

Recent acquisitions from the seed exchange

When we were down in the far South of England, this year, one of the most frequent comments about our *Journal, The Rock Garden,* was that it was too parochial. When the critics were asked to be more specific, they usually replied, "Well, er, the show reports, they concentrate too much on Scottish growers." This is simply not true; read the reports on page 289 of the last issue and see how many North of England names are mentioned. We feel sure Show Secretaries would be only too pleased to receive more entries from the South of England. If their good plants appear, they will get a mention. However, lest we too be accused of parochialism, we shall extend this feature to include plants raised from other Club exchanges, as well as our own SRGC seed list. After all, many growers are, like ourselves, members of more than one society.

Actaea pachypoda

Undoubtedly one of the most striking features in our garden during the monsoon of September 1983, was this herbaceous perennial. Its spikes of shiny white berries, unlike many flowers, stood up to the gales and continuous heavy rain, over 200mm during the month. While the children were small, we had avoided this genus altogether, since all bear conspicuous berries which are very poisonous; hence the old common name, 'Baneberry'. The American, *Actaea pachypoda* was described as the most ornamental species; but it was also said to be confused in cultivation with a white-fruited form of our European native *A. spicata* (The type of the latter has black fruit). To make matters worse, *A. pachypoda* has synonyms of *A. alba* and *A. spicata alba*. Thus we decided to play safe, and try to get the true *A. pachypoda* from wild American seed. Such appeared in the 1978/79 SRGC list, contributed by a lady living in Wisconsin.

Like many Ranunculaceae, actaeas have a hard seed which is slow to germinate. Seed we sowed in January 1979 did not germinate until April 1980. Being a large herbaceous plant, rather than an alpine, the seedlings grew rapidly, and were pricked out within a few weeks, during May 1980. A year later, May 1981 they were planted out into an ordinary border, choosing a fairly moist position with less than half sun. There were a few flowers in the summer of '82, but no set fruit, hence the fine display in '83 was their first real effort.

Growing to about 90cm high, *A. pachypoda* has bright-green compound leaves, which are bipinnate. This means the leaves are pinnate, with the leaflets again sub-divided pinnately. The foliage bears some resemblance to that of an *Astilbe*. The flowers are white, carried in short spikes, with small petals and prominent fuzzy stamens. As the shining

white berries swell up to 1cm in diameter, the pedicels also thicken and turn dark red. The picture is completed by a black spot on the upper end of each berry, giving rise to the vernacular American name of 'Doll's Eyes'. The fruit remained in good condition for many weeks so the plant fully justifies its modest space requirement.

Clematis aethusifolia

Clematis species, as opposed to the large-flowered hybrids, are one of Poll's favourite group of plants. We always look out for them in the various seed lists. *Clematis aethusifolia* was one of many in the 1981 list of the American Rock Garden Society. The seed was contributed by a member living in Sweden, which goes to show the truly International nature of these exchanges.

We chose this species because it was said by 'Bean', to be one of the smaller species, only growing to two metres. Thus it is more suitable for a position against a wall of our bungalow than the vigorous *C. montana* types. Also, being native to north China and Manchuria, it is much hardier than such as *C. texensis,* from the southern 'States'. So far only 1.5m high with us, the slender stems carry finely dissected dark-green foliage. The leaves are about 7cm long, and pinnate with about 5 leaflets, each again tri-foliate. The flowers appeared in late August and were narrow, pendant, pale-lemon-yellow bells, about 2cm long. Small, yes, but elegant. They were followed by the usual fluffy seedheads, also quite small; but with a hazy hint of pink around the achenes themselves.

Our seed, which had crossed the Atlantic twice, was sown in April 1981, and germination was very rapid, only a few weeks later. By June 1981 they had been potted individually into 3 inch pots, using our ordinary compost of 2 peat, 1 coarse sand, plus a slow-release fertilizer. Three seedlings were planted-out beside our front door the next spring. Perhaps because I had unwound their roots and spread them out on planting, all three sulked during the whole of 1982. One died during the next winter. This year, 1983, saw take-off, with satisfactory growth and flowering.

Occupying such a prominent position beside the door, many visitors have remarked on what a pretty little plant it is and some seed has already been passed on. If you think large-flowered hybrids like 'Nelly Moser', are the last word in clematis, then we must admit *C. aethusifolia* is not for you; but we like it very much.

Gentiana glauca

Nowadays we tend not to buy gardening books, preferring instead

such Floras as we can afford, or alternatively books on wild flowers. Many of the latter are not intended for gardeners at all, more for walkers and amateur naturalists. However this type of 'flower guide' is frequently well-illustrated and can give one an idea of which species are worth trying. So it was that we came across a colour photograph of *Gentiana glauca* in the Alaska-Yukon wild-flower guide, liked what we saw, and made a note. A lady member of the ARGS living in Seattle contributed seed to their 1980 exchange, having collected it in the Yukon at 3,700ft. We sowed the seed we obtained in March 1980 and, like the clematis, germination was within a month during April 1980. However, the gentian seedlings were very tiny and so we left them to grow on for a year in their seed-pot. There is no fertilizer in our seed-compost, so we gave them a very dilute liquid feed every two weeks or so. Although *Gentiana glauca* is found in meadows and alpine tundra when Poll pricked them out the next year she used a 'rich scree' mixture for reasons explained in the aciphylla item. After a further year's growth in 3 inch pots they were large enough to try outside in a trough. They survived a winter uncovered and flowered in the early summer of 1983. While other alpines were scorched around them by the excessively hot weather, they proceeded to set copious seed. Not bad for an arctic plant!

Gentiana glauca is quite a small plant with us, only about 7.5cm high in flower. It forms rosettes at ground level, the leaves obovate and blunt. The foliage really is quite glaucous, as are the flowers. The latter are in loose clusters of three or four, the individual trumpets about 2cm long and 0.5cm across. The corolla lobes do not reflex but remain erect, adding to the narrow feel of the flower. The colour is difficult to describe, we argued about it; greeny air-force blue was the final compromise.

It is not as showy as G. *verna;* it really is a most distinctive little plant which we can only describe again as elegant.

Linum capitatum

We obtained this beautiful yellow Linum by mistake. In the 1979 AGS seed list, there was included a batch of seed collected in the Pirin Mountains of Bulgaria by some Czech members. Having just lost *Iberis saxatilis* in the severe '78/'79 winter, we sought to replace it by requesting seed from this collection. However, what we got was clearly not an Iberis, the foliage was too broad, spathulate in outline and a slightly glaucous green. While not truly shrubby, the plants formed rosettes at ground level, on a woody stock, or rhizome.

Sown in March 1979, the seed germinated that spring, was fed for a year like the gentian and pricked out in the spring of 1980. The seed list included the useful information that this collection was from the marble part of the North Pirin; other collectors please note! Thus we used limestone chippings when making up the scree mixture for these seedlings. We cannot give an exact recipe, we simply take our standard 2 peat, 1 coarse sand compost and add chippings until it looks and feels right. Planted-out in troughs in April 1981, we had to wait two years before our suspicions were confirmed. The plants carried flat-topped inflorescences, technically cymes, of bright golden-yellow flowers, on stems of about 10cm. Dwarfer at present than the well-known Gemmel's Hybrid, and slightly deeper in colour, they were really most striking. How large they will be eventually time will tell. 'Flora Europaea' says, "Stems up to 40cm", whereas the collectors, writing in the ARGS 'Bulletin for Fall' 1981, give a maximum of half this: 20cm. So far they appear quite hardy and so they should be coming from around 1,850m, which is more than can be said for many Linums in this garden. A mistake perhaps, easily made in an exchange (No. 3769 instead of 3767); but a very beautiful plant that we are pleased to have.

Xerophyllum tenax

We first saw this plant in the Stead's garden at Thorntonhall, to be more precise in Joan's scree. Unlike our garden, where we argue all the time about where to put plants, Joan and Don have avoided the problem by having their own separate sections. We thought that the *Xerophyllum* was a grass at first, but Joan informed us it was actually the American 'Bear Grass' and that it had been raised from seed. This is the only practical means of propagation, since although offsets are formed, the plant has a long tap-root.

Wild collected seed from north-west America was offered in the 1976 SRGC Exchange, and we sowed it in January upon receipt. It germinated in May 1976. Although a member of the Liliaceae, the single fine colyledons looked exactly like a stiff grass. They were potted in standard compost (see above) in August 1976, rather later in the year than we would like nowadays. Growth was slow, but the small tufts were large enough to plant-out by April 1978. They continued to enlarge slowly, until by 1983 the tough evergreen leaves were about 30cm long and forming dense wiry clumps. The name means 'dry leaf'. We had been told that the species rarely flowers in cultivation so we were rather surprised when one plant did so this year. A stout stem elongated until it reached about 1m, terminated by a dense conical raceme of pale-cream flowers. The individual tepals are quite small, less

than 1cm, and the stamens are rather prominent. Apparently bears like to bite off the inflorescences, hence the vernacular name. Lacking the attentions of a hungry bear, our plant proceded to set seed, the raceme elongating as it did so. The particular offshoot which flowered, looks as though it is monocarpic, but there are several others so the plant is perennial.

Even if it didn't flower, we feel this is an architectural evergreen well-worth having in a well-drained sunny bed or scree. The recurving leaves, light-olive-green above and silvery beneath, taper continuously to long fine points; the clump forming a shimmering fountain in any breeze.

Cumulative Index

The Cumulative Index for Volumes VI to XVII (Numbers 20 to 69) has now been printed and is available at a price of £2 (£2.25 including postage) from the Publications Manager, Mr. T. G. Sprunt, whose address is given on the back cover. Copies will also be available from Group Conveners.

This Index, which has been printed as part of the Club's Jubilee activities, includes a comprehensive listing of past *Journals* under separate headings of Plants, Authors, Articles and Places. It will be invaluable for looking up details from past *Journals* and is really a unique compendium of information. Those members who do not have all the *Journals* back to Volume VI should take advantage of the offer of past numbers given on the back page of this issue.

Angus Seed Exchange

Seed lists will be available until 1 February 1984. Members who wish a copy should send a stamped addressed envelope (6 × 9), or a gummed label to: Miss J. Halley, 16 Abercrombie Street, Barnhill, Dundee DD5 2NX. Group Convenors who wish surplus seed should make application by 28 February, and those who wish unpacketed surplus seed must also apply by 28 February.

The Joint Rock Garden Plant Committee

(Recommendations made at Scottish Rock Garden Club Shows)

STIRLING – 26 MARCH 1983

Award to Plants

Certificate of Preliminary Commendation

To *Primula clusiana* 'Murray-Lyon' as a hardy plant for flower in the alpine house or on the rock garden. Exhibited by Margaret and Henry Taylor, Tantallon, 32 Morris Place, Invergowrie.

Awards to Exhibitors

Certificate of Cultural Commendation

To Eric G. Watson, 1 Ewesley Gardens, Woodlands Park, Newcastle-upon-Tyne for well-grown plants of *Kelseya uniflora, Dionysia balsamea* GWH 580, *Dionysia paradoxa* and *Haastia pulvinaris.*

To Wilf Kirby, 4 Orders Lane, Kirkham, Preston for well-grown plants of *Nassauvia revoluta* C&W 5221 and *Raoulia grandiflora.*

To Malcolm C. Adair, 307 Churchill Drive, Glasgow for a well-grown plant of *Arcterica nana.*

EDINBURGH – 9 SEPTEMBER 1983

Awards to Plants

Award of Merit

To *Asplenium viride* as a hardy plant for foliage in the alpine house or on the rock garden. Exhibited by Brian Russ, 9 Crosshall Brow, Westhead, Lancs.

Certificate of Preliminary Commendation

To *Celmisia* 'Edrom' as a hardy plant for flower and foliage on the rock garden. Exhibited by Margaret and Henry Taylor, Tantallon, 32 Morris Place, Invergowrie.

Awards to Exhibitors

Certificate of Cultural Commendation

To R. P. Robinson, Heathwaite, Silverdale, Lancs for a well-grown pan of *Spiranthes spiralis.*

Fig. 65 Golden Jubilee Salver: presented in 1983 to Mr A. Evans (see page 388)

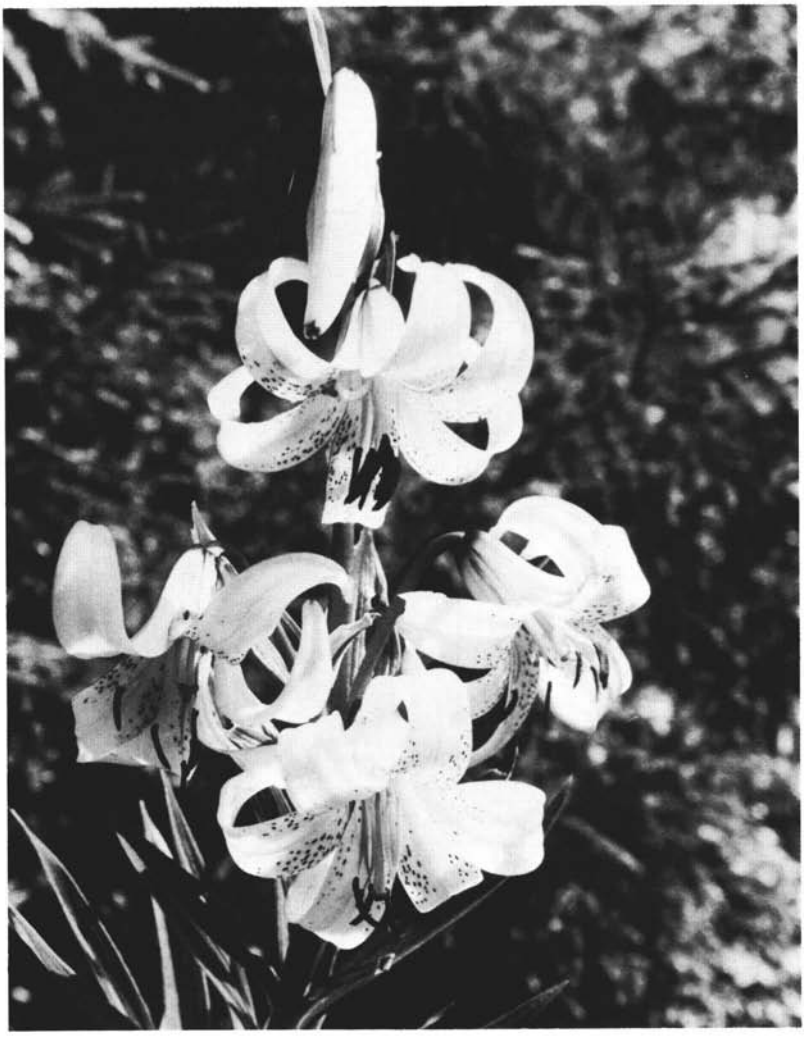


Fig. 66 *Lilium szovitsianum* (see page 384)

Photo: M. J. B. Almond

Fig. 67 *Cyclamen persicum* (see page 330) Photo: Andrew Stevens

Fig. 68 *Cyclamen pseudibericum* (see page 330) Photo: R. Bezzant

Fig. 69 *Primula reidii williamsii alba* (see page 398) Photo: R. Bezzant

Fig. 70 *Primula petiolaris* (see page 401) Photo: Andrew Stevens

Cyclamen cultivation

RAY JOHNSTONE

CYCLAMEN are interesting plants to grow, offering a challenge in their cultural requirements throughout the seasons of the year. To get them to flower profusely, or indeed with some species, to flower at all offers another challenge. To get them to produce and ripen seed and to grow that seed to a flowering size plant adds yet another challenge. There are 17 species that make up the "set" but within each species the range of leaf shape and markings and/or flower shape and colour offer such a vast range of combinations that the cyclamen grower will find his collection is more than just 17 pots. In my case it has run to over 700 pots in the 10 years I have been cultivating the species.

The enthusiast may also like to see them growing in their natural habitat. Observation of plants in the wild will provide a great deal of insight into their cultural requirements although this can be a hot and strenuous business since the plants don't always grow in easily accessible places.

An invaluable work for the cyclamen enthusiast is the AGS Publication "Cyclamen" by Mrs. D. E. Saunders. This was first published in 1953 and revised in 1973. Two cyclamen have had name changes since the revision: *C. alpinum* Sprenger the cilicium – like plant with ships propeller-shaped pink flowers and marbled leaves, flowering early spring, is now correctly *C. trochopteranthum* Schwarz. The more common *C. cilicium* 'var' which is often seen labelled as *cilicium alpinum, coum alpinum* or *orbiculatum alpinum* is now *C. cilicium var intaminatum* Meikle. This plant is autumn flowering and has tiny flowers of white faintly veined with pink or grey although there is a form with pink flowers, still with faint veining (Fig. 73). The leaves are like a plain *coum,* round and dark-green. There is however a marbled leaf form which makes a more decorative plant.

It is unfortunate that two distinct cyclamen finished up with the epiphet *alpinum* but now that the plants have been renamed it is hoped that growers will make the effort to correct the labels on their plants to avoid confusion in future. Another two cyclamen have been renamed for a while now but the old names are still persisting. Anyone growing *C. europaeum* or *C. neopolitanum* should change their labels to read *purpurascens* and *hederifolium* respectively.

The cyclamen enthusiast may find it beneficial to join the Cyclamen Society, one great advantage being that their seed distribution scheme takes place in August when the seed is still fresh, thus giving better germination.

Seed makes a convenient starting point for cultural notes; it should be harvested when the pod starts to split. The seeds are sticky at this stage with a mucilaginous substance which is attractive to ants. The ants carry off the seed and help to distribute the plants. I had doubts about this theory when I saw some of the locations of the plants in the wild and the apparent scarcity of ants at some sites but I have carried out field and garden tests and find that the ants definitely do carry off the seed.

The seed should be sown as fresh as possible. If it has been stored for some time, bought commercially or obtained from distribution schemes of various societies it is a good idea to soak for 24 hours in water. A little washing up liquid should be added to the water as a wetting agent to make the seeds sink instead of floating on the surface. Plant saucers or yoghurt pots make good receptacles for this practice; put them somewhere out of the way where they won't be knocked about or dried out. Sowing is more difficult after soaking but the seed coat will have been softened and will also have appreciably swollen with the intake of water.

My seeds are sown in 75 mm plastic drinks cups. These take up a minimum amount of space and generally provide enough surface area for the usual amount of seed which one receives. It is not wise to sow the seeds too close as problems with damping off can occur at the seedling stage, so larger amounts should be sown in larger containers.

I do not use any specific compost, I have tried a commercial JI seed-sowing compost to which I added $^1/_8$ inch granite grit to improve drainage. I found that this compost was a little too much on the fine size and it tended to compact and provide liverwort with a suitable habitat, recently I have tried a 'Chempak' seed-sowing compost which is 3 buckets of riddled peat, 1 bucket of sharp sand and 263 grammes of chempak seed-sowing base. I have also used my own version of JI seed-sowing compost in which the 3 parts of peat were replaced with 3 parts of leaf mould. I find the cyclamen will germinate in any compost but it is advisable to have a sterilised compost and the drainage must be good.

The seeds are sown on the surface of the compost and are then covered with $^1/_8$ inch granite grit or similar material. I have used coal grit of a similar size as this is supposed to suppress liverwort. This could well be true if you have the proper type of coal; a lot depends on its chemical composition but it did not completely stop liverwort in my

case. Seed pots can be sprayed with 'Algofen' if liverwort is a problem, reputedly without harm to seedlings but it is better to provide a well-drained compost which discourages the growth of liverwort rather than have to cope with the results of a poorly-drained compost.

Cyclamen can be slow to germinate so it is advisable to keep the seedpots for three years if space permits. Thereafter the compost can be tipped onto a specific part of the garden from which any late germinating seedlings can be retrieved. If there are less than 20 seeds in a seed sowing, I write the number of seeds on the label, I then know at transplanting time if it is worth-while keeping the pot for future seedlings.

The pots are plunged in sand, preferably in a shady situation, the labels pushed firmly in to make it difficult for the blackbirds to shuffle them. The seeds generally germinate at the time when the parent plants produce their foliage.

Cyclamen seedlings are more tolerant of frost than mature plants but it is advisable to give them some protection. A pane of glass to keep off the wet is often enough but, in cases like the 1981/82 winter, they should be given a more protected environment. Transplanting should be carried out during the plants dormancy when the seedlings are over a year old. They can be left in the seedpot to grow bigger but I find there is more root damage during transplanting if they are older. The urge to transplant them just after germination is often succumbed to, especially on a cold but sunny day when sitting transplanting in the warm greenhouse is a pleasant occupation. I try to overcome this temptation and aim at transplanting the seedlings when the corm is pea-sized.

Large numbers of seedlings take up less room if they are transplanted into seed trays but I find I have had more losses using this method and it is more successful to pot them singly into small clay pots. Hold the seedling at the depth at which it grew in the seed pot, make sure the roots are spread out and fill up the pot with compost, tapping gently to settle it in. A little additional compost may be required to bring up the level to the top of the corm then a dressing of grit placed on top. This acts as a mulch and helps to stop the compost from drying out. The pots are plunged into the sand where the effects of over and under watering are not so severe. I now label each pot; I often have dodged the wearisome business of bulk-label writing only to wonder a week or so later what the contents of a couple of misplaced pots are. I go through hundreds of labels so for seedlings I find a cheap and easy method is to cut up polythene containers (preferably coloured) and write the information with a fine point black marker. This does not fade and can be cleaned off if desired with surgical spirit or a wire wool pad although it is easier to treat these labels as expendable.

Seedlings should be kept moister during the dormancy stage than their parents. It is sufficient just to water the sand-plunge more regularly without watering into the pot although *purpurascens* and *hederifolium* will take direct watering without harm. Keep the seedlings as long as possible in the pot before potting on, they will flower better when pot-bound and they do tend to sulk for a year if they are repotted. Cyclamen will tell you when they need repotting by rooting through the drainage hole into the plunge. Another method is to remove the top dressing and examine the tuber. If it is nearly filling the pot, it is ready for repotting. *C. africanum* is a fast grower, noted for going one stage further and splitting the pot. If a plant does not need repotting it is advisable to remove the top inch or two of compost and replace with a fresh compost equivalent to JI No. 2. I do not use a standard compost but I aim at a JI No. 1 often replacing the loam with leafmould so a typical mix would be:

3½ parts pine leafmould
3½ parts beech leafmould — in place of 7 parts loam
3 parts peat
2 parts sharp sand
1 part ⅛ inch granite grit
small lump of chalk (crushed)

To each 36 litres (bushel) of this mix I add 112 grammes (1 oz) of JI base fertiliser. This seems a complicated mix when metricated! I use a 4-pint-size beer tin (previously drained) to measure out the compost and to every 4 tins of this mix I add a 1 oz measure of JI Base. I also give a scattering of a slow-release nitrogenous fertiliser such as 'Gold Harvest'.

I do not follow this recipe slavishly but may add the ingredients until they "feel" right. This "feel" for me means squeezing a handful, listening to the grinding of the grit and sand, dropping it and seeing how it shatters. More systematic gardeners may prefer to make a note of the ingredients, observe how the plants grow in it then modify later mixes to suit. Cyclamen are not too fussy but I have found a 'sad' or poorly-drained compost is definitely to be avoided. All my compost ingredients go through a 6 mm riddle and sometimes I remove the dust from leafmould, loam or garden compost with a flour sifter. This is a tedious job but the result is an open compost which does not clog up and restrict drainage.

Plants potted in pure Levington compost have been successful. It encourages a good root growth. For this reason I avoid having more than one tuber in the pot as the plants are impossible to separate later without a great deal of root damage. More care is to be taken when watering, avoiding waterlogging in wintertime and complete drying-out in summertime. Sometimes the cyclamen can be kept growing all

year round in Levington compost which means a bigger plant in less time. The florists *persicums* are grown this way and can reach flowering size in only 8 months from sowing.

Sometimes I leave chalk out of the compost. I have noticed in the wild that the flowers of *graecum* which are growing in limestone crevices tend to be paler than those growing in pine needle leaf soils. Lime has this effect on other plants I believe but I am not a botanist or chemist so cannot comment too much on this theory.

My plants are kept in an aluminium greenhouse with glass to the ground. I have installed extra ventilation louvres. Three are fitted at ground-level and three at bench-level; there are four ventilators in the roof, one of which is automatic. During the warmer months the door is kept open all the time, necessitating the use of bird-proofing. I have fitted a wire mesh frame, hinged onto the doorway. The house is set on a brick foundation and on the inside a path has been laid and beds constructed along both sides and one end. These beds are filled with sand and it is into this sand that the pots are plunged. A bench is fitted on each side of the greenhouse running the length of the house. These benches are supported by metal angles and carry a sand-plunge in which the smaller pots are kept. These benches cast a certain amount of shade on the beds below but in addition the greenhouse is fitted from May until October with plastic net shading.

An additional length of shading is fitted between the bench and plunge bed on the north side to provide deeper shade for the cyclamen which come from the more shadier and moister habitats (*purpurascens, hederifolium, cyprium, repandum* group, *coum* group and *cilicium* group).

A drip system, rigged up from tubing and valves obtained from aquarium shops keeps the sand moist around those plants which prefer moister conditions. This is not working satisfactorily in my case as my water reservoirs are soon emptied. A system working off mains water supply would probably be more successful. My greenhouse is too far away from the house to have an electricity supply. Anyone intending to erect a greenhouse is advised to keep it close to a power supply if the cultivation of tender plants is contemplated. I have a lean-to greenhouse against the end of my garage which is in a more convenient situation. After the tomatoes have been cleared out in October, the great migration of cyclamen begins. All tender species are transferred into this greenhouse and plunged in the border and in trays on the benches. The greenhouse is lined with polythene as an insulator, which also gives a certain amount of protection from scorching on the odd sunny day. Frosts are kept at bay by means of a fan heater coupled to a thermostat which is set at 1°C above freezing. Should the temperature drop to this

level, the heater starts and continues until the temperature has risen by 3°C before cutting out.

A lack of space in this greenhouse means that I have to leave the hardy species in the other house. The winter of 1981/82 gave me a new insight into hardiness and I shall make efforts in subsequent winters to cram as many plants as possible into the heated house. Only *purpurascens* survived that winter without much fatality, *hederifolium, coum* and *repandum* were decimated, although the same species grown in the open garden were not affected so much.

Ventilation is a bit of a problem, especially when greenhouses are lined with polythene. Doors should be opened on sunny days and ventilators should be operable. I cut U-shaped flaps in the polythene round the ventilators. On still, frosty nights these flaps will hang down, covering the vents and keeping out the cold but when there is a wind, they will blow away from the vent and admit air. They can be pinned up in better weather to give complete ventilation.

One effect of bad ventilation is moulds which attack the crown of the cyclamen, especially those species which tend to have a lot of growth arising directly from the crown (such as *cilicium*). These forests of small leaf and flower stems stop any air movement and encourage moulds. As a preventive measure, all dead leaf and flower stems, all dropped flower heads from those flowers which have become 'pregnant' and flowers still retained by a coiling seed stalk should be removed. Any mouldy parts must be removed as soon as possible and the plant dusted with flowers of sulphur. Sometimes the whole crown rots and surgery is then the only way. To save the plant, remove the top dressing, expose most of the tuber and using a sharp blade, cut out the diseased tissue from the corm until sound tissue is reached; make sure there are no 'corners' in the wound and the cut surface is even. The finished wound may finish up as a conical crater in the top of the plant. Paint the cut area with methylated or surgical spirit and dust with flowers of sulphur. Remove the plant to a warm, dry airy place and be very careful with watering. No water must be allowed to contact the tuber. The wound will dry and callus over, new growing points will arise from the rim of the wound and the plant can be in flower again the following year. The cut out portion will eventually fill in with new tissue but until this happens the plant must be watered with care.

Insects do not cause too many problems; the occasional greenfly attack can easily be dealt with. Caterpillars can do a great deal of damage before they are found. The worst of these are the nocturnal caterpillars of yellow underwing moths. These are brown and green brutes up to 50 mm long which can defoliate a plant in one night (they

seem to have a preference for graecums). Keep an eye on the leaves, if there are any signs of overnight damage go out the following night with a torch and examine the plants; the caterpillars can be found clinging to the stems or the leaves. Squashing them is messy but a permanent solution. A more insidious beastie is the vine weevil; the c-shaped white grubs of these live in the soil and eat the roots and tubers. The sudden collapse of the plant is the signal that something is wrong. If the grubs are collected and put in a dish in the garden, your local robin will make very short work of them. For prevention, add a soil insecticide (naphthalene or diazanon) to your composts before potting (see article on p. 377).

Some of the species seem to be reluctant to set seed. Perhaps growing conditions are not quite right but possibly cross pollination with another grower's plants could help in those species which are not grown in any great quantity. It is worthwhile taking your plants on long car journeys; the vigorous shaking they get is good for pollination. Persicums grown commercially at Rochfords are pollinated by holding the pot in one hand and thrashing the flowers across the other arm; more courageous growers may like to try this method.

Seed set is announced by the dropping of the flower and the subsequent coiling of the stem. Sterile stalks retain the flower and go limp; these should be removed before rot sets in. Plants which have set seed are given occasional liquid feeds.

All the species are grown on the general lines already given but individual species may need slight cultural deviations, these are given below.

C. africanum is very much like *hederifolium* but the leaves are thick and leathery and arise directly from the tuber, (*hederifolium* leaf and flower-stems grow horizontally then bend abruptly upwards). The corm is often concave on the top. It can be given the same treatment as *hederifolium* apart from keeping it drier; it is tender and requires winter protection.

C. balearicum, creticum, repandum and *repandum rhodense* can be lumped together as the 'repandum group'. Give them shady positions and keep the sand plunge moist during the growing season.

Being woodland plants they like a leafy compost; their leaves can be damaged by sunlight so they should always be protected from direct sunshine. *Repandum* is reported to be hardy but I have not had much luck with it in the open garden. As an experiment I grew *repandum, repandum rhodense* and *creticum* out of doors, planting the tubers 5 to 6 inches deep in stony, pine leaf mould at the base of a birch tree, covering the tubers with flat stones to keep off the damp and frost. *Rhodense*

lasted one winter but the other two survived three winters and flowered, albeit sparingly until I took pity on them and put them back in a pot. *Creticum* is beautifully scented.

C. cilicium, var *intaminatum, libanoticum, mirabile, pseudibericum, trochopteranthum* and *cyprium* form a group which can be grown similar to *repandum* but need not be shaded so much. *Pseudibericum* (Fig. 68) and *cyprium* will tolerate drier conditions. *Mirabile, pseudibericum* and *trochopteranthum* can be a bit obstinate as far as seed production goes and therefore are not as easily obtained as the others. A good pointer for separating *mirabile* from *cilicium* is the ragged edge to the petal apexes of *mirabile*.

C. coum, hederifolium, parviflorum and *purpurascens* are satisfactory plants for outdoor culture although the asking price for *parviflorum* is such that growers would hesitate to commit it to the open garden, therefore it is more often kept in a pot. It should be given cool moist conditions I believe but as yet my experience with this species is mainly of bereavement. The remainder like moist conditions if grown in pots; *purpurascens* is kept in well-shaded moist conditions all year round as it is more or less evergreen. It starts to flower in late May with the main blooming period in July and August. It has a strong perfume and one plant can fill the greenhouse with its scent. In the wild these are plants of shady conifer woodland, overlying limestone, where the soil is dark and peaty with nodules of limestone. *Hederifolium* is the best species for outdoor culture and is a good species for the beginner to practise cultivation on. It is very variable in leaf and a good collection of leaf forms can easily be built up. *Coum* is also variable and has in the past been split up into several varietal names. Worthwhile obtaining are the silver-leafed forms, known as Nyemans or Pewter leaf, the deep coloured form with marble leaves numbered MT 4051 and *coum abchasicum* or *caucasicum*.

C. graecum, persicum and *rohlfsianum* are the hot country plants and will take a lot of sun and warmth. *C. persicum* (Fig. 67) I have seen in the wild has been growing in very hot positions, often in rock crevices in full sun therefore it is the only species which I grow with the tuber exposed above the top dressing.

In the wild *graecum* grows deep, often in shade under trees, but where they are in open situations they generally grow out from under stones which must protect them to an extent. They usually have several floral trunks which wander about under the surface before terminating in the leaves and flowers. Strong perennial roots obtain moisture from deep in the ground and it is a fairly common sight in Greece to see large tubers weathered out of roadside embankments hanging on only by their roots. It is often advisable to use a deep pot for this species. I grow

graecum on the surface of the compost but add a top dressing of grit which covers most of the tuber. Plants which have developed floral trunks need to be set further down in the pot. The leaves of *graecum* must be the most beautiful of all cyclamen especially when they are fresh in the autumn when their velvety texture can be appreciated.

C. graecum and *persicum* are not watered, either in the pot or in the sand plunge, from the time when the first leaf begins to go yellow, right through the dormant season until there are the first signs of fresh growth. They are then given a thorough soaking.

C. rohlfsianum is given higher temperatures, kept in full sun in a greenhouse among tomatoes, plunged in sand and not watered until the first signs of growth. It may be advisable, however, to water earlier, say in mid-July to give it a longer growing season before the cold weather sets in. It is removed on to a south-facing bedroom windowsill for the winter, plunged in a trough of sand which is kept moist. My *rohlfsianum* corms are covered with gravel in the same way as *graecum* but my next experiment will be to expose the tubers and top dress the compost with a black grit in an effort to increase the heat absorption of the tubers.

Most cyclamen coil their seed pods from the flower end. *Rohlfsianum* and *graecum* coil from the tuber end and *persicum* does not coil but loops downward.

Cyclamen can be obtained from the more specialised nurserymen although *hederifolium* and *coum* can be found in most nurseries. Many garden centres will sell dry tubers at certain times of the year. These are more difficult to establish than a pot-grown plant but it is worth having a good look at the tubers; there have been many cases of the more uncommon species being sold as *hederifolium*. If you have an idea of what the tubers look like you can pick out those which look different. A few cyclamen may turn up in your local group plant sale; you have to be quick to buy them as they usually go fairly soon. If you miss them, find out who bought them, there might be more at home. Collar your local cyclamen enthusiast; seed or spare plants may be available. Exhibitors at shows usually respond to enthusiastic admiration of their plants and could send you seed. Seed can also be obtained from the distribution schemes of various societies and botanic gardens and can also be bought commercially. On occasions expeditions go to the right places and a share in such an expedition may yield some cyclamen seed or perhaps a plant.

My garden is in North East England and is on sand. It is not too suitable for outdoor cultivation of cyclamen therefore I grow most of my collection in pots. People with better climatic or garden conditions may wish to grow more plants outdoors.

The cultivation of hardy Cyclamen

KATHLEEN DRYDEN

MY FIRST introduction to the genus *Cyclamen* was through the Alpine Garden Society's show bench in 1961. I became entranced and determined to try to grow them. Finding the plants to grow was the first hurdle. There were few in the trade and most of the plants seemed to be in the hands of an exclusive clique and they meant to keep it that way. Fortunately things have improved rapidly over the past two decades. Through the seed exchanges of the various alpine societies, seed has become more freely available and they are readily obtainable in the trade in various stages of growth. Undoubtedly the best way to buy them is as a growing plant in a pot. The latest method of sending out so-called "plants in the green" in the spring, is one to be observed with strict caution. At this stage of growth and also when the plant is just starting into growth, the tubers are at their most vulnerable. Great losses are incurred at these times; at best they take a long time to re-establish.

The first plants that I was able to buy were dried tubers, even though the then scanty literature was adamant on a common theme, that dried tubers were no good and they didn't grow. It is my practice to this day, when confronted with a new plant, to examine its structure and obey my own instinct, which I prefer to call common sense. I remember my childhood, when my grandfather patiently nursed various dormant tubers to life in damp sand. I applied the same method to dry cyclamen and they came to life, one *C. hederifolium* and the other *C. persicum* (Fig. 67). These are still with me today. Cyclamen have a terrific will to live and treated with respect they seem to have an indefinite life span. Beginner's luck to be sure, but I have learned over the years that the softer the tuber the drier the sand has to be in the first instance. Water means death to a flabby tuber, even one that has been inadvertently over-dried. The plants were cherished in pots and the next step was to grow them in the garden. In our suburban garden in Essex with a London clay subsoil they refused all our attempts to make them happy.

When it came time for us to move, we went one Sunday afternoon in February 1968 to see a half-acre plot on the Essex/Hertfordshire border. Whilst the owner extolled the delights of her carefully attended herbaceous border, I was fascinated with the *Cyclamen hederifolium* leaves in all sorts of odd corners. We bought the garden that afternoon.

Fourteen years later the garden comprises various rock gardens, raised beds, etc and we have planted many trees. Each time we plant a tree we underplant with cyclamen and other bulbs. Of course I had grandiose ideas of planting cyclamen in groups for succession of flowering. They thought otherwise and although we now have hundreds of tubers and seedlings in the garden, there are still places where they will not grow. In the main each species likes to keep to its own station, more often than not of its own choosing, and be a little king in its own domain. I am convinced that if the general atmosphere of the garden is sympathetic to the genus you will succeed.

Once you have your first plant, whether it is in a pot or not, the seeds will escape with the help of the ants, drinking themselves silly on the sweet sugary substance that envelopes them within the capsules. If the germinating seedling likes the spot, it will grow away contentedly. Of course many young plants perish if the seed is deposited by the ant in an alien place, but this must of course happen in the wild and is probably the reason why so much seed is produced. In a not over-tidy garden most of my plants are encouraged to do their own thing, within reason. However, I must lead on to a warning here, not learnt from any book. You cannot learn to grow from a book; you can get an idea or a spark of intuition but then it is up to you to reason it all out. The species that I had the most difficulty with until recently was *C. coum* in all its forms. They would grow for a time, set very few seeds, then fade away. We build small manageable raised beds, no more than nine to twelve inches high, which just raises bulbs and plants that need extra drainage above the level of our rather heavy rich soil. It is usually a pile of precious, once-used potting soil, that sparks off the making of one of these beds. Some eight years ago we made such a bed at the base of a Bramley apple tree and three years later we had a delightful swarm of *C. Coum* hybrids, one can only call them that. One can see in the babes the influence of *C. coum* EKB 371 and the "white" leaved form brought back by the BSBE expedition to Iran No 518. The one that dominates is the one that I christened 'Pewter Strain' for want of a better name. There is no central zone to the leaves, the centre is a complete greeny pewter colour and each leaf has a dark-green narrow margin. Most of the flowers are large and of good substance and vary from pale-pink to dark-carmine.

After a time, as usual, the plants seemed to go back and then I realised the culprit; *C. hederifolium* had also got into the bed and was swamping the coum. In retrospect it came to me in a flash of inspiration that in all places where *C. coum* had died out *C. hederifolium* was almost vulgarly rampant, and so I fear that the latter now has to be severely culled from

the places where we want the *C. coum* to flourish. I also realised that *C. repandum* had been quietly killed in the same way.

With regards to the lack of seed on the open ground plants as opposed to the pot-grown plants, this was also a 'think it out, observe, act' exercise. I never cease to marvel at some of our winter flowering plants, that can be flat and seemingly dead at ten in the morning after a severe frost with no snow cover, and alive and well by lunch-time when the air temperature has warmed sufficiently. They continue to flower seemingly unharmed, but if one looks at the reproductive organs under a lens, you will find that these have not survived the frost, although the corolla is still in perfect condition, thus, on the next warm day the insects have nothing to pass from flower to flower.

The garden is very rural, very exposed to drying east winds and very cold. The winter of 1981/82 was the worst so far, the lowest temperature recorded being −27°C. The slaughter of bulbs in pots was horrendous and much of it was my own stupid fault. I am convinced that they died of drowning in freezing melt-water. If I had had the sense (fortitude) to prise the frozen pots out of the frames and benches with an ice-axe and poke a sharp instruments through the drainage hole in order that the melting water could drain away I would have saved many. Needless to say, the cyclamen in the garden were completely defoliated, hardy and "tender" species alike, and we had to play a waiting game. As the year wore on mature tubers of *C. graecum* and some forms of *C. hederifolium* became complete evil-smelling mush. The first was expected but the latter was an experience designed to shake one's confidence completely and rewrite all the books. However, on reflection, it confirmed my suspicion that where *C. hederifolium* and *C. africanum* are grown together a hybrid occurs far more frequently than we have heretofore suspected, and that a large part of the tenderness of *C. africanum* is passed on to the siblings. Also, subsequently over the past year I have in my mind another query – what is the plant that we know as *C. hederifolium* that grows with *C. graecum* in Greece? However, it is not within the object of this article to be either botanical or controversial.

But all is not gloom as I write in the autumn of 1983. I have found that *C. libanoticum* reappeared and flowered in the spring, *Cc. cyprium, mirabile, cilicium,* and *cilicium* var *intaminatum* came through and flowered this autumn, and, to my joy, young plants of *C. graecum* had survived and flowered also. You may think it odd that I mention *C. cilicium* in this context. Everybody says it is easy. I haven't found it is satisfactory as a garden plant, but it is settling down in a bulb frame where it put itself between fritilliaries. This frame is one railway sleeper high, the soil is

once-used potting compost. It is covered with an access frame. The glass sides are only removed temporarily for maintenance. The top glasses are removed from the beginning of September to mid-November, and watered if there is no appreciable rainfall. The top lights are removed again at the beginning of March according to the weather conditions in any one year, and they go back at the end of May. The bed is fed at the spring-opening with a good general fertiliser; slow acting John Innes base is still the best by my book. At the autumn-opening the bed is fed with a low-nitrogen, high-potash fertiliser.

There will be many beginners reading this paper who are waiting for a compost formula. To the reader who is successful at growing cyclamen it would be better now to switch off, so to speak. Don't change your method that you have proved in your own environment. Here, I sow the seed from my own plants straight from the pod. The seed capsules are coiled down towards the ground. In June I start to test the coils. If, when pulled, the stem springs back, it isn't ready, if the stem remains flaccid the seed is ready, no matter what the colour. The seed is then washed in a sieve to remove the sugar and so discourage the ants and sown in a compost of 50/50 peat and sharp grit. If you receive your seed dry from the Seed Exchange it helps to soak the seed overnight in a little water with a spot of washing-up liquid. The seed is lightly-covered with the mixture, then top-dressed with not less than a quarter inch of clean grit, ie no sand. The pot is thoroughly soaked from the bottom and stood in a north-facing frame. The seed will germinate at the due time when a mature plant will normally start in to growth. As the pots show signs of germination they will need some winter protection. If you only have a frame, sheets of newpaper floated down to trap air between will protect on a frosty night, but the paper must be removed and dried each morning. The plants are kept growing as long as possible and when the seedlings appear the second year the whole lot are potted on without disturbance. The following year the tubers can be picked out whilst dormant, or you can wait until the growth starts again. In their early years the little plants like company and grow much faster than if pricked out singly. Cyclamen should never be overpotted, they hate unused soil around them in pots. The potting compost should always be light and fluffy with perfect drainage. I used one part by bulk JI No 3 mixed with two parts peat. To this I add an equal part by bulk of the drainage mix, a half of which is medium-grade chick grit; the rest is made up of limestone chips, crushed pot and a little perlite. Tubers that are being grown on as specimens are repotted about every three years in their early stages; as the plant matures every five years is enough. *C. persicum* and *C. graecum* have the top soil removed each year and top-dressed as they are very greedy.

Sometimes a tuber will be found to be damaged or starting to rot. Cut back with a sharp clean blade into healthy tissue. Dip the cut surface into a solution of liquid fungicide for a few minutes then leave to dry for about 30 minutes. Paint the surface when dry to the touch, with methylated spirit and leave overnight in a cool place. Then place the tuber in hand-damp, clean sand in a shaded place until growth starts again. When a healthy brown skin starts to grow on the cut surface, pot on in the usual way, but put a layer of sand between the compost and the area of operation.

We can vegetatively propagate cyclamen in this way. The tuber is planted very deeply or nicked to encourage extra growing points. The tuber is then cut into pieces each with an eye and treated as above. If planted deeply most tubers will grow floral trunks, these can be detached and grown on as cuttings; eventually a new tuber will form. Both of these processes are very slow and require skill and patience. It is best to practise on a prolific form before trying to operate on a one and only rare form or species.

For general aftercare and management you must study the genus as a whole and seek to learn about the natural habitat and growing conditions of the plant in the wild. The question of hardiness has already been touched upon. One often hears claims that this or that famous grower grew a reputedly tender species in the open garden. I can only relate to you how I have found the relative hardiness in this very cold garden. *C. rohlfsianum* needs at the very least frost-free protection. It needs to be jerked into growth at the end of July with a thorough soaking, and one more thorough soaking will, in most cases, suffice for the whole year. It lives on a warm shelf when dormant. I grow *C. africanum* the same way but it is relatively a bit more hardy than the former, its leaves are much tougher and can therefore stand extremes better. *C. persicum* has never survived in the garden here. I cannot resist growing a few in a conservatory, frost-free, where it will flower and scent the air during the dark days, but it will flower well but much later in the alpine house. *C. graecum* sits out the summer in a southlight greenhouse plunged to the rim in damp sand. Almost all the rest are housed in shaded frames, and covered to give them a gentle dry rest. *C. coum* is in an uncovered frame and is watered periodically if there is no rain. *C. purpurascens* I have a pot in each of the foregoing situations. In all situations in the garden, sometimes it grows, sometimes it flowers, but it is always cantankerous. Why a natural woodlander from the European Alps should be so we don't know, but just keep trying.

The most important thing is to show our plants and share our knowledge with others. Among all the plants we grow, hardy cyclamen

takes the highest rating for getting people hooked on alpines. It is possible to lift and pot plants for show, but it is difficult and very often unsatisfactory. A lot of cyclamen have geniculate stems, ie the stem on emerging from the tuber travels along at right angles before turning its head to heaven. All cyclamen stems are weak at the point of emergence. Plants of *C. hederifolium* and *C. coum* may look a delight in the garden, but try lifting one and it immediately falls apart. It takes great skill and patience to put it back together again and look as it did before. In fact, I have found it well-nigh impossible. It is better to lift the plants in turn, after growth has died down, about June, and grow it in the pot for six months or so, replant after the show. It is even easier and less disturbance for the plants, to grow them in water-plant pots, ie half-pots made of lattice plastic. These are sunk into the ground and can be left until the plant is well into growth before lifting and double-potting.

As I have said, cyclamen abhor having a lot of soil around them in a pot. Growers tend to overcome this by growing a lot of seedlings and making a pot full. One so often sees *C. libanoticum* and *C. repandum* grown this way, they both have naturally small tubers even when mature. I must confess to these large potfuls being my absolute 'bête noir' in the cyclamen world. In any batch of seed of any species I have rarely found two identical seedlings, the result is usually slovenly and spells poor cultivation. I feel that a lot of the trouble lies with the judges. They seem to like large potfuls, or perhaps they think that they are supposed to prefer large clumps. How I would love to see the Farrer/Forrest Medals go to a perfect plant of *C. cilicium* var *intaminatum* in a four or six inch pan. One of the problems with plants like *C. repandum* and *C. libanoticum* is that although they prefer to be singly in a small pot, they do tend to run their flowers to the side, so here we have the perfect plant for the double-pot. Exhibit your plants in clean pots, with clean top-dressing. The top-dressing should seek to convey the natural conditions of the plant, ie if it has a woodland habitat, woodland scruff and leaves is preferable to stone chips, you can even research whether the woodland is deciduous or not. You don't find beech leaves in pine woods! Label your plants clearly and horizontally; if grown from seed the source is useful. All exhibits should be beautiful and informative.

I would like finally, to stress the importance of growing cyclamen from seed. Many of their habitats are now closed to us. I doubt if there are new species to be discovered but I think there may be many forms. Every cyclamen seedling is a new mystery, so do keep records of the source of the seed. Don't be like a recent American visitor, who, on being offered some cyclamen plants, declined saying that he already had a complete collection. I will go on sowing seed and rescuing dried tubers that escape the confiscation net.

NOTICE

The **ANNUAL GENERAL MEETING** will be held at the
BRITISH MEDICAL ASSOCIATION HOUSE,
Drumsheugh Gardens, Edinburgh,
on **Saturday 20 October 1984,**
at **2.00 pm**

In accordance with the Constitution and Rules amended in 1980, members are notified that nominations are required for President, Secretary, Treasurer, Subscription Secretary, Editor, Publicity Manager, Publications Manager, Curator Davidson Slide Library, Overseas Liaison Secretary and four Ordinary Members to serve on the Council.

Nominations in writing, and seconded by another Club member or members, must be sent to the Honorary Secretary no later than 15 MAY 1984, the nominator having ascertained that the nominee is willing to serve if elected.

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

The following have served for three years as Ordinary Members, retire and are not eligible for re-election as Ordinary Members for one year:
Mr. Martin Bremner
Mrs. Jill Sleigh
Dr. Peter Semple
Mrs. Polly Stone

Honorary Secretary:
Miss K. M. Gibb,
21 Merchiston Park,
Edinburgh EH10 4PW

Fig. 73 *Cyclamen cilicium* (see page 323) Photo: J. Cobb

Fig. 74 *Celmisia hectori* (see page 399) Photo: Andrew Stevens

Fig. 75 New erected 'Stone Column' (see page 314)

Fig. 76 *Lloydia longiscapa* (see page 398) Photo: Andrew Stevens

Fig. 77 *Anchusa caespitosa* (see page 400) Photo: Andrew Stevens

Fig. 78 *Corydalis wilsonii* (see page 397) Photo: Andrew Stevens

Fig. 79 *Pleione humilis* 'Frank Kingdon-Ward' (see page 395) Photo: Andrew Stevens

William Fraser Tolmie, MD, 1812-1886

A. C. SMALL

IT IS well known that Scots played a prominent role in the development of Canada. Perhaps not-so-well known is the important part they played in its botanical exploration. In the late 18th and early 19th centuries several Scots played leading parts in the botanising of the north-west of the American continent; in 1786 Archibald Menzies, followed in 1824 by David Douglas and John Scouler who travelled in the same ship. To these names should be added William Fraser Tolmie who first arrived in 1833, just one hundred and fifty years ago.

He was born at Inverness on 3 February 1812 but, following the death of his mother was brought up by an aunt and went to school in Edinburgh. From there he went to Glasgow University to study medicine. The Professor of Botany there at that time was William (later Sir William) Hooker. Also in Glasgow then was John Scouler, Professor of Natural History at the Andersonian Museum, now Strathclyde University. Tolmie was a very methodical man, and during his student days kept a diary and continued it with few breaks until 1843. This interest in botany took him on long walks in the environs of Glasgow as far afield as Aberfoyle about 25 miles each way. He graduated MD in 1832 and was recommended by Hooker to the Hudson Bay Company who were looking for a physician and surgeon to go to what was then called the Oregon Territory. Whereas Menzies and Scouler were ship surgeons and naturalists, Tolmie was a passenger on the ship and was eventually to make his home in this new country.

During his student days he enjoyed whist, dancing and skating but after taking up this appointment he came to be described as dour. But it was this dogged streak that was to keep him going in the difficult years ahead.

The voyage via Cape Horn started at Gravesend on 13 September 1832 on the barque 'Ganymede' of 213 tons. During the next nine months he recorded a regular time table of study. He had books of his own and others he borrowed covering such diverse subjects as medicine, botany, navigation, geometry, geography, German, French, Theology, The Bible etc. He also took every opportunity to try to catch

birds and sea creatures for dissection or preservation of their skins; amongst the latter was the Flying Fish, *Exocetus*. Luckily the ship had an easy passage round the Horn but met very rough weather in the Pacific causing much sea sickness.

The first stop was at the Sandwich Islands (Hawaii) reached on 21 March 1833 where he took the opportunity to explore the island of Oahu and climb Mount Kala, 3,850 ft, botanising as he went. Unfortunately, many specimens were lost by the carelessness of a porter who dropped them over a cliff. A list of plants collected contains 55 names, all in the local language.

The mouth of the Columbia River was reached on 30 April 1833 and four days later he arrived at Fort Vancouver, the Hudson Bay Company's main depot in the region, 9 months and 17 days after leaving Gravesend. Fort Vancouver is now replaced by the city of Vancouver in the State of Washington, U.S.A. For the next 6 years, however, he was to be engaged in medicine and the fur trade on the coast from Fort Vancouver to the Stikine River near present day Wrangell (not Wrangell Island) south of the border of the Yukon.

His primary duty was to provide medical care for the company's employees excluding the Indian trappers though that did not prevent him treating them on occasion. It would have been dangerous to treat them always as, if things had gone wrong, the Indians would have exacted serious reprisals.

As medical matters would not take up all his time he was expected to engage in the barter of furs for goods brought from England, the greatest demand being for blankets and ammunition. A supply of trinkets he had brought out he disposed of cheaply.

From the beginning he started to compile a comparative vocabulary of the different languages of the numerous tribes he had to deal with and this was to prove of great value later. All the time he was collecting plants and bird skins to send home. Hooker had supplied him with a descriptive list of plants of America but he found few which matched his own collection. From time to time he recorded bundles of specimens being sent home mostly to Hooker but at least two to Scouler and another to the museum of Inverness mostly ethnological.

While at Fort Vancouver he sowed seeds of carrots, onions, turnips and cabbages and also planted potatoes. He also sowed seeds of dahlias and acacia trees brought from Oahu but, unfortunately, the vegetables were a failure.

He was not long at Fort Vancouver before he was sent 100 miles north to Nusqually at the south end of the Puget Sound (near present day Tacoma) to set up a new fur trading post. He arrived on 30 May

1833 suffering from toothache; it was over a year later before he had the tooth extracted by a ship's captain. The following December he realised he had a hernia and had to send to Fort Vancouver for a truss.

Although some tribes were friendly Tolmie was warned that he might expect trouble where he was going so he acquired a flint-lock rifle which cost him 150/-. In fact, he used the gun mainly shooting at birds for specimens without much success to begin with. He opted to travel over land providing an opportunity for more collecting on the way.

At Nusqually he cultivated another garden and succeeded in cropping some vegetables. Some weeks were spent erecting buildings on a virgin site but, on the arrival of senior officials, orders were given to change the site and all had to be done again.

He had not long to wait before an urgent medical case had to be dealt with; the Superintendent of Works had suffered a serious injury by gashing his foot with an axe, and this was to prove troublesome for a good many weeks. An earthquake added to the troubles and he had the embarassing experience of being the object of attention of several young Indian women.

When things had settled down he applied for and was granted 10 days leave to visit, and try to climb, Mount Rainier 14,410 feet, and to collect plants. He took as guide an Indian and his nephew. The guide was paid with a blanket and the nephew with ammunition. Three other Indians came in the hope of killing elk. The weather was wet and they had to sleep out under trees. They climbed one peak, later named Tolmie's Peak as he was the first white man to climb it, but the Indians would go no further. They only went that far on the understanding that they were looking for medicinal herbs. They were afraid to offend the spirits of the mountains. Tolmie found few alpine plants but lots of berries. Back at Nusqually he took up his abode in a part of the store and sent off to Scouler now at the Andersonian Museum, Glasgow, a collection of plants and skins which Douglas at Fort Vancouver had promised to forward but failed to do so. Later Tolmie recorded his regret that he never met either Douglas or the American botanist Nuttall who were both in the vicinity at the time.

He now resolved to resume his studies in geography, medicine and theology. Following on that he started to teach some Indians the principles of Christianity. By December 1833 he was finding the winter depressing and records a wish for the company of a friend in whom to confide his joys and sorrows. About this time he and a colleague Donald Manson conceived the idea of a circulating library amongst company staff. Books were ordered from London and distributed from Fort Vancouver. Next he was sent to Fort McLoughlin, Milbank

Sound about 380 miles further north, where he had many patients requiring attention. The weather was bad, they had a hurricane, snow and wolves were seen near the camp.

His stay here was short and soon he was on his way to the Stikine River close to the Yukon border another 380 miles further north. Although it was May the sea was stormy and he was very sea sick. They soon met with a U.S. ship and learned that 7 weeks previously the schooner 'Vancouver' had been lost off the Queen Charlotte Islands but that the crew were safe.

When they arrived at the Stikine the Commander of a Russian fort barred their way supported by local Indians; faced with threats the ship retreated to Fort McLoughlin.

Two months later in July 1834 Tolmie was rushed back North this time to Fort Simpson about 100 miles away where some patients were requiring urgent treatment.

In October the fort was attacked in strength by Indians and the place was abandoned. However, early November saw him at Fort Simpson where for a time he was kept busy making up accounts and arranging his specimens. He climbed several hills but was disappointed that there were so few plants of interest. They had some thunder storms which Indians said were caused by a large bird flapping its wings, while flashing its eyes produced lightning.

Some Indians treated for wounds in the forearm he found were caused when the men had requested their chief to bite large pieces of skin and flesh as this was considered an honour.

The winter of 1834 finds him lamenting the lack of polished female society and he adds the comment that all this was endured "for filthy lucre's sake." Pulling himself together he competed with colleagues in putting the stone and went skating to the astonishment of the Indians.

Christmas Day was celebrated with an issue of rum to the staff, while on New Year's Day 1835 there was a party with songs and dancing. Just one week later he finds life very dull but has to sum up the accounts in December, calculate the average temperature since April, finish copying a chart of the coast begun on the brig 'Dryad' on the voyage to the Stikine River and arrange a table of Indian languages. Throughout he records dealing with no fewer than 44 different tribes and although some shared a language he sent to Scouler a vocabulary of 17 different tongues.

In February he noted "charming weather" on the 9th, followed by raspberries budding and birds singing. On 19 March, a temperature of 80°F was followed 5 days later by 2 inches of snow. There is something familiar about that.

A new problem arose when scurvy appeared amongst the staff; a change of diet from salt, dried salmon to duck, peas and such fresh foods as could be obtained from the Indians was ordered.

On a happier note he records seeing a humming bird on 20 April but 3 days before the second anniversary of his arrival at Fort Vancouver he expresses thoughts about perhaps leaving the Company's service. He must have had second thoughts about this for the following year 1836 he was back at Fort Vancouver.

There is now a break in the Journal which was resumed on 28 October 1836 when he noted orders for clothing, also books, botanical and medical, to be obtained from the U.K. In April 1837 he made a list of 23 trees with Indian names and uses of fruit, timber etc.

October 28, 1838 finds him thanking Governor George Simpson for permission to make a visit home but declines since the circumstances there have greatly changed. However, five months later he accepted this opportunity to extend his medical experience. His departure was delayed for two years, until a replacement could take over and he succeeded in getting away on 22 March 1841 to begin an overland trip to York Factory on Hudson's Bay. He started by boat on the Columbia River with a guide and six of the best men. A month later they changed to light canoes as far as possible then had to proceed on foot and snowshoes through very rough country as they would have to surmount several ranges of mountains which are disposed from north to south while the travellers were going from west to east. When they reached the Saskatchewan River they proceeded by canoe and eventually on horseback. Despite physical exhaustion he notes the flora and fauna of the country. In the valley of the Assiniboine River they had to cross many lakes and rivers which made it difficult to keep boxes and bundles dry. By 5 June the horses were in poor condition but four days later at a settlement they got fresh horses and soon afterwards a Mr Grant provided them with a gig and horse to take them the final 18 miles to Fort Garry (Winnipeg). No further description of the journey is provided but he arrived at York Factory on 4 July five months and 12 days from Fort Vancouver instead of the nine months on his outward trip. He had still to get to England which he reached in mid-October implying that he must have spent some time at York Factory waiting for a ship. He was in Edinburgh by 1 December 1841 and back in London in January 1842 where, apparently, he remained till 6 May when he took himself off to Paris. On arrival at Boulogne he delivered seeds of *Pinus lambertiana* to the Governor then proceeded by overnight coach to Paris. There he met a Dr McLoughlin, a relation of his senior at Fort Vancouver, who arranged for him to go to the hospital La Charité

where he attended lectures and did some dissection. He also visited the Bicêtre, a mental asylum and the cemetery Père la Chaise besides the Louvre and other famous sights. At the Jardin des Plantes the seeds of *Pinus lambertiana* had preceded him and he was given a warm welcome. Previously considered dour, the atmosphere of Paris must have stimulated him for he talked to all kinds of people, students, soldiers, professors and peasants. He had a good knowledge of French and at least a working knowledge of Spanish and conversed in these languages as well as English.

His religious beliefs were not forgotten but, at this time, he inclined towards what he called Universalisation, an amalgam of various beliefs.

Reluctantly, on 15 June he departed for Calais and London. We next learn that on 10 October 1842 he was aboard the Company's barque 'Columbia' bound for the Pacific North-West. This time a call was made at the Cape Verde Islands which he describes as very rough and hilly. He tried to purchase oranges, melons, cucumbers and a scraggy chicken but complained that prices were very high, that duty charged on English goods bartered was 24% whereas that on American was only 16%. His overall impression was of poverty.

He did not observe a single fern or myrtle on the island, the most common tree resembling *Ricinus communis*. There were orange trees, bananas and white and blue *Convolvulua ipomea*.

On 27 February 1843 they met two American whalers and he went aboard one to attend the sick and received a few newspapers with English news. On his return in 1843 he had hoped to go to Yerba Bueana (San Francisco), hence his study of Spanish, but was stationed again at Nusqually as Superintendent of the Puget Sound Agricultural Company a subsidiary of the Hudson Bay Company. The fur trade was declining in the west as settlers moved in and the Indians were being confined to reservations. The Company tried diversification into agriculture, coal mining and even the export of ice to California but only agriculture had a modified success.

Dr Tolmie remained at Fort Nusqually till 1856 and when war with the Indians broke out his knowledge of the Indian languages was of great assistance in bringing peace. In 1846 the Oregon territory boundary had been settled at the 49th parallel and the Company moved its headquarters from Fort Vancouver to Victoria on Vancouver Island. Having acquired 1,100 acres of land there Tolmie had erected for himself the first stone-built residence in the West, calling it Cloverdale and settled there till his death in 1886.

In religious matters he appears to have returned to a more orthodox belief as he attended church services in Victoria until he became too deaf to hear.

In 1850 he had married Jane a daughter of John Wark a Company Factor and a part-Indian mother. They had a large family but there were no male grandchildren to carry on the name.

In 1846 he was elected to the U.S. House of Representatives and in 1860 a member of the Legislative Assembly of Vancouver Island till 1866 and when British Columbia joined the Dominion of Canada he sat as a member of the House of Commons till he retired in 1878. The youngest son Simon Fraser Tolmie was Premier of British Columbia from 1926 to 1933.

From 1833 till 1841, except during the winter, he noted every other day the changing of drying papers but seldom named the plants collected though Indian names are supplied in some cases. Botanical names were given for the following: *Acer circinatum, Coptis trifolia, Cornus florida, Didymania angiosperma, Dracaena terminalis, Gaultheria shallon, Iris triandris, Nymphea lutea, Oxycoccus erectus, Panax horridum, Pinus banksiana, Pseudotsuga douglasii, Pinus flexilis, P. lambertiana, P. taxifolia and Abies nigra.*

The following were given generic names only *Acacia, Alnus, Anemone, Arenaria, Camassia, Cerasus, Convolvulus, Corylus, Crataegus, Erinus, Fragaria, Gnaphalium, Larix, Laurus, Lycopodium, Menziesia, Myrtus, Penstemon, Physalis, Plantago, Populus, Pyrus, Quercus, Rhamnus, Ricinus, Rubus, Sambucus, Saxifraga, Trientalis, Vicia, Viola.*

Plants dedicated to him include *Tolmiea menziesii* and the following genera (all species *tolmiei*) *Allium, Calochortus, Carex, Nemophila, Penstemon procerus* and *Saxifraga.*

Other dedications include Tolmie's Peak (Mount Rainier Group), Tolmie's Channel, a sea passage south of Prince Rupert and a bird *Oporomis tolmiei.*

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The Beaver, the Hudson Bay Company's quarterly magazine.
Johnson's Gardener's Dictionary, 1898.
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I have also to thank Professor B. Lloyd Binns for helpful suggestions for this article.

PERMANENT LABELS

Following the request in the last issue, several members have sent in information about permanent labels. This is being assembled and will appear as an article in the June issue.

Acantholimons in the rock garden

ZDENEK SEIBERT

ABOUT 40 years ago my favourites were dry loving plants as my initial rock garden in Marovia was very sunny and dry and often without any possibility of watering when needed. Among the dryland plants I found the species of the genus *Acantholimon* most attractive for me.

These plants are indigenous to Asia Minor, mainly Kopet Dag, west Tibet, eastern Tiang-Shiang, Iraq and Iran; only one of them is native in south Greece. The genus was named by Boissier; later it was treated by Bunge and other botanists. The species are found growing on rocky places, on upland steppes, bare rocks, and shallow soil in the mountains. They feel happy on exposed hot and dry positions but some species are satisfied on northern talus slopes (*Acantholimon tataricum, A. margaritae* and others). Most of them prefer high altitudes to 4,000 m but some are distributed in lowlands, eg *A. lepturoides* is known from the vicinity of Tbilisi in the USSR.

The genus includes about 150 to 180 mainly endemic species restricted to small regions. Many of them are reported from one place only. They are all truly lovely alpines suitable for sunny rocky slopes in the garden provided with good drainage of broken crocks, brick and coarse clinker. On less dry positions the branches become longer and the cushion becomes larger, less compact and less silvery, too. Although the *Acantholimons* are said to grow on granite and other acid soils they seem to possess some tolerance to limestone as they prosper very well on tufa. In my experience they should be placed not in a rich soil but in crevices, arid localities or in gravel with a bit of clay. They are happy also on shale and walls. In the Botanic Garden at Tashkent (USSR) the collection of *Acantholimon* species is grown on non-calcareous gravel soil.

The plants are perfectly adapted for the rocky areas. The long roots scramble deep in the rock until they reach some moisture. I cannot help admiring the power of the roots. Some years ago when I grew various species of this genus in deep pots inserted in peat the roots used to grow through the sides of the pots and broke into the peat.

Because of their long roots *Acantholimons* resent transplanting and plants do often not survive this treatment. *Acantholimons* withstand

snowless winters well, but being true xerophytes they hate moisture and require to be kept dry throughout the year. The growing conditions here in west Bohemia are not so favourable for this genus as they were in my previous garden in Moravia; I therefore protect the plants against rain with a glass pane which I lay on a simple iron construction around the plants when needed.

In the wild *Acantholimon* species make more or less hemispherical compact cushions with stiff, often rigid, short, acute, spiny and green or silver-grey leaves sharply pointed and produce spikes according to the species of lilac, pink or red flowers resembling *Dianthus*. Long-flowering membranaceous flowers lose their colour in the course of time.

Acantholimon species are long-lived plants. In nature they achieve 100 or more years but on the other hand in the garden they only grow for 10 or 12 years when watered. In the conditions of Tashkent, *Acantholimon* species are grown in the Botanic Garden without any watering through the year.

As I recall 1947 was a hot, dry, and rainless summer in our country. For the whole season my garden in Moravia was without any water. Many plants were lost but the *Acantholimon* species were satisfied and looked very well.

Only the species *A. glumaceum,* which is familiar to gardeners, is tolerant of careful irrigation and winter rains. This species is also easy to propagate by division, layering, and cuttings. The plant gives rise to roots at the base of the branches. By tearing the branches bearing roots in June or July and putting them direct to a sunny spot they will certainly grow on. In this way I propagated this species with success many times. The cuttings may be taken also in June or July and it doesn't matter whether or not they have a heel, but they should not be very short. Layering can be carried out at any time and when the branches root they can be separated and potted in spring or summer or planted directly into permanent places in June and July. This species is quite tolerant of transplanting but it is difficult to retain the neat cushion habit afterwards.

The other species are difficult to propagate by the above methods. Cuttings usually show reluctance to root by layering and by lifting the clump for the purpose of division it is very difficult to re-establish the plant. In order to make the plants ready for division I grow some mother plants in plastic pots, but not for very long. Clay pots are not advisable as the roots stick to the sides and break off when the plant is removed. In summer I take the plant out when it has 8 or 10 branches and in case there are rooted branches I use them for potting. The plant

will be potted too and placed into the frame. This treatment is always successful and there is no risk of losing the mother plant. The degree of success in propagation by cuttings depends in my experience on some factors such as the quality and species of the plant, the temperature at the time and the time itself when the cuttings are taken and particularly the rooting compound. In my old garden in Moravia the cuttings produced roots more willingly than here, because there are relatively less sunny days.

I take cuttings with a heel from plants growing in my garden in Moravia on a sunny place in July. The cuttings must be stiff. Soft ones don't root, but simply rot. Then they are trimmed, dipped in rooting compound, inserted in pots filled with a mixture of peat and sharp sand and placed in a cool greenhouse. The cuttings root from two or three weeks to one year. Some time ago one cutting of *A. armenum* produced roots after two years. When the weather is cool in July the pots should be placed on a heating cable in an unheated greenhouse. The easiest way to propagate *Acantholimon* species is from seed. After flowering the corolla does not fall off but becomes dry and shrivels into the calyx. The calyx containing a seed has a thicker tube then an empty one. By opening the calyx we can see if there is a seed or not. The seeds are collected with the persistent calyx and shrivelled corolla and are sown uncleaned. After the seed has germinated the young plant usually lifts the calyx and looks like a small umbrella.

In our country the members of this genus don't set seeds as a rule. In spite of this there can be exceptions. A couple of years ago I found three seeds set on *A. venustum* and two on *A. glumaceum* growing in Moravia, but something like that happens only rarely. In the Botanic Garden at Tashkent the plants produce abundant seeds which germinate. The seeds closed in calyces sown as soon as ripe often start to germinate in two or three weeks, otherwise sown later it sprouts up in the next spring. Potting and transplanting of seedlings are not problems. Seedlings come true from the seed.

Why no seed is produced in our area is unknown to me. I watched the bees working in the blooms but the seed didn't develop. Nevertheless the reproduction organs are easy to reach for many insect species to pollen the stigma, but even when I myself substituted the work of insects there were no results. Maybe the pollen must not get wet from dew at night or it is not hot enough here for developing the seed.

I have never found any plants attacked by pests and diseases or any plants suffering from ills. Even the birds and slugs show no interest in these xerophytes.

Since the climate here in west Bohemia is not good enough for the

Acantholimons I grow only a few species for which I have created a slope towards the south. *A. litvinovii* has been growing for eight years. It is an endemic alpine plant from west Tian-Shian (USSR) where it is found on sunny rocky slopes at an altitude of 2,500 to 3,000 m. The plant makes a compact cushion, is free flowering and in summer it bears a host of blossoms. For the time being it is 35 cm in diameter, 17 cm high and the spikes with light lilac flowers are 7 to 8 cm high over the cushion with short, linear, spiny silver-grey leaves. It seems to be rather tolerant to summer rainfalls, but in winter I protect it with a sheet of glass. It survives dry snowless winters without any harm.

I raised the plants from seeds collected in the Turkestan in 1957 and sent to me by the Botanic Garden at Tashkent. The seed sown in October 1958 germinated in April 1959, but another seed sown in September 1973 germinated in October 1973.

Less tolerant to summer rain is the well-known *A. venustum* discovered by Tournefort on the occasion of his journey to Turkey in 1701 and 1702. He described the colour of the flowers as "sweet turning red". Of course, the blossom glares deep rose. But the species also differs at the first glance from the former one in having a robuster growth, with the leaves wider and more prickly. The colour of the compact cushions growing on a hot and sunny position in meagre soil is clear silvery-grey.

I gathered the first plant about 30 years ago and the plants which I possess at the present time are progenies raised by cuttings and division from this first plant.

Very similar in appearance to this mentioned species is *A. armenum* native in south Caucasus, Armenia, and Kurdistan. The flat to half-globe-shaped cushions with greenish-grey to silver-grey flat and in summer linear-lanceolate leaves pointed with a sharp spine are overtopped with spikes 10 to 25 cm long with pink flowers. The stem is zigzag in shape, more so than in *A. venustum*. On the other hand, *A. lepturoides* from Caucasus with rose flowers, which I have lost because of its great sensitiveness to moisture, the zigzag line of the stem is even more apparent. Both species *A. armenum* and *A. lepturoides* were raised from seeds collected in the wild.

In comparison with these species *A. androsaceum* gives relatively better results from propagation by cuttings and division. It is a native of Asia Minor but is not reported from the USSR. The initial deep pink or red flower buds develop to clear pink flowers on a short stem so that the bunched flowers are partially hidden in the cushion with grey-green needle-like leaves.

It is rather difficult to distinguish *A. creticum* at first sight. This is

because of its nearly identical habit to *A. androsaceum*. Growing next to each other, *A. creticum* tends to spread more than *A. androsaceum* and differs also in having the leaves more greyish in colour. Nevertheless there can occur differences according to position. The propagation by cuttings is successful in 60 to 70 per cent, but it is not very tolerant to moisture as it didn't withstand last winter. The plant made a very large prostrate compact cushion keeping moisture under itself which caused rotting of the trunk. If I had taken more cuttings the plant would have been retained.

There are still a lot of species worth attempting. At the present time I grow seedlings raised from seed collected in nature of the species *A. avenaceum,* native in Kopet Dag at an altitude of 1,500 to 1,800 m in Iran, *A. tataricum* from Turkmenistan is distributed on rocky slopes towards the north at altitudes from 1,500 to 2,500 m, but I have to suspend my final judgement on whether they are capable of cultivating in our growing conditions. Some time ago the following species *A. vedicum, A. hohenackeri, A. margaritae,* and *A. erinaceum* belonged to my small collection, too, but they succumbed to the unfavourable weather.

There is another species which promises to be suitable and desirable for the rock garden, especially for the gardeners who are keen on collecting dwarf plants and growing them in troughs. It is *A. diapensoides*. The compact cushions reach 30 to 60 cm in the wild being from 3 to 5 cm high only. My 8 years old plant having been raised from a cutting and growing in a trough in decomposed granite is 20 cm in diameter and from 3 to 4 cm in height. The plant is characterized by greenish-grey linear needle-like leaves. Several visitors confused it with its small rather tender leaves for *Androsace carnea halleri*. The bright pink flowers in spikes are said to top slightly over the cushion, but I have not seen any of them yet. This species is reported from high altitudes of east Pamir, Iran, and east Afghanistan. Ing. V. Vašák collected this plant 90 km from Tashkent on Chimgan Mount at a height of 2,900 to 3,000 m. This plant has never been protected against rain throughout the vegetative seasons and sometimes was left without any covering in winter but it survived well in weather not favourable for xerophytes. Perhaps it would be advantageous to place it in front of a conifer which will suck up the unwanted moisture by means of its roots.

The nomenclature of the genus *Acantholimon* is debatable at the present time and some botanists feel it deserves wider recognition.

The species of the genus *Acantholimon* except for *A. glumaceum* seem to be neglected by gardeners although they require no special care, just a dry and sunny position. With several exceptions they produce flowers in profusion and the appearance of the compact bushy cushions decorates exposed spaces on rock gardens. Why not try *Acantholimons* then?

Snowdrops and Snowflakes

BRIAN HALLIWELL

SNOWDROPS and Snowflakes, common names for species of *Galanthus* and *Leucojum*, are most often associated with winter or very early spring. Although these plants have been in cultivation in gardens for 2,000 years (in this country 400) the common and botanical names in use today have a much shorter history. Until Linnaeus introduced his binomial system of classification for plants both were lumped together under *Leucojum*.

Leucojum was a name used by Theophrastus in the 3rd century BC but it seems to have referred to two quite different plants: a Stock, perhaps *Matthiola* spp and to an early flowering bulbous plant with white flowers. Dioscorides who lived in the 1st century AD provides an illustration in Materia Medica with a description which suggests a Stock or Wallflower. In 16th and 17th century Europe some botanists lumped Snowflakes and Snowdrops with *Narcissus*. Three hundred and fifty years ago, *Narcissus* (and Daffodil) was a universal name for any bulbous flower which had strap-shaped leaves, unbranched flower stems and flower buds enclosed in a spathe. It included such genera as: *Hippeastrum, Sprekelia, Nerine, Zephyranthes, Sternbergia* and even *Agapanthus*. Clusius in Rariorum Plantarum published in 1601 has a woodcut in which there are 5 illustrations side-by-side of Snowdrops and Snowflakes with *Leucojum bulbosum* for all with no additional qualification to separate one from the other.

When we look at Gerard's writings in this country it becomes even more involved. In his catalogue of 1596 he uses Latin names only and under *Leucojum* he has 6 entries, four of which refer to Snowdrops or Snowflakes and two to either Wallflowers or Stocks. The catalogue of 1599 has common names along with Latin but these complicate the confusion still further. For the plant which we now know as *Leucojum vernum* is called Early Bulb Stock Guilloflower. At this period Guilloflower was an alternative name for Carnation, Stock Guilloflower usually for Stock. Bulb Stock Guilloflower meant either Snowdrop or Snowflake and Early Bulbstock Guilloflower separates one species of Snowflake from those flowering later in the year (Yellow Stock Guilloflower was Wallflower and Sea Stock Guilloflower, *Verbascum spinosum*). In between these two lists of plants cultivated in his garden,

Gerard had published in 1597 his Herbal but in this book he uses the common name of Bulbous Violet, perhaps more suitable when the English translation of *Leucojum* is White Violet.

John Tradescant, the younger, seems to have been the only writer to separate Snowflakes and Snowdrops. There appears in his plant list in Museum Tradescantianum of 1654 for Snowdrops *Leucojum bulbosum triphyllon* – Bulbous Violets of three leaves (leaves here is a reference to floral parts) and for Snowflakes, *Leucojum bulbosum hexaphylon* – Bulbous Violets with six leaves.

Snowdrop as a common name was used first by Thomas Johnson in his 1633 revision of Gerards Herbal and was repeated by John Evelyn in Kalandarium Hortense which appeared in 1664. Bulbous Violets was retained by most other writers of garden books of the 17th century: Parkinson, Sir Thomas Hanmer, John Rea, and the Reverend Samuel Gilbert.

In Systemae Naturae of 1735, Linnaeus creates a new genus, *Galanthus,* although Snowdrop was now the universal common name and is used by Aiton in the first edition of Hortus Kewensis published in 1779 for both *Galanthus nivalis* and *Leucojum vernum*. The first reference I can trace of Snowflake is in volume 2 of Curtis's Botanical Magazine of 1788 where it is used in a description of an illustration of *Leucojum vernum*. The new common name must have been quickly accepted for, in his second edition, Aiton is using it as do all gardening authors of the 19th century.

A few other names have been used some of which are translations from, or anglicisation of French, German or Dutch whilst others are dialect words or local names used in various parts of England; for Snowdrops: Snow Bell, Snow Flower, Snow Piercer, Candlemas Bells, Fair Maids of February, Milk Flower and Mary Tapers and for *Leucojum aestivum,* Summer Snowflake: Summer Fools or Loddon Lily.

Rhododendron gracilentum

B. A. KNIGHTS

RHODODENDRON is a popular, widely grown genus of plants for gardens with acid or calcium-free soils and very probably most members of the club grow a number of representatives of it in their gardens. My own interest in Rhododendrons was greatly accelerated by a period of collaboration with David Chamberlain and James Cullen at the Royal Botanic Garden, Edinburgh, when I was attempting to make a modest contribution to their revision of the genus. During this period I was privileged to see some of the tropical species maintained behind the scenes in the propagating houses. This group of plants exhibits an amazing range of form both of foliage and, especially, of flower. They also are less seasonal in flowering habit and many species could be considered for development as plants for the home or a heated greenhouse. A number of these species are to be seen in the peat section of the range of glasshouses at the Royal Botanic Garden and some features of them are described by Peter Cox in his book *Dwarf Rhododendrons*.

Thus, I developed an interest in this group in the hope of being able to select a species to grow on the dining-room window ledge of our house. The introduction by Peter Cox of a small range of these, so-called, Malesian species afforded me the opportunity to buy a specimen of *R. gracilentum* which I thought the most suitable of the half dozen or so he was offering at that time. After three years this plant has now come into flower for the first time and has borne 12-14 single pink, bell-shaped flowers over a five-week period.

Before describing the species in any detail, it may be worth saying a few words about the position of Malesian Rhododendrons in the general classification of this genus. The tropical species have been most thoroughly studied by Hermann Sleumer, whose classification is widely accepted. Reference to his classification appears in Chapter 2 of the proceedings of a conference held at the New York Botanical Garden May 15-17 1978: "Contributions towards a Classification of Rhododendron" edited by James L. Luteyn and Mary E. O'Brien. This article also contains a substantial list of references (and see also Chapter 1 for an earlier version of Sleumer's work). A more readily accessible distillation has been made by James Cullen in *Notes From The Royal Botanic Garden, Edinburgh*, vol. 39, pp 1-4.

Essentially most(?) of the Malesian Species of *Rhododendron* belong to the subgenus *Rhododendron,* that is they are lepidote species bearing scales. Within this subgenus they are in their own Section: *Vireya,* (the other two being *Pogonathon* and *Rhododendron*).

R. gracilentum, grown under the conditions prevailing in our dining-room on the ledge of the north-facing window in a room with north and west facing windows and normally maintained in the range 50-70° F (10-21°C) throughout the year, is a straggling trailing small shrub with pale red-brown coloured stems. This colour is derived from the scales which are strongly pigmented. The leaves are arranged in what appear to be very marked 'whorls' with usually two scale leaves on the stem between each 'whorl'. The leaves vary in size but are pointed at both ends and about three time longer than their maximum breadth (elliptic-lanceolate) with virtually no petiole. Pruning of the longer shoots encourages branching and several shoots emerge from each 'whorl' at which branching occurs. In my opinion, depending on selective pruning, this species could be encouraged into a semi upright shape for pot or greenhouse display, or into a trailing habit for a hanging basket.

The pink flowers are bell-shaped, or campanulate, with a slight curve along the axis. This curve is most marked in the bud stage where the corolla extends to 15-20 mm before the tip opens out to nearly 20 mm diameter with a total length of about 25 mm. The anthers are dark in colour with smoke-grey coloured strands of pollen which produce an agreeable contrast. The seed pods retain the style and elongate during development but I do not know if viable seed can be expected.

The overall effect is quite pleasing and, in my view, this species is a worthy addition to our house plant collection. I recommend all enthusiasts to consider this and other Malesian species of similar size for cultivation in the house. It should be borne in mind that not all such species are dwarf or of neat habit and that, in relation to the size of plant, *R. gracilentum* has comparatively large and showy flowers.

Fig. 71 Flowers of the Dolomites
Above: *Primula minima*
Below: *Geum reptans*

Andalusia and the Costa del Sol

CHRIS and MARIE NORTH

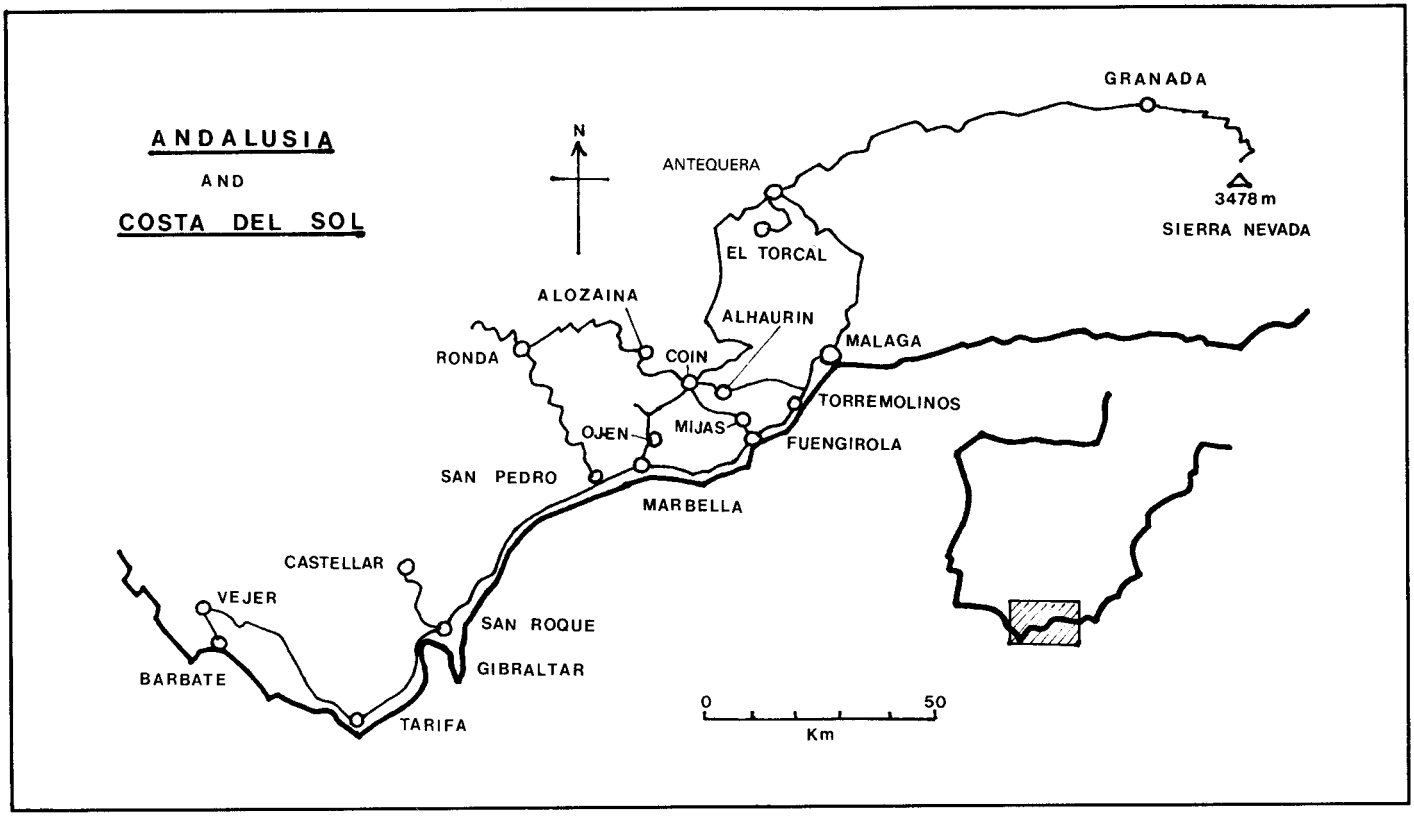
BEHIND the façade of tourist hotels which line the coast of the Costa del Sol there are hundreds of square miles of rugged countryside of extreme interest to naturalists. Stationed at one of the popular holiday resorts such as Marbella, Fuengirola or Torremolinos, and with the use of a car, one can range from the marshy area of the delta of the River Guadalquivir – the territory of the pardel lynx and the Spanish race of the imperial eagle – in the west, to the snows of the highest mountains in Spain – the Sierra Nevada – in the east.

We stayed at a hotel in Fuengirola from 9-24 April and hired a car for most of that time though we did plenty of walking also and used the local bus services on two occasions. Before leaving, we had taken the precaution to obtain a copy of "Andalusian Flowers and Countryside" (Stocken 1969), published after the author, Lt-Cdr Stocken, had been killed in an accident in Greenland. It is invaluable to the plant hunter and so well presented that one has the uncanny feeling that the author is at one's elbow to help – a very fitting memorial to someone who was one of us plant hunters and evidently a charming person. Another useful book for the area is, of course "Flowers of South-West Europe" by Polunin and Smythies (1973) and many of the species cited in this article are illustrated there.

Around the hotel there were several interesting and colourful 'weeds' including:

Anacyclus valentinus
Anchusa azurea
Andryala integrifolia
Galactites tomentosa
Limonium sinuatum
Pulicaria sp.
Reichardia tingitana
Silybum marianum
Trifolium sp.

Of these the *Reichardia* which is likely to be dismissed as just another *Composite,* is an attractive plant with fairly large hawk-bit like, yellow flower-heads marked purplish towards the centre. The *Limonium* is a tall and fine sea lavender – the species sold in Britain as a cut flower. Within the ruins of the local castle grew several specimens of a sparsely branched shrub with glaucous leaves and tubular yellow flowers. This is *Nicotiana glauca,* a native of South America that has become naturalised throughout the Mediterranean region.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At a short distance from Fuengirola the land rises over 1,000 metres to the Sierra de Mijas. In the centre of this rocky countryside lies the small town of Mijas itself which is somewhat of a tourist centre with its 'burro taxi' ranks of gaily harnessed donkeys and stalls selling locally grown and prepared sugar almonds. It is nevertheless a typical, unspoiled and charming Andalusian town with brilliantly white-washed buildings. One can take the bus or walk to here from Fuengirola but it is a fairly steep climb. On the way up we saw many fruiting plants of *Narcissus papyraceus* on the dry hillsides and they must have looked impressive flowering in January. We walked out of Mijas on the road to Coin, passing through garrigue consisting mainly of junipers, *Calicotome villosa, Cistus albidus, C. salvifolius* and some *C. clusii* that had rather small white flowers. Within this association grew patches of the dwarf European palm *Chamaerops humilis, Aphyllanthes monspeliensis* a curious member of the *Liliaceae* with clumps of rush-like leaves and 1 cm diameter blue flowers, *Phlomis purpurea* and *Phlomis lychnitis*. A plant growing by the roadside which especially caught our eyes was *Ptilostemon hispanicus* (previously called *Chamaepeuce hispanica*) a thistle with rosettes of fishbone-like leaves having milky-white midribs and beautiful long amber-coloured spines. With it grew:

Alkanna lutea
Asphodelus albus
Bellis rotundifolia
Gynandriris sisyrinchium
Lavandula multifida
Linum narbonense
Linum suffruticosum
Ononis speciosa
Paronychia sp.
Thymelaea hirsuta
Trifolium stellatum

The *Lavandula* is a distinct and unusual species with cut leaves and a frowsty smell.

A track took us through a wood of Aleppo pine admixed with a few eucalyptus trees. Here were isolated specimens of *Ophrys lutea, O. speculum* and *Orchis papilonacea* which is a particularly beautiful large-flowered form in this area. In a grassy area grew *Crambe filiformis* – a tall seakale with small white flowers, and a few plants of *Iris filifolia*. The last of these species is a fine bulbous iris similar to the Dutch iris of our gardens but with narrower leaves; unfortunately it was not yet in flower.

We also went into the Sierra de Mijas by taking the bus to Marbella and then to Ojen. Walking through the last village we were surprised to see a group of eight active beehives which had been made from large, hollowed-out olive tree trunks. At the same place we saw a particularly fine specimen of the southern festoon butterfly which is a species having

yellow wings closely patterned with black and some red areas; the larvae feed on *Aristolochia*. There were also green hairstreak butterflies and a very small species of 'blue'.

Hanging down a rock face were plants of *Putoria calabrica*, a species allied to madder and the bedstraws. It has attractive pink flowers which are, unfortunately, afflicted with a disgusting smell. With it grew *Chaenorhinum origanifolium*, a mat-forming plant somewhat reminiscent of the ivy-leaved toadflax but with open-mouthed, mauve-pink flowers. Walking about two miles northwards out of the village and up a creek we saw *Orchis lactea* and *Ophrys speculum* in quantity and the rather insignificant orchid *Neotinia intacta* with miniscule white flowers and spotted leaves. There was much *Lavandula stoechas* and *L. multifida* amongst which grew a small-flowered annual *Calendula* species and the usual Mediterranean form of the scarlet pimpernel with blue flowers. In a few lush areas there were masses of the fine periwinkle *Vinca difformis* and the colourful *Fedia cornucopiae*.

Another approach to the Sierra de Mijas – along its north edge – was made by going along the coast road past Torremolinos and then turning left to Alozaina in the Sierra Blanca. A few kilometers out of Alhaurin there was interesting *Cistus* – scrub mostly of *C. populifolius* with some *Erinacea anthyllis*, rosemary, juniper and the two *Phlomis* species already mentioned. Amongst them grew *Tuberaria guttata*, *Cistus monspeliensis*, and *Cleonia lusitanica* – somewhat like a small *Prunella* with pink flowers. However, what really caught our eyes was a large bush of *Halimium antriplicifolium* which is a truly magnificent species with racemes of yellow cistus-like flowers. The relatively numerous members of the *Cistaceae* are certainly the main floral glories of Andalusia and, seeing them in huge masses, one only wishes they were more hardy in our cool damp climate. Continuing along the road past Coin we came to lush meadows by the Rio Grande near Alozaina. Here we saw our first cattle egret, many bee eaters, much *Fedia cornucopiae* and the tall white *Cistus ladanifer*.

Everybody who goes to the Costa del Sol should endeavour to visit Ronda – a town of Roman origin with an entrance by bridge over a canyon and the oldest bull-ring in Spain. In spite of its reputation as a brigands' hold out in the past it has a sophisticated marble-paved pedestrian shopping precinct and some fine buildings. It lies in the hills some 40 km north-west of Marbella and behind the Sierra Bermeja and Sierra Blanca. One climbs rapidly into the sierras as one leaves the coastal road at San Pedro and high up on this route there is a good view of the Rock of Gibraltar which glistens white in the sunlight. At this vantage point grew tall bushes of *Cistus ladanifer*, all of which had

white, unblotched flowers though the form with a purple blotch at the base of the petal also grows in this area. Amongst them were more plants of the magnificent *Halimium antriplicifolium*.

At the top of the pass the brown, ochre-coloured mountains, speckled and streaked in places by leafless almond orchards stretched into the distance, flecked here and there with the brilliant whiteness of a village. Three Egyptian vultures circled overhead and, on climbing up the mountain side we discovered the reason for their vigil. An upturned sheep was struggling on its back. We helped it to its feet and as it staggered away the vultures quickly sized-up the situation and made off. Here in the short turf grew *Orchis morio, O. lactea, Romulea clusiana* with large mauve or white flowers having a distinct yellow throat, a *Biarum, Crocus* and *Gagea* in the shelter of gorse bushes of the local endemic species *Ulex parviflorus*.

About two-thirds of the way to Ronda from the coast road at San Pedro there is a rough road to the right which is marked on some maps but does not seem to be signposted. It leads to Bosque de Pinsapos, which is a group of some of the few remaining trees of the Spanish fir *Abies pinsapo*. This attractive tree has stiff, short, blunt needles and is useful for decoration in parts of southern Britain as, unlike most other *Abies*, it thrives well on limy soils. By the roadside here grew *Ranunculus rupestris* and large patches of a cushion saxifrage, probably *Saxifraga globulifera*, on the rocks. The *Ranunculus* is a fine large-flowered yellow buttercup which flourished in our garden for a time and survived the winter but proved to be short-lived. Further along this road in a moist area by a stream we saw the jonquil *Narcissus jonquilla* in flower and the large celandine *Ranunculus ficaria ficarioides*. In a pine wood nearby there were *Orchis italicus* and *O. morio*.

Approaching near to Ronda, back on the main road, by the verge there was much *Moricandia arvensis* – the purple-flowered cabbage and an interesting-looking dandelion with regular overlapping leaf segments. Having enjoyed the delights of Ronda for an hour or so and watched a stork flying above the main street at roof-top height, we went down a road to lower ground at the north of the town. There were many interesting plants in the rocky turf including large quantities of *Iris planifolia* which must look magnificent when it flowers earlier in the year, a *Reseda* with feathery white flowers and probably *R. media, Lathyrus tingitanus* and numerous orchids, especially *Ophrys lutea* but also the rather uncommon *Orchis collina*. There was a very decorative *Erodium* which we thought at first was one of the rare species endemic to the area but we grudgingly decided, after careful inspection, to be a large-flowered form of the common cranesbill, *E. circutarium*. We returned from Ronda to Fuengirola via Alozaina and Coin.

It took us a day to drive west along the coast road to near the Cape of Trafalgar and back. Passing the road off to Gibraltar at San Roque we made a detour northwards about 20 kilometres to Castellar de la Frontera. On the way there we travelled through woods of cork oak but there were appreciable areas of marshy ground and we saw many birds. Nightingales sang in the trees and peering into a bush whilst recording the song of one on tape we saw the performer who stopped abruptly on realising that there was a human audience. It was a demure and unpretentious little bird quite unlike what one would expect of such passionate prima donna. We played the recording at coffee-time after dinner in the hotel lounge and it was greatly applauded but we were astonished that none of the guests realised that it was the song of the nightingale. Continuing along the road we saw many bee-eaters, cuckoos and an occasional stork – there was a nest on the roof of the Palacio de Almoriana and we saw more nests later on the poles supporting the electric power cables at San Roque.

Castellar de la Frontera is a picturesque but somewhat neglected old town. Colonies of lesser kestrels nested on the buildings and along the walls and between the tumble-down houses grew *Cistus ladanifer*; this time some had blotched flowers. We were delighted to find the hare's foot fern *Davallia canariensis* climbing among the rocks – it seemed to be a slimmer version of the typical form we have seen growing in Tenerife. By the roadside grew:

Convolvulus tricolor	*Ornithogalum* sp.
Hedysarum coronarium	*Scrophularia sambucifolia*
Lupinus luteus	*Serapias pseudocordigera*

The *Scrophularia* is a showy figwort with rather large orange-brown flowers. The *Ornithogalum* may have been the rare and fine *O. reverchonii*. Amongst the bushes there were some flowering plants of the curious and showy little *Cistus* parasite *Cytinus hypocistis* looking like small yellow eggs in a red nest.

Returning to San Roque and continuing west along the coast road one climbs through pine woods of the Sierra de las Plata and we felt a distinct change here from the Mediterranean to the Atlantic climate. It was raining slightly at the time and the mist came down to the tree tops reminding us of our own highlands. We descended again to near sea level and to marshy ground near the Rio Barbate. Here were many cattle egrets, storks and we saw marsh harriers and kites at close quarters. This is one of the few areas where one can see cattle egrets in Europe – they have a nesting colony near the Cape of Trafalgar. Spectacular plants of *Scilla peruviana* grew in the wet areas, often in

water, with large flat heads of blue flowers. It is a Mediterranean native and has no connection with Peru. It can be grown in Scotland without protection but never seems to flower outside though we have not seen it treated to marshy conditions under cultivation.

We took a side road southwards towards the coast near Trafalgar to a place called Barbate de Franco. This secluded sloping rocky coast near here was a veritable Garden of Paradise and the few hours we spent there are perhaps the most memorable we have had in the Mediterranean. The tallest shrub here was *Lygos monosperma* – a curious 'broom' with deliciously-scented white flowers and near-spherical pods each containing only a single 'bean'. The side branches hung down like curtains which swayed in the sea breeze. Between the *Lygos* and a few umbrella pines grew:

Anagallis monelii	*Dipcadi serotinum*
Anthyllis cystoides	*Halimium commutatum*
Armeria gaditana	*H. lasianthum*
Antirrhinum linkianum	*Iberis linifolia*
Calendula suffruticosa	*Orobanche* sp. (*crenata*?)
Cerinthe major	Phagnalon rupestre
Cistus palinhae	Ruta chalepensis
Centaurea polyacantha	Senecia sp. (*vernalis*?)

The *Angallis* was the most beautiful of all the plants we saw in Andalusia. It formed cushions completely covered with 1-2 cm diameter coerulean-blue pimpernels that contrasted very well with the large-flowered orange marigold *Calendula suffruticosa* which grew alongside. It is a perennial form of the so-called *Angallis linifolia* that is somtimes grown as an annual in our gardens. The *Armeria* is an extraordinary robust pink-flowered thrift growing to more than half a metre tall. *Antirrhinum linkianum,* a sub-species of *A. majus,* having typical mauve-pink snapdragons, effects the unusual habit of climbing between shrubs by twisting its petioles round them to get a 'leg-up'. The *Centaurea* is an attractive tall cornflower with 5-7 cm diameter pink inflorescences and slightly spiny leaves classed as a sub-species of *C. sphaerocephala.* The plant association here is probably typical of other parts of the coastline of the Costa de la Luz and the Algarve.

Our last main sortie was eastwards to the Sierra Nevada. It is a fairly-long drive from Fuengirola and took us five hours to Granada though about an hour was lost negotiating Malaga. The by-pass road to this city may now be completed but, if not, we would advise visitors to go via Antequara for this is a much more leisurely drive and it is worth visiting the curious limestone formations nearby at El Torcal

which, at a distance, are reminiscent of a ruined city. There were many species of orchids there including *Ophrys tenthredinifera* which we had not previously encountered in the region. We also saw:

Cerinthe major purpurascens	*Hyacinthoides hispanica*
Cynoglossum chierifolium	*Helleborus foetidus*
Euphorbia characias	*Paeonia broteroi*
E. sp. (*biglandulosa*?)	*Ranunculus rupestris*

The paeony was not yet in flower but we picked a stem with flower buds and took it back to Britain wrapped in newspaper. In due course it opened its large pink flowers. Around Antequara itself we saw *Cistus populifolius, Fumana ericoides, Helianthemum lasianthum* and the attractive blue flax *Linum narbonense*.

Granada is a pleasant city and the home of the pomegranate – *Punica granatum* – the apple of Granada, a native which is widely cultivated and naturalised throughout the Mediterranean area and has beautiful scarlet flowers. Granada is not responsible for the grenade which gets its name simply because it looks rather like a pomegranate. One climbs from Granada to the Alhambra, built in the 13th century and surely one of the most beautiful and imposing palaces in the world. Next to it is the Generalife – the garden of paradise built by the Moorish kings and of great interest to gardeners. It is said to have inspired de Falla's music 'Nights in the gardens of Spain'. Here we watched the scarce swallow-tail butterflies on the flowers backed by the snow-capped Sierra Nevada and saw the local snapdragon *Antirrhinum graniticum* growing as a weed in the flower beds.

Without difficulty we drove on the good road up to the parador on the Sierra Nevada. This is not at the top of the mountain but as far as one could go at the time because snow blocked the road higher up. On the way, at about 1,000 metres, we noted much *Helleborus foetidus*, a *Gagea* sp., *Saxifraga granatensis* and the tulip *Tulipa sylvestris* ssp. *australis*. The lowest snowdrifts were about 2,000 metres and here grew *Crocus nevadensis* and *Colchicum triphyllum* which, in flower, is superficially like the crocus but somewhat finer. Unfortunately it did not survive in our 'trough' at home. Around, and higher up there were many cushion plants, especially:

Arenaria tetraquetra	*Ptilotrichum spinosum*
Erinacea anthyllis	*Silene boryi*
Chaenorhinum macropodium	*Sempervivium nevadense*
Helianthemum apenninum	*Vitaliana primuliflora*

However, we missed many of the plants we would like to have seen, such as *Narcissus pseudonarcissus* subsp. *nevadensis, Ranunculus acetosellifolius,* and *Gentiana alpina.* We had too little time and there was too much snow. More species can be seen there in flower during the summer (Taylor, 1972).

The modern parador, high up on the Sierra Nevada, was comfortable and tastefully appointed with an exhibition of old saddlery. From our bedroom window we looked out over the quiet, cold snowfields with two ravens performing their acrobatics and watched the sun setting over Granada. It was a superb ending to an excellent holiday.

To those who might be inspired to go to Andalusia we would say – do get a copy of Stocken's book, if you can. If this is not possible, consult his numerous articles on Andalusia written in the journals of the Alpine Garden Society and the Royal Horticultural Society between 1962 and 1967.

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Members wishing to submit material for the June 1984 issue of 'The Rock Garden' are asked to let the Editor have it by the beginning of April 1984 at the latest.

The cultivation of peat-loving plants

ALFRED EVANS

The 1983 W. C. Buchanan Lecture

IT IS exactly 20 years since Willie Buchanan died. He was a dairy farmer whose lands were part of what is now the Drumchapel Housing Estate and who, after retiring, lived in Bearsden. He was also a very successful cultivator of plants and although he grew alpines well and judged at SRGC flower shows, his interest was not confined only to these. He was extremely keen on rhododendrons and Asiatic plants and many other genera which favour acid soil conditions, including primulas. But after making that point I must digress to say that he had in his garden a clump of *Cypripedium calceolus* as large as any I have ever seen either in cultivation or in the wild. However, as my subject is the cultivation of peat-loving plants I must ignore species of that sort, no matter how good they may be, and confine my remarks to those plants which are not generally found in limey soils.

Most of us are aware of the conditions peat-loving plants favour, at least in a general way. Usually there is plenty of moisture about, certainly during the growing season although the situation may become drier as the summer progresses. It is an accepted fact, however, that this sequence of factors is just as important for plants grown in gardens and it is well-known that on the east side of this country in particular, the rainfall is often too light, especially during April, May and June when many plants are in bloom or are in active growth. Therefore, although overhead watering may not be the ideal way in which to irrigate plants, there can be no doubt that water must be applied. Our seasons are almost the wrong way round for some genera for not a few prefer dryish winter (ours is often so wet) and a moister summer. The dry atmosphere prevailing during the growing months is a hazard we must try to combat and adjust while the drying, sometimes cold east winds which can play havoc with a plant's development are hardly helpful.

We all enjoy the sun but I doubt if there are many people who like continuous wind. I question if there are a great many plants which do either, especially those geared to a moister-retentive soil. The wind can dry out a sandy medium quite quickly so we must recognise that if we are to be successful in growing a very wide range of acid-soil-type plants we must try to get the type of loam right.

So, what do we require? We want a soil which drains well and yet is retentive enough of moisture not to allow it to get too dry. If I were to take as an example the Royal Botanic Garden, Edinburgh, the garden I know most about, where the soil is extremely sandy and poor, I would have to admit that soil preparation and its improvement goes on apace before planting is considered. To our light soil we add liberal quantities of peat in order to do two things. One is to help increase the moisture-holding ability of the soil, the other to improve its texture. Planting in pure sand may have merit when dealing with some desert genera, but these are not our concern here.

Where soils are richer or where the rainfall is heavier than the 24 inches of rain recorded annually at Edinburgh, then the quantities of peat incorporated into the soil can be less. Remember I am aiming at the ideal situation and none of us ever attains that, but we must all modify and adjust the humus content of the soil according to the way we assess the problem. I am also convinced that it is the shortage of moisture in the atmosphere at Edinburgh which causes many failures and, although we are aware of this short-coming, the problem is so big due to there not being sufficient water points, not enough water pressure, and inadequate lengths of garden hose, etc, to blanket the garden in a fine mist all at once and at the optimum time.

There is, unfortunately, very little Scotch mist at Edinburgh, far less a monsoon period. Just think how beneficial that would be as certainly the air would then be well-charged with moisture. What a pity it is that occasionally we cannot take some of our rare plants on holiday, perhaps back to their homelands for a spell so that they could become recharged and be revitalised in the conditions they revel in before returning to our alien shores.

Still another factor which influences the growth and health of plants is light. We know that some species succeed only where maximum light is available. After all, many of the dwarf ericaceous genera flourish in open bogs and hillsides where shade and shelter are hardly present. This is not strictly true, though, for in a closely-knit plant community on the open hillsides shelter is provided by one's neighbours. It is like surviving in a crowd. Furthermore the atmosphere round the plants is usually still; the winds blowing across and over the tops of the plants rarely pass through the tightly-packed growth; often, as in a crowd, it can be quite steamy. This is all conducive to satisfactory growth. It is the plants with smallish leaves which are usually found on open, exposed sites. Sheltered places, open woodland for example, seem to favour plants with broader foliage. The ubiquitous rhododendron probably illustrates the point better than any other genus. On open

moorland it is the small-leaved alpine species, the Lapponicum types, that form large mats in the same way as heather clothes our hills. Larger leaved species are found in the sheltered fringes and glades of forests and even through the wood itself where the canopy is not too dense.

The world contains many plants which occur on acid soils and our methods of cultivating them are just about as varied as there are individuals. As gardeners we should cultivate a sensitivity towards the plants we grow. By that I mean we should come to know whether or not the conditions we provide are suitable for specific plants. It is just the same when it comes to the actual planting. The wearing of gloves for example may protect the grower but they are of no help to the plants and hinder the gardener from making real contact with his plant material. This is very important when settling in young plantlets with fine roots which could be damaged if too much pressure were exerted on them. I know we all have our planting techniques but we must plant with care without being over-fussy.

The manner in which plants grow, the structure of their roots, shoots, etc, their recommended planting depths, the ideal soil and the degree or absence of shade in which they are found in nature usually influences our judgement. How then can we get everything right the very first time? The fact is surely that plants have a tolerance greatly in excess of what we imagine.

I have selected a wide range of plants for discussion and these I hope will illustrate the points I have been trying to make. Remember it is the Edinburgh garden which influences my remarks. If I were gardening in Glasgow or Inverness I should have other factors to contend with. Moreover, I have not restricted my selection of plants to those suitable only for the rock garden but, knowing Willie Buchanan's interest, I hope that he would approve of most of what I have chosen.

When considering peat lovers one of the plant families which must be looked at is Ericaceae. We are all aware that it is a large one; in fact something like 80 genera are included in it and, without taking into account the wide variation within the species, it is reckoned that there are in excess of 1,500 species. They range worldwide and while we in our gardens may make a distinction between east and west the plants themselves fail to recognise geographical or political barriers. Nevertheless, so far as plants are concerned, we are restricted in our selection to those which are hardy. Hardiness I know is difficult to define but if plants were truly mobile, that is to say if we could move them around freely, testing their reactions to different sites, I am sure we would be able to cultivate out-of-doors more plants than we do at present, especially some of those species we consider to be slightly tender.

One of the larger genera that interests us all is *Rhododendron* and this I shall deal with at some length. It is found in the northern and southern hemispheres, following a path southwards through Malaya, Borneo and New Guinea to Australia. If we consider the many forms *Rhododendron* takes, from tree-like giants like *R. arboreum* to the tiny creeping forms like *R. radicans* and *R. lowndesii* we can immediately appreciate how diverse is this genus. Indeed, as gardeners, it is only because we are told by botanists that they are all rhododendrons that we do not question that they are related. I am thinking of how the flowers vary in shape, how the foliage differs in texture and how the plants themselves (in stature and form) look so dissimilar. However, we know them to be closely associated and we know that in almost all cases a peaty soil is what they prefer. That is only the beginning, however, and if we have a lime-free soil we must now consider where our plants should go.

Because we all like to grow the better forms of species my first plant is a selection of *R. augustinii*. This is named for Augustine Henry, a medical officer in the Chinese customs. *R. augustinii* belongs to the triflorums and although it will reach ten feet or more, the leaves are relatively small and the plant does not look too heavy. There are some very good colour forms and 'Tower Court' is considered to be one of those with the truest blue flowers. It likes an open site where it will furnish itself with leaves and flowers down most of its height. In shade it will become very lanky, being drawn towards the light and will certainly fail to flower as well. So, by not crowding it in, making it a sentinel in a peaty border, it will not become bare of foliage at its base. Many woody plants are ruined because of too close planting and none show this more readily than rhododendrons. I mentioned that *R. augustinii* will reach upwards of ten feet, too large you may say to fit into a small garden but cross it with *Rr. intricatum,* x *intrifast* and *impeditum* and you may finish up with much smaller plants such as 'Blue Bird', 'Blue Diamond' and 'Blue Tit'. These hybrids are certainly highly popular and are only a small selection from a swarm of hybrids that exists claiming *R. augustinii* as a parent.

If we move on to *R. campanulatum,* quite a different plant with leaves which are longer, broader and softer in texture, we are talking of a species which will enjoy an open site but will not be too happy if it is exposed to too much wind. It has been in cultivation for at least 150 years and like our previous species shows great variation. Naturally some forms appeal to us more than others do but I chose this particular species because there is a fine form named for its collector. It is *R. campanulatum* 'Roland Cooper'. Now Mr Cooper was curator at Edinburgh until 1950 and prior

to his appointment he had been a plant collector for A. K. Bulley. More important, however, he was one of those small band of gentlemen who were in at the very beginnings of this Club, indeed one of our founder members. *R. campanulatum* 'Roland Cooper' also reaches ten feet but it is particularly handsome.

'Cherry Brandy', on the other hand, belongs to the species *R. cerasinum*. Kingdon Ward gave this fancy name to a form with two-tone flowers which he saw growing in the wild. Like the other two species it is from the Himalaya. We are now considering a plant which responds to a little care. To neglect it and let it become dry or allow it to be blown about in drying winds will reduce its vigour and, in consequence, affect its ability to flower well. *R. cerasinum* means cherry-coloured and that is the shade most widespread in the species. And if we now mention *R. cinnabarinum* we should be thinking of a plant with flowers which are cinnabar-red in colour. It also has attractive glaucous foliage, and produces very long shoots in a single season. An open sheltered border provides the conditions it likes. One of the more sought-after forms is *roylei* for here the flowers are plum-coloured, and produced in clusters. 'Cinnkeys' and 'Royal Flush' are well-tried hybrids.

Surely one of the most striking of all rhododendrons is *R. griffithianum*. It has enormous flowers, about the largest in the genus, the trusses being built up of delicate, pink, wide-open blooms. The foliage too is quite broad but thin in texture, especially when compared with the widely grown and much appreciated large leaved *R. sino-grande* which has leaves like canoe paddles. *R. griffithianum* has delightfully fragrant blooms and this adds to their charm. It is certainly a plant for western, moister gardens and in open woodland sheltered from winds. Strong winds could quickly defoliate this species but too much shade on the other hand could prevent it from flowering well. Its qualities have been much appreciated by hybridists and it has been used as a parent almost more than any other species. While I could not attempt to list the controlled progeny of this plant it may be sufficient to mention that when crossed with *R. fortunei* it gives us the race of hybrids known as *R.* x *loderi*. This alone runs to at least 20 clones, all of them being of high merit.

'Lady Alice Fitzwilliam' was a lady of unknown origin who, like Topsy, just growed. As you will no doubt gather she gave her name to a rhododendron which was raised or appeared last century but no parentage is mentioned. With a name like that I should not think that the common *R. ponticum* could have been in any way responsible. She is a lovely rhododendron with white, heavily-perfumed flowers and was admired so much as to be awarded a First Class Certificate in 1881. The

corner of a sheltering wall in Cornwall or a similar type situation on Gigha she may accept as suitable environments.

But different again and demanding a change in conditions is the extremely rare and not easily cultivated *R. pronum*. The flowers are said to be creamy-yellow heavily spotted with crimson. I have never seen it in bloom in cultivation. It is a decorative foliage plant with leaves which are fluff-covered when young but eventually as they mature and the tomentum goes, the upper surfaces of the leaves are shown to be glaucous. It stays as prostrate as the specific name suggests and adopts a carpet-like habit of growth if not overshadowed by other vegetations. I know that it is available in a limited way but it is really one for a collector.

I cannot resist including the hybrid 'Saffron Queen'. It was named for a Cornish lady in 1948 because of her concern to obtain saffron from abroad when it was so short just after the war. It owes the richness of its yellow colouring to *R. burmanicum,* a plant of very doubtful hardiness, but this condition does not appear to be obvious in the clone.

Although probably never a member of the Scottish Rock Garden Club, there was a man who worked on rhododendrons in the Herbarium at Edinburgh and was well-known in his day. He was Harry Tagg and a very fine rhododendron collected by George Forrest in Yunnan carries his name. *R. taggianum* is one of those species which is almost completely epiphytic and for which it is difficult to find a permanent home. It belongs to the Maddenii group which is well-known for the large size of its trumpet-shaped blooms and for their strong fragrance. In west coast gardens it may be induced to grow for a time in a sheltered border but because of its loose type of growth it is usually seen tied to a stake or trained on a wall. A gentle breeze can be heavy with the heady scent wafted from the flowers.

R. yunnanense as you would expect comes from Yunnan. I have included this triflorum because I think that there are some fine selections. The internal markings are often so intricate that they almost resemble an exotic butterfly stilled by a camera. In general the species is very floriferous and in the open border will match *R. augustinii* for size and growth.

All rhododendrons should have a fine sandy/peaty loam. Their large root balls, made up of masses of fine roots require this fine mixture if they are to establish quickly. They also resent deep planting so always the aim should be to replant carefully and not bury the stems. There is no objection to a top-dressing of coarse peat or leaf mould, however, just to help retain moisture and keep down weeds, but as the compost decomposes the young feeding roots on top of the root ball will reach up and make use of this material as it breaks down.

Quite apart from the rhododendrons discussed in some detail, albeit all from Asia, there are other genera belonging to the same plant family and in this instance although not all of them occur only in the North American continent a great many of them do. *Chamaedaphne, Kalmia, Kalmiopsis, Leiophyllum, Ledum, Phyllodoce, Cassiope, Gaultheria* and *Loiseleuria* are the genera in question and this fleeting mention of some of these may just remind you of their contribution to our garden flora. If I may just add Pieris from western China and the Himalaya we could feel that we have selected over a fairly wide range. What do they like?

Well, some of these are open heathland plants and some may grow in quite wet bogs. Furthermore most of them are gregarious in that they prefer the company of other species and seem to contribute positively to a balanced vegetative covering. We cannot or we do not appear to be able to achieve this in our gardens. As I mentioned earlier, their growing together and through each other seems to be helpful to their health. How often in the garden do we see isolated specimens of Ericaceae looking sad and dried up? How often are the bases of the plants brown and dead or with centres open which look an unattractive brown? Lack of moisture and excessive exposure to the more vulnerable parts of plants can cause these problems. The older sections of the stems of Cassiope for example can look unhappy and this is often more obvious where only bare soil is on top of the tiny feeding roots. This does not encourage the growth of healthy tissue. So in nearly all cases a sensible top-dressing with minimum root disturbance and a sheltered niche can work wonders.

Remaining with the North American genera, this time looking at herbaceous species whether they have resting crowns formed by buds, tubers, rhizomes or bulbs, we can enjoy some very worthy wild-occurring plants and, of course, some which are only curiosities. *Clintonia, Erythronium, Lilium, Linnaea, Mediola, Scoliopus, Sanguinaria* and *Trillium* are enough to demonstrate those we enjoy and cultivate in our gardens.

Asia's contributions to our gardens have been praised endlessly but I have space to pay tribute to only a few and, of these, I would first mention gentians and especially the autumn flowering species and hybrids. I feel that a speedy trip across two continents to appreciate these treasures is worth the effort. They form such an important part of our autumn colour and are so easy to manage on a peaty soil that no one who is a rock gardener would willingly be without them. *Gentiana hexaphylla, sino-ornata,* the white form of that species and two distinct clones of the grex *G.* x *stevenagensis,* 'Bernardii' and 'Frank Barker' could constitute a small worthwhile collection. They are easily increased

Fig. 72 Flowers of the Dolomites
Above: *Soldanella pusilla*
Below: *Oxytropis campestris*

by dividing the clumps and replanting all the thongs in March. *Lilium neilgherrense, nepalense, regale* and *tsingtauense* are species of high merit and yet they are so different in appearance that this brings an up-market note to any garden. Add the odd hybrid lily and perhaps a species of *Nomocharis, pardanthina* for example, for greater interest still.

If we were to observe together plants with kindred spirits, I think *Primula* and *Meconopsis* could be dealt with as one. Certainly whatever else they may do in nature, they associate well in gardens. The woodland, semi-shaded type of situation is ideal and of course with rhododendrons providing shelter and background and with some of the less robust herbaceous material forming associated clumps we could almost say that we have completed our selection of garden plants. The hybrid blue poppy, *Meconopsis* x *sheldonii* would be there, so too would *Mm. aculeata, discigera, horridula* and *superba. Primula aureata, bhutanica, cockburniana, nutans (flaccida), vialii* and *yargongensis* would be amongst the first chosen but there are so many others. If obtainable we would surely add that fine member of the Primulaceae, *Omphalogramma souliei,* even although we are aware that its hold in gardens is none too firm. *Notholirion thomsonianum* from Afghanistan and *Orchis (Dactylorhiza) elata* from Algeria and southern Spain would blend in well with what has been listed. And finally, as though to add cream to an already over-rich cake, room would have to be found for *Trillium grandiflorum, ovatum* and *erectum* and their selected forms. These would certainly go to making the collection comprehensive.

We are plantsmen after all. We like attractive, well-laid-out gardens and no doubt most of us make some attempt at arranging the plants in a pleasing fashion. In this we may only be partly successful for obviously if we are to grow a wide range of plant types we are going to sacrifice something for our interest. Willie Buchanan's garden was full of interesting plants. It was a veritable treasure house of rarities. He did display his rock plants well and many he grew in an aesthetically arranged group of outcrops in front of his house, Chelsea fashion in design but with quality, non-garish plant inhabitants. Many of the numerous other plants he grew were accommodated throughout his shrub borders and in frames. He may not have actually grown all the plants mentioned in this article but I feel sure he knew of their existence.

Some peat garden plants from Japan

BRIAN HALLIWELL

THROUGHOUT the islands which make up Japan, there are extensive moorlands above the tree line on mountains. These moors can be on cliffs, rock outcrops, exposed broken rock devoid of soil or peat deposits of varying depths over undulating ground, in gullies or on ledges and plateaux. Each type of terrain has its own vegetation but in all there will be many representatives from the family Ericaceae. As on all mountains the plants, often small, are low growing or prostrate so as to be exposed as little as possible to fierce cold desiccating winds. These plants are growing in organic soils retentive of moisture, even boggy where rainfall is high. There are frequent mountain mists or low cloud and in summer when temperatures are higher there is plenty of atmospheric humidity from evaporation. These conditions can best be reproduced on the peat garden, a kind of hybrid between a rock and woodland garden where, in specially prepared soil retained by peat blocks, small growing plants can be grown which will not swamp others or in their turn be overgrown by vigorous neighbours.

The plants described in this article were seen by me on a visit to the mountains of Honshu and Hokkaido in September and October 1979.

The dominant genus of Ericaceae on these Japanese moorlands is *Phyllodoce* of which there are three species; the commonest being the blue heath *P. caerulea*. This is a rare Scottish plant being found only on the Sow of Athol and on Ben Alder and adjacent mountains. It is a small evergreen shrub usually less than 12″ high which in early summer produces pendulous urn-shaped flowers with narrowed mouths. Blue is a common name and *caerulea,* a species name which means blue, are surprising epithets when the flowers are purplish pink. Of similar size but sometimes spreading rather than upright is *P. aleutica* which has the same pendulous urn-shaped flowers but whose colour is greenish, yellow or white. Possibly the most attractive is *P. nipponica* which is the smallest with stongly revolute leaves. Its flowers though also pendant are bell-shaped with open mouths and pure white with pinkish sepals. *Cassiope,* which with *Phyllodoce* is the dominant genus on the moors of North America, is represented in Japan by one species, *C. lycopodioides*. This is completely prostrate with slender stems clothed with tiny

overlapping pale-green leaves; from the tips of these stems are produced several pendant white bell-shaped flowers. *Ledum palustre* is a rare plant in Scotland occurring in one or two localities in Stirlingshire and Perthshire. In Scotland this plant, sometimes called marsh tea, makes an upright shrub to 3 feet with aromatic, alternate narrow leaves with reflexing margins dark-green above and covered below, as are the stems, with rusty-coloured hairs. In summer from the ends of branches are produced umbels of small upright cup-shaped white flowers. It is the sprawling but prostrate variety *decumbens* which occurs on these Japanese moorlands. *Loiseleuria procumbens* has the surprising common name of mountain azalea (there is no resemblance between the flowers of this plant and the garden azalea that I can see). It is fairly common on the tops of the higher Scottish mountains where it usually occurs on broken rock. The plant forms a mat of woody stems clothed with tiny evergreen leaves which can become studded in summer with masses of tiny upward-pointing bell-shaped flowers in varying shades of pink. The British forms of this plant seem to defy successful cultivation, but so beautiful is this plant in flower that those gardeners who like a challenge have tried the North American form which seems easier; perhaps it is also worth trying the form which occurs in Japan. There are three little-known genera rarely seen in cultivation, probably because they are difficult to flower: *Arcterica, Harrimanella* and *Bryanthus. Arcterica nana* which appears in Bean as *Pieris nana* rises above the ground only by a few inches and has small oval dark-green leaves with a prominent mid-vein. From the end of branches are produced one or a few pendant white urn-shaped flowers with restricted mouths. *Harrimanella stelleriana,* appearing in Bean as *Cassiope stelleriana,* when not in flower resembles a miniature species of *Erica* with yellowish-green leaves. A single pendant white bell-shaped flower with an open mouth develops from the tip of upright branches to be followed by a reddish capsule which can be slightly fleshy when immature. *Bryanthus gmelinii* which scarcely rises above the prostrate habit, is ericoid in appearance with upright flower stems on which are outward-pointing star-like flowers of 4 or 5 petals which are white flushed with pink.

The most spectacular genus in Ericaceae is *Rhododendron* which has, by comparison to the plants so far described, large flowers and in colours other than white. There are about 40 species in Japan but that which occurs at the highest altitudes is the completely prostrate *R. aureum*. Its leaves, which are about 1½ inches long and perhaps half as wide, are almost oblong in outline. There is an umbel of a few flowers which are creamy or pale-yellow. In the 8th edition of Bean this species is dismissed as being scarcely worth growing but there are selections

made by the Japanese in which there are flowers with substance and of a good clear yellow. The name *R. camtschaticum* does not appear in the latest edition of Bean, not even in the index with a cross reference. It took some finding for it is now to be known as *Therorhodion camtschaticum* probably split off because its flowers are produced on current season's growth and in racemes. It makes a small compact shrub rarely reaching 12 inches with purplish pink flowers produced in July and August when most species of Rhododendron have finished flowering.

The plants so far described would be grown for their flowers but there are plants grown principally for their usually more attractive fruits.

There are many species of *Vaccinium* in Japan but these are mostly to be found in the upper forest limits and amongst alpine scrub. Cowberry or whortleberry, *V. vitis-idaea,* which is widespread not only on Scottish mountains but on most moorlands throughout Britain, is the commonest species on Japanese moors. In addition to growing in moist places, it can be found at the edges of volcanic vents from which escape warm or hot sulphurous gases and it is an early coloniser of pumice screes. No one would consider this or perhaps any other species of *Vaccinium* for a peat garden but they would not hesitate to plant the smaller growing kinds of *Gaultheria* such as the prostrate *G. miqueliana* which has quite large white fruits set off by dark-green leaves which take on reddish hues during the winter.

Autumn colour of deciduous woody plants can provide a brief but spectacular display during the autumn October. *Arctous alpina* is a plant of Scottish moors where it is known as black bearberry. Bearberry is a common name that is usually used for *Arctostaphylos uva-ursi,* a genus in which this plant has been included. The blue-black succulent berries, which are said to be edible, make some kind of display after the leaves have fallen but it is the red of the leaves before they fall which is the more attractive. *Arctous alpina japonica* which has been given specific rank by some authorities seems to be much more flamboyant than Scotland's plant. It forms extensive mats of upright stems only a few inches high but before they fall the leaves become a brilliant scarlet far outshining any neighbouring plant.

Leaving Ericaceae and moving to Diapensiaceae. *Diapensia lapponicum,* a plant with a circum-polar distribution, was discovered on a remote Scottish mountain as recently as 1951. There is a low hummock of growth with closely-spaced tiny evergreen oval leaves; these hummocks become studded with upright cup-shaped flowers about ½ inch in diameter which are white or cream coloured. In cultivation this plant

has proved almost impossible but those gardeners who like a challenge have persevered and have discovered that some of the geographic forms from outside Europe are somewhat easier. The Japanese form which is variety *obovata,* is one such plant which in addition to its beautiful flowers has foliage which turns to a very deep red during the winter.

Now to Rosaceae, but still with attractive foliage, there is *Geum pentapetalum,* a mat-forming plant with pinnate leaves which in October becomes a bright crimson carpet over which dance the grey feathery seed heads. In early summer these mats are studded with quite large cup-shaped flowers with white petals and a boss of yellow stamens. This can be a difficult plant to get established but the effort is well worthwhile. *Potentilla fruticosa,* also in Rosaceae, is a well-known plant which makes an occasional appearance on Japanese mountains in a prostrate form but no one would consider this for a peat garden.

One species though which could be considered is *P. miyabei* which is a small-growing herbaceous species. There are trifoliate leaves green above but grey beneath and having slightly incurving margins which suggests leaflets that are grey-edged. The flowers as in so many species in this genus are yellow but any change from white may be appreciated.

Gentians would certainly have a place in a peat garden if only for their beautiful blue flowers. So many of what are considered as difficult to cultivate in England are quite easy in Scotland where a more careful choice would be made for subjects for the peat garden. One of these might be *G. nipponicum* which is a small growing species needing a moist soil and is rather like an inferior spring gentian, *G. verna,* with flowers varying from white through the shades of pale to medium-blue. Superior in every way is *G. jamesiana,* which is probably not in cultivation. It is rather more robust and has somewhat large flowers, more freely produced and of a clear sky-blue.

From the very large genus of Primula many are a challenge to grow and some, even in Scotland, only succeed on a peat garden. The commonest species on these moorlands in Japan is *P. cuneifolia* which crosses the Baring Straits into Alaska. This is such a frail-looking plant that one wonders how it can survive in such bleak surroundings. There is a tiny rosette of pale-green leaves with an umbel of a few surprisingly large, outward-pointing deep-pink flowers. This species tends to be short lived, so new stock needs to be raised regularly.

There are a number of moorland plants, not unduly difficult in cultivation, which do not need to be grown on a peat garden and are quite easy in the rock garden in a moist soil. There are about 50 species of *Viola* in Japan of which a number extend to the highest altitudes on mountains and it is surprising that these all seem to have yellow

flowers. The commonest is *V. biflora* a species widespread throughout the mountains of the Northern Hemisphere. *Campanula lasiocarpa* extends from Japan through Sakhalin and Kamschatea through the Aleutians into Alaska. The plant most often seen in cultivation seems inferior to the Japanese form. From loose mats of foliage arise stems on which is a single flower which may be held horizontally or upright about an inch deep and ¾ inch across the mouth of a good medium-blue. More of a curiosity than a thing of beauty is *Zigadenus sibirica*. This is a bulbous plant with upright-channelled leaves from which emerge spikes of small cup-shaped yellowish or greenish flowers. This genus, which seems concentrated in California, does extend northwards into Canada with one species in Asia. *Z. sibirica* is the least attractive of a group of plants which has never become popular with rock gardeners.

Another genus also predominantly North American but which is popular with rock gardeners for summer display is *Penstemon*. From this large genus one species occurs in Asia, *P. frutescens*. This species, which grows on broken exposed rock where it is drier than on peat is rhizomatous forming loose mats. In summer short stems arise on which are a few flowers about an inch in length of the palest mauve flushed purple with darker lines or markings. The whole flower is covered with hairs and when seen early in the morning when covered with dew is an extremely attractive sight.

There are surprisingly few Japanese plants in cultivation on rock or peat garden and more ought to be tried. Some of the forms with a wide geographical distribution which occur in Japan also ought to be grown to see if they are easier for cultivation and superior to those with which we are most familiar. In recent years more Japanese plants have been coming into this country and it is hoped that numbers will increase. The recently-formed Japanese Alpine Rock Garden Society now has a seed exchange which should enable British members to extend their collections of desirable plants.

Vine weevil

GARTH FOSTER

THE vine weevil attacks at least one hundred cultivated species of plants in horticulture. It causes economic losses in Scotland in five situations:

- ★ shrubs during propagation and in containers
- ★ glasshouse pot plants such as cyclamen and fuchsia
- ★ strawberries in polythene tunnels
- ★ crops mulched with black polythene
- ★ primulas and alpines in ornamental displays

The damage comprises:

- ★ grubs feeding on roots, rhizomes and corms
- ★ adults girdling main stems and notching leaf edges

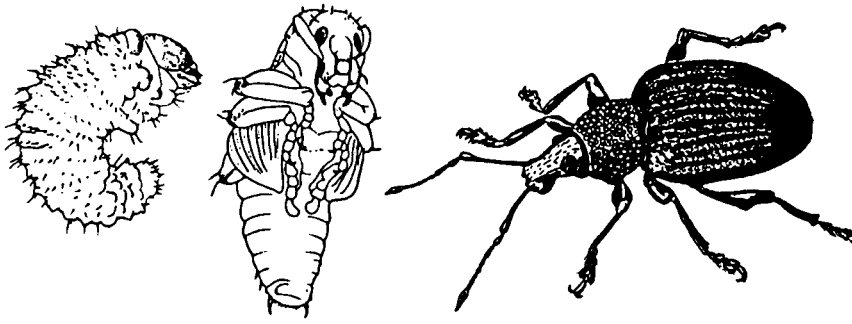
Damage either to established shrubs or to outdoor strawberries and other fruit crops on bare ground is rarely bad enough to justify control measures.

The vine weevil (*Otiorhynchus sulcatus*) is one of several large weevils which appear to be increasing as pests of horticultural crops. Other common species in the west of Scotland include the clay-coloured weevil (*O. singularis*), which is responsible for the notching seen on the lower leaves of most rhododendrons, the pig weevil (*O. porcatus*), which attacks outdoor primulas, particularly bear's ear (*Primula auricula*), the bronze or metallic green leaf weevils (*Phyllobius* spp.) which occasionally defoliate young shrubs in windbreaks and roadside plantings, and the sand weevil (*Philopedon plagiatus*) which attacks bedding plants in light coastal soils.

Vine weevil is unusual in that:

- ★ it is highly fecund, 500 eggs per female being average with the maximum exceeding 1,600
- ★ no males are known – thus one grub can start an infestation
- ★ it cannot fly – it can, however, climb and has been recorded walking up to 70 metres

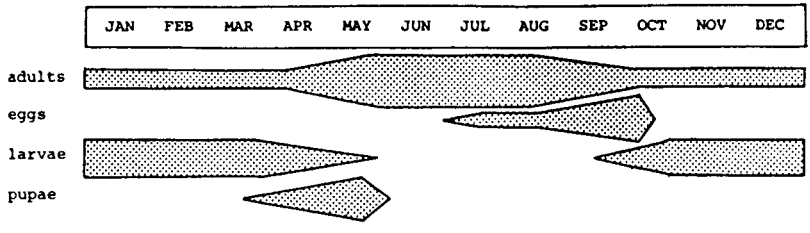
The adult weevil is a centimetre long and dull black with patches of yellow hair. Its snout is short but this makes the other weevil characteristic, the elbowed antennae, more obvious. Most adults hide under



larva or grub pupa adult

plant debris during the day but they have been found on furniture, in drapery and even clinging to the underside of a dog. They are well-camouflaged and play dead when disturbed so their presence is usually detected by freshly notched leaves rather than by seeing the insects themselves. The eggs are round, 0.8 mm across, and white when newly-laid, becoming brown later; they are laid in damp places near the soil surface. The larvae are up to 14 mm long and are white with a brown head; they have no legs (in contrast to chafer grubs) but there are many bristly protuberances on the body, which is typically C-shaped. They feed just below the soil surface and should be searched for when patches of plants wilt or when a plant becomes loose in the pot, indicating that the main roots have been severed. The pupae are also white and occur several centimetres deep in the soil in cavities known as "cells".

The life-cycle outdoors is summarized in the table. Under heated glass the cycle is about two months early with a longer period of adult activity during the summer. In their search for hibernation quarters, some of the adults surviving outdoors at the end of the season enter glasshouses where conditions favour further egg-production, thus adding to the attacks of resident weevils.



The numerous cases reported in the spring of 1982 could be explained by the severity of the early winter causing more weevils than usual to locate and to enter glasshouses. Egg-laying and hatching are, however, promoted by high humidities and it is more likely that the wet autumn favoured high larval numbers.

Control of vine weevils is hampered by a shortage of approved and effective recommendations. This will worsen when the best of the materials – aldrin – is removed from the market in full implementation of an EEC directive. Aldrin converts in use to HEOD otherwise known as dieldrin, the product used mainly as a sheep dip or seed dressing. The use of dieldrin was banned in EEC countries in 1981 because of the unacceptable build-up of residues in the environment, especially in predatory birds. For similar reasons DDT is no longer recommended for many pest problems, including weevil damage. Many modern insecticides have been tested as alternatives to the persistent organochlorines for vine weevil control; the few which have shown promise have not promoted sufficient interest for development by the agrochemical industry.

The recommended treatments for commercial control are:

- ★ Aldrin mixed into compost as a preventive at 1.5 kg *Murphy Aldrin Dust* per cubic metre of compost for use on ornamental crops only
- ★ Gamma-HCH as a remedial drench of up to ¼ litre per plant of *PBI Lindane 20* diluted 1:2000 (eg ¼ litre per 500 litres water) on most ornamentals
- ★ Chlorpyrifos as a drench of up to ½ litre per plant of *Murphy Dursban* diluted 1:500 on strawberries after fruiting and on conifers

Aldrin is not available to amateur gardeners and most garden products containing gamma-HCH are not suitable for preparation of soil drenches. However, Hexyl, made in sachets by Pan Britannica Industries, is suitable for use as a drench. Murphy Chemical Ltd recommend the use of Tumblebug (a mixture of permethrin and heptenophos) as a drench to be applied three times at weekly intervals once grubs have been detected. Soil penetration is facilitated by poking holes under the plants before pouring in the drench.

The mixing of HCH dust into soil compost is not a very reliable means of control.

An interesting development in vine weevil control has been the idea of biological control. Scientists in Germany have developed an insect-killing fungus (*Metarhizium anisopliae*) for vine weevils and work on insect-feeding eelworms was initiated in Australia. The eelworms are so small that they can be sprayed onto a crop in much the same way as an orthodox insecticide. Neither the fungus nor the eelworm will harm the plants. However, these products are not yet commercially available in Britain.

Warning – Rhododendrons may damage your health!

ANNE M. CHAMBERS

THE poisonous nature of rhododendrons has been known for many years, but a recent article in the Journal of the American Rhododendron Society[1] further emphasised the dangers of the genus. It seemed appropriate, at the risk of being thought a plagiarist, to remind our readers of the problem so that we may continue safely to enjoy the beauty of our rhododendrons!

One of the earliest descriptions of the phenomenon must be that of Xenophon[2]; his account of an expedition against the Persians around 400 BC related in graphic detail how his men were poisoned by eating honey. The army, returning after the battle of Cunaxa, was approaching the Black Sea – the narrative continues: "The Greeks ascended the mountain and camped in a number of villages which were well stocked with food. There was nothing remarkable about them except that there were great numbers of beehives in these parts, and all the soldiers who ate the honey went off their heads and suffered from vomiting and diarrhoea, and were unable to stand upright. Those who had only eaten a little behaved as though they were drunk, and those who had eaten a lot were like mad people. Some actually died. So there were numbers of them lying on the ground as though after a defeat and there was a general state of despondency. However, they were all alive on the next day and came to themselves at about the same hour as they had eaten the honey the day before. On the third and fourth days they were able to get up, and felt just as if they had been taking medicine." The poisoning has been attributed by Ungan[3] to honey from the flowers of *Rhododendron ponticum*.

In 1947, the Scottish plant hunter George Sherriff was in south-east Tibet with his friends Ludlow and Elliot when they were poisoned. As a very welcome change of diet they had purchased some wild honey from natives of the area. All three enjoyed the honey but shortly afterwards, Ludlow and Elliot fell ill. In Fletcher's *A Quest of Flowers*[4] Ludlow describes in his diary how he "felt cold and giddy, and had a curious numbing pain in the back of my neck, and could neither see nor write properly"; eventually he collapsed. Next morning, he and Elliot

had recovered completely and ordered the cook to discard the honey, though Sherriff, since he had been unaffected, did not consider it to be at fault. However, the point was taken when the Nepali cook, having ignored the instruction and eaten a large amount of the honey, became very ill indeed. The wild honey, presumably, was formed from nectar of whatever flowers were in bloom at the time; Sherriff, therefore, could have eaten a part of the honey made from flowers other than rhododendrons and so escaped the ill-effects experienced by his companions.

Despite extensive naturalisation of *Rhododendron ponticum* in Britain, we seem unlikely to become victims of poisonous honey, but we should certainly be aware of the fate of a recent visitor to the National Trust garden at Inverewe in Wester Ross related by Leach[1]. He was leading a party of fellow-Americans around the garden but had stopped to photograph the lovely "Lady Chamberlain". Two drops of nectar fell on his hand and, without thinking, he licked them off. Within minutes he experienced a tingling sensation in fingers and toes, then numbness and lack of coordination in his limbs; he became disorientated and unable to stand. Within half an hour, though still weak and shaken he had recovered enough to seek help and, after a few hours, had recovered fully.

And now for some chemistry! The poison in rhododendrons is Grayanotoxin I, a chemical of the diterpenoid group. It occurs in the leaves and flowers of various members of the Ericaceae too, such as *Kalmia, Andromeda, Ledum, Leucothoe, Menziesia* and *Pieris* and, appropriate to its complex structure and wide distribution, has a variety of synonyms of which rhodotoxin, for the layman, is most easily remembered. In man and animals, the toxin causes slowing of the pulse and a profound fall in blood pressure with all the attendant sequelae; lack of coordination, convulsions, progressive paralysis and even death may occur[5]. However, forewarned is forearmed – the purpose of this article is not in the least to scare, but to ensure that we may all live with our Rhododendrons happily ever after!

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North-east Turkey

MICHAEL and LYNN ALMOND

Part Two

AFTER spending as much time as we could afford at the Dağbaşi Pass we retraced our steps to Ispir and set off again further down the Çoruh valley. The river at Ispir is about 1,250 metres above sea level and the vegetation in the bottom of the valley was beginning to look like what one might expect to find in the Mediterranean area. The lower hillsides were covered in scrub (where they were not too precipitous to be covered in anything) and there were masses of *Iris* of the *germanica* type (all of which had, alas, finished flowering) and valerian. Small villages, their houses thatched with reeds and branches, clambered up the steep slopes. Any of the flat alluvium in the valley bottom that was stable enough was being used to grow maize or fruit trees. The river still flowed fast and furious and the backcloth to the tranquil ribbon of greenery along its banks was still incredibly spectacular – rugged mountain faces in shades of red, orange, yellow, grey-blue and green. Every so often the river banks reared up, crowded in upon the river and cut the thin ribbon of green along one or both of its banks: thus confined, the raging torrent became even more fearsome than it had been higher up the valley. The road varied from uncomfortable to impossible. At one point it turned north and headed off up a side valley; we retraced our steps for a few miles and discovered to our consternation that we had to cross the river by a picturesque old wooden bridge. We had passed the bridge earlier in our innocence and stopped to photograph it: it looked like a relic of the Middle Ages and certainly more suited to the passage of a mule train than of a motor vehicle. It is difficult to describe our feelings as the car lurched up on to the rough planks decking the bridge and began to inch forward. Luckily, as always, the local people were as helpful as they possibly could be. Without their guidance it would have been impossible either to keep the car wheels on the deck of the bridge or to squeeze the car between the great cantilevered beams supporting the bridge; in each case there was little more than an inch to spare. After what seemed like an age, we finally bumped down to the ground, some fifteen inches or so below the uneven end of the bridge deck, on the far bank of the river. We shook our helpers warmly by the hand and bade them farewell. Now, we thought, our troubles were over for the moment at least.

But no; after driving for a hundred yards or so over a field we had to make our exit from it by driving the car at an alarming angle over the roots of a large tree, through the narrow gap between the tree and a rocky outcrop crowned with thorn bushes and then down a steep embankment into a dry stream bed. We then drove for about half a mile up the stream bed which was quite steep, especially considering that the 'roadway' was composed of loose cobbles varying in size from an inch or two to the best part of a foot across. We then had to negotiate the narrow gap in some wooden scaffolding supporting a concrete irrigation channel being built across the stream bed, before mounting another steep embankment and at last reaching what could, without too much poetic licence, be described as a road. We were, in fact, back on the kind of road we were accustomed to: about the standard of a forestry track in need of considerable repair in places. For all this unwonted excitement, however, our memories of this drive down the Çoruh valley are dominated by the overwhelming magnificence and beauty of the scenery – and it was all, I think, well worth it!

Our next excursion up into the mountains to the north and west of the Çoruh valley was made from the little town of Yusufeli. We drove up the valley of the Barhal Çay to the little village of Alti Parmak Köyü which nestles in the bottom of a steep-sided, heavily wooded valley beneath the jagged, 3,000 m peaks of Altı Parmak Dağ ('Six Finger Mountain'). As the road followed the river up through winding gorges we saw a great many campanulas growing on the cliffs, in particular *C. betulifolia* with masses of large, white, widely spreading bells. It was even growing on the roof and walls of the magnificent tenth century Georgian church of Barhal at Altı Parmak Köyü. Although the local population is now entirely Muslim, the church has been kept in nearly perfect condition and is in use as the village mosque. Around the church the thickly wooded slopes are dotted with the sturdy wooden houses of the villagers. In the valley bottom rushes a clear mountain stream feeding countless irrigation channels and sustaining a profusion of vegetation: most striking when we were there were the marsh orchids and the various campanulas.

Our next excursion from Yusufeli was to another medieval Georgian church, that of Işhan, dating from the eighth and ninth centuries; although not quite so perfectly preserved as the Barhal church, that at Işhan (of which the nave is in use as a mosque) is a splendid example of medieval Georgian art and craftsmanship, with its soaring columns and its intricate stone carving. The village of Işhan occupies a small green oasis on the gaunt mountainside, high above the valley of the Oltu, a tributary of the Çoruh river. On the way up to Işhan, through a

weird and wonderful landscape of canyons and fairy chimneys, we found a surprising number of plants. As well as masses of campanula leaves clinging to the cliffs (the flowers were already over) there were numerous plants still in flower: *Echinops, Dianthus, Malva* (or *Lavatera*) and a few marsh helleborine (*Epipactis palustris*) growing in the shade of the cliffs next to a delightful little waterfall. In a patch of parched earth below the village we also found the leaves of a tulip, possibly *Tulipa armena*.

Before flowing into the Çoruh the Oltu joins forces with another river, the Tortum, which has carved out for itself even more spectacular gorges then the Çoruh itself. These gorges, together with the picturesque Lake Tortum and further well-preserved medieval churches nestling hidden in the side valleys, make the Tortum valley well worth exploring. In July, however, it has little to offer in the way of flora. It was only as we approached the head of the valley, near the pass on the road from Tortum to Oltu and also where the river starts it journey from the high plateau by passing through the defile known as the Georgian Throat (Gürçü Boğazı), that we found any flowers worth remarking upon. We were now back at a height of about 2,000 metres. As well as two distinct *Orobanche* species (probably *O. alba* and *O. purpurea*) we found *Ajuga chamaepitys, Morina persica, Verbascum speciosum, Linim thracicum, Onosma, Acantholimon* (with beautiful large pink flowers), *Scutellaria, Sedum pilosum* and *Saxifraga aizoon* (?).

From Yusufeli we proceeded further down the Çoruh valley past the town of Artvin, clinging precariously to the steep valley sides high above the river. Having gone down the river as far as was possible (it flows into the Black Sea at Batum in Soviet Georgia) we retraced our steps a little way and turned south up the valley of another tributary of the Çoruh , the Merçevi. We visited the little village of Hamamlı Köy, with its small medieval Georgian church, perched high up the mountain side above the confluence of the Merçevi with the valley that leads through narrow, apparently bottomless, gorges to the citadel rock of Ardanuç. Then we pressed on further up the valley, past the castle of Şavşat with its strange trapezoidal towers. The road was better than some we had travelled but, as the main route between the Black Sea coast and the high plateau around Kars, it suffered from a steady usage by heavy lorries grinding their way up and down.

Above Şavşat the scenery takes on more of an alpine flavour; indeed it has been compared by one French traveller to the Engadine. At the edge of the pine forest, above a steep alpine meadow, we found *Lilium szovitsianum* (Fig. 66) in some numbers, with their imposing yellow flowers flecked with brown. Nearby, in the wood itself, were various

orchids including *Orchis coriophora* and *Dactylorhiza maculata*. In a similar wood we found a pretty little wild pansy, purple dappled with yellow, and on a rocky outcrop beside the road another white campanula, similar to *C. betulifolia*. We also saw evidence that earlier there had been a profusion of scilla, hyacinth (of various sizes) and cowslips. As we sat on the grassy bank beside the road admiring the view we were joined by three of the local swains who were plaiting themselves hats from the twigs and foliage to keep off the midday sun. Had it not been for the cigarettes they were smoking, the whole scene, including the valley below, its sides dotted with what looked like old-fashioned Swiss chalets – could have been cut from a film of 'Heidi'.

The road winds up past more villages of rough wooden chalets to an unnamed pass between Şavşat and Ardahan. The change in scenery is abrupt, almost startling. On the one side is an alpine valley, steep-sided and largely wooded on its lower slopes, falling away rapidly from the 2,300 m high pass away down to the sea beyond. On the other side there is a rolling grassland, falling away relatively gently to the valley floor no more than 500 metres below. This is the high Armenian plateau and to the south the land does not fall down towards sea level again until it reaches the deserts of Mesopotamia; the valley here is that of the river Kura which flows through the great valley of the Caucasus past Tbilisi, capital of Georgia, to the Caspian Sea. The first village over the crest of the pass has houses with dry-stone walls and turf roofs. There are flocks of sheep and herds of cattle and horses on every side from time to time a horseman gallops across the open steppe. There are carts, with thick solid wooden wheels, pulled by oxen. The women are doing their washing in a small stream surrounded by dozens of geese. We are in a different world.

In spite of the fact that it was being extensively grazed, the pass was covered with quite a variety of flowers, including *Scilla* and *Geranium versicolor* (veined cranesbill). After staying in the small garrison town of Ardahan in a surprisingly well-appointed hotel, we set off across the high plateau of the upper Kura valley for the Yalnızçam Pass. The road west from Ardahan first of all winds along the northern edge of the wooded hills that skirt the southern edge of the valley. It then turns north and forms the main street of a long straggling village of single-storey dry-stone houses. All the time we had to proceed very carefully to avoid colliding with children, dogs and geese – the geese in places were virtually carpeting the road and were very reluctant to move. After crossing the river Kura, here meandering lazily through the marshy upland meadows and lined with people washing themselves, their clothes and the occasional lorry, we passed through meadows

ablaze with *Gladiolus communis, Adonis annua* and *Consolida orientalis* before reaching the hills on the north side of the valley and the bottom of the long and bumpy haul up to the top of the Yalnızçam Pass. We paused in the village of Hasköy to admire the view and the craftsmanship of the local people. One house had a rough horizontal loom set up in front of it on which a flat-woven rug was being produced in shades of brown and grey. An attractive young women with fine features was busy all the time with her lace-making as she stood and observed us. Before we took our leave a group photograph was duly taken and we agreed to give a lift to one of the village elders who had also been very eager to be in a prominent position in the photograph.

We took him to the summer encampment (yayla) at the top of the Yalnızçam Pass (2,650 m). Here the road was lined with wooden shacks, including the booths of traders, and there were also some dry-stone houses on the moor behind them. The scenery of the Yalnızçam is not dramatic: the open pastureland rises gently on each side of the pass and there are no very obvious features. The name Yalnızçam ('Lonesome Pine') reflects the general treelessness of the hilltops. The view north, however, back the way we had come up past the medieval Georgian castle now known as Rumkale, is fine – a great expanse of rolling upland receding ridge after ridge southwards – and the view north, of the unbroken scarp cresting above dramatic hillsides tumbling to the valley floor below, is magnificent. We were told that the shielings at the top of the pass were occupied for only three months of the year, while there was fodder on the mountains for the animals. The animals and their owners migrate south for the winter. The owner of the general store, who entertained us munificently with glasses of tea and slices of water-melon but who would not touch any himself because it was Ramadan, came from Ardanuç in the valley to the north. He showed us round the settlement, pointing out all the local colour including the post to which animals were tethered to be slaughtered, before a group of the locals gathered for the usual photo call. As eager as ever, jostling for the best position, was the old man we had brought from Hasköy. Although he was so eager to be photographed, however, he was very careful to hold up his string of beads between the camera and himself to ward off the evil eye.

Like the pass between Şavşat and Ardahan, the Yalnızçam Pass is well grazed. There is still, however, sufficient left over to make a visit rewarding. We found *Scilla siberica, Bulbocodium vernum, Merendera kurdica, Ornithogalum balansae, Aster alpinus, Caltha palustris* and two species of campanula – both purple and growing on rocky ground.

After driving over the Allahüekber mountains (and getting caught in a hailstorm with hailstones the size of marbles) we left the headwaters of the Kura for the plain of Kars. From here we went east to the Soviet frontier at the medieval Armenian capital of Ani and then south, over the flanks of Mount Ararat and via the baroque fantasy of Işhak Paşa Saray to the beautiful inland sea of Lake Van and its archaeological treasures. The scenery continued to be on the grand scale but, by mid-July, the season was too far advanced for there to be anything of particular interest in the way of flowers. If only we could have come a month earlier! But even if not all our dreams had yet come true we had experienced more than enough to satisfy us – until the next time.

Golden Jubilee Year of 1983

LYN BEZZANT

Discussion Weekend

THE outstanding event of the year was the special extended Discussion Weekend which took place at Dunfermline College of Physical Education, Cramond, Edinburgh, from Thursday 8 until Sunday 11 September. A first-class programme of lectures was given by distinguished speakers. Informal discussion and slide shows continued nightly into the small hours. Mrs Kathleen Truman and her helpers are to be warmly congratulated for arranging a most enjoyable and rewarding Conference.

Jubilee Reception

On the Friday evening we were all welcomed at the Royal Botanic Gardens to a magnificent Jubilee Reception. The approach corridor to the Information Centre, where the event was held, was decorated with hanging baskets of the most delicately beautiful flower and foliage arrangements in a predominating theme of gold, with different shades of soft green. This theme was echoed in the superb floral displays inside the Reception Room and at the Conference itself. Mrs Jill Sleigh was responsible for all these, and in association with Mrs Dorothy Rutherford, the caterer, she made all the arrangements for the delicious buffet supper.

Around the room, Dr Brinsley Burbidge had mounted a remarkable display of his splendid colour photographs of flowers. Young members of the staff of the Royal Botanic Gardens were in attendance throughout the evening. The Reception was an extremely happy social affair, and had very much the atmosphere of a very special family occasion. We are greatly indebted to Mr Alfred Evans for making the arrangements for us to have our Jubilee Reception in such appropriate and delightful surroundings, and to the Regius Keeper for making the facilities of the Royal Botanic Gardens available to us.

Distinguished guests included Professor Douglas Henderson, Regius Keeper of the Royal Botanic Gardens, Mr William Mackenzie, a founder-member of the Club, and Mrs Kathleen Dryden, President of the Alpine Garden Society.

The Jubilee Salver (Fig. 65) purchased from donations, which is to be awarded annually to an individual who has given outstanding service to the Scottish Rock Garden Club, was presented by Mr Mackenzie, our sole-surviving founder-member, to the first recipient, Mr Alfred Evans.

The Alpine Garden Society has most kindly given us a Silver Trophy to mark the occasion of our Jubilee. It has been decided that this Trophy will be awarded annually to the Plantsman of the Year, the exhibitor gaining most first prizes at the Club Shows during the season. The winners for 1983 were Mr and Mrs Henry Taylor. The Trophy was presented to them by Mrs Kathleen Dryden. Commenting on how the two societies, the Scottish Rock Garden Club and the Alpine Garden Society were now working together more closely than ever before, Mrs Dryden paid a well-deserved tribute to the late Mr David Livingstone, and reminded us that it was he and Mr Eliot Hodgkin who had laid the groundwork for this happy state of affairs.

Open Day

Another memorable occasion was Open Day for five gardens in the Perth and Angus area on Saturday 14 May. The morning was cool and damp but the weather became brighter and breezy later on. Members from all over Scotland enjoyed spending the day visiting some or all of the gardens, which were the National Trust for Scotland Garden at Branklyn, Mr James Aitken's nursery and garden at Orchardbank, Mr Peter Cox's rhododendron garden at Glendoick, Mr John Duff's garden at Glenfarg, and Colonel J. Anderson's garden at Wester Balruddery. Our grateful thanks go to all the garden owners who cheerfully conducted hundreds of visitors around all day long, who allowed so many pairs of stoutly-shod feet to tramp over their lawns and paths and who let us enjoy our picnics in their gardens.

Group Activities

Individual Groups celebrated Jubilee Year each in their various ways. Festivities began as early as 15 September 1982 in Dunbartonshire, when that Group opened the Jubilee Session with a Preview of Dolomite Flowers in words and pictures followed by a Social and Buffet Supper. The West of Scotland combined Groups, Lanarkshire, Renfrewshire, Glasgow and Dunbartonshire, presented a piece of Caithness glass to the exhibitor of the best bulbous plant at the Glasgow Show. They also arranged for the construction of a small rock garden at Pollock Park, Glasgow, with a suitably engraved plaque placed on view.

On 11 March the Edinburgh Group held a Jubilee Dinner in the Upper Library of the Old College, Edinburgh.

Fifeshire and Ayrshire Groups jointly financed the colour page in the January 1983 *Journal*. The two photographs show flowers of Greece described by Mr Bill Ivey in the accompanying article. Continuing in this vein, Mr Ivey gave the Clark Memorial Lecture at our Annual General Meeting on 22 October.

The Inverness Group donated a sum of £350 to the Club's existing investment, the income from which will be used to assist outlying and newly-formed Groups to defray Lecturer's expenses. Furthermore, a most generous Jubilee gift of £1,000 is to be given to the Club over a period of four years, by an individual Inverness-shire member, Mr Jack Drake of Inshriach.

The Aberdeenshire Group has promoted a Black and White Photography Competition with a first prize of £25. Details are given in this issue. This Group has undertaken to assist the National Trust for Scotland in re-designing and refurbishing the rock garden at Leith Hall, Kennethmont, near Huntly. In June members of the Group visited Kildrummy Castle Gardens, and later had a celebratory Jubilee Dinner at the hotel there. Aberdeen also presented a sundial to the Cruickshank Botanic Garden, which was mounted in a prominent place and suitably inscribed to mark the occasion of the Jubilee.

Mountain Holidays

Two different Mountain Flower Holidays took place during the summer, one to Wengen in Switzerland, and one to Arabba in the Italian Dolomites. Both of these tours were a great success and will be reported upon fully elsewhere.

Notelets

Also to commemorate the Club's Fiftieth Birthday, a set of notelets, six different line-drawings of favourite flowers, designed by Miss Victoria Matthews, Mrs Anne Chambers and Mrs Jill Sleigh has been produced and will be on sale at Group meetings and at Shows.

Many more members than I have mentioned have played a part in making 1983 a joyful and memorable year. Let us all look forward with confidence to our Diamond Jubilee. Dare we hope that by then more frontiers will be down and a wider range of mountains accessible to the plant hunter? Perhaps we will be able to plan, let us say, an Albanian Mountain Holiday by 1993 or a pilgrimage to the mountain fastnesses of the Bulgarian-Greek border, interesting and exciting possibilities for the future.

Golden Jubilee Tour to Wengen

VALERIE LEE and JOHN McWHIRTER

ON THE morning of 27 June 1983, 22 of us with our leader Mr Alfred Evans and escorted by Mrs Lorna Polunin from Fairways & Swinford, converged on Gatwick Airport. Under the guidance of our Courier all went well and we bumped down at Berne at about 2.30 pm. The Airport bus took us to the Railway Station where, after being joined by two more members of the party from Denmark, we caught the train for Interlaken. A change of train to Lauterbrunnen where we had yet another change, this time to the Rack and Pinion version for the steep and circuitous climb to Wengen. The hotel's electric buggy took our baggage to the Alpenrose Hotel, some few hundred yards away. We walked. Wengen is not accessible by road so there are no cars or lorries on the streets, only a few small electric conveyances for the hotels etc, which makes the place quiet, sleepy and somewhat exclusive. We got a warm welcome from our host at the hotel and from his Scottish wife Margaret and after a wash and change dinner was ready for us and we were ready for it.

After dinner plans were made for the following day and some were dismayed to hear that we were to catch the 8.30 am train to Kleine Scheidegg, which meant leaving the hotel not later than 8.15, which again meant being up much earlier than we had expected. However, after a breakfast of cereals, prunes, authentic Swiss muesli made with yoghurt and fresh fruit, a selection of cheeses, breads, jams, croissants, with the usual plentiful supply of fruit juice, tea and coffee, and not forgetting to collect our packed lunches, we all made the Station on time.

When we arrived at Kleine Scheidegg (6,762 ft) the weather was indifferent, mist and drizzle but not bad enough to dampen our enthusiasm. Our first discoveries were large patches of *Louiseleuria procumbens,* then *Primula hirsuta, Crocus vernus albiflorus, Primula farinosa* and *Soldanella alpina* with blossoms just appearing through the snow. The weather was poor for photography, but the plastic bags were filling rapidly and at the after-dinner seminar over 50 species were recorded which we thought was not too bad for the first day.

On Wednesday 29 we caught the 9.00 am Cabin Lift to Mannlichen (7,317 ft). From the Station at the top, looking South, we could see

under a deep-blue sky, the snow-covered peaks of the Eiger, Monch and Jungfrau. As we turned our backs on them to walk towards Mannlichen Peak the large trumpets of gentians were everywhere and among them good specimens of *Viola calcarata, Gentiana verna, Ranunculus alpestris, Ranunculus pyrenaeus* and *Hutchinsia alpina* while some fine clumps of *Silene acaulis* were hugging the rock faces. From the top on a glorious day we could watch the sun playing on the Eiger and it was reported that some members of the party had been pinching themselves just to make sure that it was real and not all a dream – 'unbelievable' was an adjective which was repeated more than once.

After lunching near the top we made our way down again and it was while poking about around a large mass of rock that one of our female members discovered several interesting-looking plants that she had not come across before. The Leader was hailed and he crowed with delight as he announced that they were none other than *Androsace helvetica.* He was so pleased in fact that the finder was rewarded with a kiss, which just goes to show how little excuse a man needs. We photographed madly. Nature seems to ordain that the best, the rarist and the most desirable plants will grow in the most awkward places where there is no hope of siting a tripod, but maybe that is as good an excuse as any for some of the inferior efforts.

On Thursday 30 it was again warm and sunny when we took the 8.30 Rack and Pinion to Lauterbrunnen, the steep Funicular to Grutschalp, and the electric train to Murren on the other side of the deep Lauterbrunnen valley and explored the Blumental area west of Murren. Here we found rich Alpine Meadows in all their luscious glory ablaze with campanulas, *Polygonum bistorta, Anemone narcissiflora, Pulsatilla alpina, Pulsatilla sulphurea* and many others. Lunch was had on rocks at the edge of the snow among soldanellas, primulas and crocus. Crossing more meadows to reach the higher screes the pulsatillas looked even more beautiful, maybe it was just because we had had a nice lunch, but we found it difficult to decide whether they were 'bonnier' as our Leader said, in bud or fully-open so we photographed them both ways. On the higher screes more *Androsace helvetica* then down the long valley back to Murren. The usual after-dinner seminar not only confirmed the identification of the plants for the finders but enabled others, and especially those who could not venture, to share in the finds and the experiences.

As the first three days had been quite hot and strenuous we were given a free day which meant that the ladies could do a bit of shopping.

Saturday 2 July was another fine day and again the 8.30 took us this time the short journey to Wengernalp. On the walk through the Pine woods to Biglenalp we found *Rhododendron ferrugineum* and *R. hirsutum*

making ground-cover under the trees and along the edge of the path *Androsace chamaejasme, Globularia bellidifolia* and *G. nudicaulis*. with here and there *Thalictrum aquilegifolia* in the sunny openings between the trees. At Biglenalp we discovered good specimens of *Moneses uniflora* growing in the shade of the conifers. These are not easy subjects to photograph as the flower stems are short, the flowers hang their heads and they often grow in shade, but photographed they were in those brief seconds when the wind let them be more or less still. Lunch was the usual meat rolls, cheese, hard-boiled egg, apple, orange, sweet, biscuit and bar of chocolate. Although very good and wholesome such fare could become a trifle monotonous. Some wag remarked that there was always variety in the girl on the chocolate bar wrapper.

Skins were getting pinker in the sun, especially for those ladies, or was it lady, who decided to go it in her pants so as to get her legs sunburnt. It was that same lady who chanced upon a large area of open scree literally covered with *Cypripedium calceolus, Dryas octopetala* and a few plants of *Nigritella nigra*. These accounted for quite a number of rolls of film. A Game Warden who came along with gun and glasses to investigate our goings-on was a friendly chap when he saw only cameras and let us look through his glasses at chamois cavorting about on the snow on the far side of the valley.

On a bright and clear Sunday we boarded the usual train for what we thought must be the top of the world, Jungfraujoch (11,700 ft). For the last 4 miles or so of the journey the Rack and Pinion railway climbed in a tunnel cut from the rock of the Monch with train-stop galleries from which, through large glass windows built in the mountain side, were splendid panoramic views of mountains and glaciers below. This was an excursion for general interest rather than plants where we saw skiing, husky dogs, a small aeroplane with skids landing on the snow, the famous Glacier Palace with corridors, rooms, etc cut in the solid ice and the beginning of the Aletsch Glacier which stretches for some 13 miles and is the longest in Europe.

Monday 4 July was one of our most exciting days. Back at Murren we took the Cabin Lift to Birg (8,800 ft) where on a most unhospitable-looking rocky ridge we found beautiful specimens of *Androsace helvetica, Thlaspi rotundifolia, Ranunculus glacialis, Saxifraga oppositifolia* and *S. biflora*. Farther along while still mildly exultant at finding such lovely plants in so unlikely a place our delight was increased by finding *Androsace alpina*. Previously there had been no place to site a tripod. Here there was no place even to stand. The descent from the ridge was difficult for some of the less-agile and a few returned by Cabin, others had the help of one of the stalwart males in negotiating the steep scree

slopes. Two of the ladies remained for a long time exploring the ridge and one of them reported later that they had found a clump of *Androsace alpina* the size of her bottom. This we all agreed was quite impossible. The long walk down the valley and the screes to Murren brought, along with tired and sore feet and legs, more *Ranunculus glacialis, Gentiana brachyphylla, Pulsatilla vernalis, Geum montanum, Geum reptans, Gentiana verna, Hutchinsia alpina* and *Ranunculus alpestris* making patches 2 ft square; farther down in the meadows there were lots of *Soldanella pusilla*.

The blue waters of Lac Thun prompted us to make a short boat trip to the woods on the far shore on Tuesday 5 to see orchids, cyclamen, pyrolas and masses of hepaticas though none in bloom. The Interlaken shops had a strong attraction for the ladies on the way home.

Wednesday 6 saw us back on Mannlichen this time to explore the ridges to the South. Most of us went by Cabin but four or five of the tougher ones decided to do the steep 3,000 ft ascent on foot. We had hoped to find *Eritrichium nanum* but it eluded us and the scrambling and panting and getting ourselves into places where we should not have been, were all in vain. We regret to record that the SRGC did not find *Eritrichium nanum* in the Wengen area (but see the forthcoming account of the Arabba trip, Ed).

On Friday 8 we visited the Schynige Platte Alpine Garden (6,454 ft). This is a delightful more or less natural garden where the plants are growing under conditions similar to those in the wild.

On Saturday 9 small parties went to different places. One group returned to Birg where the large clump of *Androsace alpina* was found and to their surprise the size was confirmed – by measurement, they said. That evening the meal was special, all sitting round one large table, with speeches and toasts, and presents.

When we returned to Biglenalp on Sunday 10 the cypripediums were fully open. There were so many it was almost impossible to avoid stepping on them, so inevitably a lot more film was used up, but what a way to finish a tour.

We were amused to read in our instructions that a special early breakfast would be prepared for us on Monday 11 to enable us to catch the 8.30 am train. We and the Staff had had some practice.

It was a most memorable holiday. The weather was excellent, the hotel was first class, the members of the party were friendly, pleasant and entertaining and the days were full of good fellowship. Our Leader had unbounded enthusiasm, endless patience and good humour and was untiring in his desire to help us during the outings and in the long seminars in the evenings when he identified specimens for us. To him we owe our most sincere thanks.

It will be a pity if we have to wait another fifty years for another such experience.

Plant portraits

Pleione humilis 'Frank Kingdon-Ward'

Jack Crosland

Of the spring-flowering species of *Pleione,* the type plant *Pleione humilis,* and the form collected by Kingdon-Ward in the Chiz Hills of west-central Burma, are the first to flower. Even when grown cold, which is recommended, the flower-buds make their appearance early in January but, as the first two months of the year are normally very cold, the flowers do not develop until about the end of March, in response to the rise in mean temperature and increased daylight.

The form collected by Kingdon-Ward under his field number KW21966 is more vigorous than the type, making larger pseudo-bulbs and larger flowers which are of better substance, although in a survey conducted by them in 1971, Hunt and Vosa dismissed this form as a variant only, and synonymous with *Pleione humilis.*

The large slightly-pendant flowers are on short stems, and these are white, faintly-suffused pink; the lip is deeply fringed, and streaked within by reddish-brown lines and spots. The pseudo-bulbs, which are elongated bottle-shaped, of bright-green colour, can attain 7 cm in length when mature, and these are partially encased in coarse brown fibres which issue from the base.

Pleiones are frequently described as near-hardy terrestrial orchids, a misleading generalisation which does not recognise that some species are hardier than others. Nor does it recognise that in nature they are more epiphytic than terrestrial, establishing themselves in deep moss which covers rocks and fallen trees.

Pleione limprichtii is perhaps the hardiest of those in cultivation, and has frequently survived 20° of frost (F) in an unheated alpine house and in cold frames, in east Aberdeenshire, Scotland. *Pleione humilis* 'Frank Kingdon-Ward', is only marginally less hardy. The illustration (Fig. 79) is of bulbs grown in the alpine house, without any form of artificial heating, but these are covered by several sheets of newspaper during periods of moderate frosts and, additionally, by a sheet of hessian when frosts are severe. Records show a minimum reading of 12°F, within the house.

Changeable winter temperatures, which frequently rise well above freezing make it necessary to remove or replace coverings as dictated by the need to protect pseudo-bulbs from severe frosts. Losses occasionally arise, but these are more than compensated by the natural increase of bulbs over a span of years.

The compost consists of four parts each by bulk of John Innes No 3 Potting Compost, clean sharp sand, sphagnum peat and live sphagnum moss. These are carefully-blended but not rubbed fine, in order to provide a well-aerated, sharply-drained medium, which does not readily dry out. Repotting annually, the JI No 3 content eliminates the need to feed during the growing season.

Overwintered in the alpine house, the pan is plunged just above ground-level in a 50:50 mixture of peat and sand, which is in contact with the earth. Thus the bulbs are dry, but not arid, throughout the dormant season.

Repotting in the mixture indicated is best undertaken when bulbs are fully dormant, the months of December/January being ideal, but since at this stage the pseudo-bulbs have neither roots nor leaves, watering is deferred until growth is active. With confidence gained by experience, they can be repotted even in full-bloom or when flowers have faded but, at the latter stage, the near emergent roots will be apparent, and as these are soft and brittle the greatest care in handling is necessary to ensure these are not damaged.

The pseudo-bulbs dislike exposure to full sun and high temperatures but in high-summer, provided with necessary shading and full ventillation, when leaf-growth is well-established, drenching by means of a hosepipe induces luxuriant leaf production and new pseudo-bulbs.

As pseudo-bulbs are of annual duration only, the right conditions for reproduction are vital to survival. The old pseudo-bulbs gradually wither as new ones develop but, as they shrink, a mass of tiny seedling bulblets arises at the apex. These can be removed when repotting and grown-on; with great care and patience a percentage of those can be brought to flowering size in a period of four years.

Corydalis wilsonii

James Cobb

Corydalis wilsonii is a Chinese species which has been a long time in cultivation. It is an evergreen perennial with a non-tuberous rootstock. The foliage is an attractive glaucous-grey colour and is finely divided but the whole plant is more robust than the better-known wildling *Corydalis lutea*. The flowers are packed together in an attractive dense

raceme of a good clear yellow which is neither pallid nor harsh. In cold alpine house conditions the plant comes into generous flower in late March and is at its best for an April display. It is probably best on a relatively lean mixture of compost as too much nitrogen produces an excess of foliage and soft tender growth. It is, however, equally easy to produce a starved dry-looking plant and to summarize it is an easy plant to grow badly but requires care to produce a really balanced strongly-flowered plant. There is always a tendency in spring to have frost damage to the emerging tips of the flower spike and these spoil the appearance of the plant a month later. The plant is not absolutely hardy even under alpine house conditions but provided it is kept as dry as compatible with its staying alive in winter it will survive all but the very harshest cold spells. It will even survive outside especially with a winter cover but it does not look happy generally and is probably best regarded as an alpine house pot-plant (Fig. 78).

It sets profilic black seeds but, if seed is not wanted, the dead flowering spike should be cut off carefully since it is easy to pull handfuls of the plant away and spoil it. It will eventually form a huge multi-crowned plant and needs repotting annually into a larger pot with good drainage especially if plastic pots are used. Most seeds stay put on the plant until harvested and are not flung around the alpine house in the totally irresponsible way *C. lutea* would. The large glaucous seedlings are easily recognised, transplanted without difficulty and I always keep back a tiny pinch of seed from the Seed Exchange in case of accidents. This was one of my first alpines and although subjected to the usual accidental and deliberate insults of the tyro the original still survives, however I am ashamed to confess I sometimes have to hide it when visitors come.

Lloydia longiscapa

Joan Stead

This member of the Liliaceae is a native of Kashmir. The grassy foliage is about 4 inches high, slightly overtopping the open flowers (Fig. 76). The outsides of the butter-yellow petals and sepals bear a marked green central stripe and the yellow stamens, surrounding the bright green stigma, are thrown into sharp relief by a brownish-red feathered central patch.

My first plant was obtained from Jack Drake, in April 1967, and was planted in a shady peat bed. It survived, and flowered, for two years, but there was no increase and it died during the 69/70 winter. It was replaced in October 1970, and planted in a sandy-peaty compost, in a pan. It obviously resents root disturbance, and only flowers sporadically

after repotting. It is very slow to increase, and does not always set seed. This year (1983), it flowered well, possibly as a result of the mild winter and formed seed-pods.

With me it spends the winter in the alpine house, and the rest of the year it sits uncovered in a shady frame.

Primula reidii var williamsii

Lyn Bezzant

This is a rather more robust form than *Primula reidii* itself and was introduced by L. H. J. Williams of the British Museum (Natural History), from Western and Central Nepal in 1952-54. It is a member of the difficult Section Soldanelloideae. In nature these are mainly high alpines, kept dry and at an even temperature around freezing point, under a blanket of snow for four to six months of the year. While in growth and flower the plants will be plentifully supplied with water from the wet screes which they inhabit.

Primula reidii var *williamsii* (Fig. 69) has rosettes of soft green leaves, covered with hairs. The five inch farinose scape carries an umbel of seven to ten semi-pendant lilac-blue or white campanulate flowers, covered with glistening silvery farina. They are deliciously scented. This primula loses its leaves entirely in winter. It is reputedly a short-lived plant, and every effort should be made to keep stocks going from fresh sowings of seed.

The plant illustrated was received from another member of the Club as a small seedling in spring 1982. It had been grown from SRGC seed. It was potted-up in a mixture of equal parts loam, grit, leaf-mould and peat with a dash of lime chippings. A plastic pot was used with a good layer of bottom drainage. The same mixture was used when the plant was ready for potting-on in August. During the summer it was kept cool and shaded in a frame and watered from below. The leaves were kept as dry as possible. The pot was taken into the alpine house in October and plunged in moist sand under the staging. After the foliage had died-down the compost was kept only just moist until growth was evident again in spring, when watering was gradually increased. A dilute liquid-feed was given about once a fortnight. The first flowers opened in mid-April, and blooming continued until well into May. This is a white-flowered form, the individual blooms are of good shape and solid substance. The plant was kept cool and shaded on the bench until flowering was finished when it was replaced in the shady frame. Seed was set and some of this was sown immediately upon ripening. The rest will be sown in March. The compost used for seed is equal

parts sieved fibrous loam and leaf-mould with two parts coarse sand and a top-dressing of grit and crushed charcoal.

If enough seedlings are produced to experiment, future specimens will be tried in the open ground and in pots entirely frame-grown.

Seeds can be obtained from the Seed Exchanges of the SRGC and the AGS. Plants can be obtained from several specialist nurseries. Many of these have trade stalls at our Shows and advertise in the specialist societies' publications.

Celmisia hectori

Roma Fiddes

Celmisia hectori is a high alpine from North Island, New Zealand. It forms a dense cushion, woody at the base. In cultivation it tends to sprawl with age. The leaves are up to an inch long, leathery and very silvery above. The flowers are the white daisies usual for the genus.

Like most of the genus, *Celmisia hectori* prefers a damp peaty soil.

My attempts at propagation of *Celmisia hectori* have not been very successful. I have managed to root cuttings on two or three occasions under mist with bottom heat. The resulting plants have either died in their pots or have failed to establish themselves outside. The plant in the photograph (Fig. 74) was grown in my parent's garden which is colder and wetter than the Cruickshank Botanic Garden, Aberdeen, so it seems summer drought is a more likely cause of failure than winter cold.

Mr J. Lawson of Inshriach suggests taking cuttings in autumn in a cold-frame and potting them up in spring. Seed is offered in the SRGC seed list, but I have no experience of growing celmisias from seed and it is reputed to be difficult.

Celmisia hectori does not appear to be commercially available at present.

Anchusa caespitosa

Fred Hunt

I find this oft admired endemic Cretan plant of the Boraginaceae family fairly easy to maintain in a happy condition when given alpine house treatment, although, in fact, it will withstand our milder winters outdoors when planted in a trough or scree, where it can be seen to advantage. However, as an insurance I keep a couple of plants under glass.

The flowers appear in spring and are almost stemless, being of a gentian-blue, nestling in rosettes of attractive, narrow green leaves. A well-flowered plant can make quite an impression on the show-bench (Fig. 77).

In cultivation, plants will tolerate alkaline or acid conditions; a large deep pot is recommended in order to accommodate the gross root system. When in growth plenty of water (as in my experience these are thirsty plants) and an occasional liquid feed will help keep them in good condition.

Should plants become congested in time, it is policy when repotting (at least once yearly) to detach young rosettes and insert these in a gritty/peaty mixture and place them in a shaded propagator, whereupon most will form roots in a fairly short time.

This way a succession of younger plants is ensured, these being preferred to older plants which are inclined to hide the flowers under the leaves.

From time to time specialist nurserymen advertising within this *Journal* carry stocks of these appealing plants.

Primula petiolaris

Ian Douglas

Primula petiolaris, from Nepal, is generally considered to be one of the easier members of the Petiolarid Section. Personally, I do not find any of them particularly easy, to the extent that they cannot be planted-out and just left to get on with the job of growing. The principal requirements seem to be to ensure that they do not dry out in summer and that they do not get wet during the winter.

The plant illustrated (Fig. 70) was grown in a pot plunged in a frame until the beginning of October and then transferred to a shady plunge in the alpine house. The compost used consists of a basic John Innes mix (1 peat, 1 loam, 1 grit) with some extra grit and leaf-mould added. It is my impression, however, that the compost is not at all critical provided it contains plenty of humus but is still free-draining.

Usually I prefer to grow *P. petiolaris* and its close relatives in a bed in the garden. The bed is raised to a height of some six inches behind a row of stones and faces north with a eight-foot stone wall on the south side. The primulas grow here in a mixture of roughly equal parts of peat, leaf-mould and garden compost. From the end of September until late-March the bed is covered with plastic frames, at a height of about a foot-and-a-half but with the sides left open to allow air to circulate.

Primula petiolaris can be readily propagated by division and in my experience this is best done as soon as possible after flowering. It may also be grown from seed which should be sown 'green'. For the benefit of those unfamiliar with the term, it does not actually mean 'green' but 'just ripe'. Indeed the seed germinates very poorly if kept for any length

of time. Petiolarid primulas have a curious seed-head which is caused by a translucent membrane. When the seed is ripe this membrane simply disintegrates. This is the time when the seed should be sown and a careful day-by-day watch should be kept otherwise much of the seed may be lost. To give some idea of timing, I did not sow *P. petiolaris* this year but sowed *P. edgworthii* on 3 July and *P. sonchifolia* on 4 July. *Primula edgeworthii* germinated by 25 July and *P. sonchifolia* by 30 July.

The biggest problem I have encountered is not so much germinating the seeds as keeping the young plants alive over the first winter. After some dismal failures I decided that pricking-out late in the season was the cause of the problem and I now leave them in the seed-pot until the spring with consequently much greater success. Perhaps some of the more expert growers may care to comment on this method.

This primula is readily available from nurserymen, if somewhat costly.

Germination of Celmisia

CELMISIA – Of this huge genus about 12 species are grown in the United Kingdom. They are notoriously poor at germinating and to a large extent this is due to the fact that much seed is non-viable even when fresh (as low as 5% in some batches of seed) and that it is infected by fungi and attacked by insects. Seedlings are particularly susceptible to damping-off. If you are lucky enough to have a seed batch which is viable and free from pests and diseases there are a few general recommendations for successful germination. Most rapid germination can be obtained at 10-20°C but maximum germination (although slower) is at 5-15°C. Stratification is not normally needed but seeds will in fact germinate well but slowly at 2-5°C. All seed should be given light, at least for the first few days after sowing. Seed stored for several months or germinated at 2-5°C will, however, germinate in the dark. Seed will germinate in 4 weeks at 10-20°C or even in 1-2 weeks if the seed coat is removed. Another way to obtain reasonable germination is to warm dry seed at 40°C for 4 days before sowing. There is little point in giving recommendations for individual species as it is known in Celmisia that differences in germination between different seed batches of any one species are often greater than differences between species.

Dionysia aretioides

Duncan Lowe

Over the past 12 to 15 years dionysias have been introduced in variety and quantity, yet our hold on them, in cultivation, frequently falters and is only just maintained by dedicated care and regular propagation. More than once a species has been nursed back from the edge of horticultural extinction by the rooting of a solitary rosette, prudently snipped from an ailing cushion. Through trial and error our ability to sustain the plants in captivity has improved a little but still the mortality rate is discouraging.

As a genus in cultivation *Dionysia* has demonstrated a strong aversion to life out-of-doors and to anything approaching dampness even when sheltered from the elements. The only acceptable results have been achieved by growing them as permanent alpine house dwellers and even these careful watering techniques and routines are essential to sustain reasonably healthy plants.

The exception in this fickle race is *Dionysia aretioides*, a robust and (for a cushion plant) vigourous species that flowers just as profusely as the best of them. Ten years ago it dominated the show benches with ultimate successes displayed in perfect hemispheres the size of a football, with a total covering of golden flowers. Now fashion has relegated *D. aretioides* in favour of others requiring more attention and also because it is regarded as relatively easy to grow, which seems to rate almost as a defect with ultra-competitive show exhibitors.

Easy to grow, in dionysia terms, means that it can be grown outside given adequate conditions.

The subject of these few paragraphs (illustrated on the front cover) is a plant grown outside in a raised bed and which has survived several years, including one with a record summer and another with an exceptionally cold winter. It was planted-out as a rooted cutting in an almost vertical crevice contrived from two rocks sitting in a raised bed filled with a half and half mixture of chippings and leafy soil. The rocks provided a north-facing perch and allowed rooting to go far beyond the crevice, down into the stuff of the bed. Beyond these arrangements the only additional artifice is a small pane of glass propped over the plant from October to March.

The rate of growth has been much slower than that of pot-grown, house-protected specimens but otherwise the foliage is turgid and less pallid, every rosette produces bloom in spring and rotting leaves are rare. Apart from countering aphid attacks, which are fewer and lighter than on those 'indoors', there is little else for the gardener to do but enjoy having *D. aretioides* out there in the garden.

Show Reports 1983

Edinburgh and Midlothian Show – 11 June 1983

The Show was later than usual and it gave exhibitors and public alike an opportunity to show and see the June-flowering alpines. The Forrest Medal winner was on Jack Drake's stand – a truly magnificent plant of *Ramonda nathaliae* with more than thirty pale-blue flowers. There were some good 3-pan exhibits, none better than Mr Fred Hunt's *Sarcocapnos crassifolia, Oxalis* 'Ione Hecker' and *Androsace alpina* with masses of pink flowers, which won the Elsie Harvey Memorial Trophy. Mr and Mrs Taylor won the Henry Archibald Rose Bowl with *Linaria tristis, Asarina alpina* and *Sarcocapnos crassifolia.* Mrs Jean Wyllie came second in the class with that old favourite *Campanula zoysii, Ptilotrichum spinosum* and an impressive pan of *Phlox* 'Chattahoochee', covered with its blue-violet flowers. Mrs Lyn Bezzant had three good pans which won the A. O. Curle Memorial Trophy for plants grown from seed by the exhibitor – *Lewisia rediviva, Menziesia cilicalyx* and the little ericaceous shrub *Tsusiophyllum tanakae.*

The two pan classes were well-supported. Mrs Betty Craig won the class for Scottish natives with *Pinguicula vulgaris,* and a very well-grown plant of the difficult *Primula scotica* which also won the R. E. Cooper Bhutan Drinking Cup for the best primula. Other notable plants were *Dianthus callizonus,* a rarely-seen pink from Rumania, *Phlox triovulata* which received a Certificate of Merit, and the orchid, *Cypripedium pubescens* with three flowers in perfect condition, which won the Henry Tod Carnethy Quaich – all of which were shown by Mr and Mrs Taylor. The class for new, rare or difficult plants was won by Mrs Bette Ivey with a good plant of *Jurinella moschus pinnatisecta* whose big flowers resembled Knapweed. The most notable plant in Section II was *Sarmienta repens,* a rare gesneriad with bright-red flowers, which won a Certificate of Merit for Lt-Col and Mrs Anderson.

D. C. GRAHAM

Newcastle-upon-Tyne Show – 9 April 1983

Despite the cold spell in the week preceding the Show which gave some exhibitors problems in presenting plants at their best, there was an entry of 249 exhibits tabled by 41 exhibitors.

The Farrer Medal was awarded to Mr A. Furness of Hexham for a magnificent plant of *Primula sonchifolia*. He also took first place with an entry of *Primula bhutanica* (Sherriffs form), *Lithodora oleifolium* and *Rhododendron racemosum* F 19404, the latter plant being awarded a Certificate of Merit. *Rhododendron forrestii* var *repans* gained a Certificate of Merit. Mr Furness also took first place with *Salix reticulata* and with a triple-entry of well-grown plants of *Primula bhutanica, Primula sonchifolia* and *Pulsatilla vernalis*. Altogether a very creditable personal performance, recognised by the award of the R. B. Cooke Plate for the highest aggregate of first prize points in Section I.

The AGS Medal for Class 1 was won by Mr J. R. Johnstone of Ryton for an entry of *Cyclamen repandum rhodense, C. creticum, Pulsatilla vulgaris, Degenia velebitica, Gentiana clusii* and *G. verna*. The latter two plants were in full flower, and drew attention to the comparative lack of gentians in this year's show. He also took first place with *Celmisia sericophylla* which had beautiful silky foliage.

Mr and Mrs H. Taylor of Invergowrie were awarded the AGS Medal. They also took first places with a compact form of *Androsace ciliata* which they have introduced into cultivation, and a fine *Trillium hibbersonii* with six pink-veined flowers on very short stems. A special gold medal was awarded to Mr R. R. Brown of Sandhoe for an exceptional composite arrangement which included a wide variety of dwarf alpines.

E. G. Watson of Wideopen gained a 1st Prize with a 10-inch diameter plant of *Dionysia balsamae* GWH 581 in full-flower. He also won with *Primula hirsuta forma nivea*, a very good white-flowered form, and *Dionysia microphylla* GWH 1302 from Afghanistan.

Other outstanding plants in the Open Section included a large plant of *Celmisia bonplandii* with two-inch diameter white daisies entered by Mrs S. Francis of Ponteland and a six-inch bun of *Kelsya uniflora* in full flower by Mr R. A. Hodgson of Stokesley.

Mr J. W. Cowan of Co Antrim made his journey worth-while by winning the Gordon Harrison Cup for the highest aggregate of 1st Prize points in Section B. His entries included *Origanum dictamnus* and *Chamaecyparis pisifera nana*, a four-inch diameter dome of *Androsace pyrenaica*, and a good flowering specimen of *Celmisia ramulosa*. He also came first with *Aciphylla pinnatifida*.

Another overseas visitor was Mr B. D. Davidson of The Hague who won with *Fritillaria schliemannii* and *Saxifraga grisebachii* 'Wisley'.

The number of entries in Class B was disappointing but Class C made up for this with 88 entries.

The Cyril Barnes Trophy for the highest aggregate of 1st Prize points in this section was won by Mr G. W. Beilby of Stillingfleet who showed two good examples of *Primula aureata*.

Some very good plants were shown in Section C. Mr J. J. Eden of Leyland entered a beautiful example of *Shortia kantoensis* with ten flowers on a fairly-small plant, while Mr A. Davis of Gosforth showed a plant of the rare *Ewartia nubigena*.

R. A. FAIRBURN

Perth Show – 23 April 1983

Extremely changeable weather throughout April must have given many exhibitors anxious moments before the show and although entries were down in some classes, on the day we were rewarded yet again with some very floriferous exhibits.

The Alexander Caird Trophy for the Six Pan Class was awarded to Mr F. Hunt who exhibited *Lewisia tweedyi, Fritillaria pallidiflora, Anchusa caespitosa, Shortia soldanelloides, Lithospermum oleifolium* and a very healthy and striking specimen of *Arisaema sikokiana* from Japan, a curious aroid with an impressive striped spathe.

Dr P. Semple received the Dundas Quaich for his exhibit in the Three Pan Class of *Armeria juniperifolia, Vitaliana primuliflora praetutiana* and *Primula ellisiae*, a most attractive species.

After much deliberation the judges decided that the Forrest Medal be awarded to a large and well-flowered plant of *Cassiope selaginoides* LS 13284 shown by Mr Adair. A Certificate of Merit was given to *Primula* 'Barbara Baker' exhibited by Mr and Mrs R. Bezzant. This was an extremely well-flowered plant so much so that the foliage was almost obscured. Mr and Mrs Bezzant also won the L. C. Middleton Trophy for gaining the most points in Section I.

Corydalis cashmeriana with striking blue flowers exhibited by Miss G. L. Blackwood won the Murray Lyon Trophy.

The New, Rare or Difficult Class always promises exciting plants and Col J. D. Anderson's plant of *Ourisia racemosa* was very impressive, the whole plant being covered in scarlet-crimson flowers. Second Prize in this class went to Mr R. Milne for a lovely plant of *Primula caveana* which unfortunately is now only rarely seen in cultivation. Third equal in this class were *Lloydia longiscapa* exhibited by Mrs J. Stead and *Viola beckwithii* shown by Dr P. Semple.

Entries for the Rhododendron Class were considerably down but a well-flowered plant of *Rhododendron* 'Yaku Fairy' won Mrs J. Wylie the E. H. M. Cox Trophy for the Best Rhododendron in the show.

The Bronze Medal for the most points in Section II was won by Dr J. Gauld who was also awarded the Perth Trophy, given to the member of the Perthshire Group gaining most points in the show.

Glasgow Show – 7 May 1983

Although entries in Section II were again light, those of other sections were a great improvement on last year. This was particularly noticeable in Sections I and V. In the latter case, kind weather resulted in quite the best display of rhododendrons we have had for several years and it was heartening to note that there was quite an increase in the entries from those who had not previously entered in Section V.

The Dr William Buchanan Memorial Rose Bowl was awarded in Class 1 to Mr and Mrs R. Bezzant for six splendid plants, including *Ranunculus parnassifolius, Kalmiopsis* 'Glendoick', *Primula aureata* and *Corydalis cashmeriana*.

The Henry Archibald Rose Bowl was won by Dr Peter Semple. Curiously there were no entries for Class 3 for the William C. Buchanan Challenge Cup.

Class 4 for three pans of dwarf Rhododendrons and the Edward Darling Memorial Trophy was won by Mr M. Adair. The fine plants shown in this class included R. 'Curlew', 'Dora Amateis', 'Snipe', 'Carmen' and 'Razorbill'.

The Ian Donald Memorial Trophy was again won by *Salix reticulata* but this time by Mr and Mrs M. Bremner.

The Crawford Silver Challenge Cup for the most first prizes in Section I was jointly awarded to Mr and Mrs H. Taylor and Mr M. Adair.

The James A. Wilson Trophy for the most points in Section II was awarded to Mrs Daphne Ogg.

In Section V, Rhododendrons, the Urie Challenge Cup and the Rhododendron Challenge Trophy were awarded to Mr and Mrs N. Rutherford. The Sir John Stirling Maxwell Trophy for the best spray or truss (species) was awarded to E. A. T. and H. C. Wright.

To celebrate the SRGC Jubilee an attractive piece of Caithness Glass was presented to the competitor showing the best pot of 'bulbs' in the show. This was won by Mr and Mrs V. Chambers with a fine pot of *Fritillaria meleagris alba*.

Mr and Mrs Henry Taylor won a Forrest Medal for a very fine pink form of *Ranunculus parnassifolius*.

Among the many interesting plants were Mr Adair's *Cassiope* 'Badenoch' and Mr H. Esslemont's *Kalmiopsis leacheana*, both awarded Certificates of Merit. The Taylors had a very fine plant of *Omphalogramma*

vinciflorum and colourful pans of *Rhodohypoxis,* as had Mrs Kissen. *Gentiana clusii* in good form was shown by Mr A. Leven and *Gentiana verna* by Dr Semple.

The miniature alpine gardens in Classes 60 and 61 from Mrs Wyllie, Mr Small, Mr R. Brown and Mr and Mrs Taylor showed what can be done to grow alpines in a really small space.

Mr Stephen Benham put on a splendid display from Brodick Castle Gardens on behalf of the National Trust for Scotland.

CHARLES SIMPSON

Aberdeen Show – 30 April 1983

Despite a very wet spring a number of excellent plants were on show in the Music Hall, Aberdeen, each one in its own way deserving of some mention in this report but space is limited. What a pleasure it was to see that the judges had awarded the George Forrest Medal not to a rarity but to an easily acquired, long established plant in our gardens – *Gentiana verna angulosa* shown by Dr P. Semple. Beginners please note next year it could be an *Aubrieta,* provided it is well-grown, well-presented and well-flowered.

The Six Pan Class was very competitive with six entries in all. The winner was Mr J. D. Crosland whose entry contained amongst others *Pleione humilis, Cyclamen persicum* and the dwarf shrub *Hormathophyllum reverchonii.* Second in the class was Mr H. Esslemont who included a truly magnificent specimen of *Kalmiopsis leachiana.* The entry of Mr F. Hunt who was third contained an attractive small plant of the pale-blue *Lithodora oleifolium,* a plant which I have not seen on the show benches for a number of years. A pity it does not appear to relish outdoor conditions in Aberdeenshire.

Other plants which caught my eye were a small but well-flowered plant of *Paraquilegia anemonoides;* a good form of *Fritillaria meleagris* (Purple King) both shown by Dr Semple. Gentians of note included the yellow-flowered *G. verna oschtenica* with ten flowers shown by Mr Crosland and the intriguing *G. tubiflora* grown from seed from the BMW collection by Mr W. D. Holmes. Of particular interest was a pan of the true *Pleione forrestii* shown by Mr Crosland, the dark-brown markings contrasting well with the deep-yellow of the flower ground colour. The flowers themselves were rather smaller than those of the hybrid which has gone under this name for a number of years. The yellow-flowered *Pulsatilla aurea* shown by Mr Esslemont and grown from seed obtained from Moscow will, when it becomes available, make a welcome addition to the collection of purple, red and white forms more commonly grown.

Outstanding among dwarf trees were *Chamaecyparis obtusa pygmaea densa* shown by Mr Harley Milne and *C. microcachrys tetragona* covered with orange-red cones in the Cruickshank Botanic Garden's stand. Rhododendrons were not much in evidence. Worth noting, however, was a small plant of *R. keiskii* (Yaku Fairy) shown by Mrs J. Wylie. It was also a pleasure to see the tiny white flowers of *R. microleucum* shown by Mrs H. Salzen. It is undeniably hardy and a plant which has flowered regularly for over twenty years in the writer's garden.

On show by courtesy of the Regius Keeper of the Royal Botanic Garden, Edinburgh were *Fritillaria hermanis* ssp *amana* carrying green flowers with a distinct brown stripe, *Fritillaria conica* lemon flowers with a tinge of green, x *Jankaemonda vandedemii* (a cross between *Jankaea heldreichii* and *Ramonda myconii*) and *Alyssum pyrenaicum* a neat and floriferous white-flowered species. Would that such plants were more readily available.

Mr J. N. Aitken was awarded a Gold Medal for his exhibit of Alpine Show and Border Auriculas. Particular interest in the green and grey-edged varieties was shown by the many visitors to the show.

The Walker of Portlethen Trophy was won for the second time by Mrs Craig. The Aberdeen Quaich for the best plant in Section II went to Mrs Kent.

J. N. AITKEN

Jubilee Photographic Competition

As announced in the June 1983 issue a Jubilee Black and White Photographic Competition is being run by the Aberdeenshire Group. The Rules are as follows:

1. The subject is any plant suitable for rock, wild or water garden.
2. Each entry shall consist of three black and white prints, each print to be of a separate subject.
3. The maximum size of a print shall be 10 inches by 8 inches.
4. Only two entries per person allowed.
5. The closing date shall be 31 May 1984.
6. Judges shall be appointed by the Aberdeenshire Group.
7. Entries, which will remain the property of the Club, should be sent to the Editor, *The Rock Garden*.

Letters to the Editor

National Council for Conservation of Plants and Gardens

2 Dalrymple Crescent
Edinburgh EH9 2NU

Dear Sir,

At the International Conference in Nottingham in 1981 Mr Chris Brickell gave a moving talk on the need to conserve garden plants for the future. Subsequently he spoke to us at our Annual General Meeting in 1982. He appealed for our help, partly because of our specialised knowledge of alpine plants, and because, living in Scotland, we could extend the Council's records of all types of hardy plants.

At the recent Discussion Week-end the subject was given an interesting airing and it is clear that many of our members cannot see how they can help the NCCPG in the particular way that the organisers have indicated. I have heard it suggested that the body best suited to record endangered plants grown by rock gardeners would be as a botanical garden and I doubt if many would quarrel with this idea. There is less agreement on the keeping of national collections. Having laughed somewhat wryly at Henry Taylor's article in which he could have been helpful but chose to be facetious, it would be interesting to hear some more serious opinions from other members on this subject.

I think there may be members who, like me, would be interested in being associated with an active group. Those in the East of Scotland should write to: Project NCCPG, Suntrap Horticultural Centre, 43 Gogarbank, Edinburgh EH12 9BY. Please send sae. A group has not yet been formed here but the Centre has undertaken to keep collections of Helleborus and Erythronium. Already several enthusiasts have expressed interest in helping NCCPG by applying to join the group, when formed.

In the West of Scotland "The Strathclyde Group" is already a going concern. Apply to the Organising Secretary: Mrs Pat Jordan, Kittoch Mill, Carmunnock, Glasgow. Please send sae.

"The South West of Scotland Group" under the Chairmanship of Lady Maclehose, expects to be fully established towards the end of 1983. Apply to the Organising Secretary: John Smith, 5 Wyvis Place, Irvine, Ayrshire. Again, please send sae.

Yours sincerely,
Isobel J. Simpson

Haydnstraat 44
6561 EG Groesbeek
The Netherlands

Dear Sir,

As a horticultural teacher I intend to write a book about the genus *Campanula*. I have already been collecting information for many years. I built up a plant collection of more than 130 species of *Campanula* in our garden on the nursery of Scholing Werkenrode at Groesbeek. This in close cooperation with Mr D. Smit, Curator of the Botanical Garden of the VU – University of Amsterdam.

Before I start to write at the beginning of 1984, I should like to get all the information available around the world from this genus. If possible I should like to get all the information you can give, for example:

- Seeds or information about it
- Photos about plants, use, growing, flowers, etc
- Natural science
- Drawings about plants, leafs, flowers, seeds, etc
- Copies of text books, magazines, reports, studies or otherwise
- Titles of books and names of authors who have written anything about *Campanula*
- Numbers of natural growing species in your country, province or region
- Production of potplants and cutflowers
- Proceeding of competitions or exhibitions with *Campanula*
- Study and research made about quality, flowering, value in cultivation, day-length, propagation etc
- Anecdotes

If you know of anyone who is, or has been, working with *Campanula,* who knows of some details concerning *Campanula* species in your area, please send him or her a copy of this letter. It is very important and it is impossible for me to reach everybody around the world who knows something of this genus without your grateful help.

Some of you have already been helpful with my script "Campanula as a cut-flower and as potplant" in 1981.

The book will be a complete standard work of all information and knowledge about the genus *Campanula* with emphasis on botanical, technical and practical details.

I hope you will be so kind to help me to collect all available information. If possible I should like to have the information before the end of 1983. When discretion is required I'll be delighted to give it.

Thank you for your help.

Yours sincerely,

Mr H. H. Berteler

Obituaries

J.L. Mowat

The death of J.L. Mowat on 7 September 1983 will sadden members of the SRGC. He was born in Galashiels and received his first horticultural training from his father, a Head Gardener for 40 years, then attended the course of study at the Royal Botanic Garden, Edinburgh. On the successful completion of his studies in 1925 he was appointed Head Gardener of the Botanic Garden of St Andrews University with a small collection of plants used for teaching. Expansion of the University in the 1930's brought about his appointment as Curator of the Botanic Garden and Grounds and increased responsibility for all University landscaping, sports facilities and Botanic teaching supply. This enabled him to increase the collection of plants which became renowned throughout the world. J.L. retired in 1967 having laid the foundations of the new Botanic Garden with Professor J. A. MacDonald.

During this time his main interests were rock garden and peat-loving plants and he built up an impressive collection and was an acclaimed authority on alpines. He was an excellent judge at the many Club shows and was a member of the Joint Rock Garden Plant Committee from 1949. For many years he was convenor of the East Fife Group and its leading light.

It was as Editor that he is best-known to his many friends throughout the world. He undertook this task from 1951 to 1967 and introduced colour to the *Journal* and this has been a feature ever since. He organised a week-long SRGC conference in St Andrews in 1959.

J.L. was elected to the Council of the SRGC in 1934 and was President from 1967 to 1970.

For his services to Horticulture he was awarded in 1957 the VHM by the Royal Horticultural Society, and in 1964 the Scottish Horticultural Medal by the Royal Caledonian Horticultural Society – the highest accolades in Horticulture. In 1980 the Scottish Rock Garden Club conferred on him Honorary Vice-President for his unstinting service to the Club over the years.

Those of us who worked for him or were trained by him have much to be thankful for, as he unselfishly gave of his wide knowledge and

expertise. We remember with thanks and appreciation his distinguished service to horticulture and extend our deepest sympathy to Mrs Mowat and Alison and John. R.J.M.

Cyril Barnes

The death of Cyril Barnes after a sudden heart attack on 30 September 1983 saddened his many friends. His health had not been good for some time but in the last few years it had greatly improved and he had been taking a lively interest in the matters which were dear to him.

His interests were, indeed, wide; his knowledge of classical music was profound as was his knowledge of archaeology and history especially with reference to the Roman Wall and Newcastle; he was widely read in all manner of esoteric studies (the Times crossword gave him no difficulty at all), but it is his gardening and botanical expertise that his friends in the SRGC will instantly recall.

He was a founder-member of the Newcastle-upon-Tyne Group of the SRGC and the first Group Convenor. That Group (the first to be affiliated to the AGS) owes to Cyril more than to anyone else its prosperity and success. He was a member of the SRGC Council for 3 years from 1960, Publicity Manager from 1964 to 1967, Publications Manager from 1968 to 1969, and was well-known to many SRGC members for his contagious enthusiasm for, and deep knowledge of, rhododendrons, clearly apparent to anyone privileged to go round his Newcastle garden. Many readers of this appreciation will still be cherishing rhododendrons, alpines and other plants most generously given to them by Cyril.

Our deepest sympathies go out to his sister, Beryl.

W.W. and R.J.M.

Book Reviews

Growing Bulbs by MARTIN RIX
Croom Helm Ltd. 209 pp. £9.95 (1983)

Botanist Martin Rix who used to be with the Royal Horticultural Society at Wisley is an expert on bulb growing and has given us the benefits of his wisdom in this excellent book. It covers:

1. The Evolution of bulbous plants.
2. The Evolution of flowers.
3. Seed dispersal mechanisms in bulbous plants and vegetative propagation.
4. Bulb-growing areas of the world.
5. A brief history of bulb-growing and collecting.
6. Cultivation of hardy bulbs.
7. Cultivation of tender bulbs.
8. Propagation of bulbs.
9. Pests and diseases.

Bulbs have played an important part in cultivation, probably being amongst the earliest plants to be cultivated for ornamental or trade purposes. As early as 1550 BC *Crocus sativus* (saffron) is shown on a vase painting. The first half of the book is rounded-off with a list of post-war collectors and the areas they visited.

In the cultivation section Martin Rix deals well with open ground, frame and Mediterranean house techniques. Pest and diseases are well-covered with tips on eradication.

Appendix 1 lists bulb genera (including many less well-known species), gives distribution details and further literature.

The list of references is exceptionally comprehensive and will be invaluable to anyone who wants to go back to original sources.

Appendix 2 lists suppliers and societies. Useful as this may seem I have a feeling it will be out of date very quickly. For some reason neither the SRGC nor the AGS is mentioned.

This book has completely changed my ideas on what the term 'bulb' covers. Who would have thought, for example, that Gentiana had a 'bulb' species, *G. olivieri*?

J.B.W.

Jewels of the Plains. Wild Flowers of the Great Plains, Grasslands and Hills by CLAUDE A. BARR
University of Minnesota Press. 273 pp (1983)

This is a delightful book. It begins with an account of the life of this great plantsman, how he started as a rancher, and how in his early life he got hooked on plants and latterly gave up ranching to enable him to give more time to his nursery at Prairie Gem Ranch, South Dakota, and write this book. He paints a vivid picture of how and where he found the plants, with many amusing anecdotes. His love of flowers is evident and many of his descriptions are beautifully expressed. He died at the ripe old age of 95.

The main part of the book is, firstly, a description of the Great Plains which stretch from Texas to the Prairies of Canada and a good map is included. This is followed by the Great Plains Native Plants, in alphabetical order. This is not just a list of plants, there are notes on the best conditions in which to grow them and other interesting comments. This is followed by a few pages of the Great Plains Plants in the Wild and in the Garden and a section by Ronald R. Weedon on The Botanical Contributions of Claude A. Barr. There is a Glossary, Bibliography and Index, and 119 excellent colour plates, two of which catch the eye – Plate 43, *Clematis occidentalis* and Plate 99, *Pulsatilla patens* which is also on the dust jacket.

This is a book to keep at hand, to be dipped into at leisure. The foreword is by Lincoln Foster, a past-President of the American Rock Garden Society. A quote from the dust jacket reads: "Botanically accurate and comprehensive this book will be of major importance to rock gardeners". What more can be said!

S.M.

The New Wild Flowers and How To Grow Them. Enlarged and Revised Edition
by EDWIN F. STEFFEK
Timber Press, Portland, Oregon. 186 pp (1982)

This is a book for American gardeners, and has little application to growers in Britain. The book is divided into two parts; Part I gives, under 6 headings, a general introduction to the growing of wild flowers. It is followed by 3 tables. Table I, of 8 pages, lists the individual species according to where they grow. Table II list flowers which may be picked freely, and Table III deals with acid-loving plants according to the degree of soil acidity. Part II is a detailed description of the wild flowers, and how to transplant and grow them. Most aspects are covered and detailed instructions given.

A minor irritation is that the page headings are all given with common names first, followed by the botanical name, but in the index both names are given. 48 colour plates are included, of variable quality, and numerous black and white illustrations, many of which do not give much idea of the plant illustrated.

This is not a rock gardeners book, but it may be of some help to anyone wishing to grow American wild flowers. The word 'new' in the title is a puzzle as it does not seem to have any meaning.

S.M.

Climbing Plants
by KENNETH A. BECKETT
Croom Helm. 178 pp. Hardback. £8.95

This book naturally does not include rock plants but it does describe a large number of species of genera such as *Clematis* which could be suitable as a backcloth to a rock garden or for growing through shrubs. It only describes true climbing plants but includes a number of tender climbers suitable for just frost-free or cool greenhouse conditions.

The colour illustrations are excellent but there are only 20 in the book; similarly the line drawings by Dr Geoffrey Herklots are superb but are limited to 25 in number.

The genus *Clematis* is particularly comprehensive with 50 species and innumerable varieties described along with many cultural hints.

Perhaps surprisingly for a book which is largely an A-Z list of plants it makes interesting general reading in it own right since there are a large number of anecdotal references alongside the necessary technical descriptions.

Beautifully produced, this book is excellent value at £8.95 in hardback.

B.R.

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