The JOURNAL of THE SCOTTISH ROCK GARDEN CLUB

VOLUME XVI Part 2
No. 63

SEPTEMBER 1978

Editor R. J. MITCHELL · University Botanic Garden · St. Andrews · KY16 8RT

Annual Subscription £2.50 payable before 15 October to
R. H. D. Orr, 70 High Street, Haddington, East Lothian EH41 3EN

Individual copies obtainable from
Dr. D. M. Stead · Esk Hause · Bishop's Park · Thorntonhall · Glasgow · G74 5AF

Price to Non-Members **£1.25**, post free £1.35

The JOURNAL of THE SCOTTISH ROCK GARDEN CLUB

VOLUME XVI Part 2
No. 63

SEPTEMBER 1978

Editor R. J. MITCHELL · University Botanic Garden · St. Andrews · KY16 8RT

Obtainable from
Dr. D. M. Stead, Esk Hause, Bishop's Park, Thorntonhall, Glasgow, G74 5AF

Office-Bearers for the Year 1978

Honorary President
VACANT

Honorary Vice-President
Sir GEORGE TAYLOR, D.SC., LL.D., F.R.S., F.R.S.E., F.L.S., V.M.H., Belhaven House, Dunbar, East Lothian

Vice-Presidents
Mr. A. CAMPBELL, W.S., 40 Dick Place, Edinburgh, 9
Mr. DAVID LIVINGSTONE, 3 Duddingston Gardens South, Edinburgh EH15 1RF
Dr. JAMES DAVIDSON, F.R.C.P., Linton Muir, West Linton, Peeblesshire
Mr. JOHN L. MOWAT, S.H.M., V.M.M., Craggan, Ceres, Fife
Mr. DAVID ELDER, 9 Christie Street, Dunfermline, Fife
Mr. ALFRED EVANS, Royal Botanic Garden, Edinburgh EH3 5LR
Mr. JACK CROSLAND, Treetops, Torphins, Aberdeenshire AB3 4JR
Mr. JOHN HALL, 19 Coquet Vale, Felton, Morpeth, Northumberland NE65 9PV
Mr. HAROLD ESSLEMONT, M.B.E., 9 Forest Road, Aberdeen AB2 4DE
Mrs. E. P. SPILLER, 21 Melfort Drive, Easter Livilands, Stirling
Mr. P. J. W. KILPATRICK, Pythouse, Tisbury, Salisbury, Wilts SP3 6PB

Honorary Members
HER MAJESTY QUEEN ELIZABETH, THE QUEEN MOTHER, Clarence House, London S.W.1
Mr. JACK DRAKE, Inshriach, Aviemore, Inverness-shire
Mr. ALEX B. DUGUID, Edrom Nurseries, Coldingham, Berwickshire

COUNCIL

President
Mrs. KATHLEEN S. HALL, 93 Whitehouse Road, Edinburgh EH4 6JT

Vice-Presidents
Mr. ALFRED EVANS, Royal Botanic Garden, Edinburgh EH3 5LR
Mr. A. CAMPBELL, W.S., 40 Dick Place, Edinburgh 9
Mr. JACK CROSLAND, Treetops, Torphins, Aberdeenshire AB3 4JR
Mr. DAVID LIVINGSTONE, 3 Duddingston Gardens South, Edinburgh EH15 1RF

Ordinary Members
(To retire in November 1978)
Mr. J. HARLEY A. MILNE, 15 Merchiston Place, Edinburgh EH10 4PL
Dr. M. O'GORMAN, 6 Moray Place, Gargunnock, Stirling
Mr ANGUS C. SMALL, 2 Kensington Drive, Giffnock, Renfrewshire
Mr. MICHAEL A. STONE, Askival, Fort Augustus, Inverness-shire
Mr. HENRY TAYLOR, Tantallon, Morris Place, Invergowrie, Dundee

(To retire in November 1979)
Mrs. E. M. BEZZANT, 24 North Grange Road, Bearsden, Glasgow
Mr. MARTIN S. BREMNER, Coruisk, Denniston Road, Langbank
Mrs. S. M. SIMPSON, 18 Queen's Road, Aberdeen
Mrs. JILL SLEIGH, 18 Garscube Terrace, Edinburgh EH12 6BQ
Mr. J. WOTHERSPOON, Mains Park, Montgomerie Drive, Fairlie, Ayrshire

(To retire in November 1980)
Mrs. JOAN DODDS, South Hazelrigg, Chatton, Alnwick, Northumberland
Miss RHODA FOTHERGILL, 16 Pitheavlis Terrace, Perth
Dr. JOHN GOSDEN, Linsandel House, Melville Road, Eskbank EH22 3BY
Mrs. ELIZABETH IVEY, Northbrae, Courthill Street, Dalry, Ayrshire KA24 5BL
Mrs. JOAN STEAD, Esk Hause, Bishop's Park, Thorntonhall, Glasgow G74 5AF

Honorary Editor
Mr. R. J. MITCHELL, University Botanic Garden, St. Andrews, Fife KY16 8RT

Honorary Publicity Manager
Mr. A. D. MCKELVIE, 43 Rubislaw Park Crescent, Aberdeen AB1 8BT

Honorary Publications Manager
Dr. D. M. STEAD, Esk Hause, Bishop's Park, Thorntonhall, Glasgow G74 5AF

Angus Group Seed Exchange Hon. Manager
Miss J. HALLEY, 16 Abercrombie Street, Barnhill, Dundee

Honorary Curator of Davidson Slide Library
Mr. R. S. MASTERTON, M.R.C.V.S., Cluny House, Aberfeldy, Perthshire

Honorary Overseas Liaison Secretary
Mrs. S. MAULE, 578 Lanark Road West, Balerno, Midlothian EH14 7BN

Honorary Subscription Secretary
Mr. R. H. D. ORR, C.A., 70 High Street, Haddington, East Lothian EH41 3EN

Honorary Treasurer
Mr. L. N. BILTON, W.S., Kilmagadwood Cottage, Scotlandwell, Kinross KY13 7RY

Honorary Secretary
Mrs. I. J. SIMPSON, 48 St. Alban's Road, Edinburgh EH9 2LU

Chairman of the Standing Committee of Group Conveners:
Mr. J. HARLEY A. MILNE, 15 Merchiston Place, Edinburgh EH10 4PL

Chairman of the Standing Committee of the Show Secretaries:
Mr. E. G. Watson, 1 Ewesley Gardens, Woodlands Park North, Wideopen, Newcastle upon Tyne

Contents

VOL. XVI PART 2 SEPTEMBER 1978

Conference for Beginners

SINCE the very successful week-end in 1976 we have had many requests for another Conference.

This has now been arranged and will be held in Strathclyde University Hostel at Chesters, Bearsden, Glasgow, on Saturday 7th and Sunday 8th April 1979. The cost from lunch on Saturday to tea on Sunday will probably be about £11.50.

The Programme will include talks on Soil, Construction of Rock and Peat Gardens and Raised Beds, Some Plants to grow, Simple Propagation and Books. There will be visits to gardens of members, a Plant Sale and plenty of time for questions and discussion.

The number will be limited to 40 members. It is difficult to say what constitutes a Beginner, but if you think this Conference is for you please send a stamped, addressed envelope to:—

Mr. W. L. MORTON
11 Morven Road
Bearsden, Glasgow G61 3BU

who will send full particulars.

There will probably be a big demand for places, so you are advised to book early. We hope this Conference will be as successful as the previous one.

New Members Competition 1977/78

THERE was a Competition extended to NEW MEMBERS joining in the year to April 1978 who completed a questionnaire; there were 146 who were kind enough to send in a completed questionnaire. The winners of the two valuable book prizes presented by the President were:—

Mrs. John Barto, 525 East 84 Street, New York, New York 10028, U.S.A. and Mr. S. J. Farwig, 1230 Almar Street, Concord, California 94518, U.S.A.

The Subscription Secretary thanks all those who entered the competition; the information obtained has been of great use to the Publicity Manager.

Asiatic Gentians of Series Ornatae

by Dr. JAMES CULLEN

THIS STUDY arose out of a query received at the Royal Botanic Garden, Edinburgh, as to whether genuine *Gentiana farreri* was in cultivation. In order to answer this query, I found that a taxonomic investigation of the whole group of gentians to which *G. farreri* belongs—*Gentiana* Sect. *Frigida* Series *Ornatae* of Marquand's (1937) classification—was necessary. The purely taxonomic results of this study will be presented elsewhere; the present paper is intended mainly as a guide for the keen gentian grower.

The taxonomic history of the group is fairly confusing. Bayley Balfour (1918), Marquand (1932, 1937) and Harry Smith (1933) have all made contributions, some published, others in the form of determinations on herbarium sheets. The horticultural side has been dealt with by Wilkie (1936) and Berry (1951), but the classification of the group is still rather doubtful, partly due to the intrinsic difficulty of the group itself, partly to the very extensive hybridisation that has taken place within it, and partly due to the confusion of names on plants in gardens —always a problem with plants such as these, where label-mixing is so easy.

The study involved a survey of the available herbarium and living specimens. Edinburgh is fortunate in having not only a good collection of wild herbarium material (Forrest, Kingdon-Ward, Rock, Harry Smith, Stainton, etc.) but also a very useful collection of specimens of cultivated plants accumulated by Wilkie in the '30s and '40s, when he was in touch with most of the main growers and hybridisers. This material makes possible the precise identification of at least some of the hybrid and cultivar names that are found in the literature; without it, many names would have remained obscure.

In carrying out the revision I have worked with the wild material first of all, and then carried over the results to the plants in cultivation. The classification I propose is derived from a morphological and geographical analysis of all the material available.

Series *Ornatae* has an extensive distribution in eastern Asia (fig. 11); the most westerly point is in central Nepal, and the distribution eastwards follows the Himalayas through Sikkim and Bhutan into Tibet, Assam and north Burma. On reaching western China the distribution

takes a right-angled bend, and aligns itself again with the main trend of the mountains, running north from mid-west Yunnan, through western Szechuan into Kansu, then further north through Tsinghai, ending in the north somewhere in Mongolia. Throughout this vast range the plants are found in alpine pastures and damp places, occurring between 9,000 and 15,000 ft. (2750-4500 m), except in the extreme north, where they probably grow at lower altitudes. The distribution is continuous except for a narrow gap in Tibet, at approximately 96° E, where conditions are perhaps too dry.

In the notes on the wild species that follow, I shall use fairly informal names; the correct names may be somewhat unfamiliar (indeed, one group has no name at the moment), but they are indicated.

1. G. ornata Wallich

Small plants with a terminal rosette of narrowly oblong-lanceolate leaves fully expanded at flowering time. Cauline leaves oblong, not narrowed at the base, acute at the apex, 8-12 × 1.5-2 mm, 5-8 × longer than broad, with finely denticulate margins. Flowers completely sessile (i.e. the uppermost pair of leaves overlaps the base of the calyx). Calyx tube 9-12 mm, lobes linear-oblong, acute, 4-9 mm, adpressed to the corolla tube or reflexed slightly and gradually away from it. The corolla is narrowly funnel-shaped within the calyx but expands abruptly above it into a funnel-campanulate bell. The tube is 26-33 mm long, and the lobes are 4-6 mm long, apiculate. The colour varies considerably, but the lobes are usually light blue within, the tube below the plicae white or light blue inside, deeper blue outside with yellowish green stripes.

G. ornata, which is restricted to Nepal and Sikkim, was the first of these gentians to be described (1836); it was not introduced into cultivation, however, till 1930.

2. G. prolata Balfour

This species is superficially like *G. ornata*, and was included under that name until 1918. It differs in a number of characters: terminal rosettes several, in tight bud (enclosed in the enlarged bases of the outer leaves) at flowering time, cauline leaves narrowly elliptic, tapering to the base and the obtuse apex, 2-4(-6) × longer than broad, calyx tube 8-12 mm, lobes very narrowly elliptic, tapered slightly at the base, more obviously so to the obtuse apex, sharply reflexed from the corolla at an angle of 60-90°, corolla funnel-shaped, smoothly tapered, without the conspicuous bulge of *G. ornata*; tube 28-39 mm,

lobes 4-6 mm, apiculate. The colour varies from pale to deep blue, spotted or striated reddish purple outside, alternately with yellowish green streaks.

G. prolata is sympatric with *G. ornata* in Nepal and Sikkim, but extends further east, into Bhutan, Tibet and Assam.

3. The 'Lhasa Group'

This is a group of specimens from around the Tibetan capital, Lhasa, which have been identified variously by different authors, but which seem to me to form a separate species, distinct morphologically and geographically from the rest. At present it has no name.

The plants are somewhat more robust than *G. ornata*, but have a similar expanded terminal rosette at flowering time. The cauline leaves are linear-oblong to very narrowly elliptic, 10-12 × 1-3 mm, slightly tapered to the base and the acute apex, and with denticulate margins. The flowers are sessile, and the calyx tube is 10-12 mm long, with the lobes 8-14 mm, slightly tapered to the base and to the acute apex, reflexing slightly and gradually from the corolla tube. The corolla tube is 35-38 mm long, and the lobes are very narrowly triangular and apiculate. The colour varies from pale to deep blue, usually very pale inside the tube, the outside streaked with purple-margined, yellowish green lines.

This species is not, as far as I know, in cultivation, and is known only from six Ludlow & Sherriff specimens collected at various points around Lhasa. It is superficially similar to small (starved) plants of *G. sino-ornata*, but can be distinguished by its terminal rosettes and very denticulate leaf margins.

4. G. veitchiorum Hemsley

Robust plants of a rather tight growth habit. The terminal rosette is very prominent, with large, expanded leaves at flowering time. The cauline leaves are narrowly elliptic, tapered to the base and the blunt apex, 10-20 × 3-4 mm, and the margins are conspicuously denticulate. The flowers are sessile, with a calyx tube 12-13 mm long, with narrowly lanceolate lobes which taper at the base and the acute apex; they are adpressed to the corolla tube. The corolla is narrowly funnel-shaped, with well-reflexed lobes; the tube is 40-45 mm long, and the lobes broadly triangular, obtuse or somewhat acute, but never apiculate. The lobes and the inside of the tube are deep purplish blue, and the outside has greenish-yellow stripes outlined in intense purplish blue.

G. veitchiorum occurs in eastern Tibet, and in Yunnan and Szechuan. It is easily recognised by its terminal rosettes, broad leaves and purplish flowers. Where it grows with *G. sino-ornata* (in parts of Yunnan and Szechuan), intermediates are found; these are discussed below, after *G. sino-ornata* itself. I include in *G. veitchiorum* plants described as *G. altorum* H. Smith (*G. veitchiorum* var. *altorum* (H. Smith) Marq.) and plants identified by Harry Smith as *G. cunninghamii* H. Smith x *veitchiorum.*

5. G. sino-ornata Balfour

This is the best-known species in the group, widely cultivated in gardens. The plants are robust and strong-growing, forming loose to dense mats. The terminal rosette is in tight bud at flowering time. The leaves are lanceolate, not tapered at the base but tapering gradually to the acute apex, 20-30 × 1.5-3(-4) mm, the margins not, or only slightly and distantly, denticulate. The flowers are sessile or almost so, with the calyx tube 9-22 mm, and the lobes almost parallel-sided, acute, 8-26 mm, adpressed to the corolla tube. The corolla tube is 40-64 mm long, and the lobes are broadly triangular, obtuse to acute, very rarely somewhat apiculate. The corolla colour varies from creamy white (forma *alba* (Forrest) Marq.) to pale to deep blue inside the lobes and tube, and the outside is deeper blue with greenish-yellow stripes outlined in purple or very deep blue.

My concept of *sino-ornata* differs from those of Marquand and Harry Smith (as deduced from his determinations on herbarium specimens). I include here plants from south-west Szechuan, determined by both as *G. farreri*; and I exclude a group from the south-western part of the range (mid Yunnan and adjacent Burma), which are discussed below under the name *G. oreodoxa.* Thus, plants formerly named as *G. assurgens* H. Smith, *G. cunninghamii* H. Smith and *G. farreri* var. *brevior* H. Smith are included here, while *G. sino-ornata* vars. *gloriosa, punctata* and *coelestis* Marq. (the last also known as *G. coelestis* (Marq.) H. Smith) are excluded and discussed below.

6. Intermediates between G. veitchiorum and sino-ornata

As mentioned above, plants showing combinations of the differential characters of these two species are found in various parts of Yunnan and south-west Szechuan. In general appearance they resemble *veitchiorum,* but usually lack the well-developed terminal rosette of that species. The plants are not uniform in other characters, and various names have been applied to them: *G. sino-ornata* var. *gloriosa* and var.

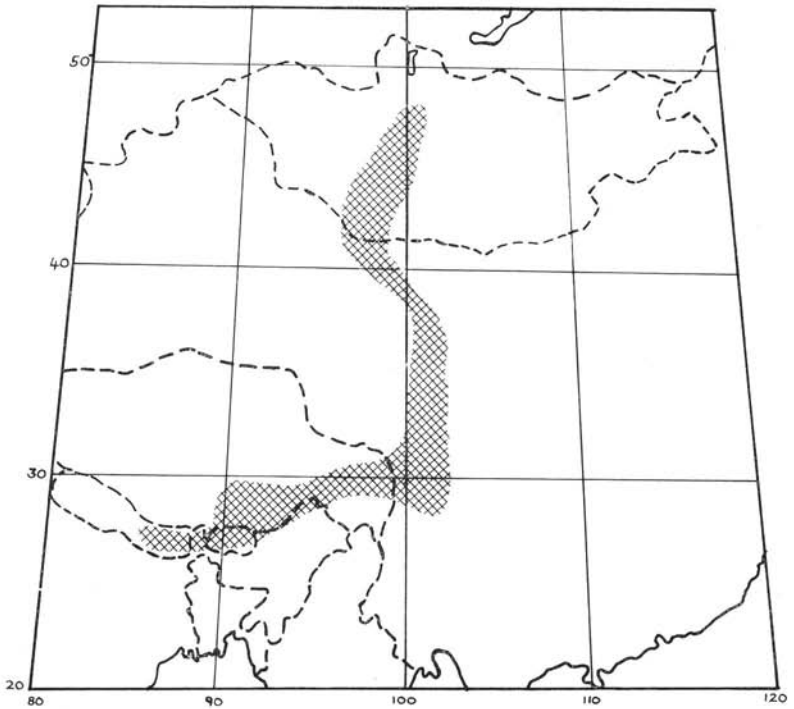
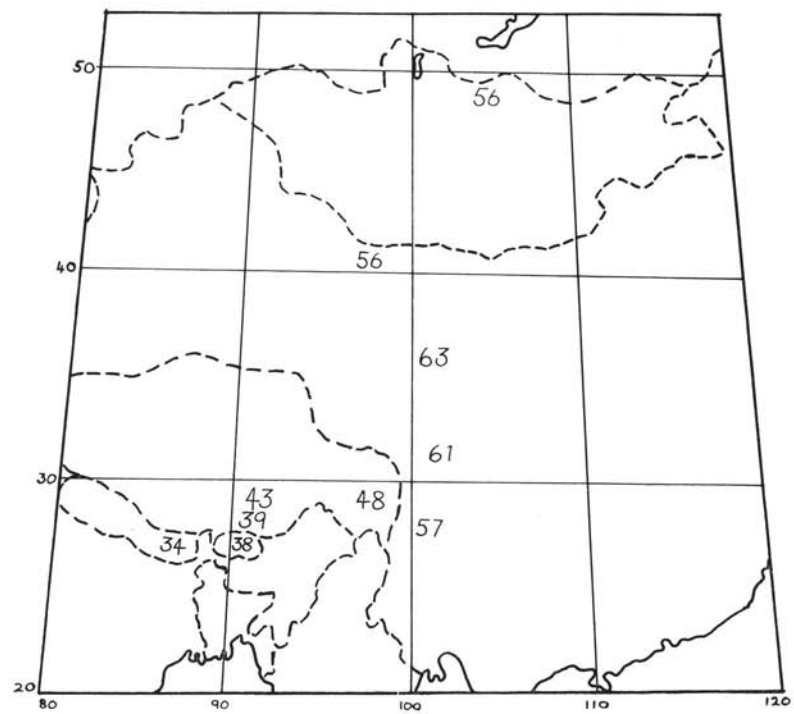


Fig. 11 Distribution of *Gentiana* Series *Ornatae*

Fig. 12 Distribution of average corolla lengths in *Gentiana* Series *Ornatae* (figures are in mm.)



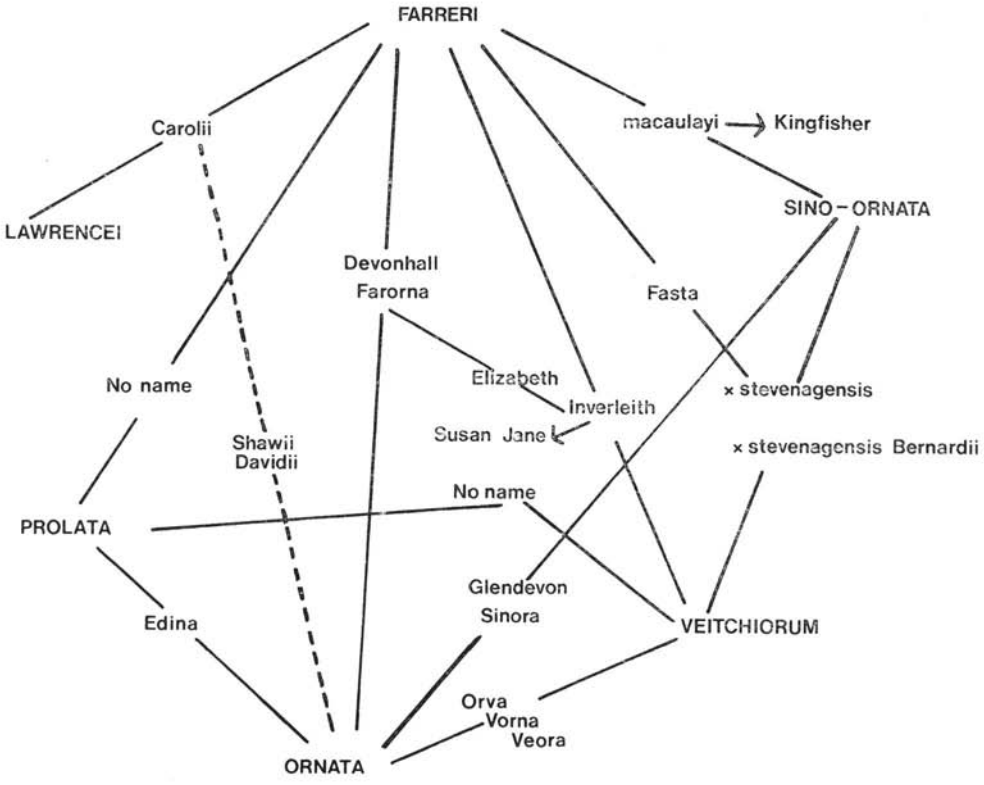


Fig. 13 Diagram showing the extent of hybridisation in *Gentiana* Series *Ornatae*. Species names in capital letters; names of hybrids and cultivars in small letters; solid lines indicate known crosses, and dotted lines presumed crosses.

coelestis Marq. (*G. coelestis* (Marq.) H. Smith); Smith's determination of *Kingdon-Ward* 4949 runs: '*G. coelestis*, probably originating from a crossing of *G. sino-ornata* x *veitchiorum*'.

If these plants are hybrids, which seems very likely, then the correct name for them is *G.* x *stevenagensis* Barker, the name for the same, but man-made hybrid, described in 1934.

7. G. oreodoxa H. Smith

Under this name I place a group of specimens from mid Yunnan and adjacent Burma which are like *sino-ornata* but have leaves up to 20 mm long, and a corolla tube 25-50 mm long, somewhat swollen above the level of the calyx, rather in the manner of *G. ornata.*

These plants form a reasonably coherent group, but grade into *sino-ornata* to the north and east. The specimens have borne a great multiplicity of names, e.g. *G. farreri, G. futtereri* aff. and *G. farreri* x *sino-ornata* (some of H. Smith's determinations), *G. sino-ornata* var. *punctata* Marq., *G. ampla* H. Smith, and *G. lhaguensis* Kingdon-Ward. *G. oreodoxa* is the oldest of these names, and is, therefore, the one that must be used.

8. G. farreri Balfour

This name has been applied to various specimens from Szechuan by Marquand and H. Smith, but I prefer to restrict it to a small group of plants from Kansu (the original locality), which are very uniform and distinct.

On this basis the plants are robust, forming dense mats, with a terminal rosette in tight bud at flowering time. The cauline leaves are 18-36 mm × 1.5-3 mm, linear, parallel-sided for most of their length, tapering abruptly to an acute apex, and with the margins not, or very distantly, denticulate. The flowers are appreciably pedunculate, with the peduncle up to 11 mm long. The calyx tube is 12-17 mm long and the lobes are 19-34 mm long, usually at least 1.8 × longer than the tube, linear, parallel-sided for most of their length, abruptly acute at the apex, gradually reflexing from the corolla. The corolla tube is 48-60 mm, and the lobes are 8-10 mm, distinctly apiculate. The flowers are of a paler blue than those of *sino-ornata*: I can't resist repeating Farrer's much quoted description of them in the wild ". . . of an indescribably fierce luminous Cambridge blue (with a clear white throat), while, without, long vandykes of periwinkle purple alternate with swelling panels of nankeen, outlined in violet and with a violet median line".

Plants agreeing with this description *in toto* are found only in a small area of Kansu (though individual characteristics do occur from time to time in the northernmost representatives of *G. sino-ornata*); their very narrow leaves give them a 'grassy' appearance, and that, combined with the very long calyx lobes and pale blue flowers, renders them immediately identifiable.

9. G. lawrencei Burkill

This is a rather obscure species, described on the basis of plants cultivated from seed sent by the explorer Bocherel while on 'a journey from Lake Baical into Mongolia'. Exactly whereabouts the seeds were collected in this vast area is not known. I have seen only one wild specimen that I can confidently refer to the species—collected by H. N. Ridley at Koko Nor (Quinghai Hu in Tsinghai province of China). This, and cultivated plants of the species are very like *farreri*, but are of less robust growth, the leaves are conspicuously denticulate, the calyx lobes are 19-23 mm, very little longer than the tube, and the corolla is somewhat shorter (tube 50-60 mm, lobes 5 mm), but with the same or even paler colouring. The lobes are triangular and prominently apiculate.

It is possible that the name *G. futtereri* Diels and Gilg should be applied to this plant. It was published earlier than *lawrencei*, but I have seen no specimens authentically labelled (it is known from near Koko Nor), so have not used it here.

These, then, are the taxa in the complex that seem to me to be worth recognition. Considered overall, the complex shows a reticulate variation pattern, with the same few characters being recombined on a geographical basis. One noticeable exception to this reticulation is the character of total corolla length. If average corolla lengths for the various areas are plotted on a map (fig. 12) we see a long cline (gradient) of increasing length, from the west to the east of the range, from 34 mm in Nepal to 63 mm in Kansu.

A situation such as this, showing reticulate variation superimposed on a cline, does not make for easy or neat classification. Two courses have been followed by earlier authors: Balfour and Marquand tended to recognise fairly broad species (some divided into varieties), while Harry Smith took a narrower view, treating, as far as possible, every different recombination as a distinct species. Neither of these approaches is entirely adequate in presenting the variation pattern exhibited by these plants. In many ways it would be best expressed

by the recognition of one species divided into several subspecies (as might well be done in a modern Flora, such as *Flora Europaea*). However, this procedure has several drawbacks, of which two are particularly important: (a) it requires a considerable amount of nomenclatural readjustment, which, apart from its intrinsic otiosity, would upset gardeners; and (b) its use really should be based on the study of population in the field. This is not possible over most of the area in question because of difficulties of access.

So, I propose to use the concept of aggregate species divided into segregate microspecies. This has the advantage of stressing the unity of the group as a whole, while allowing for the recognition of individual taxa within it without causing an inordinate amount of nomenclatural upheaval. On this basis, therefore, *Gentiana* Sect. *Frigida* Ser. *Ornatae* consists of one aggregate species (which is *G. ornata* Wallich, *sensu lato*) divided into eight microspecies, between several of which there are intermediate forms.

G. ornata Wallich sensu lato in Cultivation

When we turn to the representation of these plants in gardens, a further series of problems arises: (a) most of the original introductions have been lost, and the material remaining now has possibly undergone spontaneous hybridisation, and has certainly been subjected to rigorous selection for the best growing and most easily propagated clones; and (b) many man-made hybrids have been produced (particularly during the period 1928-50), whose parentage, though usually indicated by the raiser, is open to some doubt in the light of the known difficulties of identification within the group.

My approach, therefore has been to try to find garden material that matches my interpretation of the various species listed above; and then to try to interpret the hybrids in the light of those species. In this connection, the herbarium material of cultivated plants accumulated by Wilkie has been particularly valuable, as it makes clear who was growing what (and under which names) during the critical period of hybridisation. These specimens, combined with living material available at Edinburgh, form a reasonable base for the study of the group in cultivation.

Highlights in the history of these plants in gardens are given in Table 2, which has been compiled from various sources.

a. The Species

Of the eight microspecies recognised above, only one (the 'Lhasa group') has not, as far as I know, been in cultivation. The other seven are all available today, with the exception of *G. lawrencei*, which appears to be extinct, though its influence is still present in several hybrids. *G. oreodoxa* seems to be cultivated under the name *G. sino-ornata*; certainly, it has been grown at Edinburgh under the name *G. sino-ornata* 'Trough's Form' for some time. It was presumably introduced by Forrest, though when and where are unknown. Genuine *G. farreri* (the starting point of this investigation) is available from several commercial sources in Britain.

b. The Hybrids

In the following section brief comments are given on all the hybrids known to me. I do not by any means claim to have seen all that exist: the extent of hybridisation in the group is considerable, as may be seen from fig. 13, in which the species are indicated in capital letters, the various hybrids between them in small letters, and hybridisation is shown by lines (broken in those cases where the hybridisation is only assumed).

1. Hybrids involving *G. farreri*

G. x *macaulayi*. This is the group name for all hybrids of *farreri* x *sino-ornata* parentage. It is the oldest man-made hybrid in the group, and, judging from the available material, it includes seedlings from the second generation and backcrosses to both parents. I have not been able to find a valid publication of the name "x *macaulayi*".

I have seen at least six differing variants that must be referred to this hybrid group, varying in the particular combinations of the parental characters that they exhibit. Even more may be in existence.

(i) *G.* 'Kingfisher'. Raised by G. Berry, though its precise origins are obscure (it is said to be a seedling from *G.* x *macaulayi*, which seems very likely). It is a robust plant with long leaves (like *farreri*), but of evenly tapering shape (like *sino-ornata*). The flowers are bright deep blue, pedunculate and very large (corolla tube c. 65 mm long).

(ii) Plants similar to the above, but with less robust growth and slightly smaller and paler flowers. The only name I can find that has been applied to it is *G. sino-ornata* var. *elata*. Nothing is known of its origin, and it should, perhaps, be called *G.* x *macaulayi* 'Elata'.

(iii) Plants similar to 'Elata', but with very long shoots with elongated internodes. These plants tend to scramble through other vegetation

in a rather unusual way. This is the plant referred to in the literature as Trotter's Var., or Brin Form (cf. *Gard. Chron.* 144: 117 and 227, 1958); its origin is obscure. The name *G.* x *macaulayi* 'Brin' is perhaps appropriate.

(iv) Plants with fairly large flowers (corolla tube 59-62 mm long), deep blue and sessile. These plants are closer to *sino-ornata* than are any of the three above, and correspond with *G.* x *macaulayi* 'Kidbrooke Seedling' (cf. *Journ. Roy. Hort. Soc.* 60: 535, 1935), described by Wilkie as "a strong, vigorous form with flowers of a deeper blue [than 'Wellsii'—see below]".

(v) Plants with somewhat smaller flowers (corolla 55-58 mm, lobes 5-10 mm. not or very slightly apiculate) with a distinct purplish tinge, and leaves of *sino-ornata* shape but very broad. These plants seem to show some influence of *veitchiorum*, and they are not very different from *G.* 'Inverleith' (*farreri* x *veitchiorum*—see below). At present they seem to be without a name.

(vi) Plants with moderately-sized (corolla tube 43-55 mm, lobes 7-9 mm, apiculate), sessile flowers of a deep mid-blue, more or less exactly intermediate between the parents. In this group there is a herbarium sheet labelled: "*G. macaulayi* var. *wellsii*, received from Messrs. Wells in 1931". This is the year in which the plant received an A.M., and presumably the specimen is an authentic one. The name *G.* x *macaulayi* 'Wellsii' seems appropriate.

(vii) Plants with moderately-sized flowers (corolla tube 46-58 mm, lobes 5-11 mm, somewhat apiculate) which are clearly pedunculate and usually of a rather pale blue; the shoots of these plants are richly branched, each branch terminating in a flower. Most of the herbarium specimens of this variant bear the name *G. sino-ornata* var. *praecox*. They certainly belong to *G.* x *macaulayi*, however, and the name *G.* x *macaulayi* 'Praecox' is probably appropriate for them.

G. farreri x *G. ornata*

This cross has been made in both directions, but no hybrid (specific) name has been published. The cross with *ornata* as the female parent is known as *G.* 'Devonhall', that with *farreri* as the female parent as *G.* 'Farorna'. I have only seen material of 'Devonhall', which has moderately-sized flowers (corolla tube 43-48 mm, lobes c. 6 mm, apiculate) which are pale blue and rather swollen like those of *ornata*. 'Farorna' is described by Berry (1951) as being similar to 'Devonhall' but with slightly smaller flowers.

G. farreri x *lawrencei*

Hybrids of this origin were raised by Macaulay, and given the (unpublished) name *G.* x *carolii* (cf. *Journ. Roy. Hort. Soc.* 59: 15, 1934). The two parent species are very similar, and the available herbarium material shows that the hybrid was very like *farreri* but with slightly smaller flowers and relatively shorter calyx lobes. The plant seems to have dropped out of cultivation soon after its introduction, as it was inferior to pure *farreri*. However, seedlings from it were retained, and two specimens from Macaulay's collection in the Edinburgh herbarium are labelled *G. davidii* and *G. shawii*. These are virtually identical, and are similar to the *farreri/lawrencei* hybrid but with smaller flowers, which suggest an accidental crossing between x *carolii* and *ornata*. I propose to call these plants *G.* 'Shawii'. They are still in the trade as *G.* x *carolii*, but cannot bear this name as the flowers are much too small.

G. farreri x *veitchiorum*

This cross was raised at the RBG Edinburgh in 1938, and was named *G.* 'Inverleith'. All the material I have seen is very uniform, and intermediate between the parents. Seedlings from 'Inverleith' have been distributed by various nurseries and may differ in several respects from the original.

2. Hybrids involving *G. veitchiorum*

G. farreri x *veitchiorum*—see above

G. veitchiorum x *sino-ornata*

This is the hybrid (which occurs in the wild as well as being man-made) for which the correct name is *G.* x *stevenagensis* Barker (*Gard. Chron.* 96: 198, 223, 1934). The cross has, in fact, been made in both directions, that with *sino-ornata* as the female parent being the elder, that with *veitchiorum* as female parent being known as *G.* x *bernardii*; the first of these has no cultivar name as far as I know, and the second should be called *G.* x *stevenagensis* 'Bernardii', as Frank Barker of Six Hills Nursery, Stevenage, was responsible for the selection from the original cross it may be appropriate to call the unnamed clone *G.* x *stevenagensis* 'Frank Barker'. Both are intermediate between the parents, having *veitchiorum* type rosettes and leaves and flowers with a purplish tinge. The shoots of 'Bernardii' are unbranched, whereas those of the other variant, 'Frank Barker', are richly branched and very floriferous.

G. veitchiorum x *ornata*

Various selections from this cross have been made, and the names 'Orva', 'Vorna' and 'Veora' have been applied to them. I have seen only one herbarium sheet, labelled *G.* 'Orva'.

G. veitchiorum x *prolata*

This hybrid was apparently raised in Edinburgh in the early part of the century, but it was neither named nor distributed, and I have seen no living plants that can be referred to it.

3. Hybrids involving *G. ornata*

G. ornata x *farreri*—see above

G. ornata x *veitchiorum*—see above

G. ornata x *sino-ornata*

This cross has been made in both directions. That with *ornata* as female parent was distributed as *G.* 'Glendevon', and is intermediate between the parents, with corollas showing the swelling characteristic of *ornata.* I have seen no material of the reverse cross, known as *G.* 'Sinora', but Berry (1951) describes it as similar to 'Glendevon' but with slightly smaller flowers.

G. ornata x *prolata*

Raised at RBG Edinburgh in 1937, and distributed as *G.* 'Edina'. It is exactly intermediate between its parents, and, as it shows little improvement on *ornata* itself, seems to be little grown.

4. Secondary Hybrids

G. farreri x *stevenagensis* (*sino-ornata* x *veitchiorum*)

This was raised by Berry and named *G.* 'Fasta'. In his book (p. 124), Berry gives a long discussion of the cross and its offspring, with considerable emphasis on the variability shown. I have seen no material of it.

G. 'Devonhall' (*farreri* x *ornata*) x 'Inverleith' (*farreri* x *veitchiorum*)

A plant reputedly of this parentage is in cultivation under the name *G.* 'Elizabeth'. The plants I have seen are very similar to 'Devonhall', but with slightly smaller flowers; they seem to have inherited none of the characters of *veitchiorum.*

The nomenclature of these hybrids is very complex. Many of the names used are in latin, but very few of them have been validly published (according to the International Rules of Botanical Nomenclature). Further, names of the cultivar type have been applied to whole

hybrid progenies (e.g. *G.* 'Fasta') rather than to selected clones or identifiable units. Even further confusion has been caused by the distribution of selected variants from hybrid progenies without cultivar names, and the distribution of seedlings from hybrid plants under the cultivar name of the maternal parent. Such activities can only be deplored, as causing great nomenclatural confusion; several nurseries still carry on with them, however, and the confusion increases. In the case of these gentians some of the problems are now insoluble. We must be grateful that the mania for hybridising these plants seems to be a thing of the past.

BIBLIOGRAPHY

Balfour, I. B. (1918) Some late-flowering Gentians. *Trans. Bot. Soc. Edinb.* 27: 246-272.

Berry G. H. (1951) *Gentians in the Garden.*

Marquand, C. V. B. (1932) Cultivated Gentians of China and the Himalaya. *Journ. Roy. Hort. Soc.* 57: 188-211.

——— (1937) The Gentians of China. *Kew Bull.* 1936: 134-191.

Smith, H. (1933) Gentianaceae in Handel-Mazzetti, H., *Symbolae Sinicae* 7(2): 943-988.

Wilkie, D. (1936) *Gentians.*

Table 2

BRIEF CHRONOLOGY OF *GENTIANA* SERIES *ORNATAE*

1836	Description of *G. ornata* Wallich.
1880	Illustration (*Bot. Mag.* t. 6514) said to be of *G. ornata,* but plant not identifiable.
1896	First published description of *G. veitchiorum* (as *G. ornata* var. *obtusifolia* Franchet)
1905	Introduction and first flowering of *G. veitchiorum* (Messrs. Veitch) and *G. lawrencei* (Sir T. Lawrence); description of *G. lawrencei* by Burkill.
1907	Illustration (*Bot. Mag.* t. 8140) of *G. lawrencei* under the name *G. ornata.*
1909	Introduction of *G. sino-ornata* by A. K. Bulley; description of *G. veitchiorum* by Hemsley.
1912	First flowering of *G. sino-ornata* at Edinburgh and Ness.
1914	Introduction of *G. farreri* by R. Farrer and *G. prolata* by R. E. Cooper.
1915	A.M. to *G. sino-ornata.*
1916	First flowering of *G. farreri* at Edinburgh.
1917	First flowering of *G. prolata* at Edinburgh.
1918	Description of *G. farreri, G. sino-ornata* and *G. prolata* by I. B. Balfour.
1919	A.M. to *G. farreri.*
1928	First flowering of *G* x *macaulayi* 'Wellsii.' (*farreri* x *sino-ornata*) by R. Macaulay.
1930	Introduction of genuine *G. ornata* by T. Hay; A.M. to *G. prolata.*
1931	A.M. to *G.* x *macaulayi, G.* x *macaulayi* 'Well's var.' and *G. ornata*; confirmation of A.M. to *G. veitchiorum*; first specimen of *G.* x *stevenagensis* in the Edinburgh herbarium.

1933 Crosses *farreri* x *veitchiorum*, *farreri* x *prolata* and *lawrencei* x (x *macaulayi*) made; earliest cultivated specimen of *G. ornata* in the Edinburgh herbarium.
1934 A.M. to *G.* x *stevenagensis* (*sino-ornata* x *veitchiorum*) and *G.* x *wellsiana* (reputedly same parentage); earliest specimen of *prolata* x *veitchiorum* in the Edinburgh herbarium.
1935 A.M. to *G.* x *macaulayi* 'Kidbrooke Seedling' (seedling from *G.* x *macaulayi*); earliest specimen of *G.* 'Shawii' (selection from *G.* x *carolii—farreri* x *ornata)* in Edinburgh herbarium.
1936 F.C.C. to *G. ornata* and *G.* 'Devonhall' (selection from *farreri* x *ornata*); earliest specimens of *G.* x *carolii* (*lawrencei* x *farreri*), *G.* x *macaulayi* 'Kidbrooke Seedling' and *G.* 'Glendevon' (selection from *sino-ornata* x *ornata* in Edinburgh herbarium.
1937 A.M. to *sino-ornata* x *ornata* subject to naming (subsequently known as *G.* 'Glendevon'); first specimens of *G.* 'Edina' (*prolata* x *ornata*) and *G.* 'Devonhall' (*farreri* x *ornata*) in Edinburgh herbarium.
1938 A.M. to *G.* 'Glendevon' (confirmation of 1937); production of *G.* 'Inverleith' (*farreri* x *veitchiorum*) and *farreri* x (x *stevenagensis*), subsequently called *G.* 'Fasta'; first mention of *G.* x *bernardii* (*sino-ornata* x *veitchiorum*, the reciprocal cross to x *stevenagensis*) in the literature.
1939 Earliest specimen of *G.* x *bernardii* in the Edinburgh herbarium.
1941 Earliest specimens of *G.* 'Inverleith' and *G.* 'Davidii' (seedling from *G.* 'Edina' in Edinburgh herbarium.
1942 First mention of *G.* 'Davidii', *G.* 'Shawii', and *veitchiorum* x *ornata* (subsequently 'Orva') in the literature.
1945 A.M. to *G.* 'Orva', and earliest specimen of this in Edinburgh herbarium; first mention of *G.* 'Farorna' (*farreri* x *ornata*, the reciprocal cross to 'Devonhall') and *G.* 'Fasta' (*farreri* x (x *stevenagensis*)) in the literature.
1953 A. M. to *G.* 'Inverleith'.
1958 F.C.C. to *G. sino-ornata*; A.M. to *G.* 'Sinora' (*sino-ornata* x *ornata*); earliest mention of *G.* x *carolii* in the literature.
1961 First mention of *G.* 'Kingfisher' (seedling of x *macaulayi*) in the literature.
1968 A.M. to *G.* 'Susan Jane' (selection from *G.* 'Inverleith').

New Lilies by Embryo Culture

by Dr. CHRIS NORTH

THERE ARE about eighty wild species of *Lilium* and several have been intercrossed to give such well known garden plants as the Mid Century Hybrids like 'Enchantment', the Olympic Hybrids and the old Nankeen Lily (*L.* x *testaceum*). However, by no means all the species combinations of lilies derived by plant breeders can be achieved simply by carefully manipulated artificial cross pollinations. In many cases crossing fails not only because the particular hybrid combination is itself inviable, but because something goes wrong during seed development and no germinable seeds are produced.

The process of fertilisation and seed development in flowering plants is complex and fascinating. Contrary to popular belief, the pollen is not itself the male sperm; it is a specialised organ which produces a tube to grow down to the waiting egg cell and carry two male sperms,

one to fertilise the egg and the other to fertilise a group of attendant cells known as the polar nuclei. The fertilised egg develops into the new embryo hybrid plant and the fertilised polar nuclei become a tissue called the endosperm which acts as a kind of nurse to the embryo and, in lilies, persists in the seed as a food supply to tide over the new plant until it can develop a green leaf and fend for itself. Without the endosperm the embryo cannot develop as it is unable to obtain its nutrient supplies directly from the mother plant.

In some wide species crosses in lilies, the egg cell fertilisation proceeds normally but the parent components of the endosperm disagree so that the endosperm cannot perform its proper role. The reason for this is not fully understood. The fertilised endosperm comprises the same genetic male and female components as the embryo, though in different proportions. Three female nuclei combine with one male sperm to produce the endosperm whereas equal parts of both components give rise to the embryo and it is probable that this inbalance of genetic components is associated with malfunction of the endosperm.

Faulty endosperm may permit normal development of the embryo and the production of seed but produce a poison which kills the embryo when the seed is soaked as is often the case with crosses between *L. speciosum* and *L. auratum.* More often the endosperm dies at an early stage of development so that the embryo is starved and either dies or ceases development and remains very small as we found at the Scottish Horticultural Research Institute when *L. lankongense* is crossed with *L. davidii.* Failure to produce germinable seeds from some crosses may be due to a combination of both these effects as when *L. pyrenaicum* is crossed with *L. carniolicum.*

If the small hybrid embryo is isolated from the mother plant and given an artificial food supply to take the place of the endosperm, it often will grow into a viable plant and give us a hybrid between two species which is otherwise unobtainable. Embryos are dissected from the developing seed by a surgical operation and each is transferred singly to a small screw-top glass bottle containing a nutrient jelly made of agar, essential salts and sugar. The operation has to be done under sterile conditions and the bottles of nutrient are sterilised in a pressure cooker and allowed to cool before transplanting the embryos. Bottles containing embryo are kept in warm, light conditions and when the embryos have grown into small plants with one or two leaves they are transferred to soil. In extreme cases one seed capsule from a wide cross may only contain one out of about a hundred potential seeds

with an embryo and only one in ten of these may develop into a plant which, of course, may be unique and of great interest to the breeder. As a rule the returns are better than this.

Sometimes the egg cell develops into a small embryo without fertilisation and the new plant then resembles the mother parent and is not a hybrid. Often it can be clearly seen whether the plant is of hybrid origin by the intermediate nature of the leaf and flower features, but for confirmation and for an early appraisal of the situation, the plant may have to be examined cytologically to see whether the cells carry chromosomes from each of the parents.

Most of the hybrids produced with the aid of this embryo-culture technique are sterile and do not produce seeds, so they can only be propagated vegetatively. This is no great disadvantage as nearly all lilies are easily reproduced vegetatively by bulbils produced on bulb scales.

Not all the hybrids obtained at the S.H.R.I. by this technique are of horticultural merit, but those of *L. lankongense* crossed with various Asiatic lily hybrids, including, for example, 'Enchantment', are especially promising. The plants have flowers of a wide range of colours and are pleasantly scented. They are especially suitable for growing in groups amongst shrubs and in the wild garden. Two cultivars, 'Ariadne' and 'Adonis', with pink and mauve-red flowers respectively, are already available and three others, 'Eros' (pink), 'Theseus' (red), 'Pegasus' (ivory) will shortly be available. A wider range of new material which will be selected this year can be seen at Mylnefield during the second or third week of July.

Two other Mylnefield cultivars of quite different constitution and from embryo culture are 'Europa' (*L. pyrenaicum* x *L. pomponium*) and 'Eureka' (*L. henryi* x *L. tigrinum* hybrid). The former grows vigorously in the garden and resembles a strong-growing *L. pomponium* with many scarlet flowers and neat narrow foliage. The latter has only flowered in the glasshouse but seems to be a vigorous plant like an early flowering *L. henryi* and produces some stem bulbils. Recently North American lily breeders have shown considerable interest in embryo culture and one hybrid produced in Minnesota of the Easter Lily *L. longiflorum* with a pink trumpet cultivar of the *L. leucanthum-L. sargentiae* complex sounds especially exciting.

Embryo culture is essentially a laboratory technique and may sound complicated, but is not out of reach to the enthusiastic amateur breeder. I shall be pleased to give further details to any reader who would like to try to make use of it.

Crete and Rhodes

by J. R. JOHNSTONE

PART II—RHODES

AFTER a week on Crete my wife and I flew to the island of Rhodes to stay for the second week of our holiday at Faliraki, a beautiful bay on the east coast. Faliraki Bay is about 3 km long and bounded in the north and south by low hills; the village is situated in the centre and is being developed as a tourist resort.

Our first excursion was to walk northwards up the beach; we turned inland at the head of the bay and found the sand dunes at the side of a road a blaze of colour with poppies, daisies, *Convolvulus*, *Glaucium flavum* and the Squirting Cucumber, *Ecballium elaterium*, itself not a very showy flower but an interesting plant. The ripe gherkin-like fruits, when detached, can eject an acrid poisonous sap containing the seeds up to a distance of eight metres.

Further inland, growing in poor soil, occasionally in pure sand, we found *Dianthus crinitus*, forming a tight grey-green cushion 10 cm high from which the attractively deeply fringed white flowers sprawled out on ungainly 20 to 30 cm long stems. On slightly better soils, *Convolvulus althaeoides* brightened up large areas with its deep purple-pink flowers.

A taller plant with tubular yellow flowers had us puzzled until we visited the area several days later. The blooms had opened out fully into starry flowers and proved it to be *Asphodeline lutea*. The stems were only 45 cm high; when we had found this plant in Crete it grew to a height of 80 to 100 cm in the olive groves. The Rhodes plants were much smaller, indeed the flora in general in this area was undersized, possibly due to the impoverished condition of the soil.

We climbed up a hill and enjoyed a good view from the summit, approximately 100 metres above sea level. Examining the slopes on the way down we found a thin grassy leaf growing from under a boulder. It looked suspiciously like a crocus leaf and this was verified when we were able to find the corm. I was later able to identify these as *Crocus tournefortii* in early September when they bloomed. The flowers were pale lilac with white anthers and bright orange finely divided stigmas. A colour variant had white outer petals and pale lilac inner petals.

There was little sign of *Crocus* beneath other boulders in the vicinity. However, on a bare stony shoulder of the hill we discovered a more plentiful supply of wispy leaves. Upon close inspection we were fortunate enough to find two very small pods containing unshed seeds.

The land to the west of Faliraki was rather a poor area for plants, with only a few *Orchis coriophora* in flower. South of the village a higher hill looked inviting and another day found us exploring in this direction. Farmland gave way to the scrub on the lower slopes of the hill and we climbed until we found ourselves on a flat plateau where we stopped for a few minutes to enjoy the view and to get our breath back. The plateau was very arid with only a few herbs and bushes scattered at intervals. Growing up through one bush we found *Smilax aspera*, a thorny climbing shrub, while on the sunbaked ground two tiny plants grew together; one we tentatively identified as *Pallenis aquaticus*, its yellow flowers backed by a green bract. The other was *Campanula drabifolia*, only 2 cm high with a blue bell fading to white at the throat.

Growing on a nearby cliff in pockets and crevices we found *Campanula rupestris anchusaeflora* which has a long tubular deep violet-blue flower, unlike the tubby flowered *C. rupestris* we found on Crete. Apart from the *Campanula*, we found no more plants of interest on the cliffs. We retraced our steps and started to climb to the summit, passing through a group of *Centaurium erythraea grandiflora*, very much like an enlarged *Centaurium chloodes* which seeds itself freely in the garden. This plant was about 45 cm tall with a large head of about two dozen violet flowers with yellow stamens.

At the top of the hill was a chapel and a few army cabins and from this point we had a very good view of the long sweep of Falikari Bay and the road heading north 16 km to Rhodes town, just visible on the horizon. Below, the crops surrounding each small farmstead made a patchwork quilt of colour.

The next day my wife wanted to go shopping in Rhodes town. The old town is surrounded by thick ramparts and a dry moat, now containing fallow deer which are the symbol of the island. The walls around the moat are a magnificent spectacle in June, sheeted with the purple of *Bougainvillea spectabilis* in flower and flowering so profusely as to hide the foliage. This plant was introduced from Brazil to Europe in 1829 and is common in parks and gardens. The new town lies outside these walls and is built on the land to the north and west, the perimeter consists of hotels which face the sea and the shopping area

is mainly in the centre. Within the walls of the old town is the Turkish quarter, a maze of narrow cobbled streets, lots of small shops and some interesting buildings: the Street of the Knights of St John with its buildings dating from the time of the Crusades, the Grand Master's Palace, various museums and mosques.

Cruise ships anchor off the commercial harbour and ferry their passengers to and from the old town. A smaller harbour, the Mandraki harbour, is the berthing place for smaller boats and yachts of many nations; the entrance to this harbour is guarded by bronze fallow deer standing on high stone pillars. This is the spot where the bronze Colossus of Rhodes is said to have stood until it was destroyed by an earthquake in 225 B.C. Close to Mandraki harbour is an old Turkish cemetery, the cemetery of the mosque of Murad Reis, built in 1523. This lies under a grove of *Eucalyptus* trees and is surrounded by iron railings. Admittance is through a small gate by the caretaker's house, where a donation is expected. The mosque is reached from a corner of the graveyard across a neatly cobbled courtyard, patterns in the cobbles traced out in light and dark stones. The majority of the graves consist of a raised stone block with a hollow in the centre, a headstone inscribed in Turkish, surmounted by a carved turban or a pineapple shape in the case of a man's or a plain pointed headstone for a woman's grave. These are the graves of Turkish civil servants and exiles, dating from the 18th and 19th centuries A.D.

The reason for my interest in the cemetery soon became apparent to my wife, for in the hollow tops of some of the graves, *Cyclamen persicum* was growing in a variety of leaf forms. The leaves were just starting to go yellow and the fat seedpods beginning to split. Surprisingly enough we only found a couple of *Cyclamen* growing on the ground; they seemed to prefer the hollows in the tombstones which contained a cool, dry but loose soil, perhaps the result of accumulations of *Eucalyptus* leaves. *Cyclamen persicum* is a spring flowering species, the flowers are pink, lilac or white with a purple blotch on the nose. The petals are long and narrow with a slight twist which gives them a graceful appearance. After pollination, the seed heads arch downwards instead of coiling up as other *Cyclamen* do.

We decided to hire a car to see more of the island. Our first journey was to the lovely village of Lindos, a 'must' for visitors to Rhodes. After passing the surprisingly green looking golf course at Afantou we decided to have a look at Epta Pighes and turned off the main road onto a side road. This quickly gave way to a stony track, which is

SCOTTISH ROCK GARDEN CLUB

48 St. Alban's Road,
Edinburgh EH9 2LU.
21st August 1978.

Dear Member,

The ANNUAL GENERAL MEETING will be held at BRITISH MEDICAL ASSOCIATION HOUSE, 7 Drumsheugh Gardens, Edinburgh, at 2.00 p.m. on **Saturday 11th November 1978.**

In accordance with Rule 4(a) the President retires annually. Having held office for two years only, the President, Mrs K. S. Hall, is eligible for re-election and has been nominated.

In accordance with Rule 4(a) Alfred Evans, Esq., as immediate past President, serves automatically on the Council as a Vice-President. Three Vice-Presidents to serve on the Council are to be elected annually from the list of Vice-Presidents. The following have been nominated:—

J. D. Crosland, Esq. David Livingstone, Esq.
H. Esslemont, Esq., M.B.E.

In accordance with Rule 4(a) all Executive Office-Bearers retire annually but are eligible for re-election. The following have been nominated:—

Secretary	Mrs I. J. Simpson
Treasurer	L. N. Bilton, Esq., W.S.
Subscription Secretary	R. H. D. Orr, Esq., C.A.
Editor	R. J. Mitchell, Esq.
Publicity Manager	A. D. McKelvie, Esq.
Publications Manager	Dr. D. M. Stead
Honorary Overseas Liaison Secretary	Mrs. Sheila Maule
Curator of Davidson Slide Library	R. S. Masterton, Esq., M.R.C.V.S.

In accordance with Rule 5, five Ordinary Members to serve on the Council for three years are to be elected. The following have been nominated:—

Richard Barr, Esq., Lanarkshire
Mrs. Doreen Golder, Ayrshire
William R. Hean, Esq., Dumfriesshire
James Sutherland, Esq., Inverness-shire
Mrs. B. B. Cormack, Edinburgh
Dr. Denis G. Hardie, Aberdeenshire
Mrs. K. Mackay, East Lothian
Mrs. Margaret Taylor, Angus

The A.G.M. will be preceded by a buffet luncheon and followed by the Clark Memorial Lecture and tea and biscuits. If you wish to attend the luncheon please fill in the attached slip and return with your remittance.

Yours faithfully,
ISOBEL J. SIMPSON,
Honorary Secretary.

To: Mrs B. B. Cormack, 199 St. John's Road, Edinburgh EH12 7UU.

I wish to reserve.....places for the Buffet Lunch (wine included) on Saturday 11th November 1978, and enclose my remittance of.....(£1.50 per person).

Name .....

Address .....

.....

Please return this slip no later than 4th November 1978

AGENDA

1. Minutes of A.G.M. held in Glasgow on Saturday 5th November 1977.
2. President's Review of the Year.
3. Presentation of Merit Medals by the President.
4. Consider for adoption the accounts for year ending 30th September 1978.
5. Election of President.
6. Election of Honorary President.
7. Election of three Vice-Presidents to serve on the Council.
8. Election of Executive Office-Bearers.
9. Election of five Ordinary Members to serve on the Council.
10. Appointment of Auditor.
11. Intimation of Show dates for 1979 and of the Royal Horticultural Society's Joint Rock Garden Plant Committee meetings in Scotland in 1979.
12. Intimation of date and place of the A.G.M. in 1979.
13. Any other competent business.

PROGRAMME

1.00 p.m. Buffet Lunch (please send booking slip by 4th November).

2.00 p.m. The ANNUAL GENERAL MEETING.

3.30 p.m. The Clark Memorial Lecture. W. R. Hean Esq., N.D.H., D.H.E., S.H.M., Principal of the National Trust of Scotland's School of Gardening at Threave will speak on "Rock Gardening in the West of Scotland"

4.30 p.m. Tea and biscuits (the charge for this will be 15p).

N.B. at 11.30 a.m. MEETING OF THE COUNCIL.

at 4.30 p.m. MEETING OF THE NEWLY-FORMED COUNCIL to appoint members of Standing Committees.

Secretary's Page

September 1978

Dates for your Diary:

30th September - 1st October 1978: Discussion Weekend at St. Andrews University. There is still time to enter plants for the Show and photographs (black-and-white) or line drawings for the twice-yearly competition, even if you are not going to the Conference. The subject is Genus *Roscoea*.

11th November 1978: Annual General Meeting at the British Medical Association House, 7 Drumsheugh Gardens, Edinburgh, at 2 p.m., followed by the Clark Memorial Lecture given by W. R. Hean, Esq., Principal of the National Trust for Scotland's School of Gardening at Threave. Members wishing to bring up matters under "Any Other Business" should inform the Secretary by November 1st if possible and should remember that such matters can only be aired, not voted upon, at an A.G.M.

Shows 1979:

Edinburgh: 17th March at Pollock Halls, University of Edinburgh.
Newcastle: 7th April at Ponteland Community Hall.
Perth: 21st April at Kinnoull Church Hall (Joint Awards Committee).
Aberdeen: 28th April at the Music Hall, Union Street.
Glasgow: 12th May at Knightswood Community Centre.
St. Andrews: 28th-30th September at Discussion Weekend (Joint Awards Committee).
Please refer to your Show Schedule for details.

Show Entry Forms: Those members who are interested in showing will have noticed that entry forms are no longer supplied. They have been discontinued for economy reasons as a very small percentage of members made use of them. Exhibitors should notify Show Secretaries of their intended entry, either by post or telephone, giving the numbers of the classes for which they wish to enter.

Thank you to the A. M. Pilkington Charitable Trust for a most generous gift of £500. This will launch a General Fund for the work of the Club, to which Donations and Legacies will never come amiss.

To the Inverness Group for presenting to the Angus Group Seed Exchange the two volumes of "Flora Europaea" which will be invaluable to the Seed Exchange Manager and her helpers.

Congratulations: The Royal Horticultural Society has awarded their Lyttel Trophy to Mr. Alfred Evans, our President in 1973-1976, for his notable work on the genus *Lilium*.

Twice-yearly Competition: We were very pleased to get eight very good photographs of crocuses for the last competition which was judged at the Glasgow Show. We welcome Mr. L. E. Pettit of London as a new competitor and congratulate him on winning the prize. More entries are needed in both categories. We have tried to keep this competition very informal but a member has asked for more guidance as regards size, etc. The size of the black-and-white print should preferably be 10 by 8 inches, with a glossy finish for good reproduction in the *Journal*. Drawings should, if possible, be in pen-and-ink rather than in pencil. These should also be about 10 by 8 inches and should attempt to show the form of the plant as well as the form of the flower. In all cases a simple white paper mount, 1-1½ inches wide, greatly enhances the picture. The judges stress that if an entry does not meet some or all of these requirements it will still be considered for the prize. The subject of the April 1979 competition will be *Trillium*. A photo or drawing of any member of this Genus in the garden or, from our North American members, in the wild, will be very welcome. The last date for entry is *30th April 1979*.

Chelsea Flower Show: We do want to congratulate Mr. Alfred Evans and Mrs. Jill Sleigh for once again successfully undertaking the enormous job of organising a most enjoyable bus trip to the Chelsea Show. An account of the tour will be found in this *Journal*.

Travelling Lecturer: During September Mr. Joe Elliott will travel through Scotland and North England lecturing to Groups. Mr. Elliott, who runs an alpine nursery in the Cotswolds, is a member of Council of the Royal Horticultural Society, a member of the Joint Rock Garden Plant Awards Committee, and a holder of the A.G.S. Lyttel Trophy. If he is not speaking to your Group you will be very welcome at any of those listed below. We recommend you to go and hear this skilled plantsman and entertaining lecturer. Ask the appropriate Group Convener for details of time, place and subject.

Mon.	Sept. 11	North Cumbria Group	Tues.	Sept. 12	N. Northumberland
Wed.	Sept. 13	Perth			
Mon.	Sept. 18	Glasgow	Fri.	Sept. 15	Edinburgh
Thurs.	Sept. 21	Kirkcudbright	Tues.	Sept. 19	St. Andrews
			Fri.	Sept. 22	Newcastle

Beginners' Conference: On 7th and 8th April 1979 a residential Conference for Beginners is being held at the University of Strathclyde Hostel, Chesters, Bearsden, nr. Glasgow. Further information will be found on page 84 of this *Journal*. If you are a novice we hope to meet you there.

For Sale:

(a) *Club Ties:* Do you wear our handsome Club Tie? There are still some for sale which would make a welcome Christmas present for a member. The colour is dark royal blue with white stripes alternating with the Club emblem, *Dryas octopetala*. They look very smart with a dark suit or blazer. Please order from Mrs. Edith Lawrie, 82 Craigleith Road, Edinburgh 4. A real bargain at £2, including postage.

(b) *"The Peat Garden and its Plants"* by Alfred Evans. Copies of this excellent book are available at the bargain price of £2.80, including postage. It would make a magnificent Christmas present for yourself or a friend and may be obtained from the Hon. Publications Manager, Dr. D. M. Stead, Esk Hause, Bishop's Park, Thorntonhall, Glasgow.

Nursery Gardens in the Highlands: The Highlands and Islands Development Board had a very interesting stand at the Royal Highland Show in June, to strengthen the Agricultural and Horticultural industry in the North and West. There are 16 Nurseries from Berriedale in the North, through Inverness, Skye, and south to Lochgilphead. For details write to the Secretary, H. & I. Development Board, 27 Bank Street, Inverness.

The Library: The Hon. Librarian has been looking to second-hand book sources for further copies of the more popular books. One difficulty is that some books are in heavy demand and it would help if all Groups would return their books at one of the Spring Shows, so that they may be checked, repaired if necessary, and re-issued to another Group. High cost of postage means that the best way to circulate books is by Group Loan, but the success of the system depends on books being returned promptly. The Librarian hopes to come to the Discussion Weekend and would like lists from Groups (please, not phone calls at the last minute!) in plenty of time to make up boxes for distribution.

Advertisements: It was heart-warming to hear from a member in the South of England who had advertised for a book on Gentians that he had received a good copy from a member in America. Are our other advertisers as lucky?

Due Date for Subscriptions: The Annual Subscription of £2.50 per member (50p for Family or Junior member) is due on 30th September 1978. Please see page 50 of this *Journal* for details.

Contributions for the next Secretary's Page (April 1979 *Journal*) should be in the hands of the Hon. Secretary no later than *28th February 1979*.

usual on the Greek Islands. After a few kilometres, following the valley of a river which actually had water running in it, the valley narrowed and pine woods crowded the left side of the road. Inspection of the wood showed the ground to be too dry and the trees too immature to support a woodland flora. The river bed was bright with the blossoms of the Oleander (*Nerium oleander*), a shrub which can reach 4 metres with pink or sometimes white flowers. It is commonly found wherever there is a supply of water.

Moving further up the valley, bearing left into the woods, the track became rougher and more hilly and after a few kilometres ended in a wooded glade. Beside a stream stood a taverna, the proprietor busy setting out chairs in readiness for his day's custom.

The trees here were mainly mature pines, growing in a fairly steep-sided dene with the crystal clear stream in the bottom. The name Epta Pighes means seven springs and as we walked up the dene, the stream became smaller as we passed by the springs which fed it. Soon we began to find the *Cyclamen* endemic to the island of Rhodes, *Cyclamen repandum rhodense*, which, as opposed to the typical *C. repandum* with an all pink flower, has a white flower with a pink nose. The leaves have more greyish-white splashing on them than the typical *C. repandum* leaves.

The *Cyclamen* grew in the cooler parts of the dene, under shrubs, rocks and shady banks, the tubers being about 10 cm. deep in a stony-leafy-silty soil, generally slightly moist. The leaves had yellowed but the seed pods had not fully ripened, although some seed that was collected has since germinated at home. Soon it became apparent that there were *Cyclamen* growing higher up the valley sides in places where the pine needle leaf mould was thick and spongy.

We returned down the valley to the main road and continued to Lindos. Near the village of Archangelos we found ourselves in the centre of a citrus growing area where roadside stalls sold oranges and lemons for 20 drachma per kilo (about 14p per pound). These fruits were delicious and tasted so much better than those that are bought in Britain. As we topped the last rise we had a fine view of Lindos 3 km away, dominated by its Acropolis standing on a headland 120 metres above sea level.

Lindos is a large village that has been kept in an 'undeveloped' state. Although very popular with tourists, no high rise buildings are to be seen and the hotels in Lindos blend with the whitewashed houses that line the narrow cobbled streets. Along these streets, donkeys ply

to and fro carrying their cargo of tourists from the town square up to the Acropolis and back. Botanists, however, prefer to walk up and we found various bulbs on the slopes: *Allium*, *Muscari* and *Ornithogalum*, while exploration of the cliffs yielded many plants of *Campanula rupestris anchusaeflora*, some of which were in seed. This seed germinated well at home and the young plants have grown quite vigorously.

After a look around the Acropolis we decided to move inland and motored on a very stony bumpy track towards Laerma but, finding little of interest botanically, we retraced our tracks, stopping at a taverna in a small village, Lardos, for refreshments. Here we were very well treated by the proprietor, who obviously did not have many foreign tourists using his establishment.

The next day we decided to travel down the west coast of the island as far as Mount Profitias Elias. First we found our way out of Rhodes town to the plateau of Monte Smith; this does not seem a very Greek sounding name but it is named after an English Admiral, Sir Sidney Smith, who set up an observation post on this hill in 1802 during the wars between Napoleon and the Turks.

The escarpment of Monte Smith rises steeply from the sea on the west side and from Rhodes town on the north. There is a good view over the town to the coast of Turkey in the distance. Coachloads of tourists were using this as a background while they had their pictures taken upon the back of a long-suffering camel. Inland, there are ruins of a 3rd century B.C. stadium, theatre and temple of Apollo to interest the historically minded.

We gave the tourists a wide berth and started to explore the escarpment to the south. A large colony of the century plant, *Agave americana*, is to be found here. Although called the century plant because of the supposed frequency of flowering, it is generally only ten or fifteen years before the thick flowering stem grows out of the rosette to a height of 10 metres, whereupon the rosette, as in the case of a *Sempervivum*, dies, leaving many offsets to carry on. The bluish-green, spear-shaped leaves bear vicious spines along the margins with an extra vicious spine at the tip. This is a plant introduced from Central America where it is used for making a fermented drink.

The escarpment continues for several kilometres and is clothed with conifers which are kept trimmed by the winds which seem to blow continuously off the sea. Under these conifers, at first only a few but later in large quantities, *Cyclamen graecum* was discovered growing in a surprising variety of leaf forms. The typical form was a beautiful

leaf, rounder than the normal *C. graecum* (if there is such a thing as a normal *C. graecum*!), the centre a light green zone with a darker margin. It seemed to be, in fact, a colour reversal of the usual pattern.

The *Cyclamen* were growing in deep shade in a cool, dryish stony soil with humus in the form of pine needles. Most of the tubers were growing fairly deep (seven to ten centimetres) and had floral trunks which reached the surface. In a more open situation, a tuber was found nearly weathered out of a bank of soil; only the thick perennial roots were keeping it in place. Nearby were a lot of seedlings packed together where the contents of a seed pod had germinated without the seed being scattered. This is an autumn-flowered species. The flowers are deep reddish-pink with dark red blotches on the auricles.

We set off along the escarpment and turned down a one-way road leading from the plateau down to the main west coast road. This area is being developed with new hotels; luckily for the *Cyclamen*, building is on the flat area near the seashore and not on the pine-clad escarpment.

At Trianda, the largest village on Rhodes, we turned left off the main road and headed for the hill of Filerimos. This hill is about 290 metres high and has a monastery and ruins of a settlement on the summit. Wonderful views are to be had: north to Rhodes town, to the south as far as Profitias Elias and Mount Atavyros, while looking westward the airport lies at your feet.

The slopes of Filerimos hold mature pine woods and the common weed in these woods was *Cyclamen persicum*. It is found all over the place growing on or near the surface in dry humus-rich positions. In moister areas, *C. repandum rhodense* was found in association with *C. persicum* but growing deeper, under or between rocks. The trees cast a dappled shade, keeping the air fairly cool.

We left Filerimos and continued on our way to Profitias Elias. At Paradissi we were astonished to find a new airport under construction. Things had changed since we last visited this area in 1970. There was now no way down to the little taverna by the beach where we had enjoyed barbecued meat balls.

We continued to Soroni, bought some fruit juice and turned right to the beach where we ate our packed lunch. The beaches on the western coast are spoilt by the amount of oil that the prevailing winds cast up. It was almost impossible to cross the sand without getting the sticky mess on our feet.

After lunch, we motored off and forked left at Kalavarda for Profitias Elias. The road steadily climbed its way up through the pine woods

to two hotels, the Elaphos and the Elaphina (Stag and Hind) which are set at an elevation of about 760 metres. At 800 metres, Profitias Elias is the second highest mountain on Rhodes; its neighbour, the more arid Mount Atavyros, is the highest at 1215 metres.

Leaving the car, we walked up through the woods passing *Muscari*, *Ornithogalum* and *Allium*. We soon found *Colchicum macrophyllum*; the leaves did not seem as unduly large as their name suggests, in fact they did not seem any bigger than *C. speciosum* in gardens. This *Colchicum* has a funnel-shaped, slightly tessellated lilac flower which is about 7 cm high in October to November.

We collected a quantity of seed which was on the point of ripening, then headed on up the mountain. In places Anemone-like foliage on the surface of the ground fooled us; it turned out to be an umbellifer rather like a Cow Parsley, generally growing in silty soil from under rocks. Sharing this situation was a small *Crocus* which may prove to be *C. laevigatus*.

Gradually the ground beneath the pine trees became dotted with *Cyclamen repandum rhodense* growing in the pine litter. A few *Dracunculus vulgaris* were to be found near rock outcrops. Soon we were out of the trees and on to a ridge. The summit of Profitias Elias was about a kilometre away with what appeared to be a Radio Station on the top. We decided not to go to the summit as time was flying by (as it always seems to do on plant hunting expeditions). It was peaceful and cool on the ridge and surprisingly like being in the Alps, although the flora was not as rich as we had hoped. A last flower of *Orchis picta* was photographed, then we set off back to the car. On the way, an unusual plant was discovered growing by the path. It had a blue flower with a white throat and was only about 3 cm tall. Research has shown it to be *Orobanche ramosa*, a plant which is semi-parasitic. The woodland floor seemed to be bare apart from the pines and the *Cyclamen* so it was not clear what plant was acting as a host to the *Orobanche*.

Reluctantly we left the mountain and headed down the road, stopping to examine *Paeonia rhodia*, the peony endemic to Rhodes. This grew in open pinewoods in scattered colonies; we found no plant in flower and no seed. This peony reaches a height of about 45 cm and has a white flower.

Back on the coast road, we decided to make a quick visit to Kamiros, the ruins of a Doric town which flourished in the 16th and 15th centuries B.C. These are quite extensive ruins, the excavations covering about 6 hectares (15 acres), but quite a lot more remains buried to this

day. The ruins lie in a hollow on the side of a hill which rises to 125 metres above sea level, giving a good view to Profitias Elias. To one side of the ruins a large tract of land was lying stark and burnt, the result of a recent fire. Orchid seed heads were to be found on the site. We spent a pleasant evening in the ruins as we were just about the only visitors. We left at closing time and headed back to our hotel.

All too soon the holiday came to an end and our last sight of Rhodes from the aircraft gave us a good view of Mount Profitias Elias before the jet turned for our homeward journey.

The Alpine Garden at the University of Alberta Devonian Botanic Garden

by PATRICK D. SEYMOUR

THE DEVONIAN BOTANIC GARDEN is the most northerly Botanic Garden in Canada. Edmonton is roughly the same latitude as Manchester. We have a continental climate with hot dry summers and cold dry winters. We have 17 inches of rain per annum (mostly in the form of snow). Snow can come in September but normally doesn't appear until December and lasts through until the end of March, sometimes the end of April; particularly on north-facing slopes. Snow is vital to the success of growing alpines in our climate where the temperature can drop to —40°F. The temperature seldom reaches 32°F. in January or February. One winter we even had a month of below zero weather. It is also important that the snow falls before sub-zero temperatures are reached. All water and sewer lines have to be below 6 ft. (by city by-law). In other words, the ground freezes solid!

The Garden was founded in 1959, and like many gardens had little monetary support for a number of years. In 1973 we were fortunate to receive a grant of $15,000 from the Stanley Smith Trust towards an alpine garden. Then in 1976 we received a large capital grant from the Devonian Foundation which explains why we are the Devonian Botanic Garden. The Devonian Foundation obtained its funds from oil from the Devonian Strata. There are oil wells in the Garden and we are near the town of Devon, so the name is rather appropriate.

The Garden is situated on 80 acres of donated land some 15 miles from Edmonton. The topography consists of aeolian sand dunes (slightly acid) with peat bottoms (slightly alkaline) between. Rather an odd location for a Garden and even more so for an alpine garden. The Garden has been developed on naturalistic lines—all development following the natural curves of the dunes.

The natural cover on the sandy areas consists mainly of *Populus tremuloides, P. balsamifera, Betula* spp., *Pinus banksiana, Picea glauca, Prunus pensylvanica, P. virginiana, Amelanchier alnifolia, Cornus stolonifera, C. canadensis, Corylus cornuta* and various grasses and herbs. The peat bottoms have a cover of *Salix* spp., grasses and sedges.

The site for the alpine garden was selected and cleared of poplar. Basically we used the form of the dunes round a basin. Then we brought in a bulldozer (the operator is known as 'a catskinner') to cut a valley for air drainage. Next we started to look for rocks. Edmonton is over 200 miles from the Rocky Mountains, so transport costs ruled out rocks from the Rockies. We then thought of rocks from river beds, but they proved to be inaccessible. So, finally, we started looking at gravel pits. The first order was for 200 tons of large rock ($15 per ton delivered). This included two large rocks of 4 tons each. Two months later, 200 more tons (cost $18 per ton) arrived. Then arose the problem of getting them roughly in position. I selected one dune slope which I decided would be a simulated glaciated ridge (common in the foothills of the Rockies). So a big front-end loader arrived and we spent a gorgeous sunny fall day in 1975 dumping the rocks in piles. Towards the end of the day we were left with a pile of rocks and a fairly steep slope. So we had the idea of pushing the rocks over the edge and they rolled down. Then the two large rocks were pushed into position at the top and a mountain scene emerged. This boulder slope is across a fairly wide open space from the simulated ridge. In September, a large order of alpines came from Lohbrunner Nursery which had to be sunk in pots in the open. Shortly after this, the snow came. Next, in spring (May) 1976 we got a crew together to man-handle the rocks on the glaciated ridge into position.

Incidentally, the rocks are not all rounded boulders. They come in various flattened shapes and textures—a mixture of sandstone, granites, conglomerates, etc. Then we turned our attention to the "soil"—pure sand. After much discussion with experts we decided to mix high grade peat with the sand in approximately equal quantities. The reasoning was that in high rainfall areas (normal) the purpose of

a scree was to provide perfect drainage. Our sand was well-drained, so all we needed was humus; so we added peat. (We already had grown many alpines successfully on pure sand for a number of years). We then started to look for more rock—this time 200 tons glacial erratics at $40 per ton. This was used to complete a third section—on more "classical lines"—thus we now have three types of alpine gardens (as a teaching University Garden we have to demonstrate as many ideas as possible)—a simulated ridge, boulder field and classical which almost surround a shallow bowl. We then were left with a gentle west-facing slope 60 ft. × 45 ft. This had high grade peat added and was well mixed. In 1977 we added some flattish rock and it will become our scree and become the fourth element of the alpine garden. The last element will be a large lawn (with paths) which will occupy the centre of the area. This fall we ordered several loads of ½ in. broken rock. This will be used to top dress the whole area. We have strong winds and the sand tends to blow—the crushed rock will stop the erosion and provide a useful mulch.

Finally, plants. We get our seeds mainly from seed exchange lists, but we are now looking at catalogues for varieties. Our climate severely limits the number of dwarf shrubs and conifers which are hardy.

We feel that any plant which gets good consistent snow cover will survive, grow and flower. In the 'pre-alpine garden' stage we have been successful with many species, including *Oxalis adenophylla*, gettians of the *Ornatae* group, many *Primula* spp., *Meconopsis*, *Codonopsis* and *Dianthus*. Himalayan plants in general we grow on north-facing slopes with some shade. The following *Primula* spp. have all grown and flowered well: *Pp. acaulis, alpicola, aurantiaca, auricula, beesiana, bulleyana, chionantha, clusiana, cockburniana, denticulata, farinosa, florindae, halleri, integrifolia, melanops, minima, parryi, pulverulenta, reidii, rosea, sieboldii, sikkimensis, sinopurpurea, spectabilis, viali* and *yargonensis*. In fact, the only real failure so far has been *P. nutans*. This fall we planted a large variety of European species and hybrids.

At the time of writing (January) it is below zero F. Three to four months to go until we see what has come through *this* winter. It is a fascinating experience building an alpine garden in this climate. I look forward to reporting further on our successes and failures. I would like to extend an invitation to any S.R.G.C. member who happens to be in this area to visit the Garden—we have many other attractions as well as alpines!

The Garden Walls

by JIM SUTHERLAND

THE IMMEDIATE reaction to the above title is to envisage a boundary wall serving the utilitarian functions of giving privacy or providing some form of shelter. All too seldom do we see their other uses applied in garden design. Unfortunately a banking or a steeply sloping piece of ground is immediately designated the site of the "Rockery" in the average householder's garden and stones are "stuck in" at angles Mother Nature never intended for them. Not content with this, some people are not averse to giving them a coat of whitewash to brighten up the dreary plot. This type of treatment seldom serves the true need to prevent the soil from slipping down the slope and a constant battle ensues to keep the boulders in position. The best solution is to construct a retaining wall of a suitable height which will either reduce the gradient or, if higher, will create a level border after the area behind the wall has been filled in.

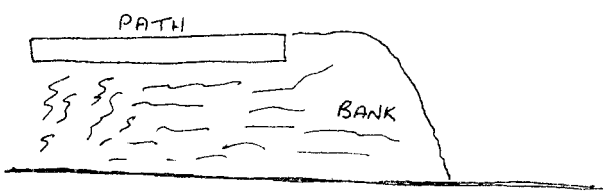
We must consider the various types of wall in conjunction with the problem confronting us, our ability to work with the different types of stone and also the materials which are readily available. Few would deny that natural stone gives the most pleasing finish, but cobbles, peat blocks, artificial stone, bricks and even concrete blocks all have their place. The use of natural stone raises the problem of whether we should build with cement bonding or build a dry-stone wall. Personally, I consider it an academic point and I would suggest that if in doubt, it is safer to use cement, leaving the joints rough and recessed instead of pointing them. This enables plants such as *Erinus alpinus* and others to colonize the crevices naturally. One practice I do condemn is that of using soil between the horizontal joints for stabilizing the stones. This will wear out from between the joints and an unstable wall will result. We never see a craftsman "dyker" using anything other than stone chippings wedged between stones to stabilize them. The beginner will find that rectangular blocks of sandstone from demolished buildings or walls are the simplest materials to work with. Remember that the higher the wall the bigger the stones must be.

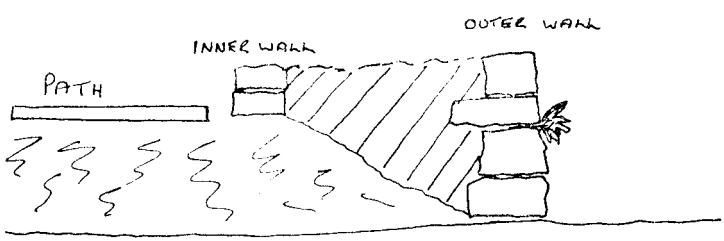
Having just discouraged everyone from constructing the most popular form of rockery, I must hasten to say that I am not carrying out an anti rock garden campaign but I do see great potential in the association of walls and alpine plants. A very good friend of mine now in the senior citizen category once said to me that if he had his

time over again all his alpines would be grown in scree conditions. Most people once bitten with the "alpine bug" become more desirous of cultivating the rare alpines and there is no better way to do this than to use scree conditions. Many writers on the construction of screes rightly draw attention to the need for free drainage, but if the site is on heavy clay, or peat overlying rock, drainage may be difficult if not impossible. The alternative to this is to create our drainage by providing raised beds bounded on one or more sides by walling.

Raised beds have innumerable advantages to the plants and the gardener. They provide a home for the cushion plants as well as the trailing plants which drape themselves over the face of the wall. The crevice plants can also be given their place in the wall where they can grow without competition.

As I have already described, the retaining wall for an embankment can be back filled to provide a raised bed instead of the slope which previously existed. Unfortunately if a scree bed is created alongside a path, dogs, children and adults (not necessarily in that order!) will tend to walk over the plants, so it is advisable to raise the bed slightly above the level of the existing ground (figs. 14 and 15).





Figs. 14 and 15. Construction details.

Patio gardening is gaining in popularity in the modern house garden and here a strictly formal approach must be considered. Trough gardening is excellent and the various forms of trough construction can give rewarding results. Troughs, however, require to be watered and a variation of the trough described by Margaret Taylor in Vol. XV, p. 94, could prove an ideal environment for the alpines and bulbs. The size of raised bed would of course be in proportion to the patio area and could be quite large. No base would be necessary and so an economy in paving slabs is effected. The walls of the "trough" or bed can be of any desired height but about 60-80 cm is suggested as this enables people to sit around the sides (hopefully to pull out a few weeds), especially if fairly broad coping stones are used for the top layer. Raising the alpines to this height provides a more comfortable inspection of the smaller treasures than would otherwise be possible. If scented plants are grown it also enables the fairer sex to enjoy the pleasures while remaining in a more dignified position. In the autumn and winter these raised beds do not harbour fallen leaves in the way that the border scree does and so we have less risk of rotting and fewer locations for our enemies, the slugs, to harbour between their voracious excursions. It is of course possible to locate anchorage points in the walls for erecting supports for lightweight winter covers to protect the rare and difficult alpines and bulbs during their resting period.

Suggested soil mixtures for different plants are legion and for those who wish to give their plants that special treatment various parts of the raised scree bed or indeed different beds can be given varying mixtures. The application of this technique has a very wide application and should prove very useful on the western seaboard where high rainfall conditions prevail. After all, our predecessors appreciated the value of raised beds when they created the "Lazy Bed" system of cultivation; however unsuitable the name may be, since there can be no laziness involved in their creation or maintenance.

A typical scree mixture (if such there be!) is as follows: 50% chippings 5-8 mm, plus 50% mixture made up of equal parts of loam, peat, leaf-mould and sharp sand. Sandstone chippings in the basic mix have the advantage of holding more moisture in the lower layers while assisting free drainage, whereas limestone chippings can be used for calcareous plants.

This can be modified according to rainfall with perhaps 75% chippings in the high rainfall areas and as low as 30% in the drier east

coast. Leaf-mould would be unobtainable in many of the western localities and this can be ignored under such circumstances.

The surface treatment of any raised bed is important both from the practical and aesthetic points of view. A finishing coat of 3 or 4 cms of chippings is desirable to show off the plants to their best. These chippings can be of any suitable stone to blend in with the wall. A layer of chippings has many functions in the rock garden and in the raised bed or trough.

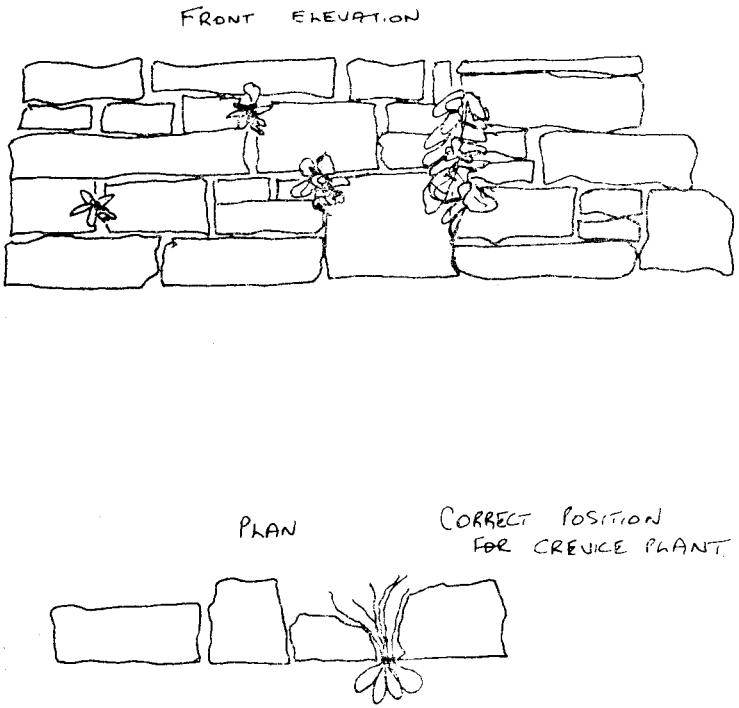
1. It provides a rapid intake of rain without surface run off.
2. It prevents soil compaction.
3. It provides a mulch to keep down weeds and reduce moisture loss.
4. It prevents soil splash on the leaves.
5. It does not prevent the alpines from self regeneration from seed.
6. It reduces the moisture content around the neck of the alpine and so reduces fungal rotting.
7. It improves the appearance of the plants and rocks.

Having firmed the scree mixture and filled it up to the level with our top dressing of chippings, some grouping of rocks to relieve the flatness is advisable. The most pleasing result is achieved with nice lichen or moss covered stones, frequently found where derelict dry-stone dykes have crumbled. Rugged outlines are of paramount importance and these should be worked into the scree to give cliff-like outcrops with two or more stones being linked together to achieve the desired result.

Finally, we must consider the most exciting part of the whole project and this is the furnishing of the feature with our precious plants. It is of paramount importance to remember that this is a very choice situation we have created and no place for the rampant *Alyssum, Aubrieta* and *Cerastium.* Nor is it the place for those little invaders like *Campanula pusilla* or *Cotula squalida* (what an apt name!). Our raised beds should be our treasure house for *Draba bryoides, Primula pubescens* hybrids, *Wahlenbergia,* Kabschia and Engleria saxifrages, *Phyteuma comosum,* dwarf conifers, and I mean the dwarfs such as *Juniperus communis* 'Compressa' and *Chamaecyparis pisifera* 'Nana Compacta'. Many, many more are eligible subjects, but do not pack it full immediately as we will always be looking for the spare corner for our new acquisitions.

We must not forget that we have not only created a bed surface for planting our plants in but also a vertical wall for cliff-dwelling and trailing plants. These plants can be a valuable ally to the not so perfect

"do-it-yourself tradesman" as they can be used to cover up some of our masonry shortcomings. Many gardeners assume that layers of soil between stones are for planting the plants, but having already warned against this practice let me make it quite clear that the correct position for a plant in a wall is in the vertical crevice and not in the horizontal one (see figs. 16 and 17). You will note that the plant's



Figs. 16 and 17. Front Elevation and Plan of Wall.

roots are in direct contact with the main compost mass right from the start and replacements can be made easily in the future. A rectangular raised bed must of course have four aspects and this can be put to maximum advantage when planning our planting. The shade lovers such as Ramondas and Haberleas will be our first choice for the north and west sides, while *Dianthus*, *Cytisus* and *Helianthemum* are all happy in the baking south face. Remember to keep the trailing plants in the high crevices and not near the bottom where they may over-run the border or the lawn below.

Creating new features in the garden can be a fascinating pastime and it is surprising how more observant one becomes when visiting other members' gardens. Take particular note of new techniques and innovations with a view to adapting them to your own particular situation. The annual summer garden visits with the local Group will offer plenty of scope for this type of exercise. The challenge and reward of creating a permanent feature in the garden will give great satisfaction and provide a welcome alternative to the routine in the garden.

Primroses

by BRIAN HALLIWELL

THE GREAT diversity of form in the genus *Primula* with some 500 species has provided plants that can be used in many places in the garden. All species are handsome and every gardener will have his own favourite whether he be a novice, specialist, admirer of a good plant, or photographer for whom a good plant must be photogenic. At the risk of arousing readers' scorn, my favourite is the common primrose.

Primula vulgaris is widely distributed in western Europe from the arctic fringes, southwards into Portugal, crossing the Mediterranean into the mountains of North Africa and extending eastwards into western Asia. In Turkey and the Caucasus the yellow primrose is uncommon and is replaced by one that is red-flowered; this sometimes has the sub-specific name of *rubra* but should be known as *sibthorpii*. There is a considerable colour range in this sub-species throughout the reds and pinks and into mauve. From northern Persia comes *Primula vulgaris heterochroma* which though most often white has considerable colour variation, especially in the blue part of the spectrum. To complete the sub-species there is from Mallorca *Primula vulgaris balearica*, a sweetly scented, white-flowered form.

Widespread throughout Britain, the common primrose seems to be found on heavier soils containing or overlying lime. Preferring light shade, it is to be found at the edge of deciduous woodland, in copses, at the foot of hedgerows or even in lightly grazed pastures. It is a herbaceous perennial dying back to a short rather stout rhizome at

the onset of winter. A loose rosette of spathulate crinkled leaves develops which can reach 9 ins. when fully developed in late spring. Flowers are produced either before or as the leaves develop and can appear at any time between early February when the weather is mild until early May, although the main flush is in April. Each flower is produced singly on a thin stem, although in some plants these can be attached to a well developed peduncle so resembling a polyanthus. Flower colour of primrose is so distinct, the palest yellow with a suspicion of green, that it has given its name to a particular shade of yellow. Whilst primrose yellow is the most usual colour, white-flowered forms are occasionally found and in parts of Devon, Cornwall, Northumberland and Pembroke, reddish or pink flowers are not uncommon.

A favourite plant of countryman and town dweller alike, it has long been taken from its natural environment and replanted in gardens. Because it transplants easily, even when in full flower, it has been over-collected from some areas near to towns and from popular beauty spots so that from places where it was once common it has disappeared. Even though it appeals to the urban gardener, too often he fails to find out its requirements and so many of the spoils of the countryside pine away and die. Primroses need a soil containing organic matter, with some lime, and one retentive of moisture; it has already been inferred a clay soil is preferable to one that is sandy. Easily raised from seed if sown as soon as it is ripe, the resulting seedlings should be left undisturbed until the following spring when they can be lined out or planted into their final positions. Division of mature crowns can take place following flowering when each rosette with some roots is separated from the rest of the plant. When replanting ensure that the roots are spread out in a hole sufficiently large to take them, plant firmly and do not bury the crown.

Primroses are not plants for formal planting, looking out of place in a neat suburban garden; they are better suited to the informality of a cottage garden. Even though the modern strains of primrose have been raised for bedding, in such circumstance they seem to be plants out of their element. They look best when growing in an area that is only occasionally trimmed to keep tidy, such as the edge of woodland, in the wild garden, in rough grass of an old orchard, or amongst grass at the base of a hedge; perhaps several plants planted together in a pocket in the rock garden are sufficiently informal for them to appear at home.

The primrose has long been cultivated in gardens with its popularity waxing and waning in each century, but it has never gone out of favour. From early times it has been referred to by poets and there are mentions of it in Chaucer and Shakespeare. By Tudor times it had become firmly entrenched as a garden plant and a group of curious forms had a vogue in the 16th century that they were never again to achieve. There were the 'Jack-in-the-Greens' where the sepals had become replaced with miniature leaves so as to resemble a ruff around the flowers. In the 'Hose-in-Hose', the calyx had become petaloid to suggest one flower inside another. At that time it was fashionable for men to wear two pairs of stockings, one set over the other; the inner covered the entire leg whilst the outer was turned down—hence hose-in-hose. In the final group the calyx had become inflated and to this group the name of pantaloons was sometimes given.

By the early years of the 17th century when the first gardening books were appearing there were only three colours mentioned—yellow, white and green—but there were singles as well as doubles; these kinds were recorded by Gerard in his 'Herball' of 1597 and by Parkinson in his 'Paradisus' of 1629. The colour range only seems to have been extended with the introduction of *Primula vulgaris sibthorpii* in about 1638. It was first mentioned in 'Theatrum Botanicum' by Parkinson, published in 1640, where it is called 'Tradescant's Turkey Primrose'. There were two famous Tradescants, father and son, who were both royal gardeners, both went overseas on plant collecting trips besides gathering together all manner of other strange things; their collections eventually forming the first public museum. The introduction of *Primula vulgaris sibthorpii* is often attributed to a Tradescant, but this cannot be for the elder Tradescant died in 1638 and in that year his son was collecting in North America. Both had been in contact with all the famous gardeners of the day both in this country and in France, and it is much more probable that they had the plant from one of these, but it was from the garden of the Tradescants that plants came to be distributed. Whatever the source, this subspecies extended the colour range and in 1648 red, purple and blue forms were being grown in the newly created Oxford Botanic Garden. In 1665 Rea in his 'Flora, Ceres and Pomona' recorded single red, scarlet, blood red to pale pink, 'there being almost twenty diversities of reds, some deeper and others lighter; some are of a blueish rose colour, sadder and paler, some brick colour, some dove colour, others of the colour of an old buff coat and some hair colour'. Besides the singles

he mentions a double red and also one that was a red hose-in-hose. He also records that the best red primroses could be bought in the market for six pence the dozen.

During the following century the colour range was extended and many more coloured doubles appeared. The curiosities of the two previous centuries declined in popularity. During the 19th century more attention seems to have been paid to vigour and weather hardiness. A number of firms sprang up which specialised in primrose breeding, introducing many new kinds. There were several peaks of popularity and it was at this period that specialist primrose societies were founded. Towards the end of the century a new race of primroses appeared which had bronze-coloured foliage to which the name 'Garryarde' was given after the village in which they were first raised. In the present century there has been more scientific breeding during which strains have been produced that come almost true to colour from seed. More emphasis seems to have been paid to colour than to constitution for many of these new strains suffer badly from adverse weather conditions.

The blue primrose has reappeared after an absence of nearly 300 years. It was raised in the 1890s by G. F. Wilson, most probably using one of the blue forms of *Primula vulgaris heterochroma* introduced in 1882. The fixing of the colour was achieved only in this century and it is to the Americans that the credit must go, for now a number of shades are available that can be raised from seed. One wonders if in future breeding *Primula vulgaris balearica* might be used to introduce fragrance. The most recent wave of interest has resulted in a search to see if any of the old cultivars no longer available to gardeners are still in existence. A number have been located in old gardens, especially in the West of Ireland, and these have now been saved for posterity.

In spite of the many colours and all the different forms, I still consider the common English primrose to be the most beautiful, but I must confess that I prefer to see it growing in the countryside rather than in the confines of a garden.

Joint Rock Garden Plant Committee

EDINBURGH—24th SEPTEMBER 1977

AWARDS TO PLANTS

AWARD OF MERIT

To *Ophiopogon planiscapus* var. *nigrescens*, as a flowering and foliage plant for the rock garden. Exhibited by Mrs. S. Maule, 578 Lanark Road West, Balerno, Midlothian.

CERTIFICATE OF PRELIMINARY COMMENDATION

To *Raoulia* x *loganii*, as a foliage plant for the alpine house. Exhibited by H. Esslemont, Esq., 9 Forest Road, Aberdeen.

To *Satyrium nepalensis*, as a flowering plant for the alpine house. Exhibited by J. D. Crosland, Esq., Treetops, Torphins, Aberdeenshire.

AWARDS FOR EXHIBITS

CERTIFICATE OF CULTURAL COMMENDATION

To E. G. Watson, Esq., 1 Ewesley Gardens, Wideopen, Newcastle upon Tyne, for a well grown plant of *Haastia pulvinaris*.

To H. Esslemont, Esq., 9 Forest Road, Aberdeen, for a well grown plant of *Raoulia* x *loganii* (fig. 18).

GLASGOW—13th MAY 1978

AWARDS TO PLANTS

AWARD OF MERIT

To *Ranunculus parnassifolius* 'Nuria', as a flowering plant for the rock garden and alpine house. Exhibited by Mrs. Margaret and Henry Taylor, "Tantallon", Morris Place, Invergowrie, by Dundee.

To *Phyllodoce glanduliflora*, as a flowering plant for the rock garden. Exhibited by M. G. Adair, Esq., 307 Churchill Drive, Glasgow.

CERTIFICATE OF PRELIMINARY COMMENDATION

To *Primula latifolia alba*, (subject to verification of name), as a flowering plant for the rock garden. Exhibited by Mrs. Margaret and Henry Taylor, "Tantallon", Morris Place, Invergowrie, by Dundee.

To *Ranunculus traunfellneri*, as a flowering plant for the rock garden. Exhibited by Mrs. Margaret and Henry Taylor, "Tantallon", Morris Place, Invergowrie, by Dundee.

AWARDS FOR EXHIBITS

CERTIFICATE OF CULTURAL COMMENDATION

To Mrs. Margaret and Henry Taylor, "Tantallon", Morris Place, Invergowrie, by Dundee, for a well grown plant of *Senecio leucophylius*.

To M. G. Adair, Esq., for a well grown plant of *Kalmiopsis leachiana* 'M. le Piniec'.

Show Reports

EDINBURGH AND MIDLOTHIAN

THE SHOW was held in Cowan House, Pollock Halls of Residence, University of Edinburgh, on 25th March 1978. There was again a very fine display of plants, perhaps not quite as good as in the exceptional Show of the year before, but that was to be expected after a severe and prolonged winter. Attendance was well up to the previous year, the hall being thronged all afternoon, and Mr. J. T. Aitken, Show Secretary, and his willing band of helpers were well satisfied on all counts.

The coveted Forrest Medal for the most meritorious plant or pan of rock plant(s) in the Show was awarded to Dr. Denis Hardy, Aberdeen, for a large well flowered pan of the blue *Primula bhutanica*. This pan was also awarded the R. E. Cooper Bhutan Drinking Cup for the best *Primula* species in the Show.

One of our welcome competitors from south of the border, Mr. A. T. Holman, Milnthorpe, gained the Reid Rose Bowl by obtaining the highest number of points in the Senior Section with a fine set of well grown, well flowered plants. Outstanding among them were a number of primulas. The hybrid 'Peter Klein' (*rosea* x *clarkei*) was covered with its smallish pink flowers and not far behind in quality was the European hybrid 'Beatrice Wooster' with soft pink flowers. Others of his primulas were *clarkei*, the variable *allionii*, this one having large flowers of a good pink, and one labelled *scapigera*, but which more likely was the hybrid x *scapeosa*. Mr. Holman demonstrated that he was not just an able grower of one genus by taking prizes with good plants of *Dionysia aretioides*, *Saxifraga burseriana* 'Sulphurea', *Tulipa kolpakowskiana*, an attractive combination of yellow and pink; *Cyclamen pseudibericum* and an extra good form of the variable *Cyclamen persicum*.

An additional class this year for 3 pans of rock plants grown unprotected in the open ground proved popular with exhibitors, there being 8 entries, which made it clear that, even in a severe winter, frames or an alpine house are not necessary to produce a wide range of plants for Show purposes. The Henry Tod Quaich, the first prize for this class, was won by Mr. Malcolm Adair, Glasgow, with three fine pans of *Saxifraga burseriana* 'Sulphurea', *Arcterica nana*, a sweetly scented little ericaceous shrub, and a *Rhododendron* labelled *ciliatum*

Fig. 18—*Raoulia* x *loganii* See page 119 Photo—H. Esslemont

Fig. 19—*Scoliopus bigelovii* growing at the Royal Botanic Garden, Edinburgh. See page 122 Photo—A. Evans

Fig. 20—*Galanthus ikariae* See page 124 Photo—A. Evans

Fig. 21—*Ramonda myconii* See page 132 Photo—A. Evans

but which was the hybrid of that species and *moupinense* called x *cilpinense*. In any event this rhododendron was in very good condition and covered by large pale pink flowers, unblemished despite the severe weather of only a week or two earlier. Mr. Adair also scored three first prizes with *Fritillaria pineticola*, yellow pendulant flowers, and *Crocus chrysanthus* 'Snow Bunting', *C. tomasinianus* 'Taplow Ruby' and the handsome striped species *C. corsicus*.

Mr. Harold Esslemont, Aberdeen, again demonstrated his skill with plants new, rare or difficult by winning the Elsie Harvey Memorial Trophy with *Raoulia* x *loganii*, grown for its foliage effect, and two Dionysias, *tapetodes* and *freitagii*. Another of Mr. Esslemont's exhibits which attracted much attention was *Crocus scardicus*, perhaps inadequately described as having a yellow interior and an exterior of deep purple shading away from the base upwards. A note attached to this crocus stated that it had been collected by Jim Archibald in 1966, that it increases slowly, that it should be grown in an ericaceous mixture and that it should never be allowed to dry out. The class for a European or American *Primula* was won by Mr. Esslemont with one of his excellent specimens of *P. allionii*, this one being some seven inches in diameter.

The K. C. Corsar Challenge Trophy for 3 pans of primulas was won by Mr. David Livingstone, Edinburgh, with the very old, now rare *P. pubescens* var. *alba*, sweetly scented and pure white, *P.* 'Joan Hughes' very dwarf with purple flowers and a white eye, and the Asiatic pink hybrid *P.* x *scapeosa*, one of the easier Petiolarid primulas. Mr. Livingstone was again successful with his 29-year-old dwarf conifer *Chamaecyparis obtusa* 'Hypnoides'.

The Midlothian Vase for the best *Rhododendron* in the Show was awarded to Dr. Denis Graham for *R. megeratum*, a beautiful specimen with bell-shaped lemon yellow flowers of a waxy texture. A fine example of the rare Japanese *Daphne genkwa* with numerous small lilac flowers gained another first for Dr. Graham. This *Daphne* has a reputation for difficulty, but it is understood that plants on their own roots are less difficult than grafted specimens. Often there is a bonus of flowers in the autumn when there is also colour from the leaves.

Mr. Eric Watson, Newcastle, again took pride of place in a number of classes with very well grown plants that need varying degrees of expert cultivation in an Alpine House. Among them were *Dionysia lamingtonii*, *tapetodes* PF8964, particularly well flowered, *bryoides* and *aretioides* 'Gravetye' which had made a fine plant from a cutting

taken in July 1975. Also of note were Mr. Watson's *Androsace pyrenaica*, smothered with small white flowers, *A. delavayi*, not seen by your reporter and possible one of Dr. George Smith's introductions from Nepal, and the New Zealand *Haastia pulvinaris*, a nice four inch diameter plant in rude health.

Mr. David Mowle, Lancaster, was another prize winner with Dionysias. His outstanding member of this genus was a large *D. aretioides* covered all over with its yellow flowers. He also had small but well grown healthy plants of *D. lamingtonii*, *michauxii* and *tapetodes* giving much promise for the future. Mr. Mowle stated that his "compost" consisted of $\frac{1}{4}$ leaf mould, $\frac{3}{4}$ of $\frac{1}{8}$ inch Shap granite, a spartan diet but obviously what the Dionysias want. Very careful watering, especially in winter, is called for. Damp, not frost, is their enemy.

Mr. Ray Johnstone, Ryton, Co. Durham, had a number of fine entries which gained him first prizes. Notable were *Hepatica triloba* with many flowers, *Androsace carnea* var. *laggeri* and *hedraeantha*, *Soldanella minima*, a splendid plant with only a few flowers but a hundred more to come, and *Sempervivum* x *fimbriatum*, *soboliferum* and *ambiguum*.

Mrs. Bette Ivey had some good European primulas on show. Prize winners were *P. allionii* and its white form, 'Joan Hughes', already referred to earlier, and 'Ethel Barker', an *allionii* hybrid which unlike its parent can be grown successfully in the open garden. Much admired was her *Cyclamen coum* in tip-top condition and well flowered. Others of her plants deserving mention were *Hormathophylla reverchonii* with grey leaves and dense clusters of white flowers, *Synthyris lanuginosa*, also with fine grey leaves but spikes of blue flowers making a striking contrast, and a very well grown *Androsace pyrenaica*, unfortunately not in flower but with hundreds of buds to come.

The Boonslie Cup for a miniature rock garden planted with rock garden plants to provide flower and/or foliage throughout all seasons was awarded to Mr. and Mrs. Henry Taylor, Invergowrie. The container had been nicely constructed by the Taylors using flattish stones and pleasingly planted with, amongst other things, conifers, *Salix*, saxifrages and androsaces. They were also exhibiting a fine selection of plants which they grow so well. Plants which caught the writer's eye were *Primula allionii* with smallish shell-pink flowers, a very satisfying well proportioned plant to look at, *Scoliopus bigelovii* (fig. 19) with curious 3-petalled flowers, pale green in colour, striped purple, *Sisyrinchium douglasii* var. *album*, *Pleione bulbocodioides* var. *alba*, a white

orchid with a pale lemon lip; a beautiful combination of colours and two very good Saxifrages: *burseriana* 'Crenata', white with crimped petals, and the pale yellow *S. b.* 'Sulphurea'.

Drs. John and Christine Gosden, Eskbank, who are particularly keen on small irises (see their article on this subject in *Journal* 61), took prizes with *I. aucheri* and a fine example of the hybrid from that species, *I.* 'Sindpers'. Other winners for them were *Cyclamen pseudibericum* and *Helleborus* 'Nigristum', a hybrid of *niger*, the Christmas rose, with *lividus* x *corsicus*.

Mr. and Mrs. V. Chambers, Killearn, created a great deal of interest with a well grown specimen of *Primula aureata* subspecies *fimbriata* (Richards) which they had collected in Nepal in 1977 (see *Journal* 62 April 1978 for an account of their expedition). It won the first prize for the best Asiatic *Primula*. The Chambers showed the same plant at the Perth Show four weeks later when, in even better shape having many more flowers open, it again won its class. It is of interest to note here that at the Glasgow Show on 13th May Mr. Harold Esslemont exhibited a large pan of flowering seedlings of *P. aureata* which showed a wide variation in the colour combination of yellow and cream and in the serration of the petals, one having flowers very similar to those on the specimen collected by Mr. and Mrs. Chambers, who informed your reporter that they had observed distinct variations in the flowers in the wild.

Other plants of note in the Show were *Leucojum vernum* var. *vagneri*, *Narcissus cyclamineus* and *minor* (Dr. and Mrs. Simson Hall), *Saxifraga retusa*, an extra good specimen (Dr. Semple), *Cupressus macrocarpa* and *Vaccinium nummularia* (Mr. Jack Brownless), *Iris danfordiae* and 'J. S. Dijt' (Mr. Harley Milne) and *Narcissus* 'Tete-a-Tete', a very good dwarf multi-headed daffodil (Mrs. Jean Wylie). The Kilbryde Cup for an arrangement of cut flowers and foliage of rock garden plants in a container not exceeding six inches in diameter was worthily won from five other competitors by Mrs. W. Milne. This arrangement of *Daphne*, *Chionodoxa* and *Rhododendron* had a captivating all-over blend of reddish pink, blue and white against a grey-green background of *Hebe*, or was it *Veronica*?

The Bronze Medal for the highest aggregate of points in Section II open to those who had not won a Medal or Trophy at any previous Club Show was awarded to Master Roderick Milne, Edinburgh, surely one of the youngest, if not the youngest, member ever to win this award. In addition to the Medal he was also awarded the Midlothian

Bowl for the best plant in this Section for a splendid well flowered *Androsace pyrenaica*. Dare I say it that this was a much better flowered plant than that which received an Award of Merit from the R.H.S. in April 1950. Among Roddy's other prize-winning plants were *Primula denticulata* (red form), *Sedum spathulifolium* 'Capa Blanca', *Sempervivum tectorum*, *Narcissus* 'Tete-a-Tete' and *Primula ingwersen-iana*, a large white primrose from Mount Olympus.

The principal class in Section II for 3 pans rock plants for which the Henry Archibald Rose Bowl is awarded was won by Dr. A. J. Richards, Newcastle, with a very good *Saxifraga apiculata*, the pale blue *Hepatica nobilis* and a lilac pink Juliana hybrid *Primula* labelled 'E. R. Janes', which it was not. 'E. R. Janes' is now a very rare plant and is of a most distinctive colour which some describe as almost brick red, whilst to others it is salmon red. Dr. Richards also took first prizes with that splendid snowdrop, *Galanthus ikariae* (fig. 20) and *Celmisia hectori*.

Runner-up for the Archibald Rose Bowl was Mrs. Jill Sleigh, Edinburgh, an indefatigable worker on behalf of the Club. Her three plants were *Saxifraga apiculata*, *Andromeda polifolia macrophylla*, probably the best of the Andromedas, and *Galanthus elwesii*, another fine snowdrop. Mrs. Sleigh's other prize-winning plants were *Saxifraga burseriana* 'Gloria', *Rhododendron* x *cilpinense* and, believe it or not, in Section II a good little plant with 14 flowers of *Dionysia tapetodes*.

Among the prize-winning exhibits in this Section the following were noted: *Narcissus* 'Tete-a-Tete', *Iris* 'Harmony', a very good *Saxifraga* x *jenkinsii* (Mrs. E. Craig), *Crocus chrysanthus* 'Cream Beauty', *Primula gracilipes*, *Pernettya mucronata* dwarf form (Mrs. Lynn Almond), *Narcissus minor* with at least 30 flowers (Mrs. Joan Dodds), a fine specimen of *Juniperus communis* 'Compressa' (Dr. Andrew Neil), and a huge bush in good order of *Rhododendron* x *praecox* (Dr. Nancy Neil).

In the Junior Section Miss Karen Wylie, Dunblane, received a prize for a white form of the common primrose, as did her sister Susan for *Iris reticulata*. Come on girls, try to emulate Roddy Milne's success next year.

Doctors Andrew and Nancy Neil, Edinburgh, staged an interesting exhibit of trees artificially dwarfed. They were only a foot or so high, while trees from the same sowing of seed had now reached ten feet in height. Some of the dwarfed trees were actually bearing cones. Dr. B. A. Knights, Kilbarchan, brought some two dozen *Iberis* raised from the same collection of seed to show the variability in habit of growth

and flower. We were delighted to have these two non-competitive features added to the Show.

Dr. M. O'Gorman, Gargunnock, on behalf of the Stirlingshire Group staged an exhibit of rock garden plants grown in the open ground to illustrate the range of plants which can be grown without protection. Right well did she succeed and we are grateful to her for the effort she and her Group members made to do this.

Our trade supporters of previous years, Alex. B. Duguid, Edrom Nurseries, Coldingham, and John R. Ponton, Old Cottage Gardens, Legerwood, Earlston, Berwickshire, were again welcomed with their stands of the many plants which they grow so well. On this occasion they were joined by Hartside Nursery Garden, Low Gill House, Alston, Cumbria, who, amongst other plants, had a collection of different forms of *Primula allionii* showing clearly how variable it is. We hope they will come again. All three expressed themselves as well satisfied with the business done.

DAVID LIVINGSTONE

NEWCASTLE UPON TYNE

THIS SHOW was held at the Memorial Hall, Ponteland, on 15th April 1978.

Exhibitors came from as far as Leicester, Lincolnshire and Merseyside, as well as from across the Border, and there were two American visitors, Mr. and Mrs. Paul Halladin from New Jersey, to what was in every sense Eric Watson's Show, for as organiser and exhibitor he excelled even his own high standards. With a total of ten first prizes in the Open Section, Mr. Watson won the R. B. Cooke Plate, took A.G.S. Medals in both the large and small pan classes for six rock plants and, for good measure, the Forrest Medal for *Dionysia bryoides*, H.1986, a little jewel of a plant which is my own favourite of the Dionysias he grows so well. (*D. bryoides* is illustrated in Vol. XV, ii, Fig. 12, and is the subject of a "Plant Portrait" in that *Journal*). Other plants of note among Mr. Watson's formidable exhibits were *Dionysia bryoides*, H.1990, *Dd. balsamea* and *revoluta*, a very well flowered collected plant of *Androsace wulfeniana*, fine specimens of *Aa. imbricata, muscoidea, pyrenaica* and *lehmannii*, a fine collected form of *Saxifraga burseriana* and a cushion of *Haastia pulvinaris* in perfect condition.

Of the many excellent plants in the Open Section some which particularly caught my eye were *Viola calcarata* var. *zoysii*, shown by D.

Mowbray, *Phyllodoce caerulea* in the peak of condition (Dr. A. J. Richards), a large cushion of *Pygmaea pulvinaris*, liberally dotted with its white flowers, and *Narcissus rupicola* (D. F. Mowle), a magnificent pan of *Cyclamen persicum* (A. J. Holman), *Androsace laevigata* and *Draba mollissima* (R. A. Hodgson), and the delightful *Celmisia philocremna* (Mrs. S. Maule). We have come to expect to see a splendid selection of *Fritillaria* species at this Show, and this year was no exception; I found Mrs. Maule's dainty *F. sibthorpiana* with its conical yellow bells more attractive than its rather melancholy, if more difficult and aristocratic cousins. Finally there were the Primulas, always the mainstay of a Spring Show: excellent plants of *Pp. gracilipes* (Dr. A. W. Davidson), *marginata rubra* (J. R. Myers), 'Linda Pope' (E. G. Watson and D. Livingstone), 'Beatrice Wooster' (Watson and S. Jackson), *rubra* and 'Barbara Parker' (both Watson) were a delight, but the star was without a doubt the exquisite *P. caveana*, on view for the first time at a Show in the North-East.

It was interesting to compare three pans of *Primula caveana*: two collected plants (Watson and D. T. Riley) looked slightly less hearty than a larger-flowered specimen grown from seed by J. R. Johnstone, who has contributed the following note:

> A member of the Rotundifolia Section, *Primula caveana* is found in Sikkim and Nepal at an altitude between 14,600 and 16,600 ft., although in the Kharta Valley, near Mount Everest, it has been recorded at 20,000 ft. The plant shown was raised from seed collected by Dr. G. F. Smith in Eastern Nepal in 1976. It is growing in Levington compost, and it is kept plunged in the open garden in full shade. From November until mid-March it was protected from overhead damp.

First prizes in Section B with *Saxifraga heinrichii* and *Salvia argentea*, a striking silver-foliage plant, and in the conifer and three-pan *Sempervivum* class—a most attractive and well-balanced entry here—earned the Gordon Harrison Cup for Mr. D. J. Kershaw of Formby, Merseyside. Ray Johnstone's much feted *Soldanella minima*, perhaps not quite as immaculate this year, but with 220 flowers over its six-inch mat of tiny foliage, vied with Mrs. K. C. Wilson's splendid *Paraquilegia grandiflora*, winner of the Farrer Medal at Nottingham the previous week, as the outstanding plant in this section. The Ericaceae class was particularly good, the prizes going, in order, to *Andromeda polifolia macrophylla* (Mrs. Jill Sleigh), *Cassiope* 'Muirhead' (Richards), and *Vaccinium nummularia* (Mrs. Wilson). Mrs. Wilson's charming

Daphne pygmaea and Mr. S. Jackson's *Cyclamen repandum* were also noteworthy winners.

In Section C your reporter took the Cyril Barnes Trophy by virtue of his "Firsts" in the three three-pan classes, for rock plants in flower, *Primulaceae* and bulbous plants. The most interesting of his exhibits were a very large-flowered *Pulsatilla vulgaris* of a clear, soft mauve and a small plant of Roy Elliott's selected *Androsace cylindrica* x *hirtella* seedling. The outstanding entries in this—beginners' (??)—section were D. H. B. Gibbs' very fine *Androsace muscoidea* and *Harrimanella* (*Cassiope*) *hypnoides*, which won for R. R. Brown the Silver Spoon for the best plant shown in Section C by a local group member and which was very much in contention for the Forrest Medal. Other notable plants here were *Andromeda polifolia* (Davidson), *Daphne sericea* and *Andromeda polifolia microphylla* (E. Pinnington), *Helichrysum angustifolium* (E. N. Woodward) and two very good Saxifrages, *Ss. retusa* (Mrs. Nan Watson) and *cebennensis* (Davidson). There was a very heavy entry in Section C, with not a weak or poor plant on view, and almost every class was hotly contested. It says something for the overall standard that neither *Pleione forrestii* nor a large pan of *Leucojum nicaeënse* featured in the prize list in their respective classes. We may look forward to next year with confidence.

Dr. D. J. Harberd aroused considerable interest and gave great pleasure with his race of *Pleione* 'Shantung' hybrids, the selected offspring of his *formosanum-forrestii* cross. All the plants were vigorous and large-flowered, and showed a range of delicate shading from a soft grey-pink to a beautiful pale yellow, with the stronger markings of *Pleione forrestii* on the keels.

There was plenty of interest and activity away from the competition benches. Dr. A. J. Richards staged a most informative display of the petiolarid primulas growing at Kilbryde, the garden of the late R. B. Cooke; Mr. Neil Huntley of Hartside Nurseries, Alston, filled one corner of the hall with his most attractive trade stand; Mr. Norman Woodward, efficient and indefatigable as ever, ran a publications and information stall; the willing band of helpers on the plant stall were frantically busy all day, as were Mrs. Gloria Johnstone and her team of ladies who provided a continuous service of drinks and refreshments in the lounge.

Our three judges, Messrs. R. J. D. MacBeath, J. D. Main and E. M. Upward, commented on the overall high quality of the competitive entries, despite the poor weather and the late and difficult season.

Our American friends were delighted with their visit to the Show. The crowds that filled the hall throughout the afternoon appeared to be interested and suitably impressed. But, at the end of a highly successful day, no-one was more satisfied with the proceedings than Gavin Davidson, aged 7, who won an equal third prize with a bonny plant of *Draba aizoides*, though how the judges could equate his *Draba* with his father's *Saxifraga exarata* is beyond my comprehension!

BRIAN DAVIDSON

PERTH—22nd April 1978

A MOVE to another venue must always be a matter for concern to the organisers of a Show, but fortunately the accommodation in Kinnoull Church Hall proved to be just right for a good layout of tables. The final result was a hall well filled with plants but not overcrowded, the exhibits being shown to their best advantage, while leaving comfortable access for visitors.

A comparison of the numbers of class entries at the Perth Show for the past five years reveals the following facts which could perhaps be considered as encouraging for the future. The highest total number of entries was in 1978. Entries in Section I this year were nearly at a maximum despite the severity of the winter and the very late season. Entries in Section II have increased consistently year by year and were three times higher this year than in 1974. The number of members winning prizes in Section I has increased every year and is now double what it was in 1974. The trend appears to be that the number of competitors is increasing and the distribution of prizes is more widespread. A new generation of main competitors is taking over and there is further promise with the emergence of various junior exhibitors. Following last year's break-through when a junior member won a Bronze Medal in Section II, six enthusiastic youngsters competed at this Show.

The George Forrest Memorial Medal was awarded to a truly outstanding plant of *Kalmiopsis leachiana* entered by Mr. Malcolm Adair, Glasgow. Looking healthy and happy after having been uplifted from the open ground and unscathed by the atrocious winter weather, there could have been no one who disagreed with the judges that this was the most meritorious plant in the Show. Nor could anyone have denied *Androsace alpina*, a high altitude plant which grows in the Alps up to the maximum height of vegetation, the right to be awarded the

silver Alpine Ibex, the Major-General D. M. Murray-Lyon Memorial Trophy. This handsome and much admired trophy will adorn the Invergowrie home of Henry and Margaret Taylor for twelve months in company with the Alexander Caird Cup for the Six-pan Class and the L. C. Middleton Rose Bowl for the most points gained from first prizes in Section I. The Six-pan entry consisted of *Primula auricula albo-cincta*, *Primula marginata* 'Linda Pope', *Ranunculus bilobus*, *Sarcocapnos crassifolia*, a blue *Viola carcarata* and a perfectly matching yellow *Viola calcarata* ssp. *zoysii*.

There was really strong competition in the Three-pan Class and the Dundas Quaich was taken to Aberdeen by Mr. H. Esslemont with a delightful *Shortia uniflora* 'Grandiflora', *Dionysia aretioides* and a lovely plant of the long-branched form of *Kalmiopsis leachiana*. The *Shortia* obtained a Certificate of Merit. Mr. Eric Watson, from Newcastle, whom we were pleased to welcome to the Perth Show, was second in this Class with *Androsace imbricata*, *Saxifraga stolitzkae* (an extremely rare plant in this country) and a collected *Primula marginata* very like the old favourite 'Marven'. From Torphins, Mr. J. D. Crosland's excellent three pans of *Cyclamen creticum*, *Fritillaria ehrhartii* and *Orchis longicornu* had to be content with third place, which shows how stiff was the competition.

Out of seven entries for the New, Rare or Difficult Class, the three prizes went to Mr. Crosland's *Pleione humilis*, Mr. Esslemont's *Dionysia viscidula* and Mr. Ray Johnstone's (from Co. Durham) *Primula caveana*, in that order.

The "Grown from Seed" winners were, another one of Mr. Watson's three *Androsace imbricata* which he had at the Show, a white-flowered *Paraquilegia grandiflora* from Afghanistan, entered by Mrs. Maule, and a *Primula auricula balbisii* x *marginata* hybridised by Mr and Mrs. Taylor.

Primula scotica (two entries) and *Loiseleuria procumbens*, were the winners in the Class for Scottish natives.

For the second year running, the Taylors' *Senecio leucophyllus* came first in the "Plant with silvery foliage" Class. This *Senecio* is a newcomer to this Class at the Perth Show, but the winning plant was outstandingly beautiful and *Senecio leucophyllus* is surely likely to delight us by its presence at many Shows to come.

Some of the other main prizewinners and their plants which specially took my attention were, Mrs. Joan Stead with *Celmisia philocremna*, *Gypsophila aretioides caucasica*, *Primula forrestii*, a fine pan of *Fritillaria*

and *Tropaeolum hookerianum*; Miss Blackwood with *Polygala chamaebuxus* 'Purpurea', *Lithospermum oleifolium*, *Oxalis obtusa*, *Pleione limprichtii*, *Pleione pricei* and *Corydalis cashmeriana*; Dr. Stead with *Cyclamen pseudibericum*, *Primula rosea*, *Viola calcarata* ssp. *zoysii*, *Ornithogalum fimbricatum* and *Oxalis pes-caprae* (although a visitor declared that this was a plant which it had been found impossible to eradicate from vineyards in climates warmer than ours); Mr. Adair with (in addition to the plant which was awarded the Forrest Medal) *Pulsatilla vernalis* and the dainty fern *Cystopteris fragilis*; Mr. and Mrs. Bezzant with *Rhododendron pemakoense*, some very good Primulas and Dwarf Conifers and *Soldanella minima*.

The final Class in Section I is for a container of Various Rock Garden Plants, arranged for effect, and this was won by Mrs. Jean Wyllie, while Mrs. Lynn Almond was runner-up, both entries being attractive examples of a good choice of plants and skilful planting.

There were fourteen members competing in Section I at Perth for the first time and we take this opportunity to thank them for their support. Mr. and Mrs. V. Chambers from Killearn were in this category and although they had only one entry it attracted much attention. Their panful of *Primula aureata* subspecies *fimbriata*, a very fine form of a not too easy primula which they had collected in Nepal during 1977, was indeed exciting.

In Section II a contender for the past few years, Mrs. Linklater Shirras, Inverness, emerged this year with the Bronze Medal for most points, a success her husband achieved two years earlier. A large number of entries from new competitors—Mr. L. Bilton, Scotlandwell, Mrs. Lynn Almond, Dundee, and Mr. Ian J. Douglas, St. Andrews—made the competition very keen.

In Section III in the Class for a Posy Bowl of Cut Flowers from Rock Plants, the entry by Mrs. Jane Martin, Scotlandwell, was adjudged the best. Entries in the remaining Classes of this Section were fewer than normal, but the exhibits were of good quality.

A non-competitive exhibit from the Royal Botanic Garden, Edinburgh, was a huge specimen of the dwarfest of all shrubs, *Kelseya uniflora* (fig. 22), not in flower. The plant formed a dense compact cushion of rosettes of very small leaves and gave the appearance of great age.

The Show Schedule booklet issued by the Club always contains an appeal by the Council for paintings and photographs, etc., of garden or plant interest to be brought along by members as non-competitive

displays. The response this year was particularly pleasing. Twenty of his newest water colour paintings by Mr. Lawrence Greenwood attracted much attention and admiration; the Angus Seed Exchange Hon. Manager, Miss Joyce Halley, had on show twelve excellent coloured prints of mountain plants, each 12 inches square, sent to her by a member in Italy; Mrs. Lynn Almond showed a large and varied selection of flowers on stamps, and as usual the hall was liberally decorated with floral posters prepared by some of the Show Secretary's pupils from Caledonian Road School. These children also had on display a selection of miniature gardens which they had constructed. All the foregoing are due our grateful thanks.

Mr. J. R. Aitken had other commitments and was unable to be present, but was good enough to find time the previous evening to decorate the front of the platform with a fine display of plants from Orchardbank Nursery, Perth.

Last but not least thanks are due to the Show Secretary, Miss Rhoda Fothergill, for successfully overcoming all the problems of staging a Show at a new venue and to the various helpers, particularly the ladies who so willingly and cheerfully prepared and served the much appreciated refreshments.

JOHN B. DUFF

ABERDEEN—29th April 1978

IF PERSISTENT wintry conditions and one of the latest seasons on record cast doubts on prospects before the Show, these were immediately dispelled as the doors opened to present a display of finely grown plants, comparing in quality and numbers with any of previous years. Congratulations are expressly due to all exhibitors, professional and amateur, who, whatever their difficulties, combined to support the Show in such a splendid way. Their labours were many in providing the colour and the contrasting forms, over three hundred competitive entries alone, plus the special displays provided by the Cruickshank Botanic Garden, Aberdeen City Department of Leisure and Recreation, Messrs. Jack Drake of Aviemore, Mrs. McMurtrie of Balbithan House, Kintore, and not least a very comprehensive exhibit of *Lewisia* and *Primula* varieties by Mr. J. N. Aitken of Dyce, Aberdeenshire.

One of the highlights of the Show for many years, not simply as an artistic display, but also as an educational feature, has been provided

by the Cruickshank Botanic Garden and the courtesy of Aberdeen University. Upon the retiral last year of the garden's supervisor, Mr. F. G. Sutherland, his successor, Mr. R. Rutherford, has kindly stepped in to maintain this traditional and valued support. We express a warm welcome, and our thanks to Mr. Rutherford for a most excellent first display of plants, the focal point being the brilliant red of *Rhododendron* 'Elizabeth', leading the eye to an instructive assembly of dwarf shrubs, bulbs and perennial herbs, including *Ramonda myconi* (fig. 21), *Sanguinaria canadensis*, *Primula*, *Narcissus*, *Fritillaria*, *Rhodohypoxis*, and the rare *Weldenia candida* from Guatemala. The exhibit was awarded a Certificate of Merit.

Once again we were pleased to welcome the City of Aberdeen Department of Leisure & Recreation representing the Alpine Sections at the Victoria Park, Aberdeen. A very wide range of species and hybrids, on a six by four foot stand, competed for recognition, and also gained a Certificate of Merit. Dwarf conifers in variety, *Acer palmatum*, *Rhododendron pemakoense* and *sargentianum*, providing a framework for Primulas, dwarf *Tulipa* and *Narcissus* species, *Fritillaria*, Lewisias, Cassiopes and *Armeria*.

Messrs. Jack Drake and Mrs. McMurtrie were commended on their supply of alpines in variety to a steady stream of buyers, their specialised knowledge of plants and cultivation making a unique contribution to the status of the Show.

Additionally, the miniature gallery of flower paintings by Mrs. McMurtrie invited inspection and appreciation of the fine detail and sensitivity in their execution.

For the third successive year Mr. A. D. McKelvie's entries gained the Walker of Portlethen Trophy for the highest aggregate of points in the open Section I. Eleven of his plants took first prizes, including *Antennaria dioica* (native to Scotland), *Doronicum cordatum*, *Hutchinsia alpina*, *Daphne cneorum*, Rhododendrons 'Curlew' and 'Songbird', Cassiopes 'Muirhead', 'Badenoch', and 'Kathleen Dryden', *Tulipa batalinii*, a pink-flowered *Lewisia cotyledon* and a fine specimen of *Prunus prostrata* retaining a truly alpine prostrate habit. But this year the honour succeeded by a much smaller margin over second place gained by Mr. J. N. Aitken, Dyce, whose fine plants included *Lewisia tweedyi*, *rosea* and *alba* forms, *Calceolaria fothergillii*, *Calceolaria darwinii*, *Celmisia ramulosa*, *Draba rigida*, *Narcissus scaberulus*, *Tulipa biflora* and *Gentiana verna*.

It is many years since the six pans Class No. 1, Section I, staged four

entries, and stimulating to speculate that competition brings out the best! The first honour passed to Show Secretary Mr. J. D. Crosland staging *Primula forrestii, Pleione forrestii, Cyclamen creticum, Fritillaria michaelovskyi, Fritillaria ehrhartii* and *Orchis longicornu.* Within this entry one of Forrest's introductions, *Pleione forrestii,* took the premier award, the Forrest Memorial Medal. The distribution of this fine yellow *Pleione* is steadily widening, but as yet it is still a comparatively rare orchid. Mr. Esslemont's entry gained second place with specimen plants of *Trillium rivale, Kalmiopsis leachiana* 'Marcel le Piniec', *Sanguinaria canadensis, Fritillaria meleagris alba, Androsace vandellii* (formerly *A. imbricata*) and *Fritillaria graeca* all in immaculate presentation. Third place, taken by Mr. J. N. Aitken's entry, included examples of *Lewisia tweedii rosea, Gentiana acaulis, Oxalis laciniata* from Patagonia, *Claytonia nivalis, Primula pubescens* 'Faldonside' and a *Tulipa* species.

Other notable plants in Section I were: *Dionysia aretioides, Shortia galacifolia, Cyclamen libanoticum, Raoulia* x *logani, Androsace pyrenaica,* grown and shown by Mr. Esslemont, who also took first places in the two classes raised from seed with *Raoulia eximia, Dionysia microphylla*—seed from Professor Hewer's 1971 Expedition to Iran, and *Androsace vandellii.*

The class "Rare, New and Difficult" never fails to stimulate interest and the first three were *Raoulia eximia, Paraquilegia grandiflora* (*anemonoides*) (fig. 23) and the diminutive *Viola fletti,* shown respectively by Dr. D. G. Hardy, Mr. J. D. Crosland and Mrs. Sheila Maule from Edinburgh.

Last year's winner of the Bronze Medal, Section II, Mr. W. D. Holmes, made his debut in the Open Section I with well grown specimens of *Pulsatilla vulgaris, Rhododendron pemakoense*—this plant taking a first equal with Mrs. S. M. Simpson's *Rhododendron laudandum* var. *temoense—Corydalis solida, Primula warshenewskiana* and *P. darialica,* and the double form of *Sanguinaria canadensis.*

Pleione humilis 'Frank Kingdon-Ward' and two pans of *Pleione limprichtii* were shown respectively by Mr. Crosland, Mrs. S. M. Simpson and Mr. J. N. Aitken, while in the classes for Primulas, Asiatic, European and American, Dr. Hardy's plants *Primula rosea, bracteosa, pubescens,* 'Mrs. J. H. Wilson', and *Primula marginata* 'Inshriach' claimed all four first prizes. Mr. G. A. Sinclair took the lead in the *Lewisia* two pans class with two well flowered specimens of *Lewisia nevadensis* and *cotyledon* hybrid.

In Section II the first impression was of well filled colourful benches. The number of entries proved to be much higher and many of them from new members of the Club.

Mrs. Craig of Pitfodels, Aberdeen, gained the highest number of points in this section with a wide variety of plants, and consequently won the Bronze Medal.

The Aberdeen Quaich, for the Best Plant in the Section, was won by Mrs. Buyers of Dyce, Aberdeen, showing for the first time. Her entry was in the class for Dwarf Rhododendrons—a pale pink hybrid of uncertain parentage, a most handsome plant full of flowers and just at its best.

The Special Prize for Two Rock Plants of Different Genera, in which Mrs. Rona Williamson of Kintore took the honours, was awarded to a beautiful violet-blue form of *Primula acaulis* and an extremely floriferous *Ranunculus* 'Molten Gold'. In the same class other praiseworthy plants noted were *Androsace carnea halleri, Rhodohypoxis baurii* and a tiny fairy of a plant of *Anemone nemorosa* 'Alba Plena'.

In the class for cushion plants there were some well grown Saxifragas and a small but healthy *Raoulia australis.*

As often happens the date of our Show coincides with the time when *Polygala chamaebuxus* is at its best, and once again this proved to be the best of the Dwarf Shrubs.

Such a large entry in the Dwarf Conifer class caused a few problems in staging which were soon resolved—such beautifully shaped specimens deserved space to be seen at their best. They duly were, with *Chamaecyparis* 'Elwoodii' taking first for Mrs. Craig. An *Abies balsamea* var. *hudsonia* and *Chamaecyparis* 'Boulevard' were other good plants.

There were fewer Dwarf Bulbs than usual, but some lovely *Narcissus* —the dark yellow of 'Teta-a-Tete' and 'W. P. Milner'. A lovely pan of *Tulipa tarda* was of note, as was the striking *T. greigii. Trillium erectum* attracted attention against a number of Erythroniums which never seem to be at their best in pots but so graceful in the garden.

From various exhibitors, Mr. Bull and Mrs. Williamson in particular, we had the pleasure of seeing Double Primroses grown to perfection, proving their renewed popularity, perhaps because of their striking colour forms.

There was keen competition in the class Saxifragaceae with one of our Juniors—Miss Julie Sinclair—bringing to our notice a lovely plant of *Heuchera merriamii.* Gentians of quality were *G. acaulis* with its large bells, *G. verna angulosa* and *G. saxosa.*

A large entry this year of Sedums and Sempervivums, *S. spathulifolium* being popular, as were the "cobwebs" of which *Sempervivum arachnoideum* won a first for Mrs. Smart, one of our welcome newcomers.

Romanzoffia unalaschcensis, and *Cassiope* 'Medusa' were other well grown plants, and one, unknown to many, the lovely *Valeriana phu* 'Aurea' with daffodil yellow coloured leaves was shown by Mrs. Buyers.

As always, the delicate floral arrangements and the various containers of living plants were much admired, and doubtless inspired many visitors to try their hands on getting home.

Perhaps the main anxiety in the present inflationary trend is the matter of sharply rising costs, but happily on this occasion expenses were covered, thanks to the interest, the industry and not least the generosity of members who gave so willingly many hours of their time, or cash donations.

An innovation this year organised and managed entirely by the ladies under the guidance of Mrs. Sylvia Simpson and Mrs. Boyd, was the cake and candy stall, which made a handsome contribution to income. Teas were served throughout the Show by Mrs. Frances McKelvie and her willing helpers; lunches for Judges and Committee on the spot in order to provide continuous service in the hall were provided by Mrs. Esslemont, Mrs. Simpson and Mrs. Crosland. Seed sales were organised profitably by Dr. D. G. Hardy, and Publicity and recruitment of new members was in the hands of Mr. A. D. McKelvie.

Finally, for the exacting task of allocating the awards, our compliments and thanks to the Judges for their deliberations: Mr. J. G. Lawson, Mr. F. G. Sutherland, Mrs. S. Maule, Mr. A. D. McKelvie, Mrs. M. McMurtrie and Mrs. M. Harbord.

The Committee went home tired after a long day, but gratified in the thought of so much given by so many, in different ways, to ensure the success of the occasion.

SYLVIA M. SIMPSON
JACK D. CROSLAND

GLASGOW

GLASGOW SHOW, on May 13th, was held once more at the Knightswood Community Centre—a venue which, despite its distance from the city centre, embodies many advantages, and where we seem to be establishing a rapport with the local folk, to judge by the increased gate.

The Dr. Wm. Buchanan Trophy was won by Dr. Peter Semple, whose 6 pan entry included a beautifully flowered *Ranunculus insignis*, a showy New Zealander, much loved by the slugs.

The Henry Archibald Trophy went to that staunch supporter of the Shows, Mr Jack Crosland. The Wm. C. Buchanan Cup (3 pans rare, new or difficult) was won by Mr and Mrs. Henry Taylor with *Fritillaria hispanica*, *Sarcocapnos crassifolius*, and a lovely pink-flowered *Ranunculus parnassifolius*. For the second year running, Mr. Malcolm Adair won the Darling Memorial Salver for 3 pans dwarf Rhododendrons (*Rh.* 'Chikor', 'Curlew' and *calostrotum*) and added to it the Crawford Challenge Cup for the most first prizes in Section I. The Forrest Medal was awarded to Mr. and Mrs. H. Taylor's *Androsace vandellii*, which remains just as fine a cushion plant, despite its frequent change of name.

Mrs. Freda Cochrane, after her near miss last year, made sure of the Bronze Medal and Wilson Trophy in Section II.

There was a dazzling display in the *Rhododendron* section, which gave great pleasure after the weather's unkind treatment of the earlier Rhododendrons. The Maxwell Trophy and Rhododendron Cup were won by the Wright Bros. of Arduaine; and the Urie Trophy was won by Mr. and Mrs. Neil Rutherford.

The National Trust for Scotland showed a beautiful stand, mainly of Rhododendrons, from the Brodick Castle Garden, and there was an informative display stand on Malesian Rhododendrons, from the Royal Botanic Garden, Edinburgh, by courtesy of the Regius Keeper.

Amongst the trade stands, we welcomed those old friends Mr. John Ponton of Legerwood, Hartside Nursery of Alston, and Marchburn Nursery, near Lanark. A new trade stand was that of the Linn Nursery, Cove, which gave us the pleasure of meeting again that long-standing member of the Club, Mrs. Taggart (sen.) who was helping Dr. Taggart with the stand.

Some of the plants which compelled attention in this eye catching show were: *Primula aureata* var. *fimbriata* (Mr. and Mrs. V. Chambers), a superb *Ranunculus traunfellneri*, *Ranunculus glacialis* (fig. 24) (so very difficult to flower in cultivation) and the beautiful and rare Scottish native *Oxytropis halleri* (Mr. and Mrs. H. Taylor). Shown by Mrs. Sheila Maule were *Viola langsdorffi*, and a superb *Primula takedana*, which bore no resemblance to, and far outshone, anything I have seen under this name before. Another eye catching *Primula* was shown by Mr. Richard Barr—*P. nepalensis* (? *tsarensis*), as was a lovely pan of

Gentiana verna var. *angulosa*. Drs. C. and J. Gosden showed a beautiful *Daphne arbuscula*. The Judges must have had difficulty in adjudicating between the pans of *Shortia soldanelloides* from Messrs. Adair and Simpson. Special mention must be made of the charming table garden, made and planted by Mrs. Margaret Taylor, and shown with a chart, naming the various species used.

Plants in Section II which would have held their own in any company were the *Tulbaghia alliacea* of Mr. S. Benham, and *Pleione limprichtii* of Mrs Sillitto.

It was a pleasure to see Section IV so much better supported than last year.

I would like to record my thanks to the Judges, and to all the members, both of the West of Scotland and of the other Groups, who worked so hard; at setting up, at the various functions during the Show, and at clearing away so expeditiously afterwards; to the Warden and staff of the Knightswood Community Centre; and last but by no means least, to those who gave such pleasure to so many members of the Club, and without whom there would be no Shows at all—our exhibitors.

JOAN STEAD

The Editor, Dear Sir,

LATE FROSTS IN THE SPRING

Here in the interior of Sweden in Skovde it happens very often that night frosts in late spring destroy buds and flowers of Rhododendrons, particularly *Rh. oreodoxa*, x *praecox* and *williamsianum* and many other early flowering species. However, some years ago I hit on a way to save my buds.

I threw a cover of plastic over the bushes and placed some stones on the basic part of it in order to get it as close to the ground as possible. Over small bushes such as *Rhododendron williamsianum* I made a little tent with polythene sheeting and secured this to the ground with pegs. Inside the tent I put a rather large candle in a tin.

When they tell us on TV that we have to expect frost in the coming night I light the candle. The small heat from the candle is enough to save the buds. It is not very much trouble and it costs nothing if you know where your wife has the candle-ends from last Christmas.

GOSTA BONDE, Skovde, Sweden

Chelsea

by ALF EVANS

THIS YEAR the S.R.G.C. Tour of Gardens, Nurseries and the Chelsea Flower Show was extended by one day, to eight days, to allow the organisers time to include in the itinerary gardens in the English south eastern counties and in East Anglia. Once again the tour was fully booked and a bus carrying over 40 members set off from Edinburgh on Saturday 20th May 1978, on the expedition. It was a lovely morning and this weather was to continue for the whole period.

The programme was a full one and arranged so that the tour went south down the west side of the country and back by an east coast route. This year visits were made to Holehird, the garden of the Lakeland Horticultural Society at Windermere; Hollett's Alpine Nursery at Sedbergh, Cumbria; Roy Elliott's and Jim Broadhurst's gardens at Birmingham; the Royal Horticultural Society's Garden, Wisley; the Royal Botanic Gardens, Kew; Chelsea Flower Show (the only bus party to arrive at Chelsea on members' day, so much so in fact that a helpful though slightly concerned policeman enquired "Did we realise that it was only members who were allowed in that day?"); Ingwersen's Alpine Nursery, East Grinstead, Sussex; Dr. Jack Elliott's garden in Kent; Beth Chatto's Garden Nursery, Colchester; Alan Bloom's large dell garden, Bressingham, Norfolk; Norwich Cathedral; Maurice Mason's large garden and arboretum, Talbot Manor, nr. King's Lynn; Lincoln Cathedral and, finally, the North of England Horticultural Society's Garden, Harlow Car, Harrogate. Every garden had something special to offer and admire and all were well worth the efforts required to get there. Some roads and lanes were on the narrow side for our big touring bus, but we survived.

The gardens visited varied a great deal and were full of interesting and desirable plants. Furthermore, they were so tidy that they looked as though they had been preened for our visit. High alpine treasures, difficult dwarf species, unusual bulbous plants, herbaceous perennials of high garden merit, flowering shrubs and handsome trees all came in for scrutiny and comment. The plants were displayed in a variety of settings depending on their type and size, and these differed from natural rock gardens to cossetting alpine houses and sophisticated cold frames. From open sites or, perhaps, where they could be tucked into

the shelter of a large boulder, to carefully chosen locations on an extensive undercover wall of tufa, rare and special plants flourished. Ideas were sought from smaller intimate gardens cared for by individuals and from large gardens which were informally designed. Open, stream-side situations were exploited and arboreta in which shade-tolerant species abounded provided lessons on a different scale. It would be possible, in fact quite easy, to give written reports on each garden visited and to list plants which were particularly attractive at the time of visiting, but this could comprise a complete *Journal.* It is better that the story of how these individual gardens appealed should be left to those who took part for, obviously, there are 40 different stories to be told.

One thing must be made clear, however, and that is that in every instance the S.R.G.C. party met with a friendly reception and on more than one occasion generous hospitality. We very much appreciate what our hosts did to make this adventure such a memorable one. One other group of selfless individuals, who cannot be forgotten and without whom entry into Chelsea would not have been possible on the Tuesday, consists of those R.H.S. members who surrendered their *Private View* transferable tickets so that non-members would benefit and have the opportunity to see Chelsea on that very special day.

The organisers wish to place on record their thanks to all who entered into the spirit of the 1977 and 1978 Chelsea ventures.

The Editor, Dear Sir, 5/5/78

Our crocuses are untouched by sparrows, even the yellow ones, but various species of *Pulsatilla, Anemone* and *Lychnis,* the woolly-leaved ones, are attacked for nest-building material, presumably, though the pieces are left on the ground. The unkindest cut of all came last week when we had an order for *Gentiana* 'Inverleith' from Jack Drake; it was also attacked. Our house is called Inverleith. The garden now is a mass of squares of wire-netting.

Yours faithfully,
GAVINE SIMON, Stranraer

The Seed Exchange

THROUGHOUT the summer and autumn members of the Club from all round the world have been collecting seed. Some have been climbing in the high mountains to seek it, others have found it at lower levels, in woodlands or in their own gardens. From New Zealand and Japan, Canada and U.S.A., from Czechoslovakia to the Pyrenees and in many other places besides, seed is at this moment being cleaned, labelled and parcelled up to send to the Hon. Manager of the Angus Group Seed Exchange.

But what happens next?

Before the seed travels back to those who wish to grow it there is much work to be done.

To begin with parcels galore arrive, in October, at the home of the Seed Exchange Manager, Joyce Halley. Each one is opened and acknowledged, then the enclosed packets are sorted alphabetically. Sometimes, alas, the wrapping has been too frail and an unsortable medley of seed pours out, but luckily this does not often happen. Though most appear to be correctly named there are sometimes names which sound unusual, to say the least, and these must be tracked down with the aid of books and professional botanists.

It helps a great deal if parcels arrive in time, but this is not always possible and there is often quite a long addendum of late arrivals. Finally, however, the list is made up, the 3000 or so species and hybrids are numbered, and the whole list is sent off to the Printer.

From now on the work becomes more exacting. Two rooms of Joyce's house are given over almost entirely to the Seed Exchange for about three months. On the tables are placed the neat rows of boxes with divisions to take the standard seed envelope. Joyce and her helpers open the packets which have arrived and tip an appropriate amount into little envelopes, numbering each one according to the printed list. Although this job can be done by experienced helpers in their own time at home, it involves a vast number of man/woman hours of work before 3000 kinds are duly ready to send out.

Meanwhile the Seed Lists have been posted to Donors and to other Members who ask for them, and in no time at all the first requests have arrived. Joyce has to go over all the requests carefully; seed of rarer plants is often in very short supply and in fairness to everyone she will be unable to give all the "first choices". She does her best to let each member have at least some of his requested rarities.

From now on the house teems with activity. Two or three members at a time, mostly from Angus but some from further afield, take the marked lists, pick out the numbered packets, check them and put them into the addressed envelopes. This needs great concentration and accuracy; after a few hours everyone is glad of a break for lunch. Then on again in the afternoon. Next day it may be a different team. So it goes on, week after week, until eventually, with a sigh of relief, the last envelope is filled and posted.

Although the team of helpers changes, many of them come again and again. We owe them a tremendous debt of gratitude for doing a job which, especially for our Overseas Members, ranks with the *Journal* in its value to the whole Club.

But one person carries on the work and shoulders the responsibility all through the winter. Those of us who enjoy growing plants from seed can never be sufficiently grateful to Joyce Halley for the unstinted devotion to her job.

K. S. H.

Recent Acquisitions from the Seed Exchange

by M. A. and P. J. STONE

Introduction:

These few notes which will, Editor and time permitting, be the first of a series, are not intended as another "how to do it" article, but are simply an account of our experiences. The practical details of seed-raising are well covered in the leaflets available from our seed exchange, and in the long series of articles by Dr. Good in the A.G.S. Bulletin, Vols. 42-3.

In a recent questionnaire sent to new members, a large proportion gave access to the seed exchange as a major reason for joining. Certainly for us "country folk", away from the centre of gravity of the Club, the exchange is one of the main benefits of membership; and we should like to express our thanks to the Seed Exchange Manager and all her helpers for the great pleasure they have made possible for us. We feel sure most members will realise the enormous workload

involved in operating the seed scheme. We find ourselves somewhat in the position of a travel writer who publicises a favourite quiet spot, only to find it overrun next season.

Of the members who do not use the exchange, we have heard two extreme opinions expressed: on the one hand, there are those who say they cannot wait; they like to buy a plant in bud or flower. In fact, many alpines will flower in their second season from seed and are no more trouble than the "wallflowers" and "Canterbury Bells" raised by non-alpine gardeners as a matter of routine. At the other extreme, there are others who are heard to say: "Oh, I never bother with the Seed Exchange; it doesn't have the sort of plants I grow", implying that they only deign to grow the super rarities unavailable to ordinary folk. The whole point of the Seed Exchange is that it does bring plants not available commercially within the reach of all members.

The Seed Exchange also provides an international pool of plants. A certain plant may die out in one country and be re-introduced, either from the wild or cultivation, via another. For example, *Primula serratifolia* has become very rare in Britain; viable seed has been offered recently coming, we believe, from Sweden. The ideal may be to select your plant in flower from the wild, in order to obtain a good form. Certainly this is the best approach to the European flora; but if we all followed it, there would soon be no wild population. A little seed taken by an individual for the Exchange does infinitely less harm than wholesale digging by parties. In any case, how many of us can collect in the Rockies or Himalayas?

And so finally to the vexed question of naming. The Seed Exchange manager cannot guarantee the accuracy of any name; she is almost entirely in the hands of her donors. While the gross errors are easy for the trained eye to spot, many are impossible to detect at the seed stage. It is most frustrating to raise, say, *Primula longiflora* only to find *P. farinosa* coming up, as happened to us last year. Plants have been raised from exchange seed under an incorrect name, and their seed returned in good faith, thus perpetuating the mistake. Notorious recent examples are *Gentiana kurroo*, *Lewisia brachycalyx* and *Silene hookeri*. Independent verification is necessary: visit, be visited, and read. Take seed from good forms, making sure it is absolutely ripe; immature seed wastes everyone's time. Premature collection is more common than generally realised; perhaps people are afraid of missing the seed. Even "professional" collectors are not immune; we received unripe seed of Himalayan gentians as part of our share from a recent

expedition. It did not germinate, of course! Please be careful to store your seed in a cool place. Joyce Halley and her team take a great deal of trouble, even leaving part of the house unheated in winter, all to no avail if the seed is already dead. And you are also giving us an excuse for failure if nothing comes up. We can always mark it down as D.O.A. (dead on arrival). Seriously, our motto always is: "If at first you don't succeed . . ."

Part I

Iris tenax: This Iris, a member of the N.W. American group, *Apogon Californicae,* forms an excellent starting point as it demonstrates clearly the value of a seed exchange. These species are not offered frequently by nurserymen, as they resent disturbance except when in growth in Spring. They are very infertile and most home-saved seed gives rise to hybrids. *I. innominata* is perhaps the most common in cultivation, many living up to the name. The answer is, of course, wild seed; and we obtained such from the 1974 exchange. Germination was rather slow and erratic, one seedling appearing in February '75 and another two in '76, of which one died. They were potted up soon after germination, when they had two leaves, and grown on for a year before planting out in the recommended woodland soil in half shade. The older survivor flowered well in 1977, producing beautifully pencilled flowers of a pearly-white ground colour. The other flowered this year (1978), pale mauve with similar markings. In both the flowers are large, though slender, for an iris of this size, being 10 cm. across on stems of 30 cms. Altogether an elegant plant.

Lilium formosanum var. *pricei:* A lily which illustrates another virtue of seed-raising: one can obtain a greater number of plants than most of us can afford to buy. Seed sown in January '74 germinated in April and several dozen young plants were potted in June. Growth was very rapid in spite of our complete lack of heat. They were planted out the next Spring just as they were showing through; some flowered the same year and the remainder in 1976.

One is always rather dubious of stating the size of a plant, it varies so much from garden to garden, but in the case of this unique high altitude form it is essential to the character: 15 cm. white trumpets, externally flushed maroon, on 10 cm. stems, yet so gentle and slender is the flare that they do not, in our opinion, appear out of scale. And a gorgeous scent too. Well-drained humusy soil in a position

where they can be viewed, and inhaled, from the south, as they face the sun. After flowering, a large seed-pod is formed which turns upright, the height then being 30 cm. A little seed should be sown every year as the bulbs are not long-lived. There will be plenty of excess to return to the exchange. Our plants have occasionally produced twin flowers.

Ourisia fragrans: Apart from the well-known *O. coccinea*, the Ourisias in general cultivation are all from New Zealand. Clay, having criticised the coarse leafiness of *Oo. macrocarpa* and *macrophylla* (fig. 25) (we don't agree; they are splendid ground cover in moist, half-shady places) moves on to praise many South American species. With this in mind, we obtained wild collected seed of *Oo. alpina, breviflora, fragrans* and *racemosa* in 1976. *O. alpina* germinated freely, but in spite of its name did not prove hardy here. *O. breviflora* and *O. racemosa* did not germinate, and *O. fragrans* produced a single plant. This was allowed to grow on undisturbed for a year, finally being potted up in June 1977. It flowered in May 1978, at this stage filling a 5 in. pot. The flowers are more regular in shape than the New Zealanders, having five notched petals of a pale lilac pink with deeper colour on the reverse. They really were fragrant, especially in the evening. Our plant is intermediate in size between *O. caespitosa* and its putative hybrid *O.* 'Snowflake'* being some 7 cm. high in flower. The close-growing mat has thick dark green, downy leaves, which are slightly sticky to the touch like some European primulas. There are short runners just below the soil surface and we hope to attempt division next Spring before risking one outside.

Primula luteola: Farrer, in "The English Rock Garden", wonders why this splendid member of the *Farinosae* from the Caucasus is so rarely seen in cultivation. Later, in the 1930s, the same is stated by Ingwersen in their 6d handbook "Asiatic Primulas" (those were the days; a comprehensive handbook for 2½p!); by K. C. Corsar in "Primulas in the Garden" of 1948; and in 1973 E. B. Anderson asks in "Seven Gardens": "How often is *P. luteola* itself seen these days?". Yet someone must be growing it, as seed is usually in the exchange. It was one of our early choices in the 1974 list, and our card index gives the following: "sown February, germinated March, potted up

*There is a New Zealand species, *O. cockayniana* which some botanists consider to be *O. caespitosa* x *O. macrocarpa*; in which case *O.* 'Snowflake' should be referred to it.

Fig. 24—*Ranunculus glacialis* in Austria 1971. See page 136
Photo—D. Nutt

Fig. 25—*Ourisia macrophylla* See page 144 Photo—A. Evans

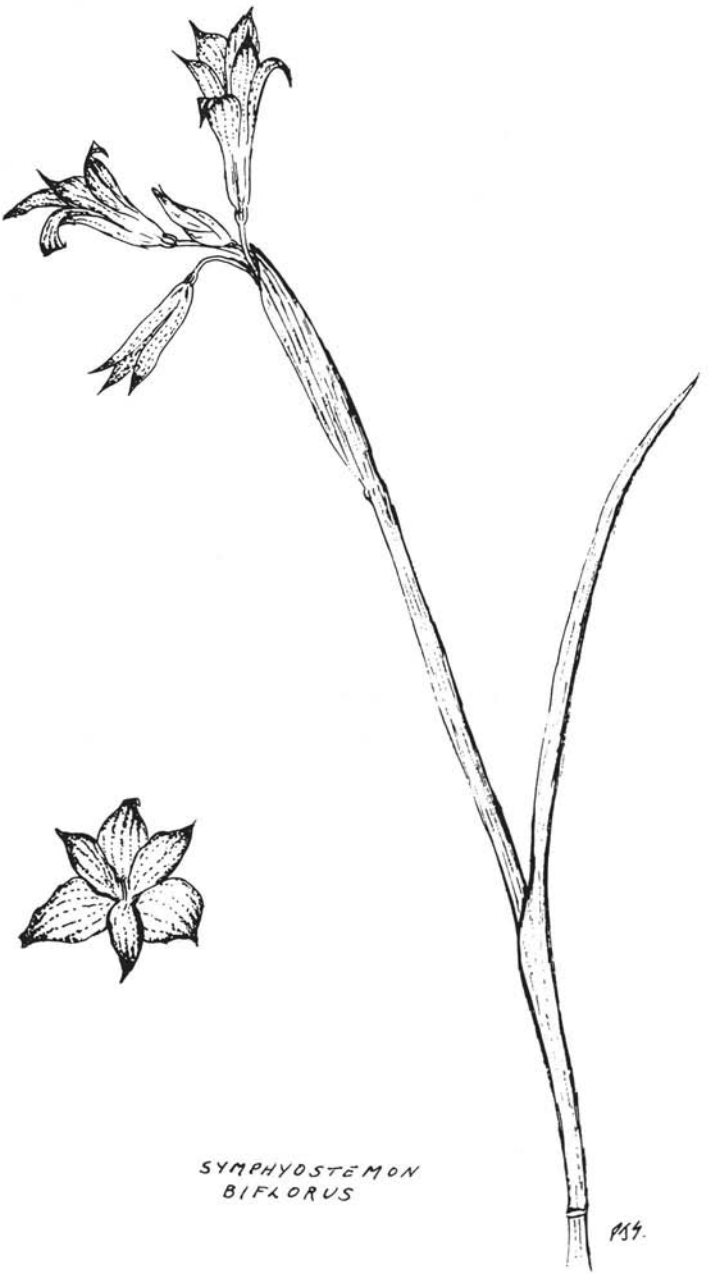


Fig 26—*Symphyostemon biflorus* See page 145 Line Drawing—P. Stone

June, and planted out in September 1974''. They flowered the following summer—what more can one ask? *P. luteola* has been described as a more graceful pale yellow *P. denticulata*, but to compare it with this coarse primula is to do it an injustice. The flower-head is less congested and the meal-less leaves are of a delightful apple green. Cultural requirements are simple; ample moisture when growing, but good drainage to avoid water-logging in winter, and division every two years at least. We often feel that water in the garden is like salt in food; more is easily added, an excess is nearly impossible to remove. It is therefore safer with Primulas like *P. luteola* and the Nivalids to err on the side of drainage and be prepared to water in a hot summer.

Rhododendron pumilum: This tiny species, usually less than 15 cm. high, while not as difficult as its stable-mate in the *Uniflorum* series *Rh. ludlowii*, is said not to be a particularly free-growing garden plant. However, with a name like ''Kingdon-Ward's pink baby'', we had to try it, and so requested seed in 1975. This was sown on the surface of a sphagnum moss/coarse sand mixture and they germinated freely in May. The seedlings were thinned and left to grow *in situ* for their first year. Still very tiny, they were potted up in threes in 3 in. pots and grown for a further year before being singled in spring 1977. Some flowered that year and all the ones we retained in 1978. Every single one was true to type: pink bells about 2 cm. long on 2.5 cm. pedicels, up to three per truss, and these on 5 cm. diameter mats of tiny (1 cm.) leaves. So much for ''Rhododendrons never come true from seed''. The pedicels lengthen in fruit to give an overall height of 8 cm. including the capsule. Although the dead-heading of slow-growing dwarfs is advised, we always leave one or two capsules per plant to provide for the next generation. Surprisingly, for a plant growing up to 14,000 ft. in the East Himalayas, it is sometimes said to be tender. Our plants were undamaged during the last winter which killed *Rh. megeratum* and cut *Rh. leucaspis* to the ground.

Symphyostemon biflorus (fig. 26): A South American irid which is closely related to the genus *Sisyrinchium*, and which at one time was known as *S. odoratissimum*. It is, however, a much choicer plant than most of this genus and well worth growing. We received a few —very few!—seeds in 1975, of which two germinated and were potted up in August of that year. One died in the winter of 1976-7, but the survivor flowered in June 1977. A rather tall, ungainly plant in its

pot, we decided to risk it outside and planted it, as a contrast with the creeping mats, in our paving. This bed comprises Caithness slabs, discarded by a local crofter from his kitchen, over well-drained sandy loam. The plant remained semi-evergreen during the severe winter of 1977-8 and produced, on 30 cm. stems, four heads of about six flowers each this summer. Can botanists count? Perhaps the herbarium specimen was a poor one with only two flowers. The flowers have six segments, the inner and outer trios being identical and united at the base to form a tube. In our specimen they are cream, lined dark magenta on the reverse. Not showy, but a plant of quiet refined beauty.

Angus Group Seed Exchange

HAVING collected my first batch of seed yesterday (mid June) I realise it is time to remind you to send your seed to me by the end of October.

The Editor likes his contributions to the *Journal* three months in advance, the seed list printers get four weeks to produce the list before the Christmas holidays, therefore we cannot linger for latecomers. Seeds or lists of seeds to come must reach me by 31st October.

Overseas members and home donors of seed will receive a list. Home members who wish a list and are not donors must send me a stamped addressed envelope, preferably $8\frac{1}{2} \times 5\frac{1}{2}$, or a sticky label to:—

Miss JOYCE HALLEY
16 Abercrombie Street
Barnhill
Dundee DD5 2NX

Applications for seed must be on the form provided in the seed list; all orders are date stamped and are dealt with in rotation in the following order: overseas donors, home donors, other overseas members, and home members.

We can supply envelopes for seed which can be obtained from:—

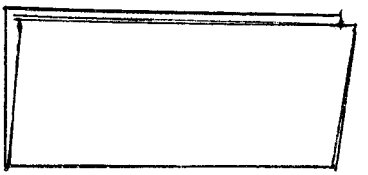
Dr. ISOBEL SMITH
36 Seafield Road
Broughty Ferry
Dundee

There are three sizes, 4 in. $\times$ $2\frac{1}{2}$ in., $4\frac{3}{4}$ in. $\times$ $2\frac{3}{4}$ in., and 5 in. $\times$ $3\frac{1}{2}$ in. at 44, 50 and 55 pence per 100 respectively, plus a 12p stamp for the first two sizes and a 15p stamp for the largest one. 20 of each size would cost you 30p, plus a 12p stamp.

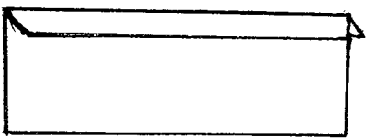
We are very indebted to the local members of the S.R.G.C. who do so much work for the exchange; please help them by sending in clean seed, in seed-proof packets, clearly and correctly labelled.

A seed-proof packet can be made from thin paper by following the instructions below. The size given is useful but can be altered as desired.

1. Start with a piece of paper 4 in. × 5 in. and fold in half.

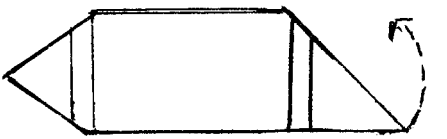


2. Keeping edges together make a narrow double fold along edges.



3. Turn paper over, at each end, fold short open edge onto single fold edge.

4. Fold each bottom corner up to top edge and tuck into fold.



We have a leaflet on methods of cleaning seed which can be obtained from Dr. Smith or myself by sending a stamped addressed envelope.

There is always a great demand for seed of Androsaces, Cyclamen, Gentians, Lewisias, Primulas and small bulbs. A few seeds of some of the rarer species are particularly welcome and we hope you have a good harvest.

JOYCE HALLEY

Obituary

PROFESSOR JAMES ROBERT MATTHEWS

THE HONORARY PRESIDENT of the Scottish Rock Garden Club, Emeritus Professor James Robert Matthews, C.B.E., M.A., LL.D., F.R.S.E., F.L.S., V.M.M., died at Banchory on 12th April 1978. He had a very long association with the Club. He was made Honorary Vice-President

in 1950 and became Honorary President in 1957. During his tenure of the Regius Chair of Botany in Aberdeen, from 1934 to 1959, he fostered the connections of his department and of the Cruickshank Botanic Garden, of which he was Keeper, with the Aberdeen branch of the Club. The exhibits staged by the Curator, Mr. F. G. Sutherland, were the subject of appreciative comment at the Show each year. On occasions Professor Matthews opened the Show or welcomed those who did. He opened the proceedings at the Edinburgh sessions of the 3rd International Rock Garden Club Conference in 1961. He contributed to the S.R.G.C. *Journal* both with original work and review.

J. R. Matthews was born at Dunning in Perthshire on 8th March 1889. He was educated at Perth Academy and Edinburgh University. He was Lecturer in Botany at Birkbeck College, London, from 1913 to 1916; Temporary Protozoologist at the Liverpool School of Tropical Medicine, 1916-1919; Lecturer in Botany at Edinburgh University, 1920-1929; Professor of Botany at Reading University, 1929-1934; Regius Professor of Botany at Aberdeen, 1934-1959. He was made a Companion of the Order of the British Empire in 1956.

J. R. Matthews had a life-long interest in the British, especially the Scottish, Flora; in Plant Classification and particularly in the genus *Rosa*. His first published work on this genus was in 1910, in the Transactions of the Botanical Society of Edinburgh, his last the section on *Rosa* published in 1976 in "John Anthony's Flora of Sutherland". His Perthshire-Scottish interests are exemplified by papers on Perthshire plants in The Annals of Botany (1922) and the Transactions of the Perthshire Natural History Society (1926-27). He published also on such diverse species as *Equisetum trachyodon* (1940) in Trans. Bot. Soc. Edin., and *Trientalis europaea* (1941) in Journal of Botany [with J. G. Roger]. His fascinating historical and reminiscent articles in the Transactions and in the Notes of the Botanical Society of Edinburgh were a source of both information and pleasure to many. Based on his work during the first Great War, he published papers on the Protozoology of Dysentery. His outstanding contributions to an understanding of the Origin and Distribution of the British Flora appeared in The Annals of Botany (1923, 1924, 1926), The Journal of Ecology (1937), The Advancement of Science (1948) and in his book under the same title published in 1955. This contains the distillation of his own life-long experience and his appraisal of all relevant studies on the subject.

Professor Matthews was associated with the work of many scientific societies and teaching and research organisations. He joined the Botanical Society of Edinburgh as a member in 1909 and became a Fellow in 1913. He was President from 1939 to 1942. He was a member of the Botanical Society of the British Isles from 1920 and was made an Honorary Member in 1974. He became a Fellow of The Royal Society of Edinburgh in 1924 and was a Vice-President from 1958-61. He was President of the British Ecological Society from 1934 to 1936. He served on the Council of the Linnean Society. In 1948 he was President of Section K (Botany) of the British Association for the Advancement of Science.

He was a member of the Scottish Committee of the Nature Conservancy from 1949-61 and was its Chairman. He had been Chairman of the Governors of the Macaulay Institute, 1947-59; and of the Scottish Horticultural Research Institute, 1952-59; and a Governor of the Rowett, 1955-59, and of the North of Scotland College of Agriculture, 1937-59. He was Honorary President of the Scottish Field Studies Association from 1955 to 1970.

The Royal Horticultural Society awarded J. R. Matthews its Veitch Memorial Medal in Horticulture in 1958. In 1959, the Botanical Society of Edinburgh paid him the signal honour of dedicating to him on his 70th birthday a special volume of its Transactions. This consisted of papers written for the occasion by former colleagues and students. The Royal Society of Edinburgh awarded him, in 1964, the Neill Prize "for his distinguished writing on the geographical relationships of the British Flora, and for many outstanding contributions to Botany, Horticulture, Agriculture and Nature Conservancy in Scotland".

I believe it is appropriate at this time to recall some words he himself wrote in this *Journal* in April 1966: "It might be assumed that a botanist, by virtue of his profession, would have an interest in the growing of plants, but in many cases the assumption could well be wrong. Fashions in botany have changed, as in other things, since the days when the late Professor Bower of Glasgow University was wont to declare that every botanist should spend at least three months in the potting shed. In my early years I served a longer apprenticeship and have never regretted the experience. It has frequently provided the answer to questions about the botany of everyday life."

J. R. Matthews was a quiet Scot of great dignity and charm. He behaved always with consideration and tact—qualities which he expected from his students and colleagues. He had, and exercised, the ability to inspire in his students, and in all those whom he came in contact professionally, a desire to increase their knowledge about plants, whether in nature, in the classroom or at the show bench. Everything that he wrote about plants, or about those who studied them, was stimulating to read. The influence of this most outstanding Scottish botanist will continue to be felt for a very long time.

J. A. MACDONALD

SUBSCRIPTIONS

THE SUBSCRIPTIONS **for the year to 30th September 1979 will remain the same.** However, in the year to 30th September 1980 the Council have decided to increase the Ordinary Subscription by £1 to £3.50; but the family and junior subscriptions would remain the same.

BANKERS ORDERS

In order to facilitate matters and save postage those who pay by *bankers order* will receive with their membership card a new bankers order form which will authorise cancellation of the existing order and substitute the new rate as from October 1979. All that is required is for the member to sign and hand the new bankers order to his banker. It would be appreciated if the new bankers order was handed immediately to the banker in case it becomes lost. If you are not sure if you wish to continue membership please do not delay handing the form to your banker as you can cancel it any time up to the following October.

COVENANTERS

Those who pay by covenant will automatically receive a new bankers order to operate from the time their covenant expires, starting in October 1979.

Life Membership is now £50.

ERRATA

Please note that there is an error in Fig. 10 illustrating Mike Stone's article on *Pernettya macrostigma* in the April 1978 *Journal.* B and D have been interchanged. B is the true *P. macrostigma.*

Beginning to Read

by JAMES T. AITKEN

THE ONE O'CLOCK Glasgow Buchanan Street to Stirling was no greyhound of the iron road; in fact it could not have been far off being the slowest and most unpopular train on the pre-nationalisation London Midland and Scottish Railway. Stories were told of it. "Guard, can I get out and pick the flowers?". "No flowers here, Sir". "But I have seed". A bridal couple got on at Glasgow and by the time they got to Stirling the first child of the marriage was school age. They said the Company gave the engine driver a calendar instead of a watch.

But thereon the Aitkens discovered Hilliers' catalogues. It was a milestone in our gardening. It happened like this. I had come by a copy of a high class country magazine, at the dentists probably, for dentists have high class tastes, are reputed all to keep racehorses and take such magazines, whereas patrons of the one o'clock are more likely to read either the *Sporting Chronicle*, for you have time to work out your bets, or the Bible, for you have the time. Anyway, this magazine carried an advertisement by Hillier & Son of Winchester inviting readers to send for their bulb catalogue. I accepted their invitation and that morning it had arrived after I had left for work. So when I joined my wife she produced this catalogue and said I would not have seen the like before.

She was right. Here was the thrill of all sorts of bulbs we had never heard of. Remember, Hilliers are not really bulb specialists, but we had our eyes lifted to new horizons.

By the time we got off at Stirling we were resolved to try all sorts of bulbs we were ignorant of that breakfast time. We did the obvious too. We got the rest of the Hillier catalogues, Shrubs, Herbaceous and Alpine Plants, etc. We did not know how well we had fallen but we knew that we had struck a rich seam. Customers in our modest way we became certainly, but most important we had learned about plants we knew nothing of till then.

The Hillier catalogues have, of course, developed since those days. Their Shrub Manual is now in hard covers or paper-back, about 600 pages, an immense repository of practical guidance, characteristics and origins, tersely lucid. You may wonder at the price, but get it, for it's cheap at the money; though I shouldn't say that, for Mr. Hillier or

his son may read this and be tempted to put up the price. My gardening really started with catalogues and, lucky me, I started with about the best of the lot.

We still read catalogues and really nothing to be ashamed of about that. Like many another sinner on the cutty stool, I just continue and find myself in good company. I recall being in the house of a retired head gardener from one of the great houses of England—the sort of chap who wore a bowler hat and who was called Mr. by everyone below the rank of Earl. A mutual friend had brought me in; we had a dram in our hands (for, of course, he hailed from Scotland), and the subject turned to some point on which even he was uncertain. He got up, unlocked his desk and took out a worn catalogue, much done up with sticky paper, and there was his ultimate work of reference.

In these immediate post-war days the great book on rock gardening was Mansfield—*Alpines in Colour and Cultivation.* Mansfield did a whole series of such books—Roses, Shrubs, Annuals. I don't know about the others but his Alpines remains one of the best books. It lists and illustrates an astonishing range of plants and, by means of codes, wises you up to their nature and wants. In these early days when a novice like me asked a pundit in one of these reeky back rooms of restaurants where rock gardeners met, about Mansfield, they would shake their heads. Every pundit had found his own special mistake in Mansfield. No pundit would agree that the other pundit was right and that Mansfield was wrong. Now it's over a quarter of a century old and everyone wants it and you can hardly get hold of it. So if you are prowling in a bookshop and see it, pounce.

To those 1949 pundits the bible was, of course, Farrer—*The English Rock Garden,* in two volumes, together with Dr. Sampson Clay's supplement, *The Present Day Rock Garden.* In the pre-war depression days some of them had sold their sons into slavery and put their wives to take in boarders to afford a copy. If you mean to go on with this rock garden lark, sooner or later you too are going to try to get a Farrer. Those who have been reading those august pages for enough years will know that I am not a Farrer worshipper. He has, frankly, a tiresome style. His judgements can be too sweeping. But his books revolutionised rock gardening. Taken with Clay there are few plants not commented on. It is now getting on for sixty years old, not superseded and probably irreplaceable. Available second-hand, or new from the States at $35.

But I confess that first I look up Mansfield, now tattered a bit like

the head gardener's catalogue, the pages yellow and thumb-marked, and when I see its merit I wonder why Collins never reprinted.

If you want good practical help on garden construction, the soil and the stones, the compost and the like, try Lionel Bacon's book, *Alpines*. Dr. Bacon, presently President, no less, of our sister society in the south, has for a long time run the advice column in the *AGS Quarterly*. So it is not surprising that he is good and readable on the construction and layout of the rock garden. And there is nothing wrong in what he says about the plants in the second half of his book, but how did he select the plants? Some are dead easy, some would tax the capability of a Forrest medalman.

The Editor of the Alpine Garden Society's Quarterly, Roy Elliott, has also a book, *Alpine Gardening*, which is discursive but none the worse for that. I think you can get it easiest through AGS Publications.

The Alpine Garden Society has itself published a number of worthwhile books and pamphlets, some on specific groups (like Lilley on 'Ericaceous Plants'), others on particular aspects (like Joe Elliott on 'Troughs'). These render a great service to rock gardeners and, indeed, to horticulture generally.

And when we are on publications by sister societies, the 'Pictorial Dictionary of the Genus Primula' issued by the American Primrose Society is a quite remarkable though unpretentious pamphlet, profusely illustrated in black and white and almost encyclopaedic. I cannot recall the price but it was recommended to me by a Northumbrian as good value and you can't say better.

The aforesaid firm of Collins is responsible for Patrick Synge's *Guide to Bulbs*. It is very comprehensive and very well illustrated and, as in most Collins books, the quality of colour pictures is high.

The only book I know of about the Peat Garden is ex-President Alfie Evans' book of that name, though therein he is styled Alfred. As you would expect from that pen, it is first class in matter and flowing in style. He even has a chapter on weeding and includes in that chapter as weeds, plants that just get too vigorous. If I had known when he was at the writing that he was to deal with weeds I could have given him enough from my experience to fill his whole book.

Another ex-President of ours who wrote a good book was the late David Wilkie, also of the Edinburgh Royal Botanic Garden, whose *Gentians* still strikes me as the best on the subject. The newer books can, however, be better on the hybrids; but the hybrids are scarcely worth the price of a book!

Two books I should include, not specially about rock gardens but which include our type of gardening.

One of the great classics of gardening literature is William Robinson's *English Flower Garden*. First published in 1883, my copy is of the 16th Edition edited by Roy Hay and dated 1956. Robinson is the chap who preached the natural garden as the English garden. He gave it creed and philosophy, to distinguish it as a unique and meritorious way of gardening, as significant and distinctive as the Japanese or the French or whatever. Apart from explaining the tenets of the 'natural' garden, Robinson discusses a great range of plants. Some are unsuited, some suited to the rock garden, but the philosophy he expounded for the garden in general is what his disciple Farrer particularised for the rock garden. A book so revolutionary and fundamental in its thought is worth a mention and a read, be you novice or expert.

Then there is the RHS *Dictionary of Gardening*. It was given to us by a Northumbrian (like Aberdonians, in real life they are open-handed) who thought we had done him a good turn. Whether we had, he certainly did us one. It has been pawed and creamed. It runs to four volumes and a supplement. It is apt at times to presume too much botanical knowledge. But it is a mine of sheer information. You recommend it without qualification. Not cheap, but if you are after that quality it's worth it.

What else? There are books galore. I have listed some of them at the end. Browse in your library or bookshop and if it measures up to your needs, then it is for you. There is no lack of literature, but frankly there is an awful lot of dross and rubbish.

But back to when we started. Much of the most practical writing is in the catalogues of nurserymen. Not just the big fellows like Hillier. The catalogue is the unsung guide to gardening. Lots of people who would blush if you styled them writers sit down winter night after winter night to produce yearly their catalogue. And therein is the distilled wisdom and experience of seasoned practitioners. There are better and very good, but I know of none not worth a read. Further, if you are a tight-wad, reflect that these catalogues are the cheapest gardening books you will get—apart from the public library.

I can't mention more than one or two, and if I miss your favourite, think that space has probably chopped mine too. Ingwersen's are said to be writing up their catalogue after the style of Hillier's Manual at comparable cost. Well, it could be good like Hillier for their catalogue is informative. Hollett of Sedbergh does a very informative job.

But Joe Elliott and Jack Drake produce two of the best, as you would expect, and, at least to Club members, they are still free. Alan Smith does an excellent job on his speciality of Sempervivums.

If you haven't got them, you could do worse than send the money they ask and get them. And if, having got a man's catalogue, you are tempted to buy and grow, that after all is the object. And it does no harm to be adventurous and try something from a description. It is one way to graduate from beginner. You triumph or you fail. Either way, you are beginning to be experienced.

LIST OF BOOKS

Dictionary of Gardening: 4 vols. and Supplement—Royal Horticultural Society (London).
English Flower Garden: W. Robinson (John Murray, London).
Hillier's Manual of Trees & Shrubs (Hillier & Sons, Winchester).
English Rock Garden: Reginald Farrer (2 vols.) (Nelson, London, reprinted by Theophrastus, Little Compton, Rhode Island, U.S.A., at $35).
Present Day Rock Garden: Sampson Clay (Jack, London).
Alpines in Colour & Cultivation: T. C. Mansfield (Collins, London).
Collins Guide to Alpines: Anna N. Griffith (Collins, London).
Alpine Gardening: Roy Elliott (Vista Books, London).
Alpines: Lionel Bacon (David & Charles, Newton Abbot).
Alpines: Alan Bloom (Faber & Faber, London).
Commonsense Rock Gardening: F. Kingdon-Ward (Cape, London).
Rock Gardens: E. B. Anderson (Penguin Books, London).
Handbook on Rock Gardens: Brooklyn Botanic Garden (New York, U.S.A.).
Scree Garden: F. H. Fisher (Ed.) (Alpine Garden Society).
Peat Garden and its Plants: Alfred Evans (Dent, London).
Propagation of Alpines: Lawrence D. Hills (Faber & Faber, London).
Seedlist Handbook: Bernard Harkness (Ed.) (Kashong Publications, New York, U.S.A.).
Hardy Heaths: A. T. Johnson (Gardeners Chronicle, London).
Collins Guide to Bulbs: Patrick M. Synge (Collins, London).
Hardy Bulbs, I: E. B. Anderson (Penguin Books, London). (Vol. II deals with hybrid daffodils, tulips, etc., by C. F. Coleman).
Asiatic Primulas: Roy Green (Alpine Garden Society).
Pictorial Dictionary of Cultivated Species of the Genus Primula: American Primrose Society (Beaverton, Oregon, U.S.A.).
Rock Garden Plants of the Southern Alps: W. R. Philipson & D. Hearn (Caxton Press, Christchurch, N.Z.).
Gentians: David Wilkie (Country Life, London).
Gentians: Mary Bartlett (Blandford Press, London).
Dwarf Conifers: H. G. Hiller (Alpine Garden Society, Scottish Rock Garden Club).
Dianthus: Will Ingwersen (Collins, London).
Campanulas & Bellflowers in Cultivation: H. Clifford Crook (Blandford Press, London).
Campanulas: H. Clifford Crook (Country Life, London).
Dwarf Rhododendrons: Peter A. Cox (Batsford, London).

Modern Rhododendrons: E. H. M. & P. Cox (Nelson, London).
Rhododendrons for Small Gardens: Eric Joy (Pan Books, London).
Rhododendron Handbook (Pt. I—Species) (R.H.S., London).
Trees & Shrubs Hardy in the British Isles: W. J. Bean (8th Edition, 3 vols. published so far) (Murray, London).
Daphne: C. D. Brickell & B. Mathew (Alpine Garden Society).
Alpine Garden Society Guides on: Sinks & Troughs, Silver Foliage Plants, Sedums, Ericaceous Plants, Bulbs under Glass, Alpines in Pots, Propagation of Alpine Plants, Cyclamen, Dionysias, Saxifrages, Hellebores, Lewisia, etc.
Sempervivums & Jovibarbas: Alan C. Smith (A. C. Smith, Keston, Kent).

Note: Any book list reflects the interests of the compiler. It is by no means exhaustive. Look in your Public Library or bookshops. Unfortunately many of the books mentioned are out of print. Often, however, they can be found in second-hand bookshops—so, as well as good reading, happy searching!

The American Rock Garden Society

Probably most members are aware of the existence in the U.S.A. of a Society comparable with our own. Some members may have wished to join this Society, but have been deterred by the apparent difficulty of transmitting their subscription. We understand that this difficulty is not insuperable. Permission has to be obtained from the Exchange Control in the first place, and evidence has to be supplied of the existence of the Society and its membership fees. Having secured sanction, the member obtains a draft from his Bank and forwards it to the Society. In practice it would probably be best first to consult one's Bank, which could supply advice and the appropriate forms.

The annual subscription is 5 dollars, and the Secretary, who will send further particulars, is William T. Hirsch, 3 Salisbury Lane, Malvern, Pa. 19355, U.S.A.

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

1979 HOLIDAYS
WITH FAIRWAYS & SWINFORD

A brief outline of our 1979 holidays for flower-lovers is shown below. Full details, giving prices and the names of accompanying experts, will be sent automatically to members whose names are on our Mailing List, or otherwise on request.

ITALY—GAIOLE IN CHIANTI: April to October
Six escorted departures have been planned, each for a maximum of ten people sharing large twin-bedded rooms, to stay for two weeks as sole guests in a traditional 17th century farmhouse in peaceful, rural surroundings. Themes vary with individual tastes and the time of year: wild flowers, bird life, summer music festivals, the Siena Palio, and the autumn wine harvest. There are, too, many fine castles in the locality, some of which can be reached easily on foot. The price includes visits to San Gimignano, Montepulchiano, Siena and Arezzo; and there is a daily bus service to Florence which passes the entrance to the farmhouse grounds. This is an ideal holiday for those who appreciate unsophisticated comfort rather than luxury, and enjoy local wine and cooking.

CRETE—SITES & FLOWERS: 30 March to 12 April
The itinerary of this holiday includes visits to Heraklion, Rethymnon and Chanea, from which excursions are made to see the sites and enjoy the spring flowers. *The tour will be repeated in the autumn.*

GREECE—CHIOS AND LESBOS: 12 to 26 April
This island holiday is divided between Chios, one of the most interesting and attractive of Greek islands; and Molyvos, which lies on the northern side of Lesbos where plant-hunting, walks and excursions will be arranged. The last two days are spent in Athens.

SPAIN—SERRANIA DE RONDA: 10 to 24 April
Ronda, in its picturesque setting, is one of the oldest and most beautiful small cities in Spain. Lying on a plateau on the edge of a gorge and overlooking a ravine, it is a natural fortress whose walls are broken to form the horseshoe from which it takes its name, and contains some superb architectural features. Its main interest to flower-lovers, however is the profusion of alpines growing in the mountains.

SPAIN—SIERRA DE CAZORLA: 15 to 26 June
This is a holiday for the dedicated flower- and nature-lover. We stay in the heart of the mountains at over 6,000 ft. at the *Parador Adelanto* for ten nights (the maximum time allowed at paradors in Spain) in an area famous not only for its flora but also for the great variety of birds in the vicinity. *The tour will be repeated in the autumn for ornithologists.*

IN ADDITION we are arranging a botanical tour to Italy, highlighting the Abruzzi National Park and the Gran Sasso, in June-July: Sites & Flowers in Nepal and Kashmir in May and October: our Kashmir Pony-Trek in July and Kashmir with Ladakh in September. TREKKING HOLIDAYS in 1979 include Sikkim (only recently made possible) in May: the Annapurna Base Camp in October-November, and the Sinai Desert in spring.

FAIRWAYS & SWINFORD (SRGC)

37 ABBEY ROAD
ST. JOHN'S WOOD
LONDON NW8 0BY

Telephone 01-624 9352

ATOL 491B

SRGC PUBLICATIONS

A SET of the available *Journals* provides information on rock garden plants and their cultivation comparable with the current books in print. At present there are 45 issues in stock—the number varies from time to time—and a SPECIAL DISCOUNT of 25% is offered to new members who order over 40 *Journals*. The 45 available *Journals* would cost just over £13, which is remarkable value. No discount on any of the 100p *Journals* when available. Overseas members must pay £1 ($2.50) extra postage because two parcels are necessary.

Current availability and price to Members

Journal	*Pence*		*U.S. Dollars*
1-6	150	when available	3.75
7, 8, 11, 14-17, 21, 27, 29, 35	100	,, ,,	2.50
9, 36-53	30		0.75
10, 12, 13, 18-20, 22-26, 28, 30-34, 54-59	40		1.00
60-63	60		1.50
Index *Journals* 1-19	15	post free	0.37
Index Vol. VIII (Xerox)	30	post free	0.75
Index Vols. IX, X + XI	15 each, post free		0.37

Postage contribution 5p (12½ cts.) per *Journal* up to a maximum of £1 ($2.50).

Waiting lists are kept for the scarce *Journals* (list closed for *Journals* 1-6) but waiting list members must now pay all postage costs.

The Club would be very glad to receive or buy any *Journals* up to No. 35 (except 9), paying postage and, if required, up to half the above prices. Copies of *Dwarf Conifers* by Hillier are also wanted.

All correspondence about *past Journals* should be addressed to the Hon. Publications Manager: Dr. D. M. Stead, Esk Hause, Bishop's Park, Thorntonhall, Glasgow G74 5AF.

SPECIAL PUBLICATIONS

Dr. Richards' article on "Petiolarid Primulas" (*Journal* 60) is available as a separate booklet—very handy for taking into the garden for identification purposes—from the Hon. Publications Manager at 75p, post free.

BINDING CASES FOR JOURNALS

Binding cases in blue PVC are now available. Each will hold four *Journals*, i.e. one volume. Price £1.40 each, post free from Hon. Publications Manager. Sets of white Arabic numbers 30p.

W. C. Henderson & Son Ltd., St. Andrews