Editorial Copy.

The JOURNAL of THE SCOTTISH ROCK GARDEN CLUB

VOLUME XIV Part 1
No. 54

APRIL 1974

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

Obtainable from
Dr. D. M. Stead • Esk Hause • Bishop's Park • Thorntonhall • Glasgow

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Contents

NOTICE

The ANNUAL GENERAL MEETING will be held in the British Medical Association's Hall, 7 Drumsheugh Gardens, Edinburgh, on **Saturday 8th November 1974, at 3 p.m.**

Members are notified that nominations are required for President and other Office-bearers, and for five Ordinary Members of Council. Nominations *in writing*, seconded by another Club member or members, must be sent to the President no later than Tuesday 20th August 1974, the nominator having ascertained that the nominee is willing to serve if elected.

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

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

Dr. Peter Harper	Angus C. Small, Esq.
Dr. D. M. Stead	James T. Aitken, Esq.

A. EVANS, President,
Royal Botanic Garden,
Inverleith Row,
EDINBURGH.

Mrs. L. C. Boyd-Harvey

It is with regret that we inform you of the death of our Honorary Secretary on 26th February 1974. An appreciation appears on page 69.

It is not the intention, immediately, to appoint a new Honorary Secretary. Any correspondence should be sent to Mr. A. Evans, Royal Botanic Garden, Inverleith Row, Edinburgh EH3 5LR. Mr. Evans will transmit any letters to the person who, in the meantime, is dealing with that subject.

The only exception to this rule is in connection with entry forms for the Joint Rock Garden Plant Committee. Application for these forms in connection with the Shows at Dunfermline and at the Weekend Conference should be made to Mr. J. D. Crosland, Treetops, Torphins, Aberdeenshire. The completed forms should be sent to him to arrive by first post on the day BEFORE the Show in accordance with the directions given in the booklet on Show Schedules.

Automatic Watering — on a Budget

by W. H. IVEY

"Diff'ring judgements serve but to declare,
That truth lies somewhere—if one knew but where"

Pope

SOME SIX or seven years ago now, my wife took to alpines, and as her experience with her plants increased, my knowledge of how to cater for their needs increased.

Alpines, I am only slowly coming to understand—the watering of them I am learning faster—the hard way—the length of time to learn being measured by the death rate of the subjects.

During this time, I have tried cistern, spray and capillary systems, and a bit of a mixture of them all.

Also during this time, I've looked at Bob Mitchell's methods at St. Andrews, Garth Merelie's at Newcastle, I've read of Roy Elliott's Bench in his article "In search of idleness", and I've read Dr. Tod's articles on capillary watering. I've also watched the magic of Jim Archibald's watering hose, but that particular system, simple and very effective, takes a little longer to understand—at present it's beyond me.

So here is my experience.

At West Kilbride, where I gave this subject as a practical talk, the audience was captive. You have a choice—I shall not blame you if you pass to the next article.

Many people have devised watering systems of their own, some are more sophisticated and more costly than those I shall describe, and some would make Heath Robinson feel he'd lived in vain.

David Livingstone tells me that

> "Last summer I was faced with the problem of how to keep my Petiolarid Primulas and Pleiones supplied with water which they so much require in the growing season and also give them the necessary shade and protection when I was on holiday. The latter I was able to provide by making a bed of Tay river sand in a sheltered area bounded by my garage wall, a boundary wall and a seven foot high privet hedge. The remaining side was open to the south-west. Wooden slats propped up against the boundary wall completed the shade and protection.

The pots were plunged to their rims in the sand which was kept wet. But this very protection meant that what rain there might be in our absence—and there wasn't much last summer —would be unlikely to reach the pots in any quantity. What was to be done? My wife suggested that watering by capillary action might be the answer.

She then started experimenting with various containers for the water and various thicknesses of "wick" made from strips of cotton. Eventually she found that a very thin cotton "wick" about 1/8th of an inch wide fed the water to the plant at about the right rate. She also concluded that a long narrow container with a covered top, to minimise evaporation, would suit our purpose best in the confined space in which the plants were plunged.

The next question was where we could get in sufficient quantity the kind of container we wanted. Again she came up with the answer—beer cans. We required 24, but we don't drink beer either from cans or barrels! Nothing daunted, she set off to get them and, after a series of comedy situations, she arrived home with a carton of two dozen display cans presented to her with the compliments of a local brewery.

Now we are ready. The little discs on top of the cans were pulled off, the cans filled with water and plunged in the sand, one at each of the pots. "Wicks" long enough for the job were made and, the day before our departure, they were put into the cans. We made sure that one end of the "wick" reached the bottom of the can. In the case of the primulas the "wick" was laid on the soil round the edge of the pot, well away from the crowns to lessen the risk of neck rot. The end of the "wick" was secured to the soil with a hairpin.

It was easier with the Pleiones. The "wick" was laced out and in amongst the pseudo-bulbs and the end again secured with a hairpin.

Off we went to Austria for a fortnight to see alpines in their native habitat and on our return we were delighted to find that all was well. Even a barely rooted cutting of *Primula aureata* had made good growth. Heath Robinson may be, but it did save valuable plants from the possibility of damage and even death".

Several years ago during a holiday in North West Scotland, in the days when roads were tracks, and tracks were non existent, in the early evening of a day, mist shrouded and soundless except for the rustle and drip of unending haar, we came on a notice which prophetically said

CHOOSE YOUR RUT CAREFULLY—YOU'LL BE IN IT FOR 25 MILES

If you are going to put in a lot of hard work to make a watering system that suits you, that covers your needs the whole year round, then that notice board, now long fallen to make way for a modern road, serves due warning on you 'THINK BEFORE YOU LEAP' your plants will benefit.

I don't intend to talk about the plants, they take second place here. My talk is intended for the gardener who has, or wishes to have a greenhouse, an alpine house, frames, propagator, seed bed, and who, with a little ingenuity and some DIY experience, can build up his own watering system.

So let's consider some of the pitfalls and hazards of the mechanics of watering and try to choose a rut as smooth and navigable as possible that will lead us to the haven of results we require.

So to all those people who grow or wish to grow plants in pots, in frame or houses, watering in some shape or form, manual or otherwise, is essential.

Of those people, most form part of busy households who have not the time to give their plants the watering attention they require and have no knowledgeable next door neighbour who can look after the plants on protracted absences.

To them more than the others, automatic watering is a "boon devoutly to be wished". So with costs very much in mind, let us proceed.

There are two ways of watering:

OVERHEAD WATERING

UNDER WATERING

Overhead watering can be done by:

Spray

Mist

Trickle

Under watering is done by:

Capillary Action by Controlled Flooding.

or

Constant Bottom Water Feed.

Watering requirements also vary with:

(1) Soil mixture
(2) Atmosphere
(3) Plants to be watered
(4) Depth of Plunge
(5) Type of Plunge

We have to find one system which suits all of these requirements. (2) and (3) are the variables to which we are trying to find an answer.

(1) *Soil Mixture*

Roy Elliott in his article says very aptly, and I can't better it: "The *soil mixture* in the pots, to suit any kind of watering no matter how much it varies in draining properties *when damp*, must AT LEAST drain away through the pot when watered from a small manual watering can without the water damming and overrunning the rim."

On (4) and (5) depend our final choice of watering system.

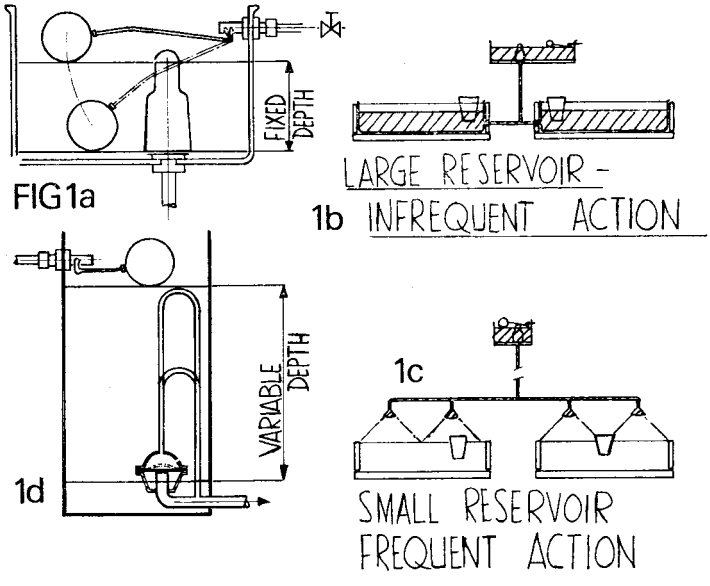
Overhead systems are best for most greenhouse plants and many alpine house plants, and for seeds and seedlings *but* death also to many greenhouse and alpine house plants too.

Under watering satisfies most mature plants, is a little more difficult for seeds and seedlings, and is unsuitable for plants like shortias, schizocodons which like a mist of water over their leaves in summer.

Overhead systems are USUALLY cheaper to build. If we do not want too sophisticated a system, then a Siphon system can be adequate with the following reservations:

(1) The automatic siphon is mechanical and not based on atmospheric conditions.
(2) The siphon system is near impossible for mist.
(3) Even for a good sprinkler system, to get the necessary 'head' of water for say six spray heads then the cistern would have to be at least sitting on top of your plant house roof or, in the case of frames, supported on an 8 ft. to 10 ft. pillar which is ugly.
(4) Then of course there is the embarrassing '*SH SH SH SH*' every time the cistern operates—especially through the night.
(5) But the one aspect where the siphon system works remarkably well is in the capillary watering bench, or the trickle watering system OVERHEAD AND UNDER.

Dr. Tod in his recent article explains well the operation of his siphon system and that saves me, but for those who would build their own there's another obvious snag.



Looking at fig. 1 *a*, *b* and *c* you see a standard automatic cistern with a fixed operating depth. If such a cistern were to be used for under bench watering, then the length and breadth of the cistern, to hold the amount of water required to flood the bench, would be as big as the bench itself and therefore quite impracticable. The cistern would, however, be perfectly adequate for an overhead sprinkler system, where the sprinkler action is frequent.

The length of time between each "burst" of water is controlled by the closing down of the isolating valve on the inlet water pipe.

Fig. 1*d* shows one method of overcoming the fixed depth of a standard cistern.

In this case the dimensions of the tank are fixed and the water depth varies with the height of the looping pipe which can be made to any size required.

The action of this cistern works as follows:—

A cup, with four holes in the sides, is brazed to the outlet copper pipe so that the pipe just reaches the cup rim. A rubber diaphragm

is placed between the cup and the inverted cover, and sealing the outlet pipe opening. A small breather hole is drilled in the inverted cover.

The water fills into the tank through the ball valve and slowly rises up the loop pipe. When the water finally runs over the loop, the water displacement from the inverted cover lifts the diaphragm and the main bulk of the water, then runs out by the outlet pipe. When the water level in the tank falls to the level of the holes in the side of the cup, the diaphragm returns, again sealing the water outlet, and so the action starts again.

Siphon systems are, therefore, sufficiently effective for trickle or spray systems in small houses, but are limited by cistern capacity. The 'Humex' cistern is a very good example of a small house automatic, fixed head siphon.

For overhead spray or mist, siphon systems are pretty hopeless, so now let's look at sprays.

Overhead watering by spray heads can be manual, semi-automatic or fully automatic, but they are dependent on full town's water pressure —they will not work effectively from a cistern.

If you make a manual system, then remember to put the control valve at the plant house door or you'll get soaked.

There are two kinds of jet: The concentrated jet (fig. 2*a*).

The open jet (fig. 2b).

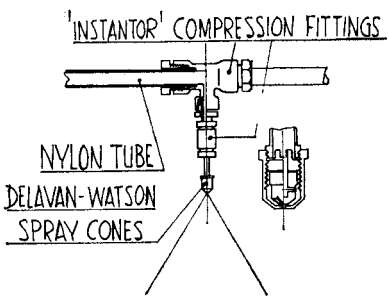
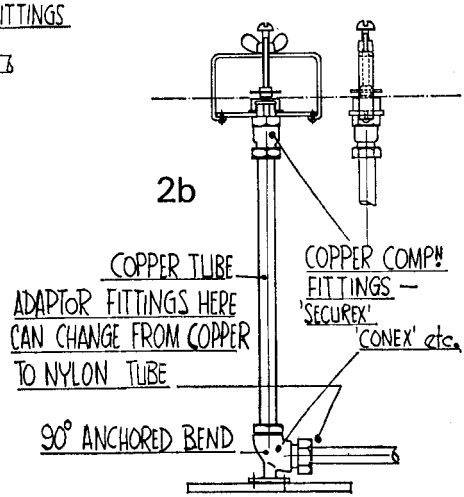


FIG 2a



The concentrated jet set up is much cheaper *but* because of limited water arc you require more jets for a large house, so it is more suitable to the small set up.

These jets *reversed* give a very effective and widespread mist.

The open jet is more preferable:

larger area watered
fewer heads required
easily adapted to automatic systems
easily adjustable from heavy spray to finest mist
easily 'home-made'—again see fig. 2*b*

Now let's consider the St. Andrews Alpine House Benches and Frames where several watering systems are used.

St. Andrews Benches and Frames.

There is a lot to be learned from the Benches and Frames installed by Bob Mitchell at St. Andrews.

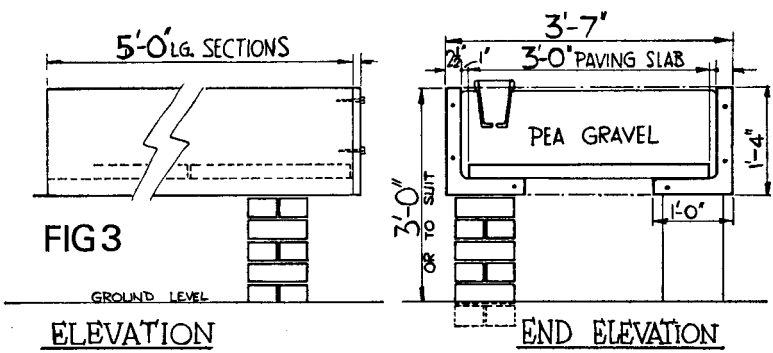
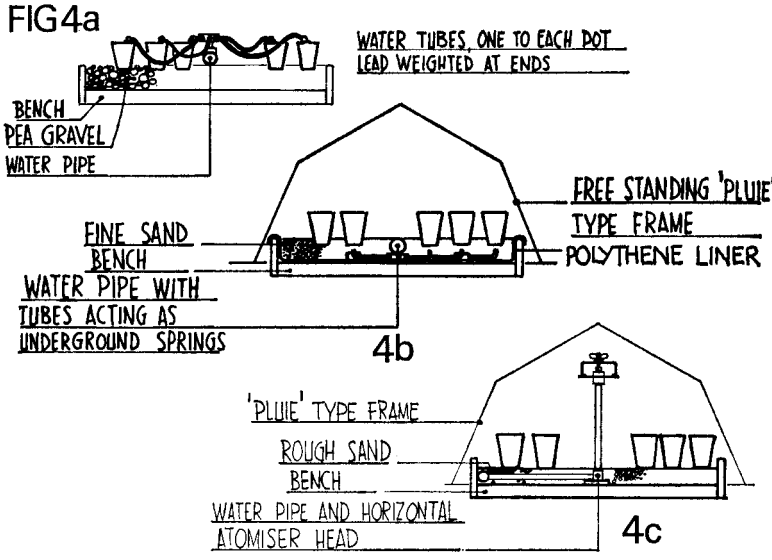


FIG 3

LARGE BED DEPTH REDUCES WATER LOSS FROM POTS - REDUCES WATERING FREQUENCY - PREVENTS OVER WATERING

The main bench in the alpine house is built as shown in fig. 3. The sides are cast concrete L sections, with paving slab bottoms and ends. The bench is filled with pea-sized gravel and the clay pots are plunged to their rims. The aim is to reduce water loss from the pots, thus eliminating excessive watering, which is beneficial to the more difficult

alpines. The plunge material is kept moist during the vigorous growth period and the alpines are watered normally. A balance between the amount of water in the pots and the amount in the plunge must be found to prevent excessive root growth outwith the confines of the pots.



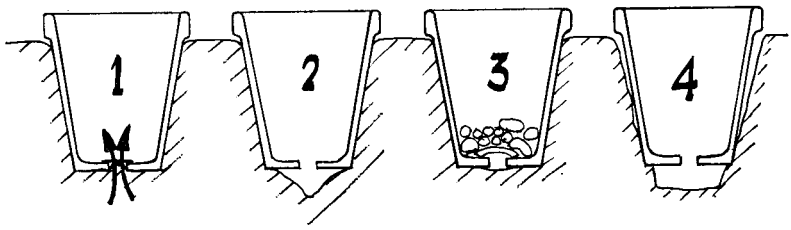
There are two systems at St. Andrews, as in fig 4*a*. These are ideal for a batch of plants with the same growth rate and water requirements —very limited use in alpines. It should be explained here that most of those proprietary drip feed systems, e.g. the 'Access' system, have nozzles which may be variably controlled to each pot. The middle sketch (fig. 4b) is an adaptation of the same system. The outlets are placed above the polythene saucer but under the sand ; the sand is fine, thus by capillary action the sand is kept moist.

Quotes Bob:

> "We have found that a large variety of plants can be grown on this type of irrigation, but I must admit we have not tried any of the difficult alpines on it".

The last (fig. 4*c*) is the open nozzle type of overhead watering which is suitable for young alpines in preparation to being planted out.

The lesson in fig. 5 is obvious to everyone who is already growing plants in pots, but to the others who are thinking of starting, it may save some moments of panic.



2- CAVITY FROM WATER DRAINAGE
3 CAVITY FROM POT CROCKING
4 CAVITY FROM WRONG SEATING

FIG 5

In example 1, the pot has been pushed into good contact with the plunge, and if the soil mixture is as is explained earlier, then there is no real need for the heavy crocking, as in example 3, and capillary action carries right up through the pot.

In examples 2, 3 and 4, the capillary action has been stopped by the air gaps caused by:—

Cavity through water drainage through the pot.
Excessive crocking, and
Insufficient seating into the plunge.

Let us turn now to Automatic Control.

Control.

For manual control all that is necessary is a stop valve at inlet and also an outlet for controlled flooding.

Automatic Control of overhead systems is relatively simple.

Automatic Control of under watering is much more complicated and more costly.

There are two methods of Automatic Control for overhead systems.

By a time clock—in this case a time clock is wired directly to a solenoid valve and the clock is then set for periods of operation, usually two, and the solenoid valve opens and shuts accordingly.

This method has many faults:

(1) It does not allow for the weather.

(2) There are only a limited amount of operations per day, thus it is bad for seedlings and cuttings.

(3) The duration of water operation cannot be regulated to seconds.

The second method is by Water Sensitivity. There are three usual methods:—

(1) *The Absorbent Pad and Fulcrum Method:*
An absorbent pad, set on one end of a fulcrum, becomes heavy with water while the water is falling, falls and breaks contact—the water stops—the water in the pad evaporates—the arm rises and makes contact, the water again comes on. This is the Humex Method.

(2) *The Floating Wick Method:*
A wick gathers water while the water is falling, transfers it to a small reservoir in which is a magnetic float—when the water is deep enough the float rises and the magnet breaks contact. The water evaporates, via the wick, the float falls, the magnet remakes contact. This is the "Access" Method.

(3) *The Electrode Method (fig. 6):*
This is the method I prefer. A sensing leaf is placed in a suitable position on the bench and is wired up to a solenoid valve through a control box. The control box is wired to the mains. The sensing leaf is made by taking two carbon electrodes from used U2 batteries. These electrodes are cast into blocks of araldite resin $\frac{1}{2}$ in. apart minimum, with the brass caps downwards. When the resin is hard the top is filed flat and the brass caps are soldered to the leads to the control box. Fig. 6*a* shows the wiring diagram for the control box. The solenoid valve is energised when the 'leaf' is dry. EF91 valve is connected as the 'cathode follower' amplifier. When the 'leaf' is wet, the valve grid is pulled up to the earth line and the valve turns on, the cathode current operates the relay and breaks the contact. When the 'leaf' is dry, the valve grid is pulled down via R2 and VR1, the valve turns off relay and contacts make. The sensitivity to wetness of the 'leaf' is controlled by VR1. The reason why I like this method is that, by smoothening or roughening the 'leaf' surface you can alter the duration of the water bursts. You can also 'plug in' different 'leaves' for drier or wetter uses.

Under Watering by Flood Control:

Fig. 7b depicts a bench with a typical example of such a system. The manual controlled version of this example is the Roy Elliott Bench.

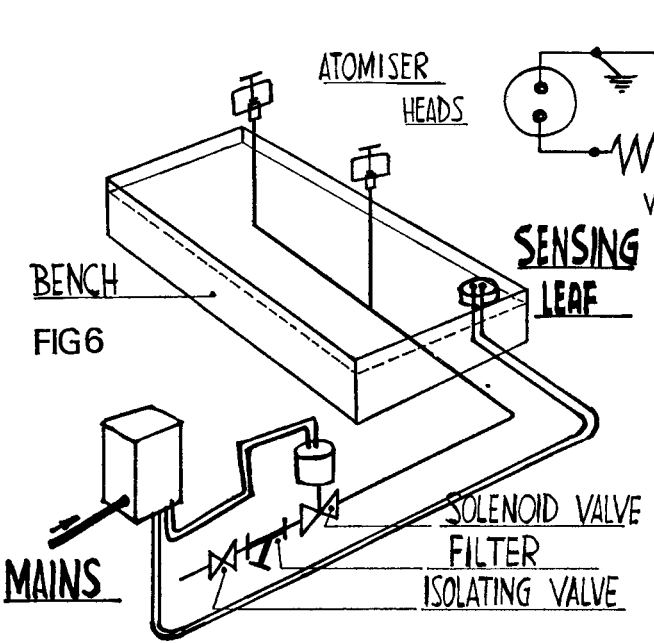


FIG6

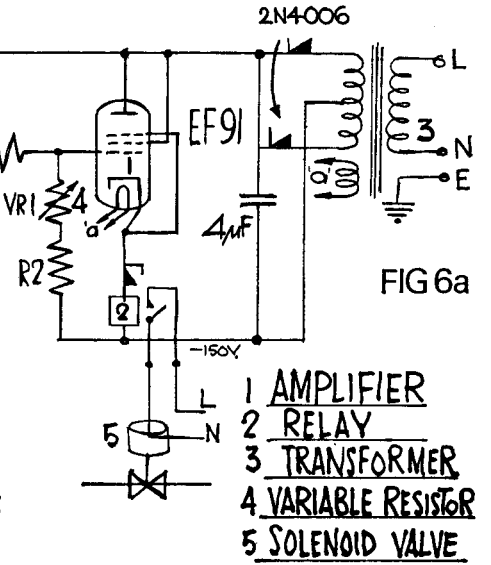


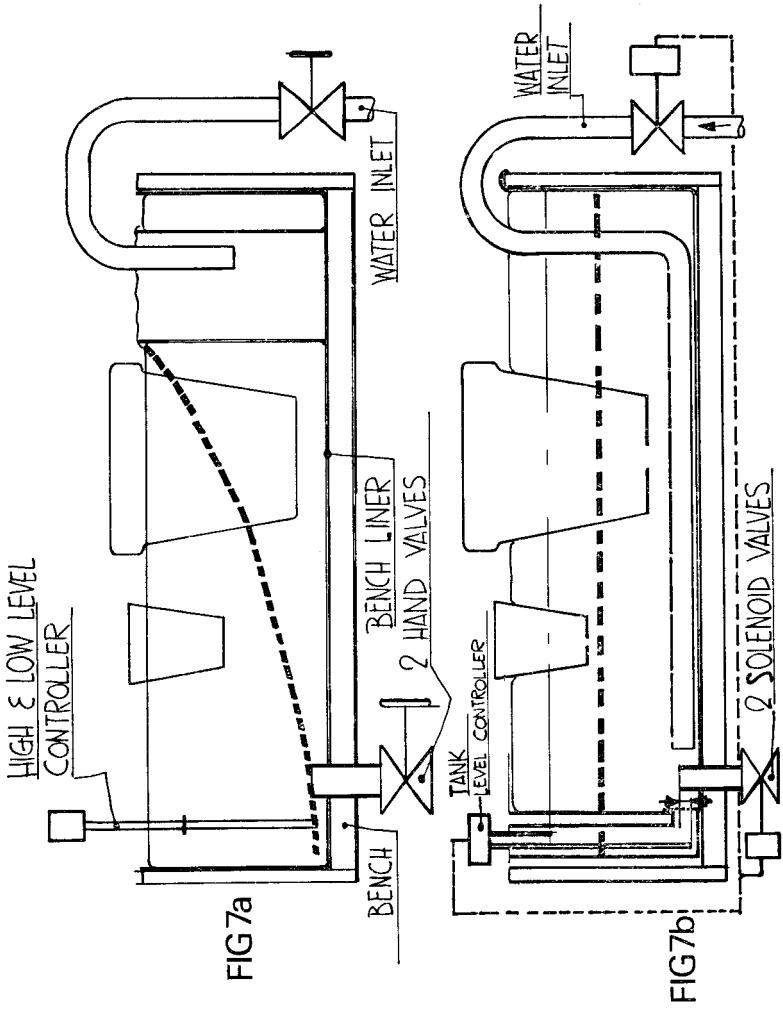
FIG 6a

SOLENOID VALVE ENERGISED WHEN 'LEAF' DRY

WHEN 'LEAF' WET – EF91 (AMPLIFIER) TURNS ON – OPERATES RELAY – BREAKS CONTACT

WHEN 'LEAF' DRY – EF91 VIA R2 & VR1 TURNS OFF – OPERATES RELAY – MAKES CONTACT

SENSITIVITY OF 'WETNESS' OF 'LEAF' CONTROLLED BY VR1



But first let's look at fig. 7*a*. In this example the water flows into a reservoir, overflows the lip and permeates the bench. The high and low level controller is at the opposite end from the reservoir.

This was my first attempt of several years ago and has everything wrong with it. It seemed a good idea to have the water flow into a reservoir and overflow—feeding could be mixed into the water at the reservoir stage. But the water distribution to the table follows along

the path of the heavy black dotted line, and so the pots nearest the reservoir are drowned and the pots nearest the controller are the only ones to receive the proper supply of water.

Another not so obvious fault is that the water level conveyed to the controller via the sand gave a very variable signal to the solenoid control valves, a fault which was worsened by the addition of fertilisers to the water and the whole contraption became very untrustworthy indeed.

So we come to fig. 7*b*. The bench is a standard bench at least 9 ins. deep—polythene lined. The plunge is a medium coarse sand. At one end, or inside the liner, a small plastic cylinder is glued or welded to the liner. The cylinder is open to the bench to allow water in but shielded from the sand. Into this cylinder a "Londex" type tank level controller is fitted. The water is fed to the bench via a solenoid inlet valve and a horizontal pipe along the bottom of the liner with nozzles drilled into it along its length. The outlet which protrudes into the liner is again controlled by a solenoid valve. The water distribution in the bench is now level.

The variable which must be decided by each builder is the dimension (between the arrows) from the top of outlet pipe to the bottom of the low level electrode.

The action is now simple. The water flows in through an open solenoid valve and fills up the bench until it touches the bottom of the high level electrode. The controller then shuts the inlet valve and opens the outlet valve and the water recedes until it reaches the top of the outlet pipe. The water, however, does not come on again until the small head of water between the top of the outlet pipe and the bottom of the low level electrode evaporates so that the controller can again actuate the solenoid valves.

So, in conclusion, although the siphon is effective for trickle and constant under water irrigation, the ideal solution to the automatic watering problem is an automatic system which will operate the controlled flood method for the difficult plants and the open spray method for ericaceous and large-leafed plants, seedlings and cuttings.

Your holidays can now be enjoyed plant- or sun-seeking free from worries of your captives at home languishing in the hands of a philistine.

But what if there's a power cut!

P.S. On reading the proof of this article, I realise that some sections lack a full explanation. If any reader is interested in any aspect of the article and would wish more detail, please write me at Northbrae, Courthill Street, Dalry, Ayrshire, and I will do my best to answer. W. Ivey

Alpine Gardening: An Appreciation

by J. D. CROSLAND

The W. C. Buchanan Memorial Lecture given at West Kilbride on 13th October 1973

ROCK gardeners or alpine plantsmen, as you will, they are an industrious happy breed, and it has been my privilege and pleasure to be associated in their activities some twenty years now. Looking back over this period of time, to those first innocent and inarticulate thoughts about creating what I then most probably referred to as "a rockery", I am conscious meantime of indebtedness to many people, past and present, at home and abroad who, directly and indirectly, have contributed so much to my knowledge, to my enjoyment and appreciation of those plants which, somewhat loosely, we refer to as alpine and rock garden plants. Especially, this afternoon, I have the honour to commemorate the name of one of that number, the late W. C. Buchanan. I knew him for a matter of three or four years; not in fact a long time. But then, one did not have to know Willie Buchanan long to be drawn into the orbit of a warm and kindly personality. Nor indeed did it take long to recognise that here was a plantsman extraordinary, a gardener who not only knew the histories and the origins of his plants, but one also who had a profound appreciation of them, and of their needs as garden plants.

He grew a remarkable range supremely well, simply and naturally in the open garden, with a minimum of fuss and an absence of paraphernalia. He had no alpine house and, as I recall, the several garden frames he used were entirely for the purpose of propagation, an aspect of the subject which particularly appealed to him, and in which he demonstrated great skill in the re-establishment and regeneration of rare and fine plants.

He had in full measure that quality which above all, I think, typifies the true gardener, namely, humility. His examples were an inspiration to me and, I am sure, to many others.

It gives me great pleasure this afternoon to recall, and to pay this modest tribute to his memory.

It was in 1953 that I paid the first of many enjoyable visits to that now internationally renowned alpine plant nursery, so beautifully

situated in the foothills of the Cairngorm Mountains near Aviemore, Inverness-shire.

I well recall that first visit, being immediately and completely fascinated by the many small plants there and, after an hour or so, quietly absorbing the details of colours, shapes and forms, became so thoroughly confused by the botanical descriptions of which I had no knowledge, that I asked for assistance and met the proprietor.

Mr. Drake made suggestions which led to my selection of a modest six, relatively easily grown plants, which were to serve as an introduction, and to the creation of an entirely new rock garden. At that time I had no garden at all, but instead a wilderness of uncultivated land nearly half an acre in extent. A small border was dug, these six small plants in their pots plunged into the soil for observation, and my involvement as a rock gardener began.

Little did I realise then that this new interest would lead in due course to plant study trips to many European countries, and be the means also of meeting many knowledgeable members of an international circle of alpine and rock plant enthusiasts.

Today, the sole surviver of that original six plants is the handsome and rare British native, *Salix lanata*, soundly established on an island in the garden pool. The upright catkins, four to five inches tall, are a striking annual feature in early spring. But the real harbinger of spring in our somewhat cold northerly garden at Torphins, in Aberdeenshire, is that wonderful dwarf *Iris histrioides major*, which flowers toward the end of February, or in early March. The blooms are quite impervious to the worst of our wintry weather, and show some hundred unspoiled blossoms standing bravely above the snow-covered ground. Equally easily grown in a cool, moist, well-drained aspect is the much rarer Caucasian, *Iris winowgradowii*. Also of the reticulata section, of similar dwarf robust stature, the flowers are a clear pale yellow, spotted on the falls. The high cost of this iris is difficult to understand as it increases steadily by off-sets, and also in favourable years, sets seed.

Of the many species, *Crocus corsicus* is a favourite, its clear warm pink blooms opening to the first spring sunshine about mid-March. Pot grown, the pot is plunged in a sandbed for sharp drainage, and receives no protection from weather, and no further treatment other than an annual re-potting in fresh compost and to accommodate increase of bulbs. A near relative grown in identical manner is *Bulbocodium vernum*, charming in bud, and in flower. The dog tooth violet *Erythronium dens-canis* is another easily grown bulb, of such beauty

when seen intimately, were it difficult to grow, the alpine house or frame would surely find space for it.

The scree is perhaps the most important and least understood part of the rock garden. Sharply drained but moisture retaining, is an apparent contradiction in terms which probably confuses most beginners. When we appreciate that this implies the rapid drainage of surplus or excess water, at all times, in a soil structure which at the same time retains sufficient moisture to support plant life, the true meaning and function becomes clearer. It is easy to improve soil drainage by the addition, in quantity, of coarse, clean sand, or grit, but the other essential element is humus, in the form of granulated peat, or leafmould. The humus content, in conjunction with sand or grit, not only assists drainage by giving the soil an open, spongy character, thereby assisting soil aeration, but also, by its nature, retains moisture and nutrients in solution by which plants live.

In our Torphins garden we are fortunate to have a good rich friable basic soil, to which the addition of peat and sand in the proportion of one part each to a similar bulk of the top ten inches of soil has created adequate scree conditions, in relation to our rainfall. *Helichrysum milfordeae* is a typical plant which demands scree treatment, and which will not survive a normal winter in absence of very sharp drainage. The plant illustrated carries more than sixty flowers and creeps steadily across the scree. *Lewisia brachycalyx*, usually grown as a pot plant in alpine house or frame, survived seven years in the same scree, flowering annually, without any form of winter cover. In the end it was destroyed by winter slugs. *Gentiana acaulis alpina*, beautiful in the garden and incomparable when seen growing wild, prefers a basic gritty mineral soil, not rich in humus, otherwise there tends to be foliage but absence of flowers. *Incarvillea mairei* var. 'Frank Ludlow' is perhaps the neatest of the incarvilleas in cultivation today; its stemless pink trumpets in rosettes of green, brown rugose leaves which at this stage lie quite flat upon the ground.

The garden frame is the natural first step to the arts of protected cultivation, and that illustrated is double sided, running north to south, designed to use twelve standard dutch lights. Six of these face eastwards for full sun, the other side facing westwards adapted to the needs of plants requiring shadier, cooler and moister conditions. Cedar lath blinds attached to the ridge can be used as required. Eighteen inches high, the sunny side is filled with pure sand to provide the sharper drainage required by the sun lovers, whereas the west side, for

better moisture retention, comprises a 50-50 mixture of peat and sand. These are the two different media into which pot grown plants are plunged to the rims. The lights are removed during the summer months to admit rainfall, except over those sections containing summer dormant bulbs where after flowering and spring growth the lights are replaced to ensure summer ripening. *Crocus scardicus*, grown from seed collected by Mr. J. C. Archibald in 1965 in the Sar Mountains of Yugoslavia, is typical of plants grown on the sunny side of the frame, and *Pinguicula grandiflora*, although a plant which in nature inhabits full sun in wet locations, does not lose character when grown in some shade on the west side of the frame where it is not allowed to get dry.

The great public gardens have much to contribute to our knowledge and fortunate we are in Scotland to have the Royal Botanic Garden in Edinburgh. Illustrated is the world-famous scree accommodating many rare plants which in flower or foliage provide year round interest. Seen in the peat borders there, one of the many splendid things is *Omphalogramma soulei*; the Grand Violet as originally described by Farrer. At the R.H.S. Gardens at Wisley the great rock garden there demonstrates sheer professionalism in the association of rock, water and plants in natural setting, and the alpine house, to the plantsman, is an Alladin's cave of rare treasures, including the legendary *Jankaea heldreichii*. The memory also recalls a superb stand of *Cypripedium calceolus* among the trees in the Savill Garden of Windsor Great Park. These and others are the plantsman's heritage.

The Club Shows at intervals provide stimulating rendezvous. And where else can one see as fine a demonstration of the rock gardeners' art? And where better can members and the lay public inspect and assess the intimate details of plants, so neatly presented in their pots and pans along the show benches?

Over the years I have been an enthusiastic exhibitor at our Shows, having brought forward the best of my plants, and having enjoyed the best plants submitted by other members. Competition invites our best endeavours and, after all, it is the best plants which set the standard—to the benefit of all, competitors, members and the public alike. And I have an impression there is a fellowship among competitors not quite shared by those content merely to spectate!

Perhaps the most exciting six pans entry was submitted to the Aberdeen Show in 1967: it took the class trophy and included also the Forrest Medal plant of the Show. The entry consisted of *Kalmiopsis leach-*

iana 'M. le Piniec' (fig 8), *Calypso bulbosa*, both from Oregon, U.S.A.; *Pleione pogonioides*; *Fritillaria karelinii*; *Primula dryadifolia* and *Trillium rivale*. It was the lovely Himalayan primula which merited the premier award, now sadly lost and I believe no longer in cultivation. *Trillium rivale* (fig. 17), not to be confused with *Trillium nivale*, is the smallest trillium in cultivation and makes a satisfactory plant in the peat border among the rhododendrons. The plant described is grown in a pot plunged in the border, in order that it may be taken to Shows without root disturbance, which it resents. In semi-shade the plant demands moisture at all times.

A few years garden experience brings home the realisation that a fuller appreciation of species plants can only be sought in the wild.

In Greece during the first week of April, when already river and stream beds are practically dry, we find the brilliant *Anemone coronaria*, hot and dusty by the road-side from Athens to Sunion. *Fritillaria graecum*, that close relative of the tulip on Mount Hymettus, and the more striking variety, *guicciardii* with its maroon and grey pendant bells, on Mount Parnes. *Iris pumilla* var. *attica*, dwarf and bearded, with flowers of cream, yellow or purple, is commonplace and charming. When we reflect that the summer to come will bring intense heat, and little or no rainfall until autumn, we appreciate more clearly the cultural needs of these and many other fine plants of the area.

On the Island of Rhodes, *Campanula rupestris* var. *anchusiflora* is exposed to the full glare of Mediterranean sun, rooted into the smallest fissures of a large limestone rock. By contrast we find *Cyclamen rhodense* carpeting the floor of coniferous forest near the summit of Mount Philerimos.

How can one grasp the real meaning of the term crevice plant before seeing plants such as *Androsace helvetica* on the vertical face of what appears to be solid rock, near the summit of the Weisshorn in Switzerland? Or of *Arabis cyprius* inhabiting every crack of a fragmented cliff face in Cyprus?

On that remarkable ridge of the Diavolezza overlooking the Morteratsch Glacier, near Pontresina in the Swiss Engadine there is a company of the most aristocratic of high alpines, none of which proves tractable to cultivation at lower altitude. *Geum reptans* (fig. 9), its golden rays to the sunshine and its runners probing to find root hold for new plants at their tips. Seedlings of *Eritrichium nanum* by the score, at once the glory of the Alps and the despair of the alpine gardener and, rarest of the rare, a glistening pure albino form. *Andro-*

sace and *Ranunculus glacialis*, breathtaking at this altitude of 10,000 feet against the backdrop of noble mountains, and, on the wooded fringes of Pontresina village itself, stands of *Lilium martagon* are to be seen.

On a rewarding visit to the Island of Sardinia this year, among many interesting plants the highlight was *Pancratium illyricum*, that striking member of the Amaryllidaceae. Closely related to *Pancratium maritimum*, instead of growing at the seashore, this variety grows above sea level in basic soil, in full sun, or in shade among rocks, and at altitudes up to 1500 feet.

Willie Buchanan was an outward looking gardener, always in search of new plants to stimulate and test his skills, and this too has been my philosophy.

After several years witness on the show benches, of fine plants in the category of new, rare or difficult, a decision to erect an alpine house in 1961 is one that has not been regretted. The alpine house envisages acquired techniques in plant control, especially in watering, ventilation and pest control. It provides the opportunity to grow many plants which are very difficult or otherwise impossible to keep alive in the exposed garden. Experience does show, however, that if a plant can be persuaded to grow outside it will generally make a better plant, in all respects, than one grown under glass.

The alpine house at Treetops is twelve by fifteen feet, is provided with two raised plunge beds containing fifteen inches depth of pure sand, into which the pot grown plants are plunged. The remaining side has a bed raised six inches only, filled with a 50-50 sand-peat mixture to provide for shade plants generally requiring cooler and moister conditions. Roller lath blinds, externally mounted, provide essential screening of sun in high summer, as well as a degree of frost protection in winter. No form of artificial heat is used even in the severest of winters; the only additional protection, afforded to selected plants as Pleiones, consists of sheets of newspaper as covering to be used or removed as dictated by temperature.

The following are some of the exotic species grown in this house: *Phyteuma comosum* and *Campanula zoysii*, both from the limestone cliffs of Yugoslavia. *Calceolaria darwinii*, which never fails to excite attention, from Patagonia—a plant which grows equally well in a well drained peat bed in the garden—but beware greenfly at all times! *Paraquilegia anemonoides* forma *pallida*—a fortuitous seedling now twelve years old, shows no lack of vigour after careful repotting every

third year. Flowers smaller than the type plant, white with a blue flush on reverse of petals.

Reference is made to two juno irises of the Persica complex which are at once ethereal and ephemeral, their blooms lasting no more than two or three days. When potted in compost in the normal way, even with provision of excellent drainage, they display a marked tendency to damping off when being coaxed into growth in spring, in spite of very careful watering. The following experiment over the past two seasons has resulted in flowers each year, and no losses. Potted into deep pots with extra drainage, the roots anchored in No. 3 potting compost, the base of the bulbs is cushioned from the compost by not less than a quarter inch of sand. At this stage the pot is then filled with pure sand only. The bulb draws nutrient from the compost into which the roots penetrate, but at no time does it become unduly wet, which it appears to resent, and it dries off quickly after watering. A good ripening follows when spring growth is complete, after which the pot is allowed to dry out completely, until autumn repotting.

A viewpoint apparently held in some quarters is that Pleiones are not plants for the rock gardeners' collections. It is a view I personally have never quite understood. By what standards then are Cyclamen acceptable? These terrestrial orchids are found growing at altitudes up to 6000 feet in Western China, and are quite hardy if kept dry when dormant. They are now classified together as *Pleione bulbocodioides.* Under their former varietal names, *Pp. limprichtii, pogonioides, yunnanensis* and *forrestii,* have been grown over the years in the unheated alpine house, with no further protection than a sheet of newspaper on nights when the house has registered 20° F. of frost. *Pleione forrestii,* the beautiful pale yellow form, only recently in commerce, is proving a good doer, flowering annually, and producing a one hundred per cent increase of flowering size pseudo-bulbs each year. All are grown in shallow pans in a four part mixture of loam, sand, sphagnum peat and fresh chopped sphagnum moss. Repotting in January, the pans are finally top dressed with the live sphagnum which is anchored around the pseudo-bulbs by very coarse river-washed gravel. In growth, cool, moist, shaded conditions are indicated. Feeding is not necessary, but there should be no drying out until dormancy.

An orchid of very different character is *Chiloglottis gunnii,* the common bird orchid of Victoria, Australia. Quite one of the most remarkable pieces of vegetable matter of my experience, the flower-head is an extraordinary and complex composition.

When Mr. S. E. Lilley addressed the company last year he referred to the romance of rock gardening, and who among us has failed to be gripped with excitement upon reading the travels of Farrer, of Forrest, Kingdon-Ward and others? In this context I find it fascinating to reflect that, several years ago, a lady by the name of Mrs. Strutz, who lives at a place called Anchorage in Alaska, collected seed of a native primula and submitted this to the seed exchange. I was fortunate to receive a little of this seed, and meantime the plant, *Primula tschuktschorum* (fig. 11) has flowered in the alpine house, set viable seed which has germinated, and been pricked out.

But efforts are not always attended by success, and there are times when one wistfully longs for a second chance! Some years ago a very few seeds of *Notothlaspi rosulatum*, that splendid endemic from the screes of New Zealand, yielded two seedlings which over-wintered and flowered the following summer. But the flowers were a mere shadow of their natural counterparts and the prospect of seed, which seemed promising for a time, did not mature.

But *Dicentra peregrina pusilla* (fig 10) from the lava screes of Japan is a success story. A plant received in 1961, within fourteen days of being collected at 4000 feet in Japan, is still strong and vigorous in a long tom pot in the alpine house, so it cannot be said to be short-lived. The plant flowers and sets viable seed annually, and provided this is sown immediately as ripe a good germination results the following spring. Viability of the seed is extremely short-lived, and I take a prepared seed-pan to the plant when seed is ripe, in August.

Aquilegia jonesii is another desirable alpine house plant which, although shy flowering, germinates readily from seed, a number of which will produce the relatively huge stemless columbines and will later set good seed.

The last slide of the series shows yet another plant of *Ranunculus glacialis* (fig. 12) on the Diavolezza, against the perennial snows of Piz Palu of the Bernina group of mountains. In order to gain perspective on scenes such as this, it is necessary to focus to infinity.

And this is an appropriate note on which to close. For the rock gardener, the scope for creative endeavour and reward, in terms of plants, in terms of places, and not least in terms of people, is indeed infinite.

Making Things Easy

by CHRISTIANA BOYD-HARVEY

EASY ? Surely, you may say, this is not a suitable subject for the S.R.G.C. *Journal.* We like things to be difficult. If you eavesdrop at a Show or other meeting of members, you are certain to overhear the exchange of clever cultural hints such as—

"It must be kept underneath the bench all the time"

"It musn't have the dead leaves pulled off or it will rot"

"If a single drop of water falls on its crown it will die"

"The trouble starts at the neck, and then collapse is inevitable"

At the Shows a plant which has needed much attention to keep it alive is more highly esteemed than an easy-going thing which has given no trouble. To be honest, would not most of us fall for a three-inch pot of *Primula reptans* rather than two or three square yards of *P. denticulata* ? *P. reptans* has charm and beauty. It is also rare and difficult. Its difficulty may be considered a desirable asset or a regrettable disadvantage according to the attitude of mind. I have had it twice and lost it twice. I felt sad and guilt-ridden, but life is easier now that I no longer have it to worry about when I am out for the day and there is a change in the weather.

Some years ago, my *Campanula zoysii* received a Forrest Medal at North Berwick Show, and its success was reported in the local newspaper. A distinguished old gentleman, an orchid fancier, called to see the famous Best Plant in the Show. He was not exactly rude about it, but just stood there silently. The plant died soon afterwards. I now have a wall dripping with *C. portenschlagiana.* All my callers (except clever S.R.G.C. people) exclaim "How gorgeous ! It is almost as good as Aubrieta". When S.R.G.C. members come, I find myself apologising for its vulgar display of colour. Secretly, I am quite pleased to have a few plants like this which give so much in return for total neglect.

If difficult plants are esteemed so highly, why should I preach in favour of easiness ? I have been trying to investigate the reason for some people becoming plantsmen while others go in for rock gardening. It is a sweeping statement, but I believe that most plantsmen live in cities and have small gardens. They attain perfection there all too soon. There is not a weed in sight. Rock gardening has become too

easy for them and there is nothing left to occupy their skilful hands and questing minds. They find it impossible just to sit there and enjoy the perfection they have created. They need to make trouble for themselves, so any plant which is doing too well is thrown out and replaced by another which wants to die. They work their way upwards through panes of glass, cloches, polythene tents and frames to a real alpine house. After they have coaxed a few hundred recalcitrant plants to live, they become famous and begin to talk a different language from the rest of us. They perform delicate operations with nail scissors while we slash about with shears. They discuss special mixtures while we brood over compost heaps.

There are some members with a foot in both camps. They have beautiful gardens, spacious enough to accommodate parties of visiting Groups, and yet they find time to raise new plants and produce pots of prize-winners for the show bench. I am watching with great interest to see in which direction their interests will be slanted with the passing of the years.

It is the passing of the years which has incited me to write all this. I would not dare to suggest to plantsmen that they should take life more easily. They like difficulties and any technological labour-saving devices such as remote-controlled roller-blinds, thermostats and automatic watering must be of their own invention. These notes are offered to dirt gardeners like myself who, with the passing years, are less inclined to bend, stretch, run, jump, climb trees and carry great rocks. We do not have to search for difficulties. They are ready-made, waiting for us outside the door. In our younger days we had an insatiable appetite for new plants, with the urge to build new garden features to accommodate them. Without the discipline of enclosure within four fences, we went on and on, taking in more and more land. We sprawled outwards when we ought to have been building upwards.

Garden Design

Size. My garden is much too large. I therefore cultivate half of it and ignore the rest. Conservation is now on everybody's conscience, and we are warned that parts of the earth's surface must be left as wilderness. Half my garden is wilderness. I attempted once to tidy the place but gave up when I disturbed a pheasant. Will the friend who described it as "Rather a mess" please note that it is my Wilderness Bird Sanctuary ? Life is easier now that I have given it a grand name and feel it a duty to avoid going there.

Height. Most of the rock garden was built well above path level, fortunately. The built-up soil had to come from somewhere, and a wide ditch was left. I had once believed that this, if lined with peat blocks, might have been a good place for growing moisture-loving plants. It was a bad mistake. It became infested with the suckers of *Pernettya mucronata* and *Myrica gale*, and the roots of everything else had penetrated into the peat blocks. It was quite beyond my powers to sort out the tangle, so after removing the good plants for future reference, the whole area was smothered with slit polythene sacks. There were about twenty of these overlapping to avoid water-logging, with their edges anchored along the paths with heavy rocks. I did not keep count of the number of barrow-loads of sifted soil which I pushed from the far end of the garden, but it took three days to fill and build upwards. It was worth the trouble, and life has become much easier. It is no longer necessary to lie prone, head downwards, to weed and tend the plants. Filling a large hole creates another large hole, but this time it is in the Wilderness so may be ignored.

Width. All parts of the rock garden ought to be accessible at arm's length from one side or the other. I am gradually clearing out plants I do not like and, where required, filling the vacancy with stepping-stones to give easier access. Stepping-stones should be large enough to take a kneeling mat. It can be dangerous and expensive to work when balancing with one foot on a stone six inches square surrounded by plants each of which may have cost £1.50.

There is one garden feature which has been a problem for years. It is a dry-stane dyke, twenty-seven inches tall with a flat terrace at the top filled with Erythronium and Cyclamen species. From front to back it measures forty inches and this is too wide to stretch across at arm's length without crushing the plants in the vertical face. Weeds take refuge from me there, until in desperation I have to fetch a foot-stool in order to reach them. As I write this, the obvious solution has at last flashed into my mind. Why not build a permanent stone foot-stool the full length of the wall ? That will make things easier, I hope.

Garden Aids

Tools. I have wasted many good gardening hours searching for a lost trowel. One trowel is not enough. Have several and paint their handles in bright colours so that they are easy to detect from a distance. I have no solution to the problem of lost secateurs.

Modern tools are light, smooth and stainless, but they cost a great

deal. My favourite little implement costs nothing. It was invented and given to me by the late Brigadier George Hutchinson. It is easy to copy and I have several hanging from hooks and the branches of trees all round the garden. It was given to me for getting pearl-wort out of peat, but it is equally useful for moss, liverwort and immature weed seedlings. It is made from the kind of wire coat-hanger which comes home from the dry-cleaner. The wire should be not less than one-sixth of an inch gauge and fourteen inches long. At one end, two and a half inches should be bent down at right angles, and the other end curved down into a rounded loop to fit comfortably into the palm of the hand. It is a simple toy, but it has made life easier.

Flower Pots. Whether the advantages of clay pots outweigh their disadvantages appears still to be a matter for debate. A hundred three-inch plastic pots weigh exactly the same as thirteen clay pots of the same size. Carrying heavy objects from place to place is a waste of energy. All my lime-encrusted, moss-covered neolithic relics are stacked away unused. Light-weight life is easier.

Kneeler. Bending may be good exercise but kneeling is easier. Sew a double layer of foam sponge bath-mat into a nylon net shopping bag. The new kneeler weighs only four ounces including its handles, and it is easy to carry it about on the wrist until needed. If left out all night in the rain it dries quickly hanging by the handles.

Weeders. There is no need to waste good gardening time hoeing and raking paths when paraquat (Weedol) and simazine (Weedex) are available. The former gives a quick kill, and is rendered harmless by contact with soil. The latter is slow acting but prevents further growth for a year. Some paths may be too narrow to risk sprinkling with a weeder-bar. The simazine solution may be mixed in a pail and dabbed on the weeds with a long-handled washing-up mop. This method of application may be used for bindweed and mares' tails as soon as their ugly noses push through the ground, using a weak solution of 2.4.5-T. Do not allow these creatures to bully you into surrender. Nagging and dabbing must be persistent right through the season, year after year. If neglected, the only way to be rid of them would be to move house right out of the district.

Frames. Garden frames have their uses but require much assiduity. They have to be opened, closed, shaded and unshaded. To me they are just one more worry when out for the day (Did I leave the oven on ? Has the cat got himself shut in the brush cupboard again ? Are the frames open or closed ?) A sheet of newspaper inside the frames

can be a help, but even that has to be put on and taken off. I find that slatted fruit boxes save much anxiety. They invert neatly over tomato boxes, each of which holds eighteen three-inch pots. They should be sited in a semi-shaded place and, in really hot weather, the shade and protection given by the slats may be increased with strips of netlon or a handful of long grass. Seedlings and cuttings survive neglect like this, but in a neglected frame they can be frizzled to parchment or smashed to a purée should there be an unpredicted gale, hailstorm or heat-wave.

The Plants

Longevity. One might expect that the way to make gardening easy would be to grow only those plants with a long life-span, avoiding others known to be transitory. I have searched my gardening diary for 1950 in order to make a list of plants which have survived from then until now. In those days I kept a list of plants newly in flower each week, a list of plants taken to the Shows and a list headed "Must have :—" All my Show plants of the early 1950s have died, but there are some notable survivors in the garden, a very mixed bag of *Daphne blagayana, D. retusa, Dryas octopetala minor, Erythronium dens-canis, Fritillaria imperialis, F. pyrenaica, Gladiolus byzantinus, Platycodon mariesii, Saxifraga apiculata,* and *Tropaeolum polyphyllum.*

I would find it too depressing to make a list of my losses. There was an ominous entry in May 1950—"White grubs eating Primula roots again". The indestructible vine weevil still lives here in 1973 and I am unable to grow primulas except those robust enough to grow roots faster than the grubs can chew them off again.

I do not think we should reproach ourselves too much for past failures, although we may wonder whether we killed a rare and lovely thing through ignorance or carelessness. We know quite well that all living things have their normal life-span within which only minor deviation is possible. We ought not, for instance, to expect *Primula viali* to live as long as *Rhododendron forrestii repens.*

If all plants lived eternally, how dull gardening would be ! We know perhaps of senile "shrubberies" where life stands still. The owners have abandoned interest, and have to hire a man to tidy up and cut the grass. On the other hand, if there are new plants approaching their first flowering, it is no hardship to visit them every morning before breakfast. There too are all the old stalwarts increasing yearly in beauty and giving a feeling of stability and permanence among the

young in-comers. It is easy to enjoy working there through all the hours of a long day.

Rejuvenation. Waiting in a queue to buy plants at one of the Shows, I heard a member say to her friend "I would love to have it but I am full up and have no room". Surely we all have plants which we have acquired over the years and which no longer satisfy our more fastidious taste. Surely some of these might now be cleared away to make room for others which we greatly covet. I realize that some people have a sentimental attachment to their old plant friends. They become quite anthropomorphic about them, saying that they do not want to hurt the feelings of the poor plants. I would say to them that the compost heap is the resurrection of dead plants and their chance of everlasting life. A great armful of unwanted vegetation cast into the wheelbarrow can live again in the cell structure of a lovely lily or rare cyclamen. And there, where the unwanted things used to grow, are good, empty planting spaces for much-coveted new plants.

I have a Banishment Border to which I transfer certain plants from the rock garden which are too rampageous but have other good qualities. There, in their new role of "good ground cover", they have space to fight out together their need for elbow-room. The winner seems to be *Geranium macrorrhizum.*

The moral of all this is that, for easy working and to maintain interest, the rock garden must be rejuvenated from time to time with small and healthy plants to replace those which are no longer worth the area they occupy. Make a list now of the senile, the sickly, the greedy and the unworthy.

Coda

When plans have been made and carried into effect for making gardening easier, there ought to be time to relax and enjoy the rock garden. I can picture myself there on a sunny midsummer afternoon resting among the bright colours and sweet scents. There will be no sound to break the silence except the twittering of strictly insectivorous birds nibbling happily at aphis infestations. With smooth, white hands, unblemished by thorns, splinters, cuts and gashes, I will rise from the chaise longue to pour tea for my friends. There will be no mosquitoes, midges nor wasps to disturb us. It will be gracious living in a perfect setting. There will be no weeds in sight—they will all be round the corner or at the far end of the garden.

But it is still three weeks to wait before midsummer day, and that

Fig. 8 *Kalmiopsis leachiana* 'M. le Piniec' *Photo* J. D. Crosland

Fig. 10 *Dicentra peregrina pusilla* *Photo* J. D. Crosland

Fig. 9
Geum reptans

Photo
Miss D. Holford

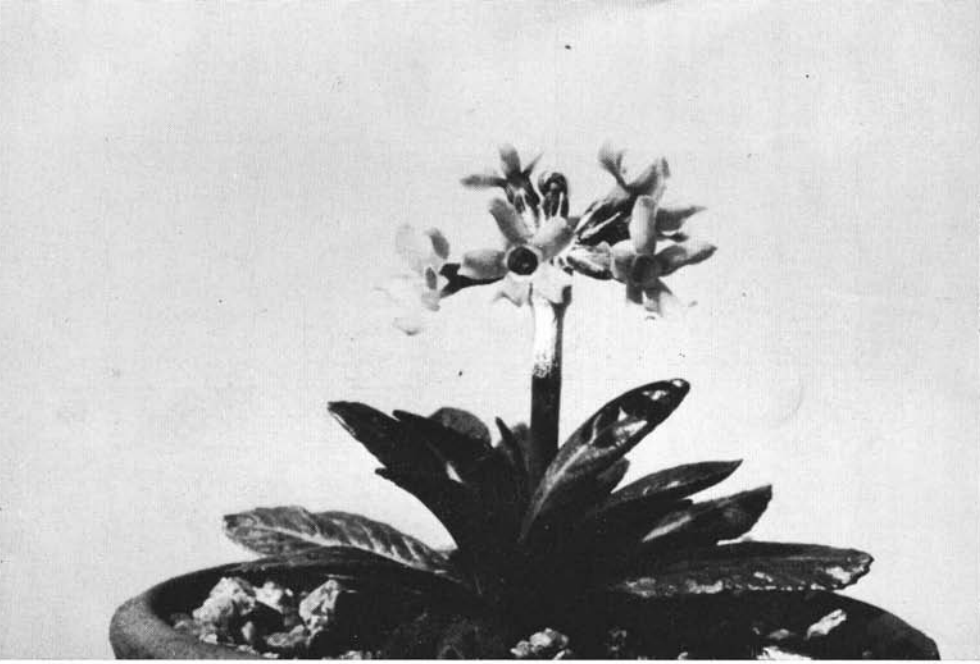


Fig. 11 *Primula tschuktschorum* *Photo* J. D. Crosland

Fig. 12 *Ranunculus glacialis* on Diavolezza *Photo* J. D. Crosland

means thick woollies, heavy raincoats, stout shoes and umbrellas to go to the Ed. and Mid. Bring-and-Buy Garden Party. The S.R.G.C. breeds discontent. I want some more plants. I need that silvery cushion Celmisia. I insist on having *Corydalis cashmeriana* again. I want cowslips and pink primroses instead of dandelions and nettles. I need to do something about the Wilderness, so must find the bill-hook, the hatchet and the pressure spray. Oh well, perhaps not. I have to consider the pheasant.

George Forrest in Perspective

by JAMES T. AITKEN

The Clark Memorial Lecture given at West Kilbride on 14th October 1973

THE ADVANCEMENT of plant availability whether in economic plants or ornamentals is achieved by two main forces. First is the discovery and introduction to different environments of wild plants. Second is the process of selection and hybridisation which takes place after the plants have become available. Of course discovery and introduction can, and most often are, separate events just as much as selection and hybridisation are different processes.

The distinction is exemplified by the contributions of two men in regard to Lupins. The genus was first discovered near the Columbia River in west North America by the Scottish collector David Douglas about 1827. But it was over a century later in 1937 that Bakers, Wolverhampton, Nurserymen, were able to exhibit the Russell Lupins—a great advance on previous varieties in range of colour and size of bloom. These new lupins were the fruit of a lifetime of devoted and patient work by George Russell, a York working gardener who in his spare time cross-bred and selected from a great range of species and hybrid lupins.

Both these activities have been carried on from earliest time—ever since man ceased to be nomadic with a pastoral economy and became settled in an agrarian society. As life became more settled and liveli-

hood less precarious, ornamental plants attracted interest as well as economic plants. The *Pulsatilla vulgaris* is said to have been introduced and naturalised in the south of England by the Romans.

However, as in so much else, the upsurge of intellectual artistic and scientific activity during the Renaissance inspired a greater trafficking in ornamental plants. To that period dates back the first organised activity for the seeking out and introduction of new plants. The plants of the new world as well as of remote areas of the old world were sought out and transported. In the reign of King James VI and I, Lord Salisbury's gardener, John Tradescant, was sent by his master to Russia and North Africa. King Charles appointed as Royal Gardener his son, John Tradescant the Younger, who travelled for his master to gather plants in New England. This activity was carried on by most of the leading European nations—France, Holland, Russia and Britain in particular—with other countries also contributing. The contribution of Britain was significant and worth examining. However, to retain the perspective it is necessary to keep in mind that Britain was by no means acting alone.

In 1973 the Scottish Rock Garden Club has been celebrating the centenary of the birth of George Forrest, whose work as a plant collector was unrivalled. His career commenced at age 31. He was then working in the herbarium of the Edinburgh Royal Botanic Garden. His chief, Sir Isaac Bayley Balfour, recommended him as a field collector to A. K. Bulley, a Lancashire cotton magnate who had established the seed and nursery firm of Bees. In Bulley's employment Forrest went to South West China. He spent the rest of his life on and off in that region collecting plants and ultimately at age 58 died in the field at the end of what was to have been his final expedition. Throughout his career he maintained a close relationship with the Edinburgh Garden, first under Balfour and later under Professor Sir William Wright Smith, Balfour's successor. Forrest never had any European collaborator, but trained and organised a number of native assistants who collected on his instructions. As a result of his work there was a dramatic increase in the rhododendron family and to a lesser extent in the primula genus. Although he was primarily a plant collector, he made an important contribution to the zoological and geological knowledge of that part of China. His later expeditions were financed by syndicates mainly of private gardeners, but some trade and institutional contributors to his syndicate were accepted.

Forrest was not the only collector employed by Bulley. After his

second expedition Forrest quit Bulley and Balfour nominated Frank Kingdon-Ward, then aged 26, as a collector. From then till he died at 73, Ward collected in South West China, North Burma and North East India, though like Forrest he fairly soon left the employment of Bulley. Unlike Forrest, Ward devoted much time to writing and his books today command premium prices. Ward employed no native collectors. All his plants he saw and harvested himself. His second wife was, however, his companion on his post second world war expeditions. One of his finest discoveries and introductions, *Lilium mackliniae*, is named in her honour.

A third collector in the service of Bulley was R. E. Cooper, who concentrated on the Eastern Himalayas. The initial botanical recording of Bhutan was his work, though his own gatherings and introductions were not rich. Cooper ultimately was appointed Curator of the Royal Botanic Garden, Edinburgh, and till his death was Honorary Vice-President of the Scottish Rock Garden Club.

Thus at one time there were operating in South East Asia three notable collectors whose work Bulley and his firm of Bees Seeds were financing in whole or in part. The object of these expeditions was commercial advantage. The knowledge that the firm was financing field collectors was a first class advertisement. The activity aroused interest in the firm. The other advantage was the ability to market new plants. Bees were then a new firm and in what better way could the firm be publicised.

At this period of history it was not uncommon for the horticultural trade to promote plant collection. About the turn of the Nineteenth century no flower was more fashionable in high society than the orchid. Keen rivalry existed among gentlemen gardeners to grow these exotic stove plants. The newer, the rarer, the more difficult were all spurs to greater endeavour to acquire and to cultivate. The great firm of Sanders Orchids sent a succession of collectors to the tropical forests of the world to seek out and send home to their houses the new and the rare in Orchidaceae. The then management of the firm appear to have been less than generous in their remuneration of these field servants. But the enterprise of Sanders greatly enlarged the knowledge and cultivation of the genus.

In the field of hardy plants, however, the nursery whose efforts yielded most was the firm of James Veitch & Son, originally of Exeter and later of Chelsea, London. The original partners, father and son, themselves spent time in the field collecting, but a grandson of the

founder, also James Veitch, was a notable introducer of Japanese plants. He was one of the earliest gardeners to secure entry to Japan, hitherto closed to foreign trade. He sent home many Japanese plants, particularly chrysanthemums, and can be credited with the discovery of *Lilium auratum.*

Two of Veitch's great collectors were the brothers Lobb, Devon men from near the firm's Exeter nursery. William went first to Chile and then later to California, where he landed when the gold rush was at its height. He re-traversed much of the country originally botanised by Douglas and introduced or re-introduced many Douglas plants, particularly trees. The brother Thomas went to India, Java and Malaysia to procure orchids and tropical rhododendrons.

There were many others. Curtis and Burke collected orchids in the East Indies. Rock gardeners will first discover Purdom, who was to accompany Farrer on his first plant expedition, in China on behalf of Veitch searching for hardy plants. There is indeed some doubt as to which of Farrer or Purdom was responsible for the first collection of the relatively few discoveries of their partnership. Eventually Purdom made his home in China in the Government Forestry Service.

But without doubt the finest of the Veitch collectors—and he ranks as one of the great collectors—was E. H. 'Chinese' Wilson, who after a training at Birmingham Botanic Gardens and Technical College, went to Kew for further training and experience. He responded to an advertisement by Veitch and in 1898 left for China with special instructions to seek out the davidia tree. He was sent by way of the United States with an introduction to the Arnold Arboretum of Harvard University, where he met Professor Sargent. The two became close friends and Wilson later left the service of Veitch to work for a syndicate whose principal subscriber was the Arnold Arboretum. Later still he joined the staff and finally became head of the Arboretum.

Because of his connection with the Arnold Arboretum, Wilson's main interest and harvest was trees. The davidia, of course, he found, thus enabling Veitch to introduce it. Wilson's main collecting was in the Yangtse Valley. He was one of the early collectors to penetrate the interior of China from the east. He is responsible for many well-known Plants, *Meconopsis integrifolia* (Farrer's so-called 'Lampshade Poppy'), *Rosa moyesii*—distinguished for its specially decorative hips in the autumn which follow a fine flowering, *Rhododendron sargentianum* (after his friend), *Cassiope selaginoides*, and *Lilium regale*—quite the most famous of his plants.

As mentioned Forrest throughout his career kept up a close connection with the Edinburgh Royal Botanic Garden, where his botanical specimens were scrutinised and his seed and bulbs were expertly grown. Such intimate liaison with a botanical institution is essential if the full benefit of a collector's work in the field is to be realised. Chinese Wilson was served by Harvard University for most of his expeditions, his first connection being with Kew.

David Douglas of Perth, who was the main botanical explorer of Western North America, was proposed for his work by Professor William Jackson Hooker of Glasgow University, whose field assistant he was. Throughout his whole period abroad, Douglas scrupulously ensured that at least one specimen or one share of seed—however scarce—went to his old chief at Glasgow. Hooker for his part spared neither intellectual nor physical effort to examine, classify and report. Though correspondence was slow, they interchanged letters. Douglas queried and was answered. Hooker advised and suggested ; and Douglas responded. Towards the end of his short life Douglas became short of patience and insubordinate to his employers at a time—1830—when the most successful of servants was expected to keep his place. But never did the bond between Douglas and Hooker ever appear to be under strain.

Sir William Jackson Hooker—as he was to become after he moved south to take charge of Kew—was later to confer the same scientific back-up when his son Joseph Dalton Hooker (later also, to be appointed Keeper at Kew and to be knighted) spent a period in Bengal and the Indian Himalayas, mainly in search of rhododendrons, many of which still grace some West of Scotland gardens.

The handicap collectors suffer when they are not well serviced by the scientist is best illustrated by the fate of the botanical findings of a number of French missionaries to China. Many of these men devoted part of their time to botanising. When the Chinese government were loath to allow foreigners entry, or at least restricted them to the so-called Treaty Ports, these splendid men moved about the country, mixed with and spoke the language of the people. Their names ring familiar to any gardening enthusiast—D'Incarville, David, Delavay, Farges, Soulei. Some material they sent to St. Petersburg and some to Kew, but their main connection was with the Paris Institute of Natural History, which completely failed to process the treasure they were receiving. Years elapsed before it was dealt with. Little seed was sent, but such as they received the French gardeners treated wrongly as

requiring stove conditions. Thus though these great men are credited, rightly, with many discoveries, their introductions are negligible. Often too the discoveries of later explorers like Forrest and Wilson proved to have been already procured by the French Fathers, but not published till long after discovery.

Kew Gardens played a distinguished part in the servicing of plant collectors. No part of the Kew record is so distinguished as the early days of the garden under its first Keeper, Sir Joseph Banks. In the whole story of plant introduction Banks is as distinguished as any, in this or any other country, or in whatever period of history.

He was a young man of good family, wealthy, a gentleman of the upper classes who as a student conceived a passion for the whole field of biology, but particularly botany. He botanised in Greenland and Labrador and got himself appointed chief of the scientists who were to accompany Cook on his voyage round the world. Cook and Banks collaborated well. The success of the voyage was credited to them both.

From then on Banks was the friend and confidant of his monarch King George III, who entrusted Kew to Banks. Banks became a Fellow and then for 42 years President of the Royal Society, was a founder-member of the Royal Horticultural Society, was created a baronet, and a Privy Councillor and received the Order of the Bath. The immense influence he came to possess was used to ensure that no voyage of discovery left Britain without its botanist, well versed and well equipped. He caused the dispatch of many Royal Gardeners to far countries to collect, explore and discover.

Francis Masson, from Aberdeen, was one of the most successful of Banks' protégés. In 1772 he landed in South Africa and in a series of journeys conducted the first systematic botanical exploration of the country. He is the discoverer of all the main species native to that area, the Cape heaths, cacti and succulents, ornithogalum (chincherinchees), gladioli, mesembryanthemum, gardenia—the list goes on and on—over 50 species of pelargonium. As well as in South Africa, he worked in the Canary Islands, Portugal and the West Indies. His final trip was to the north of Quebec and there he died. A constitution toughened to tropical climates was ill-suited for the Canadian tundra.

There were other distinguished Banks collectors. Caley was sent to Australia, Bowie and Cunningham to Brazil. When entry to China for a British mission was secured, Banks had William Kerr appointed a member of the staff. *Kerria japonica* was part of his harvest, also the tiger lily—*Lilium tigrinum.*

David Nelson—a Banks nominee—was at the side of Cook when Cook was killed in Hawaii. Later Banks appointed him in technical charge of the project to introduce the bread fruit from Tahiti to Jamaica on *H.M.S. Bounty* with Captain Bligh as master. When the crew mutinied—owing to the intolerable conditions aboard because of the space taken up by the plants—Nelson was one of those cast adrift in a small boat with Bligh. Two others of the royal gardeners from Banks' coterie later successfully accomplished this task under Bligh in a different vessel.

The Royal Horticultural Society later became a patron of collectors. They financed Douglas, first to the state of New York and north into Canada, mainly in search of fruit but also for ornamentals, and on his second and third expeditions to the west coast of the United States and Canada. He was outstandingly successful. His finding of the flowering currant was stated to be alone worth the expense of the trip. He introduced the great Douglas fir and other trees, between them the backbone of economic forestry in much of the temperate world.

Robert Fortune, from Edrom, Berwickshire, was despatched by the Society in 1843 to the newly opened Treaty Ports of China. By this time the technique of sending back by sea living plants in the Wardian case—a sort of miniature glass house—had been well developed and he sent home many plants from those cultivated in China. He was virtually restricted to the coastal cities but was able to introduce *Jasminum nudiflorum* and *Anemone japonicum.* Japan in turn was opened to western commerce and Fortune was an early visitor and introducer of the pom-pom chrysanthemum. On later trips he was financed by the East India Company to procure tea plants for the introduction of tea to India.

There is an endless overlapping and connecting of the work of various collectors. Forrest knew some of the later French missionaries in China, stayed and received help from some of them. Indeed, he was with two when he and they had to flee from insurgents. After eight days on the run, he alone finally escaped and after great privation won through to safety. He caused one of his primula finds to be named after one of the priests who then perished—Père Dubernard.

The India Tea Association employed Kingdon-Ward on his later post-1939 war trips to procure seed of the wild tea plant to strengthen the plant stock in India originally introduced from Fortune's efforts.

At one period about the commencement of the First World War Forrest, Farrer, Wilson and Kingdon-Ward were collecting all in the

same general neighbourhood of South-west China. But they were all individualists. From time to time one or other would meet, but always kept to their own courses. Farrer became oppressed by the seemingly ubiquitous presence of Forrest and his native assistants. From time to time Ward sought out and was given help by Forrest in his dealing with the natives. Professionally there was no collaboration.

Plant collecting was not the full-time occupation or even a source of support for many who made useful contributions.

The French missionaries in China were primarily preachers, teachers and medical men. They botanised as a side line which earned a little money for their missions from the scientific institutes mainly of Paris, but also of Russia and England.

Augustine Henry is an example of one who contributed significantly but who had no professional or pecuniary interest. He was an Irish doctor who entered the service of the Chinese Customs and travelled much on his official duties. The plants bearing his name commemorate him and none so well as his *Rhododendron augustinii.*

Lady Amherst, wife of the then Governer-General of India—her husband initiated the British conquest of Burma—accompanied her husband on his official journeys including the first stay of the ruler of India at Simla. She was keenly interested in Indian botany and introduced from the Himalayas *Clematis montana* to British gardens.

Menzies was the medical officer on Captain Vancouver's voyage to western North America and procured the first botanical specimens of many of the plants which David Douglas later introduced, including the Douglas fir botanically known as *Pseudotsuga menziesii.* By the time Douglas was preparing for his trip, Menzies was practicing medicine in London and the two met, became good friends and corresponded.

Ludlow and Sherriff carried out the botanical exploration of Bhutan on leave from their respective posts in India. To them goes the credit of the first use of air mail to forward plants to Britain from the field.

Captain Lewis and Captain Clark were officers of the U.S. Army sent to map the far west. In so doing they recorded some plants later introduced to gardens by Douglas. They are commemorated by the names of two plants they found.

Some plant collectors make this their life work like Forrest and Kingdon-Ward. But many whose contribution is not insignificant indulge in plant collecting as an incident in a career in commerce or science. Thus Clarence Elliott botanised in Chile and the Falkland

Islands for his recently founded Seven Hills Nursery and was responsible for *Calceolaria darwinii* and *Alstroemeria ligtu*—the latter still a speciality of his son's nursery.

Several members of the nursery trade and professional botanists are still devoting a period of their lives to plant exploration. From contemporary Edinburgh Mr. Archibald took time off from the establishment of his Dorset nursery to collect in the Atlas Mountains and the Middle East, and Dr. Peter Davies journeyed from the University Botany Department to Turkey and Persia.

Forrest's original support was Bulley alone, though Bulley farmed out sub-shares. After the first two expeditions, Forrest relied on a syndicate of several mainly private gardeners, with Charles Williams and Reginald Cory as the seniors of the syndicate. On his later trips Kingdon-Ward was supported also by syndicates. Farrer chose this means of financing his trips also, though the institutional subscribers at least were far from enamoured with the results. Wilson became the first collector to be financed, as he was on his later trips, by predominantly and later wholly American syndicates. The Austrian, Rock, later a naturalised American, was financed by the U.S. Department of Agriculture, the National Geographic Society (of America) and other American sources during his journeys and collectings in China until he decided to retire (in China) in 1933.

Mrs. Forrest acted as her husband's agent during his absences in the field. In his post-war journeyings Kingdon-Ward was accompanied by his wife. The first Ludlow and Sherriff expedition included Mr. Williamson, a colleague of Sherriff, and Mrs. Williamson, and after his marriage Major Sherriff was accompanied by his wife. But generally the role of women in this field has not been great.

One factor all the great collectors have in common is heroism. Courage and the ability to withstand her onslaughts are necessities for him who would explore nature. Forrest had to flee for his life pursued by insurgents. After the mutiny by the crew of the *Bounty* Nelson accompanied Bligh on the long voyage by small boat across the Pacific along the Australian coast and finally through to Sumatra—a great feat of seamanship requiring heroic qualities in all who participated. Masson found himself beset by lions. Douglas lost his canoe, his specimens, his diaries, and was lucky to survive with his life when the rapids of the Fraser River ran too strong. He won back to a Hudson's Bay Company fort lamenting the loss of his specimens.

Few of these men were interested solely in plants; the whole of the

natural world interested them. Forrest collected also small mammals, birds and insects as well as recording geological features and the social conditions of the people among whom he travelled. Père David is better known to the zoologist than the gardener. Père David's deer, which became extinct in the wild and was restored to China from specimens in an English zoo, is as romantic a tale as there is in natural science. And his most famous discovery is the giant panda. Douglas carried out geographical surveying, was accredited by the Admiralty and the surveys he carried out on such as Mount Hooker in the Canadian Rockies and named after his Glasgow chief were eventually confirmed to within a foot or so by later more sophisticated instrumentation. Nelson, the companion of Captain Cook and Bligh of the *Bounty*, is credited with the first recording of a kangaroo. They were never narrow men.

No firm dates can be given as to when one means of financing the work of such men yielded to a different system. Originally in the years following the Renaissance the spur came from kings and the great landed magnates of many European states. But always there were academics spurred by pure science and always men engaged in trade whether in the horticultural trade or merchants who were interested in gardening and dabbled as a side line. Within very rough bounds, however, governments of Britain and other European states —including the emergent United States of America—directed resources towards exploration, which included the flora, of the new lands during the seventeenth century. This is the time of Cook and Banks. Then in the first half of the nineteenth century learned societies took over the initiative, generally still with some official or unofficial government encouragement. From the mid-century to the outbreak of the 1914 war, the heyday of bouyant self-confident capitalist enterprise, commerce was the spur. It was probably only marginally profitable for those who invested in it. The great firms of Veitch, Barr, Sanders and their ilk no longer dominate the trade and many of them have disappeared. But in their day they served horticulture well.

Nowadays the collector looks, like Forrest and Ward, to syndicates of private persons, official and unofficial, academic bodies and commercial firms, all together, with no particular interest dominant.

Kingdon-Ward died in 1958, at 73 planning his next journey. He was a professional. The methods of each differed from the other. Forrest employed many native assistants. Douglas, respected and liked by both Red Indians and Europeans, collected every seed him-

self. Fortune went round nurseries. Masson enjoyed the company of a fellow European whenever possible. But these great men dedicated their lives to the work. Ward was probably the last of the professionals in this sense.

It is unlikely there will again be careerist explorers in the mould of these men. In future, exploration is likely to be an episode in a commercial or academic career. An incident to enrich professional experience or enlarge plant stock. Both are creditable aims from which the community of gardeners will profit.

The revolution in transport will enable plants to be moved from the wild to the garden or laboratory in a dramatically different fashion from the Wardian cases and the seed laboriously dried in monsoon-soaked tents.

The advancement of the emergent nations will enable their own nationals to conduct plant investigations and, at least relatively, lessen the role of the European and North American in strange lands. The investigation of new Zealand flora is now being conducted by her own nationals. When China becomes open again for botanical investigation, it is unthinkable that she will not have people of her own qualified to participate.

But in the future as in the past there will be those who eschew domestic comfort and routine occupation to seek out new plants for the enjoyment of gardeners. No doubt they will be concerned also with economic plants, with academic study, or commercial gain. And they will serve us no worse for that.

In our saunter round the garden, when we survey the crops in the field, or when we choose the vegetables from the menu, it is worth a thought of how our lives have been enriched materially and aesthetically by the courage and industry, the dedication and resource of brave men who went to lonely parts. In the year of George Forrest's centenary, those who preceded and came after him, his peers and those who did less but were yet significant, are worth our thoughts for we owe them much.

SUBSCRIPTIONS

The Council were empowered at the Annual General Meeting in November 1973 to fix the rates of Subscriptions; other than altering the date from 15th January to 15th October the only change in Subscriptions is that of the "Ordinary" Subscription.

DETAILS OF SUBSCRIPTIONS DUE 15th OCTOBER 1974

Details of Subscriptions for the year to 30th September 1975 are as follows:—

			U.S.$*
(*a*) Ordinary Membership	£1.50 per annum	(up 50p)	$3.75
(*b*) Life Membership	£35	(the same)	$87.50
(*c*) Family Membership	50 pence	(the same)	$1.25
(*d*) Junior Membership (those under 21)	50 pence	(the same)	$1.25

Payment of Subscription implies acceptance of the Club's Constitution and Rules.

*Subject to exchange Rates

NOTES—With the exception of Family and Junior Membership the above Subscription includes the issue of one copy of each of the *Journals* and *Year Book* published during his or her membership year, to the assistance of the Panel of experts, to free admission, subject to the Show Secretary's approval, to all Shows organised on behalf of the Club and the right to exhibit thereat, and to vote at General Meetings of the Club.

Family Membership is confined to other persons living at the same address as Ordinary or Life Members and shall be entitled to all benefits of Ordinary Membership except to the right of a copy of the Club's publications.

Junior Membership is confined to persons under 21 years of age who are entitled by concession to all benefits of the Ordinary Membership, but are not eligible as Office Bearers or Members of Council.

PAYMENT OF SUBSCRIPTION

This should be made direct to the Hon. Subscription Secretary, Mr. R. H. D. Orr, C.A., 70 High Street, Haddington, East Lothian EH41 3EN, Scotland. Cheques should be made out in favour of the Club. The Subscription Secretary would be grateful if as many members as possible paid by Standing Order. He would be pleased to send the necessary form on request to any member; this will ensure that your Subscription is paid regularly at the correct time.

William Robinson— Grandfather of Rock Gardeners

by K. S. HALL

THE UPSURGE of interest in gardening in the second half of the nineteenth century was the result not only of discoveries by famous plant hunters but also of the work and writings of many amateur gardeners of both sexes, who had a considerable influence on modern gardens.

The two who probably did most to change the appearance of British gardens were Gertrude Jekyll and her friend William Robinson. The latter is best known for his battle against the formal bedding and hot-house exotics so beloved of Victorians and for his writings on Natural or Wild Gardens, a type of gardening we take for granted but which, at that period, was a revolutionary concept.

Familiar though Robinson's name is today, it is seldom that he is given credit for his equally revolutionary approach to Alpine Gardening, yet the first edition of his book "Alpine Flowers for English Gardens" appeared in 1870, thirty-seven years before Farrer published "My Rock Garden" and almost half a century before "The English Rock Garden" appeared in print.

Well formed sloping ledges

Artificial rock on which plants do not thrive

Fig. 13

At that time it was the general opinion that alpines could not be cultivated in a garden and Robinson must have been one of the first to write of "tiny heaps of stones and brick rubbish as we frequently see piled together and dignified by the name 'rockwork'." He had been on a trip to the Alps in 1868 and described how the long roots of "the choice jewellery of plant life", a phrase to delight the Victorians, radiated in all directions through crevices filled with grit and soil. He maintained that the failure of these plants to thrive in gardens could be "attributed to a false conception of what a rockwork ought to be and of what the true alpine plant requires." (fig. 13) He stressed the importance of filling all the crevices with soil containing grit and

Right *Wrong*

Fig. 14

sand to prevent evaporation and to provide drainage (fig. 14) with a cool root-run for the plants such as they found in their natural habitat.

In scathing terms he described some of the rockwork of the period with a sprinkling of soil among the rocks and a "vacuum between the stones and the soil beneath them" so that "the first dry week sees the death of the plant."

He described, too, the almond pudding type of construction, as

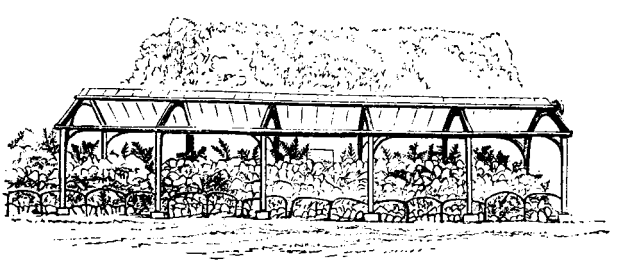


Fig. 15

Farrer called it so many years later, where "The rocks are all stuck upon their ends" and he insisted that " no burrs, clinkers, vitrified matter, portions of old arches and pillars, broken-nosed statues, etc., should ever obtain a place in a garden devoted to alpine flowers." Two of his choicest sketches of "What to Avoid" show a covered conglomeration of rocks at Kew (fig. 15) and a plantless graveyard in

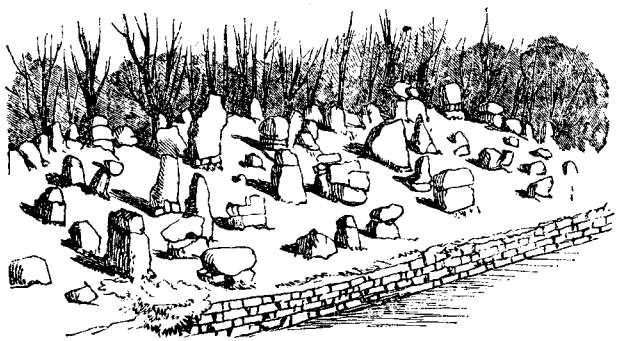


Fig. 16

the Botanic Gardens at Regents Park (fig. 16), both in 1872.

The detail and illustrations of the right way to construct a rock garden, whether a gentle mound, a rock wall or a steep rocky bank with crevices sloping backward and downward, might well have been included in any modern book and were a remarkable advance on the teachings of the Loudons earlier in the century.

After a chapter on geology he went on to tell of his plant-hunting expedition in the Alps, to the Grande Salève on the south shore of Lac Léman, Saas and the Monte Rosa area, then south to the Italian lakes and Monte Campione to find *Silene elisabethae*. Two years later he travelled West to the Rockies and the Sierra. He described many trees and shrubs of the Western States and was entranced by the Phloxes, Penstemons and Eriogonums as well as by the creeping Ceonothuses which were unknown to gardeners a century ago.

The remainder of the book is devoted to a plant-by-plant account of suitable alpines to grow. The majority of these are European but already by that time plants from America were grown in this country. *Cornus canadensis*, *Cypripedium acaule* and *C. spectabile*, three species of Dodecatheon and *Epigaea repens* are among the ones he described. He also knew of plants from other parts of the world which had not then been introduced, such as *Ranunculus lyallii*, of which he wrote

"When it is readily obtainable in this country no doubt it will form a grand object for moist, depressed, sheltered places."

Amongst the plants he described are two which are still linked with his name. Of *Anemone nemorosa* he said "I have a single sky-blue variety, which has flowered densely in a fully exposed position, and produced the most exquisite cushions of coerulean blue imaginable. One day it may become a popular rock-plant." How right he was, for today *Anemone nemorosa robinsoniana* is the joy of many a garden in the month of May. The other is *Leucojum aestivum* which grows in quantity at his home at Gravetye, of which more will be written later, and the Gravetye form is now considered to be a particularly fine variety.

William Robinson's style is more practical and less racy than that of Reginald Farrer but his book on alpines must have had an appeal to gardeners for it reached its third edition, from which these notes are taken, by 1879. Farrer's admirers have called him the Father of English Rock Gardening and have given him credit for ideas which had already been in print for many years. Perhaps it would be a fitting tribute to Robinson to call him the Grandfather of Rock Gardeners.

From 1885 until his death in 1935 at the age of 96, William Robinson lived at Gravetye Manor in Sussex, now a hotel. Recently I was able to visit Gravetye and the owner, who is gradually restoring the garden after years of neglect, showed me a book entitled "Gravetye Manor or 20 years work round an old Manor House" in which Robinson recorded how he developed the garden and estate of this lovely old house. His interest at that time seems to have been mainly in afforestation and the planting of magnolias and other fine trees in the policies. There is no mention of a rock garden, nor could I find any trace of one in the grounds. He did, however, describe the making of a Heath Garden which is still to be seen on the slope above the more formal part of the garden. He mentioned heaths in a wide range of sizes which he had planted, from the "Portugal Heath" (*Erica lusitanica*) to the "Little alpine forest heath" (*E. carnea*), insisting that they should be "massed in visible groups" and that "A Heath garden need not be rocky or in any way pretentious, but quite simple, for Heaths do as well on level ground as on the moorland rocks". We are inclined to look on the heath garden as a modern labour-saving development until we realise that these words were written over 60 years ago.

Fig. 17 *Trillium rivale* *Photo* J. D. Crosland

Fig. 18 *Dianthus alpinus* *Photo* the late D. Wilkie

Fig. 19 *Wahlenbergia serpyllifolia* var *major* *Photo* the late D. Wilkie

Fig. 20 *Omphalogramma vinciflorum* *Photo* the late D. Wilkie

Fig. 21 *Aster biennis* *Photo* V. Vasak

Fig. 22 *Cyclamen graecum* F.C.C. *Photo* Dr. I. Simson Hall

Fig. 23 Discussion Weekend 1973 *Photo* Ayrshire Press Agency

As a man Robinson must have been a curious character. He is said to have had an unhappy love affair in his younger days and in all the years that he lived at Gravetye no lady was allowed to cross the threshold. Even Gertrude Jekyll, who visited the garden frequently, was given tea in the summer house, and if the weather became inclement a message was sent to postpone her visit on the pretext that they could not walk round and enjoy the garden on a rainy day.

Letter to the Editor

South Croydon

Dear Sir,

Referring to Dr. Wacher's article on Colchicums in the Sept. '72 issue of the *Journal*, some of my experiences may be of interest as supplementing those of Dr. Wacher, whose garden is in the adjacent county of Kent.

Like Dr. Wacher, many people have found the foliage of Colchicums to be a nuisance, but I was fortunate in being able to make use of it in my previous garden, which was on a S.E. slope. On the S. and E. sides of a plum tree, I planted under the spread of the branches a quantity of *C. autumnale*. They multiplied quite rapidly, the foliage eventually covering the ground completely, thus preventing the growth of weeds from March until I cleared away the dead leaves just before flowering time. The tree canopy was light enough to admit rain. The autumn sunlight striking under the tree showed up the mass of bloom to perfection. The soil was shallow, light clay over and mixed with chalk; old down-land, in fact. The only treatment was an occasional dressing of compost and bone meal.

C. agrippinum throve equally well close to a small apple tree, as did *C. speciosum album*, though the latter did not multiply quite so rapidly. In another garden I had *C. bornmülleri* in a sandy soil, and this was a success too.

During the past few years I have had a third garden which was lime free, and only now, after 6½ years, are my Colchicums beginning to thrive. Latterly I have treated them to a dressing of lime in addition to compost and bone meal, and have concluded that these tubers much prefer a limy soil.

As regards *C. s.* 'Water Lily', this has multiplied most satisfactorily, so that established clumps have a long season of bloom and are thus particularly welcome. True, the flowers tend to flop after a time, but there are always some fresh ones standing erect. This flower looks delightful as cut bloom in a glass container, with or without a little foliage from some other plant. It stands, in a cool room, for quite a week if cut when just opening.

C. autumnale I have seen growing wild in meadowland. On reference to the *Oxford Book of Wild Flowers*, a wide range of habitat is noted, "especially on limestone", so tending to confirm my own experience with lime.

Yours faithfully,
C. F. DERRICK

Alpines in Old Kitchen Sinks

by Dr. JOHN E. G. GOOD

LET ME make it clear right away that I write here of old glazed sinks, not because I consider them to be the equal of those highly desirable, but almost unattainable stone pig and horse troughs which give such ideal conditions to their happy occupants and lucky owners, but because they are a cheap and easily acquired alternative, which can be disguised with little trouble in such a way that they make very acceptable homes for some of our choicest plants, while requiring more than a casual glance to distinguish them from the genuine article. One must either pay a lot of money for the real thing (if it can be found), swallow any inhibitions and make do with the second best, or give up the idea of indulging in one of the most enjoyable aspects of gardening with alpines. Of course glazed sinks are not the only alternative to old stone containers. Perfectly good containers may be made from various materials and I have seen examples in 'hypertufa' concrete (more of this later), slate, wood, and copper, all of which served their purpose admirably. However, in most cases these receptacles were either individually made by a craftsman or were antique 'bygones' as uncommon and costly as old stone troughs.

Perhaps at this stage, being good gardeners who are primarily interested in the welfare of our plants, we should consider the suitability of glazed receptacles from a cultural point of view. It is often argued that glazed sinks like plastic pots have an undesirable effect on plant growth because of their non-porous nature. While there are a number of respected growers who support this view, there is no doubt that their numbers are declining as more experience is gained with the newer materials. The truth of the matter seems to be that most species can be grown equally well in porous and non-porous containers providing that the compost and watering regime are correct. The 'correct' system can, of course, only be arrived at by studying the likely requirements of the species in question and then resorting to trial and error. A second objection often levelled at glazed sinks as plant homes is that their shallowness renders them liable to drought. While it is true that stone sinks do tend to be deeper than their glazed counterparts, this is by no means always the case. Furthermore, I have found that in Edinburgh, contrary to my experience in Oxford, drought is not a serious problem for even the shallower sinks. Here one always gets sufficient warning from the plants that they are suffering to enable one to make a hasty mercy-dash with the watering can, whereas in Oxford on a really hot day this was not the case.

My own major objection to glazed sinks is different to those mentioned above and is rarely advanced. It is that glazed sinks tend to be pretty uniform in size and shape and that most of them are rather too small to permit the growing of any but the smaller plants. This is a shame, as it tends to result in a collection of plants of rather uniform shape and size, in contrast with the great variation that can be achieved in a large old horse trough.

Having decided to garden with glazed sinks, the first step is to obtain them. This is an easy matter as most builders have a collection which they are only too glad to be rid of, so that a selection may be made from the various types available. If possible a variety of sizes and shapes should be chosen, making sure that none has any cracks. Once home the sink should be cleaned up and stripped of any pipework, the latter being unsightly and a refuge for slugs and other pests. This having been done, we come to the interesting part of the process of conversion into an 'old' stone trough, which is the covering of the sink with 'hypertufa' concrete. If we are to end up with a close approximation to the stone-mason's handiwork rather than a very obviously 'botched-up' kitchen sink, one or two precautions must be

observed. The main problem is that of forming a satisfactory bond between the concrete mixture and the glazed surface and it may be overcome as follows. Firstly, using a small masonry bit (about $\frac{1}{4}$ in.) in an electric drill, make shallow holes all over the outer walls at approximately four inch intervals, thus providing a 'key' for the 'hypertufa'. Next obtain an adhesive such as 'Polybond', 'Unibond' or 'Araldite' from a D.I.Y. shop or builders merchant and apply it evenly and thickly over the outer surface of the sink, continuing over the top edge and for about half the depth on the inner walls. When the adhesive is 'tacky' the 'hypertufa' mixture should be applied, it having been previously prepared according to the type of finish required. A mixture of equal parts by volume of sand, cement and peat gives a fairly tough and porous finish resembling tufa. Increasing the proportion of sand gives a texture resembling sandstone, while raising the cement content results in limestone-like appearance. The presence of the peat in the mixture is not essential, but it helps algae, lichen and moss to get a foothold, thus speeding the ageing process. Where peat is used it must be rubbed through a $\frac{1}{8}$ in. (or less) sieve as lumps will result in a mixture which flakes at the first sign of frost. The final precaution to be observed in getting a good bond between 'hypertufa' and sink comes in the preparation of the mixture. Great care must be taken when adding the water, as the margin of error between the perfect mix and one which is too wet and impossible to apply is very small. The best test is to add water sparingly, mix and then take a handful. If upon squeezing gently and then releasing, the mixture just remains in a ball, all is well ; if it is wetter than this, then a little extra peat should be added to take up the excess moisture. In applying the 'hypertufa' there is no substitute for the hands if a natural finish is to be achieved. With a little care straight lines can be disguised and corners rounded off, while the thickness in various areas can be varied, thus improving the deception. When applying the cover it is important to ensure that it extends right to the bottom on the outside, failure to do this resulting in frost lift. For the same reason the 'hypertufa' should extend well down on the inside and particular care should be taken to ensure that there is a really good bond along the top edge. The overflow should of course be filled with the mixture and disguised where possible.

Once the job of covering the sink is completed, it should be left to dry for a while, but before it is fully set its authenticity can be further enhanced with the aid of a kitchen knife or cold chisel. Having studied

a genuine stone trough and observed the sort of marks which result from the stonemason's work, one can in a short time produce a similar effect in the soft 'hypertufa'. The final touch, that of imitating the softening effect of Father Time, can be achieved by going over the whole surface with a wet paintbrush. If the work has been well done and imagination has been tempered with restraint, what was a nasty eyesore will have become a fit home for alpine treasures and a welcome addition to the garden.

Having prepared our sink we shift our thoughts to the plants which it is to contain and thence to suitable planting media. Clearly the composition of media is defined by the plants which are to be grown, but the reverse also holds in that the possible combinations of plants are dictated by the compost. If a really successful final effect is to be achieved it is essential that plants with similar cultural requirements be chosen. This point, although an obvious one, is often overlooked, with the result that sun- and shade-loving or drought-tolerant and water-loving plants are planted together. This results in the rapid demise of the less fortunate occupants, the spread of the favoured few, and probably in the early need for replanting, a process not easily achieved in a trough crowded with intertwining roots. The message is, therefore, choose your plants very carefully, bearing in mind their cultural requirements as well as the visual effects to be achieved, and go for slow-growing, long-lived plants which retain their beauty into old age. If there is a strong desire to grow short-lived plants then it is much better to grow them together in sinks which are turned out and completely replanted at the requisite intervals. It is often considered that sinks are best suited to the cultivation of sun-loving genera such as Saxifraga, Sempervivum, Androsace, Dianthus and Draba. While such genera are ideally suited to trough culture, it should be realised that troughs placed in shaded areas and containing such genera as Ramonda, Haberlea, Gaultheria, Primula, Soldanella, Pernettya and Cyananthus can be equally attractive. In fact a suitable combination of plants can be devised for a sink in any situation provided that the compost is also given careful consideration. On the question of composts, I think that the most important factors, besides the obvious ones of not putting lime in compost for calcifuge plants, is that of drainage. I do not hold with the common advice given by experts to line the bottom of the sink with several layers of graded drainage over crocks, preferring to ensure good drainage in the compost itself. It is my opinion that in a shallow and confined vessel such as

we are dealing with, wherein plants must find sustenance for many years, all available space should be devoted to compost. My practice, therefore, is to cover the plughole (another advantage of old sinks!) with a large piece of perforated zinc held in place with a few large pebbles and covered with coarse gravel. On top of this goes the compost which should contain ample *sharp* drainage to ensure freedom from waterlogging and sufficient peat or leafmould to protect against drought, the exact proportions being varied according to the trough's situation and species to be grown. Selected pieces of stone, wood or peat may be embedded in the compost to create added interest, and in particular, tufa may be used to great advantage. This porous and absorbent calcareous rock is very valuable in troughs for its beauty and ability to regulate water retention. Its chief advantage, however, lies in the fact that it is very soft and that the roots of many plants find it to be an ideal substrate. Thus holes can be bored in it with a brace and bit or gouged out with a chisel and seedlings or rooted cuttings dibbled in with a little of the compost. In a short while the roots grow out into the stone, obtaining as they go an evenly regulated supply of mineral nutrients and water. Many plants which are very difficult to grow in any other way thrive in tufa, this being particularly true of saxatile species which occur in rock crevices in nature.

In conclusion I offer the following suggestions for plant associations for troughs, realising full well that innumerable other combinations are possible. Indeed, this form of gardening can be truly said to offer a realm of possibilities for the discerning gardener.

1. For troughs in full sun:

(*a*) *Androsace carnea* varieties
Androsace ciliata
Aquilegia bertolonii
Armeria caespitosa
Asperula lilaciflora var. *caespitosa*
Campanula tridentata
Gentiana verna var. *angulosa*
Saxifraga 'Faldonside'

(*b*) *Aethionema* 'Warley Rose'
Anchusa caespitosa
Androsace lactea
Calceolaria darwinii
Campanula zoysii
Dianthus alpinus (fig. 18)
Edraianthus pumilio
Erodium reichardii
Helichrysum marginatum
Juniperus communis var. *compressa*
Lewisia columbiana var. *rosea*
Phyteuma comosum
Primula x *bileckii* (*minima* x *rubra*)
Saxifraga grisebachii 'Wisley var.'

(*c*) *Androsace mathildae*
Aquilegia discolor
Campanula aucheri
Celsia acaulis
Chamaecyparis pisifera var. *plumosa compressa*
Dianthus microlepis
Helichrysum coralloides
Leucogenes grandiceps
Lewisia tweedyi
Oxalis enneaphylla
Potentilla nitida var. *rubra*
Primula x pubescens hybrids
Salix x boydii
Saxifraga cochlearis var. *minor*
Viola zoysii
Wahlenbergia serpyllifolia var. *major* (fig. 19)

(*d*) suitable for growing in tufa rock:
Androsace cylindrica
Armeria caespitosa
Campanula piperi
Campanula tridentata
Douglasia montana
Draba bryoides var. *imbricata*
Linum salsoloides var. *nanum*
Myosotis rupicola
Phyteuma comosum
Potentilla nitida
Saxifraga burseriana 'Gloria'
Saxifraga diapensioides
Saxifraga 'Jenkinsae'
Saxifraga probynii
Saxifraga retusa
Saxifraga 'Tumbling Waters'
Sempervivum arachnoideum
Sempervivum 'Ornatum'
Sempervivum 'Triste'
Silene acaulis

2. For troughs in part shade:

Andromeda polifolia var. *compacta*
Boykinia jamesii (in a crevice)
Cyananthus microphyllus
Cyclamen coum (*orbiculatum*)
Cyclamen europaeum
Cyclamen neapolitanum
Erythronium dens-canis
Gaultheria itoana
Gentiana bellidifolia
Gentiana farreri
Gentiana 'Inverleith'
Gentiana saxosa
Haberlea rhodopensis
Omphalogramma vinciflorum (fig. 20)
Pernettya tasmanica
Primula clarkei
Primula frondosa
Primula scotica
Ramonda myconi
Ramonda myconi alba
Soldanella alpina
Soldanella carpatica
Soldanella montana
Taxus baccata pygmaea
Thalictrum kiusianum

FURTHER READING:

'The Making of Troughs' by S. E. Lilley, *in: A Handbook of Rock Gardening*, pp. 32-37 ; Alpine Garden Society Publication, £0.30 plus postage. 'Sinks for Alpines' by A. E. Hoare, *in: A Handbook of Rock Gardening*, pp. 37-38, A.G.S. 'Miniature Rock Gardening in Troughs and Pans' by Royton E. Heath, published by Collingridge (1957).

Peat, its formation and nature

by Dr. HENRY TOD, F.R.S.E., S.H.M.

I SHOULD imagine that most Members of the Club know peat as an important material included in soil mixtures, as a growing medium by itself, as a top-dressing, as a mulch or as important in soils for Ericaceae or Asiatic gentians. It is, however, interesting to hear or read how often it is asked "but what exactly *is* peat? Are all peats the same? How is peat formed and where does it fit into the natural scheme of things?".

To take the last point first, peat is a stage in the gradual breakdown of dead plant material and as we will see there are several stages in the process of peat formation giving different types of peat, but after it has been formed the pressure of later deposits through geological time can compress it, producing lignite (brown or soft coal). Still more time and further pressure converts this to ordinary coal and even longer time and greater pressure produces anthracite—add much more pressure and great heat and you get diamonds! ! This is a much simplified outline of the sequence but is basically what happens, on land conditions, whereas under marine conditions finely divided weathered mineral material is mixed with the organic detritus to form shales from which, under great geological pressure, petroleum, either as gas or oil or both, may be expressed. The petroleum then gradually moves upwards until it is trapped by impervious material to form then the gas and oil "deposits" of which we hear so much at this time.

To return, however, to the subject of this article, peat is formed in several stages and develops in several forms. The sequence of development is this: when water flows into a hollow of the nature of a basin, the ground becomes sodden and bog and water plants grow and die and their residues fall to the bottom and, as time passes, build up so that the water becomes shallower. If the plants are growing strongly they will have an appreciable mineral content derived from the soil below in which they are growing, and if the inflowing water is rich in minerals the total mineral content of the herbage, both living and dead, will rise. As the dead plants fall below water level their decomposition goes on in the absence of air and the product is ultimately peat. This is what is known as basin, low moor or fen peat and if it forms under mineral-rich water it may have almost any mineral

content—in fact, if the inflowing water has drained from limestone or chalk strongly alkaline lime-rich peat will be formed. For instance, large tracts of the Fens in England are so high in lime that oats and various other crops fail from induced deficiencies of other essential elements.

As this basin peat builds up the level of the top of it gets nearer to the water surface and so less water will run in, it will tend to run over or round the peat bog which will still remain waterlogged. This will have the effect of reducing the input of minerals so that the only plants that will grow are those which tolerate wet conditions and have low nutrient requirements. Such are sedges, cotton grass, a few moorland grasses and various mosses—especially sphagnum.

This gradual development obviously takes a very long period of time and by the time that the basin peat has built up to "ground level" the weight of the accumulated peat plus the slow breakdown of the plant material has changed the deeper, i.e. earliest, layers to a compact, more or less structureless, material, the deep or bottom peat. At this stage the surface vegetation, predominantly sphagnum moss, while still remaining sodden, begins to form the next and final type of peat, raised moss or high moor peat. This, the "youngest" form of peat, develops from the dead sphagnum and other mosses, plants with an enormous capacity for holding moisture which also have very low nutrient requirements so that sphagnum peat, as it is commonly called, has a very low content of plant nutrients. It is also soft, light, and has a spongy texture.

A great deal of work has been done on peat recently in the Netherlands, Germany, Finland, Norway, Eire and this country, mostly with the aim of developing peat-based composts, and the Dutch workers have classified the various types as white peat, water peat and black peat. The white peat is the top or sphagnum peat—light, spongy, with a clear fibrous structure and usually the most acid with a pH of 3-4. The water peat, so called because it is from below the water-table, is commonly sedge peat with still a fibrous structure, but more compact from below the 2 to 3 foot level and is usually less acid with a pH value about 5-5.5. The black peat is the deepest, compact, often structureless and greasy and is commonly nearly neutral to alkaline with pH values 6.5-8.3 and often with an appreciable nutrient content. Peat composts are usually prepared from blends of these various types, so mixed as to give a consistent product with the desired properties.

Schedule for Show at the Edinburgh Discussion Weekend

The Show will be held at the UNIVERSITY OF EDINBURGH, POLLOCK HALLS OF RESIDENCE, 18 Holyrood Park Road, Edinburgh 16, on SATURDAY and SUNDAY, 21st and 22nd SEPTEMBER 1974.

Hours and Prices of Admission:

Saturday	1 p.m. to 6 p.m.	15p
Sunday	10 a.m. to 4 p.m.	10p

Members admitted free on production of Membership Card

Entries to be sent to Mrs. B. B. CORMACK, 199 St. John's Road, Edinburgh, EH12 7UU (Phone 334 4722) **if possible by Monday 16th September.** Late entries will be accepted at the hall.

The hall will be open to receive exhibits on Saturday 21st September from 9 a.m. to 10.45 a.m. **All Exhibitors must leave the hall before 11 a.m. except those on official duty.**

The hall must be cleared by 5 p.m. on Sunday 22nd September, but no competitive exhibit may be removed from the Show Bench before 4 p.m.

The attention of all Exhibitors is drawn to the Show Notes and Rules.

Prize Vouchers must be exchanged for goods **before 31st December 1974.**

JOINT ROCK GARDEN PLANT COMMITTEE

This Committee will meet at 12 noon at the Show at the Edinburgh Discussion Weekend and Show on Saturday 21st September 1974. Plants to be seen by the Committee which are the property of members of the S.R.G.C. may be entered for the competitive classes in the Show in the ordinary way, in which case the Show Secretary shall be responsible for moving the plants from the show bench to the Committee Room. The owner must give the Show Secretary a note of the plant or plants and the classes in which they are being exhibited, not later than 10 a.m. Plants not on the show bench must be delivered direct to the Committee Room no later than 11.30 a.m. by the owner.

Members with plants to submit to the Committee should apply in advance for entry forms to Mr. J. D. Crossland, Treetops, Torphins,

Aberdeenshire. They should consult the Regulations on page 9 of the *Year Book* as to which plants are eligible.

All completed forms are to be sent, addressed to the Acting Scottish Secretary of the Joint Rock Garden Plant Committee, Mr. J. D. Crossland, Edinburgh University Pollock Halls of Residence, 18 Holyrood Park Road, Edinburgh 16, to arrive by first post on the day BEFORE the Show marked "To await arrival."

It is hoped that members who have plants worthy of consideration for a First Class Certificate, an Award of Merit, a Certificate of Preliminary Commendation or a Certificate of Cultural Commendation will bring them forward.

SECTION I

Class **(Open to all Club Members)**

1. 3 pans rock plants of different genera. THE EAST LOTHIAN TROPHY
2. 1 pan rock plant, new, rare, or difficult in cultivation
3. 1 pan rock plant native to Scotland
4. 1 pan rock plant with autumn-coloured foliage
5. 1 pan rock plant with silver-grey foliage
6. 1 pan rock plant in fruit
7. 1 pan cushion plant
8. 2 pans dwarf coniferae, distinct
9. 1 pan dwarf coniferae
10. 1 pan dwarf shrub excluding coniferae, Ericaceae and Vacciniaceae
11. 1 pan hardy fern
12. 1 pan rock plant chosen from Amaryllidaceae, Hypoxidaceae, Iridaceae or Liliaceae but excluding Crocus and Colchicum
13. 1 pan Crocus or Colchicum
14. 2 pans Calluna and/or Erica, distinct
15. 1 pan Calluna or Erica
16. 1 pan Cyclamen
17. 1 pan Ericaceae or Vacciniaceae but excluding Calluna and Erica
18. 3 pans Gentiana, species and/or hybrids, distinct. THE PEEL TROPHY
19. 1 pan Gentiana
20. 1 pan Sedum in flower
21. 1 pan Sedum judged for foliage effect
22. 2 pans Sempervivum, distinct
23. 1 pan Sempervivum

24. 2 pans rock plants not eligible for Classes 8-23
25. 1 pan rock plant not eligible for Classes 8-23.
26. 1 Miniature Rock Garden with longest side or diameter not exceeding 18 ins. ; all plants must be growing specimens—no cut flowers allowed. THE LOGAN HOME TROPHY
27. An arrangement of flowers and/or fruits and foliage cut from rock garden plants. THE WELLSTANLAW CUP

SECTION II

(Open to Members who have not won a Medal or Trophy at any previous S.R.G.C. Show. THE SILVER CUP will be awarded for the best plant in this Section)

Class

28. 2 pans rock plants, distinct, of generally easy cultivation and grown in the open ground
29. 1 pan rock plant as in Class 28
30. 1 pan rock plant native to Scotland
31. 1 pan rock plant with autumn-coloured foliage
32. 1 pan rock plant with silver-grey foliage
33. 1 pan rock plant in fruit
34. 1 pan cushion plant
35. 1 pan dwarf coniferae
36. 1 pan dwarf shrub but excluding coniferae, Calluna and Erica
37. 1 pan rock plant chosen from Amaryllidaceae, Hypoxidaceae, Iridaceae or Liliaceae but excluding Crocus and Colchicum
38. 1 pan Crocus or Colchicum
39. 2 pans Calluna and/or Erica, distinct
40. 1 pan Calluna or Erica
41. 1 pan Cyclamen
42. 1 pan Gentiana
43. 2 pans Sedum, distinct
44. 1 pan Sedum
45. 2 pans Sempervivum, distinct
46. 1 pan Sempervivum
47. 1 pan rock plant not eligible for Classes 35-46

SECTION III

Not for Competition)

Members are invited to exhibit Plants, Photographs, Sketches or Paintings of Plants of interest to Members and to the Public

Discussion Weekend 1974

THE UNIVERSITY OF EDINBURGH
POLLOCK HALLS OF RESIDENCE
HOLYROOD PARK ROAD, DALKEITH ROAD
EDINBURGH 16
SATURDAY 21st and SUNDAY 22nd SEPTEMBER 1974

PROGRAMME

Saturday:

12.30 p.m.	Lunch
2.15 p.m.	Address of Welcome
2.30 p.m.	The W. C. Buchanan Memorial Lecture "Some aspects of Alpine cultivation" by Harold Esslemont, Esq.
4.00 p.m.	Tea
4.30 p.m.	"Plants of the Nepal Himalaya" by Leonard W. Beer, Esq.
6.00 p.m.	Dinner

Sunday:

8.30 a.m.	Breakfast
10.00 a.m.	"Plants of the Andes" by John Watson, Esq.
11.15 a.m.	Morning Coffee
11.45 p.m.	"The Phyllodoce Problem" by James Cullen, Esq.
1.00 p.m.	Lunch
2.30 p.m.	"Mountains, Screes and their Plants" by Charles Graham, Esq.
4.00 p.m.	Close of Proceedings
4.10 p.m.	Tea and disperse

On Saturday morning an excursion will be organised to the Royal Botanic Garden.

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

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

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

Charges, including VAT:

For the Conference, from Saturday Lunch till Sunday tea, including full board	£5.20
Full board from Friday dinner till Monday breakfast ..	12.00
Saturday only, including lunch, tea and dinner ..	1.70
Saturday only, tea and dinner only	1.00
Sunday only, including morning coffee, lunch and tea ..	1.10

Variations can be made through the Registration Secretary.

Conference Fee: Weekend .. £2
Single day .. £1

Applications should be sent initially to the Registration Secretary, Mr. J. Harley A. Milne, 15 Merchiston Place, Edinburgh 10, enclosing the appropriate remittance. A receipt with location plan will be sent. The rest of the documentation will be issued at the Conference.

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

A meeting of the R.H.S. Joint Rock Garden Plant Committee will be held at 12 noon on the Saturday of the Show. For details, please see Show Schedule on pages 58-60 of this *Journal.*

Show Reports

DUNFERMLINE

ENTRIES at the Dunfermline Show seemed to be up considerably this year and provided a most colourful spectacle in the Music Pavilion.

There were eleven entries in Class 1—the three pan class for the Mrs. W. B. Robertson Challenge Cup—and the standard was so good that it was no easy task to select the first three. First prize went to Mr. Crosland's three, *Primula forrestii* (the Forrest Medal winner), *Pleione pogonioides*, and *Gentiana acaulis coelestina*; but other noteworthy plants in the class included *Anemone obtusiloba patula, Lewisia leana, Fritillaria pyrenaica, Primula halleri, Corydalis cashmeriana* and

Oxalis enneaphylla.

Class 2 provided a fine pan of *Cypripedium acaule*, and a very charming *Fritillaria* species shown by Mrs. Maule.

The seven entries of primula in Class 5 were good, and a little further along the bench some excellent Lewisias were on view—one called 'Late Orange' hybrid shown by Mrs. Ivey being adjudged 1st. Most of the classes on this stretch of bench contained seven or more entries and many excellent plants were present. A most attractive *Helichrysum selago* in flower was shown in Class 14, while the silver-grey class was won by a fine *Leucogenes* and the dwarf conifer class by a very good *Pinus beauveonensis.*

The Carnegie Dunfermline Trust Trophy for most points in Section I was won by Miss J. L. Thomson of Dunfermline.

There was an increase in entries in Section II also. The Bronze Medal was awarded to Mrs. M. T. Maxwell of Aberdour. The prize for the best plant in this section was won by Mr. D. G. Williamson for a pan of *Celmisia spectabilis.*

The three pan class (43) in Section IV was won by Miss J. L. Thomson with a colourful Veronica, an Oxalis and an Androsace, while the prize for the best plant in this section went to *Potentilla verna* 'Nana' shown by Miss B. Milburn. There were, again, many excellent plants in this section. In Class 45 (native to Scotland) both first and second prizes went to good plants of *Salix lanata.* An excellent pan of *Scleranthus biflorus* came first in Class 46. Class 61 (silver-grey foliage) was won by Mr. and Mrs. Campion with a *Celmisia coriacea* in fine condition, while in Class 62 for dwarf conifers Mr. Gordon Hill came first with a very excellent, spreading *Chamaecyparis obtusa* 'Nana'.

Among the miniature gardens, Miss J. L. Thomson came first in Class 28, Mrs. M. Maxwell in Class 41, and Mr. and Mrs. Campion in Class 67.

There was keen competition for The Institute of Quarrying Quaich, which was awarded to Mr. J. Muir and Mr. and Mrs. J. Campion jointly, with an equal number of points.

In all three sections the Sedum and Sempervivum classes were very strongly contested—regularly a notable feature of the Dunfermline Show—a very excellent Show and a great credit to Mr. and Mrs. Campion and their helpers, to whom the Club owes congratulations and thanks.

J. L. MOWAT

AUTUMN SHOW

THE 1973 Autumn Show was held in the Brunton Halls, Musselburgh, on 21st and 22nd September. This new venue was one of the best that the Club has had for many years, with excellent overhead light and entrance at street level. The number of exhibitors was disappointingly small, but this was more than made up for by the number and quality of the plants staged. It was particularly noticeable that there was not one plant in the Show that was below "exhibition standard", and in most classes there were sufficient numbers to provide real competition.

The gentians were good, and as the light was bright, they showed to their best advantage—which does not always happen at Autumn Shows. The heaths and heathers were quite outstanding and one of the best was in Section II, shown by Mr. Meikle, a plant which justly earned the award of the East Lothian Cup for the finest plant in that Section. He also gained the Bronze Medal. Miss Mackechnie of Kilsyth won the Peel Trophy with her Gentians and also the Mary Bowe Memorial Trophy for the highest number of points in Section I. Mrs. Cormack gained the Wellstanlaw Cup with a delightful floral arrangement. One of the most striking things about this Show was the number of unusual and, in many cases, beautiful plants exhibited. In some cases they tested even the knowledge of the Judges!

The Joint Rock Garden Plant Committee met on the Friday morning and awarded a First Class Certificate to a superb plant of *Cyclamen graecum* (fig. 22) along with a Cultural Commendation. This plant, needless to say, also gained the Forrest Medal (in silver for the last time) for Dr. and Mrs. Simson Hall ; in addition it was one of the three very fine plants to win them the East Lothian Trophy. A Cultural Commendation was given to Mr. J. D. Main's *Dionysia teucrioides.*

Altogether, although the Show was small and the attendance only moderate, the standard and quality generally were so high that it was well worth while and our thanks are due to the competitors who came from so far afield (Kilsyth and Thorntonbank) to support it and to add competition to our staunch "locals". The appeal for support of this Show was generously met by a donation from the West of Scotland Group and by assistance in stewarding by Members of the Roxburghshire Group. This help in both ways was equally much appreciated.

HENRY TOD

Plant Hunting in Mongolia
II. The Baga Tenger's Alpines

by VLADIMIR VASAK

MY TODAY'S story will be a little sad possibly. In the valley of Baga Tenger, which is situated south-eastwards of Ulan Bator and its proper environment I was on September 5th, 1966. In the following day, the 6th, I wished to start my expedition to Chenteian Mountains. But both Chentei and Bogd uul were covered with snow and from 1800m up there was a continual snow layer—and severe northern winds from Baical area. But who does know, they did blow perhaps from the Northern Ice Ocean, from this kitchen of weather. I could imagine, what ice delicacies the meteorologic chief-cook will provide to a mountain visitor and I had no taste on such cold dish.

How could I see under snow the tiny jewels of mountain flora, and how could I collect the wet and frozen parts of plants for the herbarium —and possibly seeds mixed with ice?

So in spite of it I looked more for tiny plants around me. At the foot of hills surrounding the Baga Tenger valley did grow the richly flowered small poppies—*Papaver nudicaule* L. I must accent again the value of these lovely plants, that they do show their lemon yellow flowers even at a time when nature is slowly preparing to wintering and is full of ripe seeds. When a man has nearly frozen fingers and above his head are heavy, grey clouds, he will appreciate such lovely flowers not twice only, but a thousand times!

On my way up I have found and collected numerous species of various nice plants, some of which were quite new for us.

Schizonepeta multifida (L.) Briq. does not belong to the new ones, but I will remind it. It is a persistent plant up to 15-30 cm high with blue-violet flowers in dense inflorescence. This hairy plant has so nice and intensive smell, as it is imbued with a sweet scented aetheric oil. It is widespread in Siberia and Mongolia and I can recommend it to lovers of especially aromatic plants.

On the stony places did grow our well known *Goniolimon speciosum* (L.) Boiss., and also *Dianthus versicolor* Fisch. ; the purple flowers of the second plant were to be seen on hillsides at a distance. Also some young rosettes of *Orostachys spinosa* (L.) C.A.M. growing on the stony

steep mountain slopes did enrich my collection of plants and seeds, which I carried carefully in my rucksack. In the valley of Baga Tenger I met so ripened grey *Veronica incana* L. Even this species belongs to the commonly cultivated plants, but I've collected its wild seeds also.

Among some gigantic boulders on the slope I have found freely growing *Asparagus dahuricus* Fisch., plants, which has many names in the Mongolian. The most often used name is "cherenij-nud", which means a crow's eye. Its inedible fruits are dark red to black. The other of its folk names is some less sympathetic—"uchudlin ide"—a dead man's berries and "bocholden ide"—the wolf's berries. The last name is "dzeren shilu". *Asparagus dahuricus* is 40-60 cm high plant with thick rootstock and with densely branched stalks, which are covered with needle-like cladodes, arranged in loose whorls, as it is in *A. officinalis*. It is widespread in Dauria and in Chentei, in NE Mongolia, and so its area reaches the North Chinese Chingan Mountains. Its berries are at Tibet appreciated as an excellent medicine against a heart disease (Junatov 1954).

The second plant of the Lily family was "cagan chor", a white venom, or "muchu cagan," i.e. Solomon's Seal—*Polygonatum officinale* All. It is "a neat thing about 8 inches high and especially stiff-necked" (Farrer). It belongs to plants which can be grown in shady places and its leaves are so decorative. The Mongolians are afraid of it as of a pasture-venom plant. So they call it in their language a white venom—as well as *Astragalus galactites*, of which I have written in my article on plant hunting in Zaisan Valley. For its content of glycosids and alkaloids it is used in folk medicine as an urinary medium.

In the same place I have met plants with ripe seeds of *Leibnitzia anandria* (L.) Turcz. It is an interesting plant from Tribus Mutisiae, which is mostly distributed in tropical areas. Its numerous synonyms confirm that the botanists-taxonomists were at a loss with it.

Tussilago anandria L., *Gerbera anandria* Sch.-Bip., and *Anandria bellidiastrum* DC. It comes from the Dauric zone in Mongolia, not commonly it does occur in areas of Baical. Its spring flower-stalk is only 5-10 cm high, and it increases to 30 cm in time of seed ripening. In the spring all young plants are covered by very slight white indumentum, in summer it becomes glabrous. The spring leaves are small ovate, and the summer ones are leathery, lyre-shaped and jagged. Flowers are white. The plants have one interesting character: their ripened involucre with seeds are so firmly grown together with stalks that in the collecting of seeds we usually take all plants with roots.

Leibnitzia anandria is a plant of dry stony hillsides and dry steppes. According to experience of the Botanic Garden at Moscow the seeds of *L. a.* which were sown in autumn goes up in next spring. The second year the plants do bloom profusely. Its flowering period takes nearly a whole month and starts in the middle of May (Rostenija prirodnoj flory, USSR, 1961). The second plant of Compositae family was *Aster biennis* L. (Syn.: *A. hispidus* Thunb., *Heteropappus hispidus* Less., *Calimeria tatarica* Lindl.). It is a biennial aster with leaf rosettes in the first year and with nice lavender flowers in the autumn of second year. Sometimes it survives by some side rosettes and does live even in the third year. It has relatively large composite inflorescence with lilac-blue rays and rich yellow discs. All plants have not numerous stalks 5-30 cm high, leaves are narrow, linear-lanceolate, acute, all the plant is greyish-green, bristly hairy. It blooms in late summer and is looking quite nicely. In Mongolia it is called "chonin nud"—sheep's eye, and "ungak". Its value is in its late flowering period, when in the wild flowers are very uncommon and the plants are only green.

Aster biennis (fig. 21) does not grow anywhere in a great multitude, it grows in mountain steppe slopes and is widespread in Siberia and in Mongolia. Popov (1959) supposes that in the wild are present natural hybrids with *Aster altaicus* Willd. It is a perennial plant in all aspects, smaller than *A. biennis.*

Eastwards from Baga Tenger valley I walked on grassy hills at an elevation of about 1600-1700 m and suddenly I saw at the top of one ridge towards the sky a curious plant society. There was no grass, and there were only upright single stems to be seen with heads of soft-haired seeds. This interesting plant was *Pulsatilla flavescens* (Zucc.) Juz., which is called in Mongolian "shar irgoi"—a yellow Pasque Flower. It is an inhabitant of mountains in Siberia and of Chentei. It is about 7-20 cm high in flower—plants have thick and long taproot. It flowers in spring before the leaves are developed ; in its home it is in May and June, in conditions of Czechoslovakia sooner. I am looking forward to its blossoms already ; its flowers are upright and widely open, some resembling those of Anemone of yellow colour. It usually grows in great groups on light borders of larch forests on slopes of hills and at hill-saddles. At one of them I have collected the seeds from which come our now cultivated plants. Mongolians do appreciate this plant, as the flowers of their early spring are the first food for their goats and sheep after a long winter.

In the neighbourhood of Baga Tenger on the slopes grew the fertile

bushes of *Caragana pygmaea* (L.) DC., the pointed slender pods of which I have collected. On the same place I have found also the second shrublet of the Pea family—*Astragalus fruticosus.* I enjoyed this discovery as I hope that this small shrubby Astragalus will be in the near future grown as a very decorative plant for keen alpine gardeners. For it with pleasure I have collected its somewhat woody seed pods. In previous articles I have written so on some other Leguminosae—some of them I have collected even here—as *Astragalus galactites, A. inopinatus* and *Oxytropis oxyphylla.* All their plants were fertile and so I could collect seeds of them as my valuable prey.

In larch forests in half shade below trees grew *Astragalus propinquus* with its ripe seeds, which were mostly on the plants eaten by insects. On the same place grew *Lathyrus humilis* Fisch. It had nicely regular small leaves, but regretably no seed pods. I sought all in vain, and have not found one pod on a thousand plants. I was very unhappy about it. Why might it produce seeds when it very easily spreads by a lot of thin rootstocks below the soil-surface? Its fragile rootstock with reserve of food were 10-20 cm deep. They will continue in growth next year by new leaves and save populations of species on locality.

I have left Baga Tenger Valley quite satisfied, as I had a nice plant prey in my rucksack, but I have to say at the same time I am worried about my trip tomorrow to the top of the Chenteian Mountains, which were covered by snow. I was thinking all the time how much time I shall lose probably in such weather conditions, if I shall find any plant even under the snow-layer. You can, dear readers, believe me that all my uneasiness was comprehensible as the end of my Mongolian journey approached. Thus I appreciated more each day and each hour which I could spend by hunting for plants in the nice wild nature—in such a lovely natural kingdom where a human being could not harm them, where only those can live who respect the venerable laws of a sole ruler—Nature.

On the following day the sun appeared, and my trip to Chentei—you have read of them—could not be better.

Literature:

Farrer, R.: The English Rock Garden, 1938.
Junatov, A. A.: Kormovyje rastenija pastbišč a senokosov Mongolskoj narodnoj respubliki, 1954.
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Rostenija prirodnoj flory USSR, 1961.

Obituaries

IT IS with regret that we report the death of King Gustav VI of Sweden, a member of the Club.

MRS. L. CHRISTIANA BOYD-HARVEY

TO MANY of us the name Boyd-Harvey is synonymous with the S.R.G.C., and her death, on the 26th February 1974, is a grief to her many friends, and a loss to the Club which she served faithfully for so long.

She was a woman of many gifts and a great personality. She and her husband John were both Hon. Secretaries, John from February 1951 until he retired, shortly before his death in 1966, and Chris continued from then till her death.

In the late 20's and early 30's they were well known International Motor Cycle drivers, and it was while competing that they met. Between them they won many Gold Medals and Cups, and it was when they were driving on the Continent that their interest in plant collecting began. They both served in the 1939-1945 war and were stationed in East Lothian. At the end of the war they settled in Boonslie where they made a rock garden, full of rare and interesting plants and shrubs, many of which Chris grew from seed. She was a skilful propagator and grower, and in the early days she exhibited at most of the Shows, winning many prizes, including 11 Forrest Medals. She was active in every side of the Club, was a member of the Joint Rock Garden Plant Committee, was Group Convener for East Lothian at one time, gave talks to many of the Groups, and when the Autumn Show was held in North Berwick she took a large part both in the running of it and exhibiting. Many of us remember the marvellous pans of *Cyclamen neapolitanum album* that she showed. She also had considerable success, with Mrs. Ruth Tweedie, in the growing of plants from Patagonia, which Mrs. Tweedie collected, and *Oxalis laciniata* comes to mind as being a particularly beautiful plant from these collections.

She wrote many articles for the *Journal*, always interesting, sometimes provocative and amusing, the last of which appears in this issue. I am sure we all regret her death and remember with gratitude the long and willing service the Boyd-Harveys gave to the Club. She was a well-known figure at our Meetings and Shows, always willing to give

help and advice to anyone who asked for it, and she will be sadly missed.

She learned while she was in hospital that she had been awarded the Scottish Horticultural Medal, given by the Royal Caledonian Horticultural Society, for her services to Scottish Horticulture, which pleased her very much.

S. M.

R. B. COOKE

RANDLE BLAIR COOKE, M.SC., V.M.H., died peacefully in his sleep at his home, Kilbryde, Corbridge, Northumberland, at the good age of 93 on 13th October 1973.

A timber-broker by profession, he was fortunate in being able to retire early and channel his energies into the great joy of his life—his garden. He was contemporaneous with such famous people as Reginald Farrer, George Forrest and Frank Kingdon-Ward, to whose expeditions he contributed, and it is largely on these collections that the garden is based: he lived in an age of unparalleled richness of new plant introductions, and his garden reflects that in no small measure. In his later years he often spoke of meeting Forrest in the R.B.G. Edinburgh just before his last and fateful expedition to China, and of introducing him to colour photography of plants, in which subject Cooke was a pioneer of considerable distinction. Older members of the Club will perhaps recall seeing some of his lovely slides when he lectured in Edinburgh some forty years ago.

Kilbryde is not a large garden, extending to perhaps little more than an acre, if one excludes the quarry. Moreover, it is situated in one of the most unpromising positions in Northumberland inasmuch as it stands on a steep North-facing slope at an altitude of approximately 500 ft. Nevertheless, over the course of the years, R.B., as he was affectionately known, built up a virtually unrivalled collection of rare and difficult plants which by some subtle alchemy of his own he grew to perfection. Not only did he raise and flower such large-leaved Rhododendrons as *R. falconeri*, but he managed with equal success to grow in the open the most minute of cushion plants.

Whilst it would be tedious to catalogue even the most notable of the plants he grew, it may well be said that his chief interest was in ericaceous plants, with which he had remarkable success. Conversely, he managed to grow in the open such a tender plant as *Carpenteria californica* and such a difficult one as *Philesia magellanica*, for which he constructed a special cave.

Though it would appear on the face of it that he was very much a species man, he nevertheless was interested in a good hybrid if he chanced to find a seedling or deliberately make a cross himself. Three good examples of this are the cassiopes, one named after himself and the two others after his friends, Miss Muirhead of the R.B.G. Edinburgh, and Sir George Taylor. There is also a deliberate cross he made between *Meconopsis punicea* and *M. quintuplinervia* which is named *M.* x *cookei.* This latter is not the only plant which bears his name for in an old quarry, adjacent to his garden, incidentally used for building the High Level Bridge at Newcastle upon Tyne, are a few large rhododendrons. In the place of honour is a group of *Rh. cookeianum*: it is doubtful whether this group of plants, of which he was inordinately proud, gave him more or less pleasure than the framed scroll of the V.M.H. under which he used to sit in his favourite chair.

It is small wonder that the fame of his garden soon spread and in due time visitors from all quarters of the globe would descend on Kilbryde to see the treasures. Though of a naturally shy and retiring disposition, R.B. would go to any lengths to make welcome any visitor who was genuinely interested and he and his devoted housekeeper, Miss Brady, were the souls of hospitality. When in later years increasing blindness afflicted him he was known to rise at 4 a.m. to apply his eye-drops so that he would be ready to greet a visitor at 11 a.m. Friends seldom left his garden without one of his treasures as a souvenir.

"We shall not look upon his like again"

F. C. B. & W. A. C.

MRS. M. J. LUNN

IT WAS with great sorrow that her many friends heard of the untimely death of May Lunn on 11th August 1973. The Club has suffered a grievous blow which it can ill afford by losing such a popular and enthusiastic member, who took part in all its activities, serving on the Council, exhibiting, lecturing, giving and selling plants at meetings, and opening her garden for Club visits.

Leaving a small garden in Bearsden in 1961, she took over 1½ acres of rough hillside at "Blawlowan", Buchanan Castle Estate, Drymen. Gradually, over the years, she created a lovely garden in spite of constant damage by every kind of wild life and by the Great Gale which uprooted ancient oak trees, devastating large areas.

However, May took all these set backs in her stride, working on and on until it became one of the best known gardens in the West of Scotland and beyond, with a vast collection of plants all growing to perfection in a wonderful setting. There will be many who look back with pleasure on a visit to this exceptional garden and remember the warm welcome they received.

Leading a very full life in her family circle, she was also involved in many activities in Drymen and district, constantly being called upon for help which was never refused. It is comforting to hear that Michael and Jennifer, her son and daughter-in-law, are hoping to carry on the garden and that it is not going to pass into strange hands.

Long may the wind blow gently over "Blawlowan".

M. G. N.

A. D. REID, M.B.E.

THE CLUB has suffered another great loss in the passing of Alex Reid of Aberdeen. Coming from the north-west of England, he had worked in Scotland during most of his professional career. Born into a family long interested in horticulture, he had a life-long interest in the subject, although he trained as an engineer. His competitive spirit was nurtured in the highly dangerous sport of motor cycle trials, and he had a cabinet of cups and medals won at the sport. This cabinet also contains Alex's Forrest and other medals won at many of the S.R.G.C. Shows. In his work, he quickly gained promotion and was a Director of S.M.T. on his retiral. He was awarded the M.B.E. for work undertaken during the last war.

For over twenty-five years, Alex took a great interest in the Club and its Shows. He acquired over the years a wonderful collection of plants, particularly Ericaceae. Some, he kept in pots for the purpose of showing, but his garden was full of interesting plants. He was a most discerning plantsman with a wonderful memory. He could remember exhibits at Shows long past to illustrate his search for the best flowers. He had a very gentle, kindly character, but could be critical if he saw good reason—particularly with bad judging or sloppy exhibiting !

Alex gave much time and effort to the Club as Group Convener and Show Secretary in Aberdeenshire.

His friends will miss him greatly, but our deepest sympathy should be extended to his wife Gladys and their two daughters who already have had too much tragedy in their lives.

R. S. M.

Joint Rock Garden Plant Committee

MUSSELBURGH—21st SEPTEMBER 1973

AWARD TO PLANT

FIRST CLASS CERTIFICATE

To *Cyclamen graecum* as a flowering plant for the alpine house exhibited by Dr. and Mrs. I. Simson Hall, 93 Whitehouse Road, Edinburgh (fig. 22).

AWARDS FOR EXHIBITS

CERTIFICATE OF CULTURAL COMMENDATION

To John D. Main, Esq., West Gate House, 2b Arboretum Road, Edinburgh, for well grown plant of *Dionysia teucrioides.*

To Dr. and Mrs. I. Simson Hall, 93 Whitehouse Road, Edinburgh, for well flowered plant of *Cyclamen graecum.*

COVENANT SCHEME

The Covenant Scheme which was temporarily suspended in early 1973 will be in operation again as from 1st October 1974. As most members will be aware, the Club can reclaim from the Revenue tax at the current rate on subscriptions paid under covenant. This substantially increases the Club's revenue without costing the member more than the trouble of signing a covenant form. The scheme is applicable only to those paying British Income Tax and we appeal to those not already covenanting to do so. A form of covenant for completion and return can be obtained from the Subscription Secretary or any of the Group Conveners.

CHANGE OF ADDRESS

Many *Journals* are returned to the Subscription Secretary marked "Gone Away". This entails a lot of extra work in trying to trace the missing members. Could you please notify the Subscription Secretary of any change of address, giving the new as well as the old address.

Book Reviews

" E. A. Bowles and His Garden at Myddelton House 1865-1954," by Mea Allan. Published by Faber & Faber. Price £3.00. 264 pages with illustrations in colour and black-and-white.

The life of Edward Augustus Bowles spanned an exciting era in the history of botany and horticulture, an era of new introductions and new ideas in which he played a vital part. Influenced as a young man by such famous Victorian gardeners as Canon Ellacombe, he himself, in later years, inspired and helped a new generation, among them famous gardeners and botanists of today.

In writing this biography of E. A. Bowles Mea Allan has done a vast amount of research. Not only has she traced back the history of his family and of Myddelton House, but she has delved into Bowles' material in the Lindley Library and elsewhere. She has also sought out and talked to many of his friends in order to build up this living picture of a much loved man.

She tells how his enthusiasm for botany and entomology started at an early age and was further developed at Cambridge. Later it took him on many expeditions among the mountains of Europe, sometimes with his friend Reginald Farrer, from which he introduced a number of plants and varieties not previously in cultivation. Excerpts from his diary and from those of his friends make entertaining reading and show what a delightful companion he must have been.

Joining the Royal Horticultural Society in 1897, Bowles devoted himself to the work of the Society to the end of his life. He became a member of Council, Chairman of the Scientific and Library Committees, and contributed both plants and wise advice when the garden at Wisley was being constructed. Over the years he won many of the major awards of the R.H.S., including the highest, the Victoria Medal of Honour.

The descriptions of the garden which he designed and planted at his father's home, Myddelton House, Enfield, are vivid and sympathetic. He was one of those gardeners with a gift for finding the perfect setting for every plant, whether a rare introduction from China or a native hedgerow flower, and Miss Allan has taken the trouble to watch the garden's progress throughout the year. His collections of Iris, Galanthus and Crocus were unsurpassed and his sense of fun could be seen in the " Lunatic Asylum " of plant monstrosities, watched over by a sane-minded Magnolia, which is still to be found in Bowles' Corner at Wisley.

As a writer of gardening articles and books the name of E. A. Bowles is famous and a list of his writings is included as an Appendix to this biography. His skill as an artist is perhaps less generally known, but the exquisite paintings and pencil drawings reproduced in the book reveal not only his scientific accuracy but also his love of plants. They display a delicacy of touch which few artists can surpass.

Despite his fame Bowles remained all his life a kind and modest man. We are told of his active work for his Church and of the boys club which he founded. His boys were always welcome at Myddelton, even in his study playing darts while he worked, and he was always ready to help them in their careers. Some of " Mr. Gussie's boys " have talked to Mea Allan and have enabled her to build up a picture of this warm-hearted man to whom they owe so much.

The author has accumulated such a wealth of material that at times the reader becomes somewhat confused. A more selective attitude and the exclusion of irrelevancies would have helped the narrative to flow more smoothly. The vast amount of information has at times interfered with the accurate checking of facts, for instance his old friend " kind Dr. Lowe "

was President of the Royal College of Physicians of Edinburgh, and of the Royal Medical Society (the oldest surviving Student Medical Society in Britain), but although he was for many years a member of the Botanical Society of Edinburgh, a Society which has not as yet been granted a Royal Charter, no evidence can be found that he was ever its President. One plant name appears to be inaccurate, unless the taxonomists have altered it since Bowles' day, that charming blue star-like flower of the Western Mediterranean which is known today as *Aphyllanthes monspeliensis* has been named Aphyllanthus.

These, however, are minor criticisms and this book can be strongly recommended. It will certainly remain for many years the authoritative life of a great and kindly man.

K. S. H.

"Modern Water Gardening," by Reginald Kaye. 177 pp., illus., 1973. Published by Faber & Faber. Price £3.95.

So many books are available today for gardening enthusiasts, but on the subject of water gardening it is a very long time since a book of this calibre has been available and written by someone with 50 years of practical and professional experience in this sphere of gardening, it is small wonder that we have here a book of outstanding merit. It deals in some depth with all forms of construction of pools and streams, whether of concrete or the now more modern and popular polythene, vinyl, etc., describing the siting of the pool or stream, with excellent advice so that the best and most natural effect can be achieved.

It is appreciated by most people that water in a garden, however small, can add enormously to its attraction, but few gardeners have the courage, or the knowledge, to create it. Today this is possible, and Mr. Kaye in his very elaborate description of materials, the use and best employment of them, with drawings and illustrations, has produced a book of absorbing interest. Included are two chapters on Water Lilies—those suitable only for the heated pool, as well as the more hardy varieties. Names of varieties of both types, as well as other aquatic plants and grasses, including subjects suitable for water-side planting. It is the careful choice of these subjects which will produce the most satisfying result and effect, it is here the reader can benefit from the experience of an expert. Description of varieties of fish suitable for the garden pool; their particular needs, and names of varieties should prove most helpful to the amateur water garden enthusiast.

Unlike many gardening books, Mr. Kaye has in "Modern Water Gardening" covered all aspects of his subject, including the snags and snares that might occur, and their remedies. A book of quality well worth adding to any garden-lover's book shelf.

J. B.

"Wild Flowers of the Algarve," by Mary McMurtrie.

Anyone planning a spring holiday in the Algarve will find this delightfully illustrated little book invaluable as a guide to the earliest flowers of that region. By no means comprehensive, it nonetheless includes with such well-known plants as *Lithospermum prostratum* and *Cistus ladaniferus*, a surprising number of bulbs and ophrys of particular interest to alpine gardeners. The illustrations are clear, the colour reproduction good, the text concise and informative and, above all, the book is small enough to slip into a pocket comfortably, an important consideration on a long day's outing.

No illustrated book on Algarve wildflowers being available either in English or Portuguese, Mrs. McMurtie has produced this one, privately, for the benefit of frustrated amateur botanists as well as the ordinary tourist. Obtainable from Mrs. McMurtrie, The Rock Garden Nursery, Balbithan House, Kintore, Inverurie, Aberdenshire AB5 0UQ, price £1.00.

M. I. C. H.

Plant Note

THE LEGEND OF PIATRA CRAIULUI

MENTION of the name Piatra Craiului in the necessarily somewhat prosaic pages of the Seed List recalled happy memories and inspired the recounting of the legend of the origin of this name which follows, a story which quite possibly has never before been told in English and which may perhaps serve as just one small example of the adventure and perhaps even romance which lies behind the bringing together of this wonderful accumulation of seeds, particularly those collected in the wild, which are gathered in from so many strange and interesting places.

"Long long ago there lived two sisters, the Nymph of the Water and the Nymph of the Flowers, and they dwelt happily together until one day the younger sister, the Nymph of the Flowers, met and fell in love with the King of the Mountains. They planned to marry and were very happy when suddenly the jealous King of the Wind appeared and demanded that the Flower Nymph should marry him instead, threatening her life if she refused. Her elder sister suggested that she should tell the two Kings that they must compete for her hand by climbing a very high mountain and that the first one to reach the summit would be the one she would marry. The crafty King of the Winds chose the shortest route, but as so often happens in the mountains this was not the easiest one, and as in addition the Water Nymph called down upon him floods and storms the Mountain King managed to reach the summit first and so claimed his bride. A huge rock on the summit was henceforward named the 'Mountain King's Stone' or for short 'King's Stone', in Romanian (for that is the country of the legend), 'Piatra Craiului'".

While this simple story of the happy wedding of flowers and mountain may in itself seem appropriate for a Society devoted to the cultivation of alpine plants, it has in fact a much greater significance for those who love the little plants of the mountains, for Piatra Craiului

is a real mountain and on it grow very many treasures of which the fairest and most famous of all is the Piatra Craiului pink, *Dianthus callizonus*, the loveliest of all the mountain pinks.

Piatra Craiului is an isolated mountain of Jurassic limestone lying some 20 miles to the south-west of the town of Brasov in Romania. It is a long whale-backed ridge with steep serrated limestone cliffs forming its upper part and it is upon these cliffs that *Dianthus callizonus* grows, the only place in the world where it is to be found, for it is a relict species which has developed by itself on this isolated ridge.

Strangely, even in its natural habitat it is variable, but at its best it is magnificent and to be privileged to see it growing here in its remarkable mountain home is something to be remembered for ever. Camberley

G. E. B.

SRGC PUBLICATIONS

MEMBERS will find much of interest in the back numbers of the Club's *Journals*. The availability and prices are as follows:

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14	35p	0.91
15 to 17	Not available	—
18	25p	0.65
19, 20	20p	0.52
21	Not available	—
22 to 26	20p	0.52
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George Forrest Book	£1.25	3.25

The Club will welcome the opportunity to make an offer to buy (or be gifted) certain of the old *Journals* in the number range 1 to 35, provided they are in good condition.

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