The Journal

OF

The Scottish Rock Garden Club

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EDITED BY

KENNETH CHARLES CORSAR

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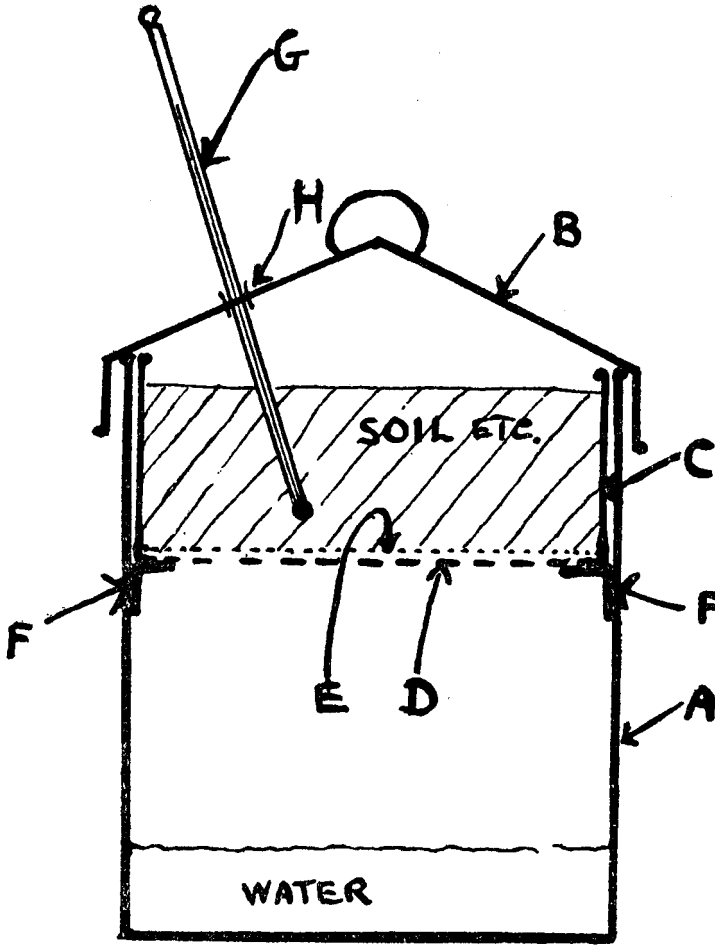


STERILISATION OF COMPOSTS. (*See page* 95.)

Editor's Notes

AFTER a lapse of six years, the Journal of the Scottish Rock Garden Club makes its reappearance. This issue has been decided upon because the Committee very rightly realises that a publication is an essential asset of membership, and a necessity in the re-awakening of the Club's activities. Though much has changed since our last Journal was sent out, though we may have lost much during the years of war, the love of Alpine flora remains to us as strong as ever, and the urge to cultivate these little plants has never gone. During the war period many of the amenities of our gardens had to be sacrifices in the interests of food production and the home cultivation of vegetables on a considerable scale may have to continue for some time to come, but by degrees a return to flower-gardening will be possible and the growing of Alpines will become as widespread as it was in 1939; one might go even further and assert that rock-gardening will be a more prominent feature than hitherto because of the much smaller space required to yield a satisfying display of plants and colour. Moreover, one man can with ease maintain singlehanded a quite considerable collection of Alpine plants, either in a rock garden or in an Alpine house, entirely in his spare time. With conditions as they are, and as they are likely to remain for a considerable number of years, what will be expected from any garden is the greatest effect at the least expenditure on lay-out and maintenance. The rock garden and the Alpine house can provide this as no other forms of gardening can. It is the purpose of our Club to foster interest in this branch of gardening,

and it is the aim of those who manage our Journal to help all who are engaged in it.

The Journal of any Club or Society provides the medium through which the members may, and should, convey their experiences one to another; notes and information on new plants should also be included. Its pages ought to contain accounts of how particular plants, or groups of plants, were successfully cultivated, or of how they failed to thrive and under what conditions this state of affairs came about. In this latter connection it might be pointed out that it is no disgrace to have failed with a particular plant; it may be the result of nothing more than bad luck; it may have resulted from some mistake in the composition of the soil in which it was planted; but someone will have been more successful and may be willing to help and advise, if he but knew the problem. The " whys and wherefors " of failures are in every way as important as records of success, and in some ways more valuable. Anything and everything connected with the cultivation of Alpine plants should be included in our Journal, and it is the duty of members to see that it does. It is quite impossible for the Editor and one or two of his friends to provide the whole matter for each issue; in any case the greater the number of contributors that there are, the greater will be the appeal of the Journal. Will each member of the Scottish Rock Garden Club, therefore, consider carefully whether he, or she, could add something to the knowledge of others by writing even the shortest note for their own Journal.

Since the last number of the Journal was published, the Club has lost by death a number of its leading members. Of these mention must be made of Mr Eric P. Laird, one of the founders, and the first

Secretary of the Club; Mr. T. J. Gray, who on several occasions acted as a Judge at our Shows; and Mr. Bishop and Lieutenant-Colonel Wood, two of our most enthusiastic members as well as two of the best Alpine gardeners in our midst. All four were most active members of Committee, and their loss will be greatly felt at our meetings. They should be remembered for the work that they did and for the assistance which they gave to others.

Accounts of our Shows held in Edinburgh and Glasgow in the Spring of 1939 were written at the time, but as these events took place so long ago it seems hardly necessary to include them now. It is, however, only proper that the names of the principal prize-winners should be recorded, and these were as follows:—

Edinburgh: The George Forrest Memorial Medal—Mr. Andrew Harley, Kirkcaldy. *Nomocharis aperta.*

Challenge Trophy and Club Silver Medal. Mr. Henry Archibald, Carnwath.

Glasgow: George Forrest Memorial Medal. Mrs. J. Haley Brown, Skelmorlie. *Paraquilegia grandiflora.*

William Buchanan Memorial Trophy. Captain and Mrs. Walmsley, Garlieston.

In 1940 small Shows were held in the two centres. In Glasgow Mr. Archibald again captured the Buchanan Trophy, while Mr. G. Laurie, Bishopbriggs, gained the Forrest Medal; in Edinburgh Mr. A. O. Curle took

all the principal awards. Since that year no meetings have been held, and the activities of the Club have been in abeyance. It is hoped that it will be possible to make a fresh start this year, and plans to hold Shows are under consideration These will necessarily be on a somewhat restricted scale as conditions are as yet far from normal, nevertheless, it is hoped that the meetings will prove of interest to members, and assist in the process of regeneration of the Club.

I will conclude this somewhat lengthy Editorial by thanking all those who have contributed to this number of the Journal, and also those who have assisted in its preparation by their advice and their encouragement.

Three Eastern Aristocrats.

By GWENDOLYN ANLEY.

I DO not know of any country which produces so many good Alpines as Japan. When it is added that most of these plants settle down fairly contentedly to the conditions which we are able to provide, it will be recognised that they are likely to prove valuable additions to our rock gardens and Alpine houses.

The most exacting, possibly, is *Dicentra peregrina var. pusilla*, but this, I think, is largely due to the fact that hitherto we have not understood its needs. It is one of the most charming of plants, and even when it does not flower it is a delight to the eyes. The finely cut, crisply curled foliage is so glaucous in tone as to seem a soft blue, while the 4-inch flower stems carry as many as five dainty little rose-pink "bleeding hearts."

Tubers are obtainable from one or two nurseries in this country, or they could be imported satisfactorily. In either case they should be obtained in early spring —certainly not later than April—and potted up at once in the following manner. The usual large "crock" over the vent of the pot should be omitted. In place of this the bottom of the pot must be covered with granite chips large enough not to fall through the vent. Over these place an inch-deep layer of smaller chips covered with only just sufficient peat to prevent siltage of the compost. This arrangement of the chips will provide perfect drainage, as well as a free passage of air through the pot. The Japanese advocate a compost as follows :—

8 parts of coarse river sand from which all dust has been washed ;

2 parts leaf mould.

When planting the tubers the " noses " should be barely visible at soil level.

It can be definitely asserted that the usual cause of failure with this plant lies in overwatering. After potting give a good watering and stand the pots in a sunny airy place so that all superfluous moisture is speedily evaporated, and do not water again till vigorous growth is visible. It is suggested that it is too choice a plant to attempt in the rock garden. It can be very successfully grown, however, in the " Scree Frame," such as I have described in my book, where it will have overhead shelter during winter, yet not be " coddled."

A very careful watch must be kept for green-fly, and the pest must be dealt with without delay if this temperamental little subject is to flower.

Neither imported nor home grown seed has yet been known to germinate in this country. In Portland, Oregon, where the accompanying photograph was taken, the plant appears to be viviparous, as I saw seeds, already germinated, tumbling from the capsule of one of the flowers shown.

An albino form has been recently discovered, and, thanks to the kindness of a Japanese friend, a plant reached me early this year which is on the point of flowering at the time of writing this note. (1939).

Campanula pilosa var. dasyantha is by no means one of the easiest of this family, but it is certainly one of the most beautiful. The obovate leaves are a rich green and very glossy as though highly varnished. The flower-stems rise to a height of five inches, each bearing two or three buds. These open singly, thus extending the period of flowering over two or three weeks. The flowers, which hold their heads erect, are

DICENTRA PEREGRINA, var. PUSILLA (*grown by the Author*).

CASSIOPE LYCOPODIODES.

of unusual size, and are fringed with fine hairs. The colour is particularly good, being of the same clear shade as *C, Zoysii.* A suitable compost consists of :—

2 parts leafmould
2 parts loam
4 parts fine granite chips
1 part coarse sand.

Full sun is desirable, but care must be taken that it is not allowed to dry out. A healthy plant makes a quantity of underground runners. As soon as these appear above ground and form small rosettes of leaves they may be taken off and rooted. It is always advisable to keep young stock going, as large specimens are apt to collapse without warning. Some growers state that it always flowers best after a really hard winter, and my experience confirms this. There is a rare white-flowered form, but it has not yet reached me.

Japan, being a lime-free country, is particularly rich in choice Ericaceous subjects, all of which are well worth the attention of the connoisseur. One of the most attractive is *Cassiope lycopodioides.* This prostrate dwarf shrub forms a mat of slender wiry branches, which are completely hidden by the minute, scaly leaves, which are closely pressed to the twigs in much the same way as is the case with the " whip-cord " Veronicas. The dense cushion-like plant is little more than an inch in height, and the more it flourishes the closer and more dense the cushion becomes, while it spreads in all directions till it covers a space of a couple of feet or more.

In April well grown plants are sheeted with white, lily-of-the-valley-like flowers, single nodding bells with reddish-brown calyces on inch-high reddish stems. Frequently these are so numerous that little of the

foliage can be seen. Flowering plants in pans should be removed to a shady place to prolong the flowering period.

In a moist, peaty soil it will flourish and flower well in full sun in the open ground, but unless moisture can be assured it is advisable to plant it in half-shade. It can be grown very successfully in a pan, and some very fine, well flowered specimens have been seen at the Shows of the Alpine Garden Society at Westminster. For pan culture a compost consisting of

4 parts leaf-mould
6 parts fine granite chips, and
2 parts coarse silver sand (alternatively 8 parts very coarse river sand)

must be used. From September till June it should be exposed to sun but never allowed to get dry. For the remaining months it must be partially shaded. On no account must it be kept in the Alpine house, as it cannot tolerate a dry atmosphere, and under such circumstances it is certain to fall a victim to red spider mite. It is easily propagated from cuttings. Young plants grow slowly in the early stages, but growth is rapid later.

(*Figures facing pages 92, 93 and 102*).

The Use of Sterilised Composts for Raising Alpines from Seed.

By Henry Tod, Ph.D., F.R.S.E.

SOME years ago, considerably before the War, I had nearly abandoned the attempt to raise Alpines from seed as I had lost all of some exceptionally rare seeds through a total failure to raise them, and what did come up at all succumbed to damping off, moulds and the like. Accordingly for several years I only raised common border stuff outside under glass in frames, and made no attempt to raise any good seeds at all. Then one day I saw a review of the first three John Innes Pamphlets and sent for them, subsequently getting Messrs. Lawrence and Newell's little book " Seed and Potting Composts," published by Allen and Unwin. This altered everything for me; this is no exaggeration at all, as I now raise almost everything from seed.

As a research worker, their experiments, which were beautifully worked out and carefully described in their book, appealed to me at once, and I tried some experiments with their composts forthwith. The results were dramatic, and from that day on I have used these composts exclusively. The process of sterilisation is not so troublesome as many think, and does not require any elaborate equipment. What I used was, frankly, an improvisation due to finance, but it worked so satisfactorily that I have never replaced it, as it suffices for my needs, as it would, I think, for all but the largest gardens.

The diagram will make matters clearer than a lengthy description. The foundation is a cinder-sifter with minor modifications. In the diagram A is the body of the sifter with its lid B. C is the tray into

which the cinders and ash are put ; the mesh of the bottom of this tray (D) is about half-inch, far too wide to hold in earth, so a disc of perforated zinc (E) was cut to fit closely into it. A hole H was bored through the lid to allow a thermometer G to be passed through into the material to be sterilised which is contained in the tray C. (*Diagram facing page 87*).

To operate the steriliser a couple of inches or so of water was placed in the bottom of A and the tray C was filled with the loam to be treated. The tray C was then lowered down into A to rest on the lugs on the wall on which the sifter mover (F) and a strip of cloth was packed in between the walls of A and C. Thus, when the water in A is boiled by setting A on a gas ring, stove or fire the steam cannot pass up between A and C but must pass up through the material to be sterilised. The lid was then put on, the thermometer passed through the hole so that the bulb was just buried in the top layer of the material in C, and the whole contraption was heated until the water boiled. It was then kept boiling gently until the temperature had risen to 180 deg. F., at which it was kept for 10 minutes, when the lid was removed, C lifted out and its contents tipped out on to a clean surface to cool rapidly. In this way loam, peat and sand were all sterilised—separately of course—and then mixed in the requisite proportions with the appropriate fertilisers—and there were the composts.

As for the components, I have found that a decent garden loam, ideally, of course, rotted turf, rubbed through a quarter-inch riddle, is satisfactory, while sharp burn sand with the fine clay particles washed out seems ideal. After some trials I have come to the conclusion that Abol Peat-Umus (which is a sterile product) is about the best peat to use, though any

finely ground peat should do, always provided it is, or has been, sterilised.

The components are mixed in different proportions according to whether seed or potting compost is wanted. I have found that Alpines are best brearded, pricked out and grown in seed compost ; the potting compost is on the fat side for them I think, though bulbs should be pricked out into potting compost for growing on ; obviously they ought to be as they have to build up their bulbs before they can flower, and that requires a good deal of feeding.

As the fertilisers are added at the rate of ounces per bushel, it is most convenient to make up a bushel at a time, and for this a measure is required. Now the seed compost adds up to five parts, so the measure must be 1-5 bushel, but the potting compost adds up to 12 parts, so the measure must be 1-12 bushel. To get over this difficulty I worked out the sizes required and made up boxes to hold these quantities *level full.* The *inside* measurements of the two boxes are as follows :—

One-fifth bushel : 11in. x $7\frac{7}{8}$in. x $5\frac{1}{16}$in.

One-twelfth bushel : 8in. x $5\frac{1}{16}$in. x $4\frac{1}{16}$in.

The composts are made up thus : *Seed Compost*— 2 parts loam, 2 parts peat, 1 part sand. To one bushel of this mixture add $1\frac{1}{2}$ oz. superphosphate and $\frac{3}{4}$ oz. ground limestone ; mix very thoroughly. *Potting Compost*—7 parts loam, 3 parts peat, 2 parts sand. To one bushel add 4 oz. of the John Innes Base Fertiliser and $\frac{3}{4}$ oz. ground limestone, and mix very thoroughly

Full details of the composts, the fertilisers, the wherefore and the why of the whole process will be found in the book referred to above. It is very clearly and interestingly written and well worth getting hold of.

To complete the process the seed pans and crock to be used are also sterilised by putting them into A filled with water, but without the tray C, replacing the lid and boiling them for fifteen minutes or so, and, needless to say, the greenhouse or frames where the pans are to be kept after sowing should be really clean.

The other details are straightforward. The usual layer of crock is placed in the pan and the compost is filled in to within half an inch or so of the rim. The compost should be just nicely damp, and here is one bad snag. When the sterilised material is cooling it tends to dry out too much, and it is extremely difficult to damp it. My own method is to put as much as I am likely to require in a large basin and pour water on to it. One then kneads the compost and the water together, much as one mixes fibre for house bulbs until the water goes right into the compost. It should not be made into a muddy consistency, but just nicely damp, so that a handful, when squeezed, will just fall apart when put down. On the top of the damp compost in the pans, which should also be damped, one then sows one's seeds. A very fine sifting of soil to cover, if covering is needed, completes the job.

Treated in this way, most Alpine seed will germinate freely and grow on well but if there is any sign of damping, an application of Cheshunt Compound should be given. The pans are best kept in the greenhouse with their bases in gravel (clean!) contained in large trays. They can then be watered by flooding the trays with clean water, when the pans will suck up as much water as they need. There are two schools of thought with regard to the use of glass over the top of the pan; personally, I have given up using it; but in a dry greenhouse which is fully exposed to the sun it is

probably best used to conserve moisture until germination has occurred.

As soon as they are large enough to handle, the seedlings should be pricked out into clean boxes of compost or else into individual pots, according to the space available, and when they are well established and growing on well they should be hardened off and then plunged outside in an ash plunge if in pots or kept in a frame if in boxes until they are planted out into their ultimate positions.

The most striking thing about seedlings and plants in general grown in these composts is their tremendous growth of root system. I have actually tried pricking out seedlings into an ordinary compost and into John Innes compost from the same batch of seedlings at the same time. After several months those in the John Innes composts were very much more robust looking and had root systems about five times the size and strength of those in the ordinary good mixture. Plants grown thus have definitely a better start in life, and, in general, do better throughout their existence. I have grown plants as diverse as cacti and primulae in these composts, and raised seed of anything and everything, Saxifrages, Shrubs, Lilies, Crocuses, Composites, rare Alpines, common Alpines—anything, with equal success.

Furthermore, if you collect your own seed and sow it as soon as it is ripe, practically any seed, no matter how difficult and slow normally, will breard like cress and give a good return.

My thanks are due to Mr. Theo. A. Stephens, Editor of "My Garden," for permission to use the material in this article, most of which appeared in a communication of mine to that magazine.

Nomocharis.

By ANDREW HARLEY.

OF the many remarkable and beautiful plants found in recent years by George Forrest and Kingdon Ward in Western China, Burma and Tibet, seed of which they sent to this country, none takes precedence over the new genus Nomocharis. These liliaceous plants occupy a position in the family midway between Lilium and Fritillaria. Found growing at an altitude of between 11,000 and 13,000 feet, they are perfectly hardy in this country, and the following species have flowered in my garden in Perthshire : *Nomocharis pardanthina, N.p.var. Farreri, N. Mairei, N. saluenensis, N. aperta* and *N. nana.*

They set seed freely, but it is advisable to let no more than two or three seed capsules ripen on a plant, as I find to allow more weakens the plants and they are not so robust, nor do they flower so freely, in the following year. Each capsule contains a great number of seeds, which I find germinate very freely. It takes from four to five years to flower the bulbs from seed, which tries the patience, but when they do flower they are worth all the time and trouble taken.

Nomocharis flowers in June and July, and the seed is ripe about the end of September, when it is collected, dried and stored till the spring ; this, I think, is the best time for sowing. If the seed is sown immediately it is ripe it germinates in about a fortnight, but makes very little growth during the winter months, and I find that one does not gain much by autumn sowing, and will have the trouble of looking after the seedlings all the winter.

Seed sown in pans or boxes, in slight heat, about the end of February germinates in two or three weeks. After the seedlings have made some growth they are pricked out into boxes about four inches deep, filled with good turfy loam, leaf-mould and sand. Care should be taken to make sure that there are no wireworms in the loam, as these pests will clear up a box of seedlings in a very short time. I find the best place to raise and grow on the seedlings is in a vinery which has heat on from February till October. After October the heat is cut off till the following spring, and although the seed boxes are frozen during the winter months, the seedlings take no harm.

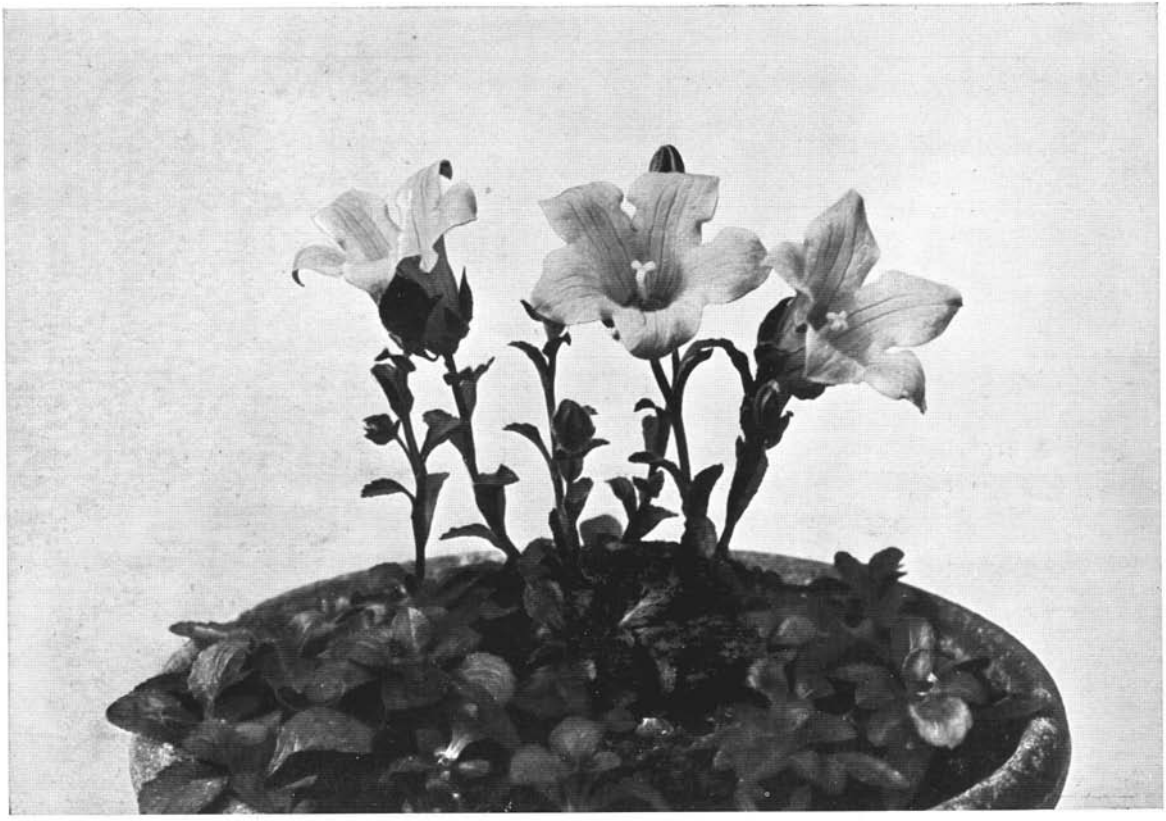
The seedlings, which will have made small bulbs during the summer, are planted in boxes with fresh soil about the end of January the following year. By growing the seedlings in this manner for three years and planting them out in the spring of the fourth year, a few of them will flower during that summer. If seedlings one year old are planted out, I find it takes them five or six years to flower, provided slugs, which are very fond of them, have not cleared up the whole bed when they are coming into leaf in the spring. I was very much troubled by slugs eating the young growths of Nomocharis when they were just coming through the ground, but found that sprinkling the beds immediately the leaves appeared with bran and Paris green effectively prevented damage.

The Nomocharis in my garden are planted in beds in front of Rhododendrons, some in full sun and some shaded for part of the day. The soil is well drained, but holds moisture during the summer months. The bulbs are placed about four inches deep in soil containing old turf and leaf mould. I have no experience in growing them in ground containing lime, but find

that they thrive in peaty soil, and I imagine that any soil that Rhododendrons grow in would suit Nomocharis.

Nomocharis pardanthina is probably the strongest grower with me, attaining a height of fully two feet, each plant bearing 12 or 13 flowers. *N. Mairei* is to my mind the most attractive species. The flowers, on stems 18 to 24 inches high, are about three inches in diameter and variably spotted. *N. aperta* is somewhat similar to the foregoing, but less spotted. *N. nana* is the least showy of the genus. The flowers on stems of 4 to 6 inches high are brownish in colour. When Nomocharis become better known and more widely cultivated I am sure that they will become very popular, because they are not more difficult to grow, and flower, than many of the Lilies. I would refer anyone interested in the genus to the *Notes from the Royal Botanic Gardens, Edinburgh,* Vol. XV, No. 51, where Mr. Evans has an exhaustive review of Nomocharis. The photographs here reproduced are of some of the species now growing in my garden.

(*Figures facing pages 103 and 106*).



CAMPANULA PILOSA, var. DASYANTHA (*grown by the Author*).

NOMOCHARIS SALUENENSIS.

NOMOCHARIS MAIREI.

A Dozen Good Bulbs for the Rock Garden.

By Louis Walmsley.

A LOT of people do not favour bulbs in a rock garden; they say they are a nuisance; they die down after flowering, are forgotten, and get weeded over with a fork, which ruins them. Actually we have not found this to be the case. If planted in pockets, well labelled and carefully hand weeded, they provide variety and colour all the year round and well repay the small amount of attention needed.

Here are a round dozen, some of them not so well known, which we have found easy and decorative and which have survived the war years despite neglect and extreme climatic conditions. The names, in order of flowering from 1st January, are: *Iris histrioides, Iris Danfordiae, Narcissus cyclamineus, Narcissus Bulbocodium, Triteleia uniflora, Camassia esculenta, Ixiolirion Ledebouri, Habranthus pratensis, Anomatheca cruenta, Crocus pulchellus, Nerine Bowdeni,* and *Crocus Imperati.*

Iris histrioides and *histrioides major* are a pair of very dwarf Irids, not more than 6 inches high, and among the most charming of the genus. *I. histrioides* is pale blue, and *I. histrioides major,* which flowers rather earlier, a darker blue. They might well be described as the "Oxford and Cambridge Iris." Both are delicately ornamented with gold on and under the falls, and the stiff reed-like leaves appear after the flowers have withered. We have grown them for some years, and never failed to have an *I. histrioides major* out by New Year's Day. We first planted them under a standard cherry tree, where the soil is light and dry. Here they have thrived and multiplied several

times over, and we now have colonies in sandy pockets and near the house. I cannot recommend a better New Year gift for anybody, and it is a bulb which in my opinion should take first place in every garden.

Iris Danfordiae may be grown with *I. histrioides* as it is bright yellow in colour, forming a striking contrast yet of the same size and type. It flowers a little later than *I. histrioides,* not opening before late January ; owing however to the long flowering season of the earlier plant, they do overlap and show one another off to perfection. It is not quite so reliable or free flowering as *I. histrioides.* The mature bulbs seem to die off after flowering, but they are replaced by bulblets which attain maturity in another two or three years. Some gardeners are apt to think that the bulbs have disappeared for good, but there is a steady rotation when established, and the grower should be rewarded with a few blooms each year.

Narcissus cyclamineus is still seldom seen in rockeries, although it has been on the market many years and is an inexpensive bulb. The miniature stature, brilliant golden colour and completely reflexed perianth are the chief characteristics of *N. cyclamineus,* which gaily enhances any rock garden in early March or even late February. It may also be naturalised in short grass, where, as in suitable sandy pockets, it soon carpets the ground with seedlings.

Narcissus Bulbocodium is known as the "Hoop-petticoat Daffodil" and has a yellow cone shaped trumpet gracefully held erect at the top of a 6 inch stem. Some years ago we had a pocket of it on one of the rockeries, since when it has seeded itself round about and is flourishing in the most unexpected places, including rock crevices where nothing could be

planted. The variety *citrinus* is equally accommodating but its paler flowers are not, I think, quite so attractive.

Triteleia uniflora is a charming spring bulb, starting to flower about mid March and continuing until May. The starlike milky blue blossoms are delightful surrounded by a mass of very narrow leaves. It grows quickly into thick clumps, and the bulbs may be separated in the autumn. Any well drained situation suits it, even part shade, or it would make a neat border decoration for a small bed.

Camassia esculenta is another extremely easy bulb, and of great charm and beauty. It grows 12-18 inches high, and has a loose spike of hyacinth blue flowers. Again any situation suits it ; it never fails to flower, and increases rapidly. May and June are the flowering months, and the blooms make a delightful bowl in the house.

Ixiolirion Ledebouri is rather more fussy and uncommon. At first we used to grow it in the Alpine house, but during the war we planted it out on a rockery to take its chance. There it has remained, and flowers regularly but doesn't seem to increase. It has a delightfully graceful habit, growing about a foot high and bearing a racemose umbel of narrow petalled lavender blue flowers. The leaves, of which there are not a great many, are long and very narrow, not particularly decorative, so we put the bulbs among some Kabschia Saxifrages, which make a pleasing groundwork.

Habranthus (*Hippeastrum*) *pratensis* is more often grown indoors or against a greenhouse wall, but as a matter of fact it is perfectly hardy in any warm, sheltered spot. Towards the end of May the large fat

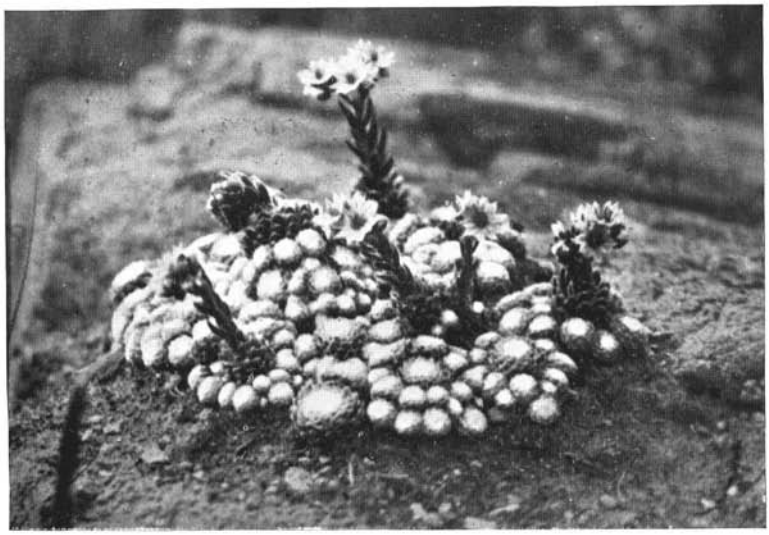
bud on the top of its foot high stem opens out into a galaxy of bright red lily-like flowers. The brilliant colouring and stately grandeur of this plant would furnish any rock garden with an unusual bulb which would, I am sure, attract the admiration of all.

Anomatheca cruenta is a jewel with its bright glistening terracotta blooms branching out from each slender flower stalk. On account of its miniature size it should be planted in a high pocket, preferably dry and sunny. July and August are its flowering months, but it will often reward the owner by continuing well into the autumn. We frequently find self sown seedlings cropping up.

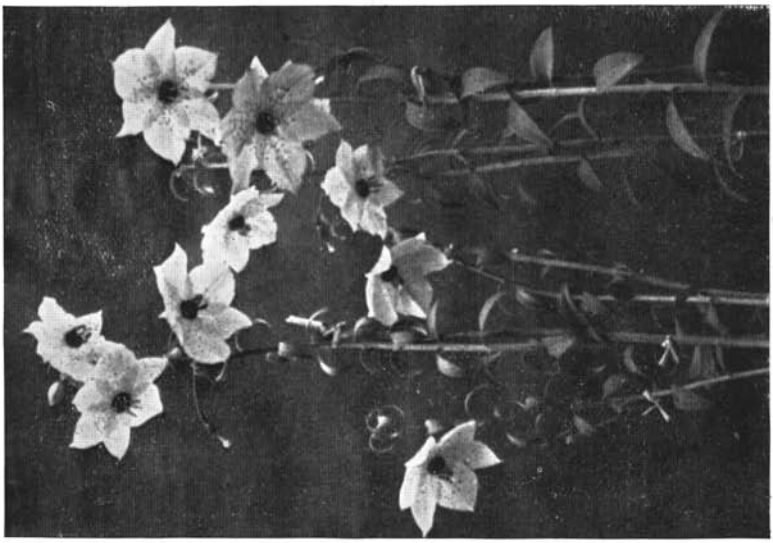
Crocus pulchellus is a very easy and prolific bulb of unusual beauty. The lavender blue flowers are large for a Crocus and strikingly marked with an orange zone at the base of the corolla. A bulb even when quite young, will carry three or four flowers and many more when established. In September, when the rockery is becoming increasingly bare, a drift of this Crocus is a delight to behold.

Nerine Bowdeni is one of the few bulbs which flower well into November, and it seems invincible as it has every quality a bulb should possess. It always flowers, is in bloom for a long time, seems quite at home even in a gravel path, and the cut stems come out and last for many weeks in water. The head of flowers, comprising 5 to 10 blooms in a clear pink, are carried on 18 inch stems. A sunny but sheltered position where the autumn gales don't play havoc with the flowers is admirable.

Lastly, for the end of the year, I would recommend another Crocus, *Crocus Imperati*. It is distinctive by



S. ARACHNOIDEUM (*on Boulder.*)



NOMOCHARIS APERTA.

Photo: D. Wilkie. CYTISUS ARDOINII.

Photo: D. Wilkie CYTISUS DECUMBENS *(of Gardens).*

reason of its bi-colour, the inside of the petals being violet while the outside of alternate petals is pale buff. I always regard December as the most difficult month of all for flowers, but if *C. Imperati* is planted in a warm corner then on a mild sunny day towards the close of the year you may be rewarded by a bright patch of colour when everything else is still asleep.

The Alpine Plant Trade during the War and After.

By WALTER E. T. INGWERSEN, V.M.H.

I HAVE been requested by our Editor to tell his readers some details of how the war and the conditions it enforced upon the nursery trade affected the grower of Alpine and rock plants, and also something of the future outlook that buyers and sellers of Alpine plants will have to face in the next few years.

There can be no doubt that the six long years of war have affected the collections stocked by the commercial grower of Alpine plants very seriously indeed. In fact it may be said that for them the war started in 1938, when Mr. Chamberlain returned from Munich and left us all wondering if the continuation of peace had not been bought too dearly. Most people seemed to realise that the bad moment had only been postponed, and not staved off altogether; trenches had been dug in London's parks and squares, and gas masks were being issued; young men belonging to Territorial and voluntary military forces left our employment; buyers of Alpine plants pulled tight their purse strings, and to all intents the hardy plant trade began to experience the beginning of the war years.

When war was actually become a fact the War Agricultural Executive Committees began flooding us with forms to be filled up giving the extent of our holdings and the number of square feet we had under glass; presently we received instructions to turn all but ten per cent. of our glass structures over to food production, and we were ordered to clear 25 per cent. of our acreage for the growing of various

vegetable crops. I suppose most of us tried to achieve this clearing by making unheard-of cheap offers through the press to effect this, but there were no buyers forthcoming, and huge and sad were the pyres on which a quarter of our treasured plants were reduced to ashes.

Sad were our hearts, as sad as the political outlook, but we felt that we all had to do our best by trying to produce extra foodstuffs in case the war interfered seriously with our usual import of commodities which keep the bodies and souls of our people together.

It is by no means an easy task to convert a nursery devoted to the growing of Alpine and other hardy plants into a fertile kitchen-garden. In our own case the whole position was against this ; we had chosen our locality because it was on high ground and fully exposed to all points of the compass, indeed the main slopes were to the north and the east. Further, the soil was acid, sandy loam that would grow most Ericaceous plants to perfection, and manures were anathema to our cultures. Our glass houses, too, were all of the nature of Alpine houses, with the most ample ventilation that could be devised, and our extensive runs of frames were designed for the wintering of Alpine rock plants, free from undue overhead moisture, and not readily adaptable for the forcing of early vegetable crops. There never had been any arrangements made to heat any of our structures, and only the workshops and the office boasted of small stoves to allow work being carried on in some sort of comfort during the inclement seasons.

Consequently my readers will not be greatly surprised when I tell them that most of the crops we attempted to grow were late in coming to maturity,

that they were not of the highest quality, and that they mostly failed to find a paying market. Indeed, some of the crops could not be given away, and those that could not be converted into rabbit food were ploughed or dug under to help improve the ground for the following season. Expensive manuring that, after feeding the ground for the crops that failed, and a whole season's labour wasted on such crops. We had offered to clear ground at the beginning of the war for the growing of drug plants. It would have been suitable for that purpose, but our offer was not accepted and we were definitely directed to grow the kinds of crops that we attempted to produce. We employed our whole ingenuity to raise our tomato plants in our unheated houses by building frames inside the houses, which we heated with oil lamps and which were covered at nights with mats and papers, and thus contrived to bring along sturdy young plants. The difficulties increased as these grew and had to be potted on, they spaced out and took more and more room. We could not convert whole houses into structures covered with double glass to exclude night frosts, and the covering of some thousands of such plants with old newspapers every clear night, or every night that looked as if it might clear towards morning, was no joke. Especially as this fell more and more onto the shoulders of the principals, who alone lived near enough to the nursery to attend to such matters. The staff of the nursery, by this time, had dwindled down to one man and one boy with about a year's training, and as these had been pledged to be employed for three-quarters of their time on food production, the position for the Alpine plants that we had retained began to look pretty grim.

In the second year of the war there were more forms to be filled in ; another request arrived that a further quarter of the nursery be cleared for increased food production and once more the pyres were lit and many more thousands of good and valued plants went up to Heaven in billowing clouds of smoke. I do not think that our attempts to increase the food supplies of the country were much more successful. We did our best, but I know our losses at the end of the year were greater than ever, and we put our heads together and finally decided to add some 15 extra acres of rough grazing ground adjoining the nursery and to farm these with wheat, rye and potatoes instead of trying further to produce vegetable crops for which we could not find a market when they were grown. This scheme was approved of by the W.A.E.C., and we were not requested to clear a third quarter of our original holding. We were truly thankful, and nearly kicked ourselves that we had not hit on this idea before we had to light our second sacrificial fire. Still better, upon the farm crops the powers that were paid a subsidy which would certainly minimise our future losses ; but there was a further advantage in a guaranteed market for these crops and a fixed minimum price, and I do believe that these latter crops of our rising honestly paid for themselves, even if they did not give us any very visible profits. This was an easement, certainly, but it did not solve the difficulty of how to look after the remnants of our Alpine plant collection. There were now over 20 acres to look after, instead of the mere five that we cultivated previously, and our staff remained stationary at one man and one boy to help my son and me to keep things together.

It is true we took to mechanisation as far as possible, and sank capital we could ill spare in motor ploughs, etc.; perhaps we found a little extra time to keep a nucleus of our most highly treasured plants going, but the rock gardens, with their valuable stock plants and the great show border surrounding the old nursery, the heath garden and the quarters for dwarf conifers upon their own roots, could get no attention and were more and more deeply covered by weeds, brambles, gorse, broom and birches which are 6 feet and more in height as I write these notes.

That, roughly, is the tale of our own war time experiences, and I do not think that any of our competitors had a much better time. I have heard of many similar experiences on the rare occasions that a few of us foregathered at one of the shows that the Royal Horticultural Society managed to contrive during these grim and mad years.

Now I am not writing these notes of woe and difficulties to wring pity from you, but I would like you to have a fuller understanding of why some of your requests to us, and to our competitors, cannot be filled promptly as in the past, and in some cases requests for certain plants cannot be met for years to come. Some of the plants we prided ourselves upon in the past have not survived the unavoidable neglect of these long years of inattention ; a few odd specimens may linger in some private garden, or in some botanical institute perhaps, but I doubt it. The labour shortage was acute everywhere, and we shall have to wait until some of us can go out again to the mountains whence we originally collected these favourite plants, or until we can correspond freely once more with overseas friends who could send us seeds or living plants to re-acclimatise and increase.

It may be years before we can travel again over the mountains of the Continent of Europe, and I fear me many of the pleasant friends we made there during collecting days of the past will have gone under during the years of mad persecution ; and so we must all be patient until really better days come again.

In the meantime there have been great social changes at home ; the wages of the working gardeners have doubled ; pots, glass and almost every commodity has gone up ; printing of catalogues, etc., postages and railway rates have increased considerably ; and as a necessary corollary the prices the nurseryman has to charge for his plants have had to be increased. If these few notes of mine will help you to realise this, and cause you to regard such facts as necessary consequences of these ill years and not as sheer extortion on the part of your nurserymen friends, I shall rest content and post on my manuscript to your Editor, wishing you one and all GOOD GARDENING in 1946 and the coming years.

Some Dwarf Brooms.

By J. L. MOWAT.

THE dwarf Brooms have a claim to a place in the rock garden which is unsurpassed by any other shrub. They can justly be classed as rock plants because they are mostly native of the dry, sunny rock slopes and hillsides of Europe, particularly Southern Europe. Once established, they will come unharmed through all the adversities of climatic extremes and cultural neglect, and produce unfailingly their sheets of brightness every year.

While many other dwarf shrubs of the rock garden have to be guarded against frost or drought, and even then often require replacement, or else sprawl all over the place at such a rate as to demand repeated heavy cutting back, the Brooms go on undismayed from year to year with a minimum of attention and without losing their characteristic compactness of form. I have two plants, *Cytisus Ardoinii* and *Genista sagittalis*, which were planted in their present positions thirty-five years ago and they are still perfectly compact plants less than three feet across and a sheet of gold every spring.

In such a family it is invidious to make comparisons, but I must admit to a very warm regard for *Cytisus kewensis* draped gracefully, semi-recumbent, over a dark rock with its sheet of pale sulphur-yellow, or almost creamy-white, flowers. Like the rest of its family, it delights in a good light soil, not too rich, and a position on a sunny ledge where, with me, though it does not exceed a foot in height, it spreads between three and four feet across with its creamy flowers in May arranged along the whole length of the previous year's growth.

Cytisus Ardoinii, from the Maritime Alps, the seed plant of the preceding, is a much more dense and compact shrub, growing less than six inches high and three feet across, and covered without fail each May with a blaze of golden-yellow flowers along the length of all its branches.

Cytisus Beanii is another hybrid offspring of *C. Ardoinii*, rather less compact than its parent, growing up to one foot high and perhaps three feet across, with deep golden flowers on the previous year's growths. With me its habit has not been so tidy as that of some of the others.

C. decumbens (*of Gardens*), from South Europe, has a character all its own. The strong, rigidly prostrate branches sit flat on the ground, and the somewhat large yellow flowers are freely produced in late May. I must admit that though I am very fond of this Cytisus, I have not been so successful with it as with the others of its race.

C. emeriflorus is a magnificent mass of deep yellow some three to four feet across and about eighteen inches high every May. It forms a dense, compact shrub which, though stronger growing than some, never gets untidy or out of hand.

C. purpureus, from Central Europe, is a most attractive and distinct species, with freely produced purple flowers in May, and a pleasant habit of growth. Its normal height is about eighteen inches, while the shrub is more compact and less decumbent than the last-mentioned species.

C. schipkaensis, from S.E. Europe, though a less compact and more straggling plant than the others which I have mentioned, is well worth a place on account of its later and different habit of flowering.

The pale creamy flowers appear in dense clusters in June and July, by which time most of the others are over.

C. supinus is rather taller than any of the above, growing up to about three feet high ; it may perhaps be too large for many rock gardens, but where there is room it is well worth growing. This Cytisus forms an erect rounded bush, profusely covered in June and July with terminal clusters of bright yellow flowers, borne on the current year's growths. It is very well behaved, and will, if required, stand heavy pruning in spring before growth commences.

The Genistas, so far as the gardener is concerned, are indistinguishable from the Cytisus, and they are equally attractive.

Genista sagittalis, from S. Europe, has already been mentioned. I have one over thirty years old which is still tidy and healthy, and which is profusely covered with brilliant golden flowers every May and June. Though only about six inches high, it measures nearly three feet across and makes a most attractive plant with its curiously winged stems. This unusual feature makes it, even when not in flower, an interesting foliage plant for the rock garden.

G. pilosa is a very compact and prostrate plant spreading to three feet across but, with me, as yet not as many inches high. Its dense, closely adpressed carpet is hidden by a sheet of bright yellow in early June.

G. radiata, from South and Central Europe, grows to about two feet high. Its horsetail-like branchlets interlace to form a compact rounded bush, and the small terminal clusters of yellow flowers are produced in June. This is an interesting and distinctive plant at any time of the year.

Photo: D. Wilkie CYTISUS HIRSUTUS.

Photo: D. Wilkie GENISTA HISPANICA.

LEWISIA REDIVIVA var. WINIFRED HERDMAN.

G. triquetra, native of S.E. and Central Europe, has winged stems like *G. sagittalis*, but this time the stems are triangular. I do not have it in too good a position, it being partly overshadowed by other plants, with the result that it is inclined to be a bit lax and straggling in its growth as it climbs to the light, but I believe that on a ledge in full sun it would be as compact as its fellows. The flowers are rich bright yellow and produced in early June.

G. tinctoria, common throughout Europe, and its double form "flora pleno," are low growing, semi-prostrate plants spreading out three feet or more but seldom rising more than a foot in height. Both type and variety are exceedingly floriferous and attractive, the double form appearing deeper in colour and almost a rich gold.

G. hispanica, the well-known "Spanish Gorse," is a deservedly popular dwarf shrub, in most gardens forming a dense, compact mass of growth about eighteen inches high, completely covered in early June with a blaze of golden bloom. As is the case with most of the dwarf Brooms, it prefers full sun and a light, well-drained soil.

None of the plants mentioned above are at all difficult to manage so long as one remembers to avoid too rich a soil and to give them a good sunny position in a light, well-drained medium. They are all easily increased from cuttings taken in August and inserted in sand in the cold propagating frame. It is well to remember, however, that Brooms do not transplant too readily, consequently rooted cuttings are best grown on in pots until they are ready for planting out.

(*Figures facing pages 107 and 116*).

The House Leek—Sempervivum.

By Henry Archibald.

A LARGE clump of these, perched precariously on the crow-step of an old thatched house, forms one of the writer's earliest recollections. Over a foot in diameter, like a gigantic hedgehog, in green and purple, it prospered there for more than one generation, and doubtless would be there still but for the advance in housing reform.

No rock garden can be considered complete without a few examples of this interesting and picturesque little Alpine. As indicated above, these plants are very hardy. Wind, rain, sun and frost may do their worst, but the only effect is to add colour and attractiveness to the little rosettes.

A light soil suits them best. They are at home in the crevice of a drystone dyke or in any small cavity on the rock face. An ideal position is on a ledge or top of a large boulder. In such positions they should be planted firmly into a piece of rotted turf a couple of inches thick, and in a year or two will have it covered with a mantle of prickly rosettes. Stone troughs, antique mortars or querns are equally suitable sites.

Cultivation in pots is easy, but repotting every second year is desirable. Overcrowding, both in pots and garden, is avoided by removal of unnecessary offsets.

Of about thirty varieties, only a few can be mentioned here. The largest of all Sempervivums is *S. giganteum*, which may grow to the size of a saucer or even larger. With size, however, character and colour are lost, and it is best grown in light soil with good exposure to the sun.

Those with large rosettes include *S. tectorum* (common Houseleek), *S. calcareum* (pale glaucous green foliage), *S. triste* (purplish plum colour), *S. ornatum* (variegated foliage), *S. Malbyi* (very bright purplish red).

The smaller Houseleeks are equally attractive :—

S. arachnoideum, when fully grown, has delicate cobweb stretching criss-cross from leaf to leaf as if produced by a spider, therefore its name.

S. globiferum, appropriately known as "Hen and Chicken," is most prolific, and the little offsets appear in half dozens as if by magic around the parent plant. *S. cornutum* (with incurved green foliage).

S. Pomelli, as the name implies, is red like an apple.

The flowers of the Houseleek are star shaped with stiff stems, and are not, for the most part, attractive. The flowers of *S. arachnoideum*, which are dainty and rose pink, are the exceptions.

(*Figure facing page 106*).

Lewisia Rediviva var. Winifred Herdman.

By KENNETH CHARLES CORSAR.

THIS Lewisia is a variety of the well-known *rediviva* which is much superior to the type both in the purity of colour and the size of its flowers. It was discovered by Miss Winifred Herdman of Canada growing in the Okanagan Valley, British Colombia, and this lady has informed me that, so far as is known, it is confined to this locality. Exhibited for the first time in this country at the Chelsea Show of the R.H.S. in 1927, it received the Award of Merit, and in the *Journal* of that Society (Vol. LIII, 1928) it is thus described : " This is interesting as being one of the most xerophytic plants known. Its fleshy root system can withstand prolonged periods of drought. The leaves are linear and fleshy ; the soft pink flowers nearly three inches across, on short stalks."

The photograph here reproduced, by kind permission of the Editor of the A.G.S. *Bulletin*, shows plants of mine in full flower. These were grown in a light scree mixture and housed in a sunny Alpine house. Rapid drainage was afforded, and the surface of the soil was covered with an inch deep layer of stone chips to retard evaporation. Good drainage is essential with this, as with all Lewisias, as the fleshy roots are liable to rot away if more moisture than can be absorbed by them is present in the soil. From the close of the flowering period, which here is from about mid-May until the end of June, nothing of the plant is visible until the following spring, when growth is resumed. During this dormant period, water should be given very sparingly, though some water will be necessary. It is my opinion that it is a mistake to allow any of

the Lewisias to dry out completely, because even though they are highly drought-resistant, they do require some moisture, and many plants are lost annually through water being withheld altogether. As growth recommences, water in increasing quantities may be given.

Lewisia rediviva var. Winifred Herdman is a sun lover, and it is found that the flowers react very rapidly to light; if placed, even for a few minutes only, in the shade they will close almost completely.

So far, my experience in growing this Alpine has been confined to the Alpine house, so that I am unable to speak of its behaviour out of doors. It would appear, however, that if it is to be grown successfully in the rock garden a position for it would require to be chosen with some care. Perfect drainage must be assured, and, except in very dry districts, some sort of protection from rain in winter will be necessary. It must be planted in a sunny spot, for otherwise the flowers will never fully open, and special precautions to ward off attacks by slugs would have to be taken.

Notwithstanding any trouble which may be experienced in the successful management of *L.r. Winifred Herdman*, the beauty of this plant is worthy of it all. Unfortunately, it may be hard to come by in these days, but once stocks become available again it should be secured by all those who appreciate a really good Alpine house plant.

(*Figure facing page 117*).

Plants and Problems.

Glass-wool as a Substitute for Snow for Protection for Plants in winter.

HAVING heard of experiments which had been carried out at Cornell University in U.S.A. in the use of Glass-wool as a plant covering, I was interested accidentally to come on a stall where this substance was being displayed at the Glasgow Exhibition in 1938.

The firm which makes it kindly gave me a roll of Idaglass, as it is called, to enable me to carry out some trials in this connection.

Although my rock garden is far too small and the number of suitable plants far too limited to permit of really reliable data being furnished, the results seemed to me to be sufficiently interesting to make a note of them worth compiling.

It may be explained that Idaglass looks rather like a coarse and sparkling cottonwool. It is made in large sheets, and supplied in rolls rather like those in which cottonwool is obtained from a chemist, but very much larger. It is, I believe, used as an insulating material in commerce.

In spite of the abnormally wet season, the wool seemed practically impervious to rain, although, especially when pressed hard down, it became "claggy," rather like wet cottonwool. If the hand be pushed under a square of the substance spread on a border, the soil feels warmer than the surrounding ground on a very cold day and rather cooler on a hot day. In this possibly as much as its moisture-preventing quality lies its value.

My first problem was how to apply the wool. I first laid it over the plant to be protected and pegged wire netting over it. This, however, tended to force it tight down and, as stated above, did not work well. I next pegged sheets with small pegs at the corners. This proved satisfactory, but I finally came to the conclusion that unless the square of wool were too small (and this seems undesirable for other reasons) it would not blow away even in strong winds when not pegged down.

The wool was put on in October, and so far as space and plants permitted the attempt was made to cover similar plants with (*a*) wool, (*b*) a sheet of glass, and (*c*) no protection.

The season was abnormally wet, and there was a short period when the thermometer fell by night to 2 degs. Fah., accompanied by a bitter east wind. This period caused a very large amount of damage to shrubs and herbaceous plants, following, as it did, the long wet period.

The wool was tried on Androsaces, Soldanellas, Cyananthus, Lewisia, *Campanula Allionii*, *Ranunculus*, *Calandrinioides*, *Anacyclus depressus*, and a number of other plants, as well as over certain areas where some bulbs less hardy than others had been planted.

So far as my experience went, with the exception of *Cyananthus lobatus*, two plants of which definitely died under the wool, all other plants did as well, if not better, under wool than under glass, and certainly showed less signs of damage than those unprotected. The Soldanellas in particular came on definitely faster than others under a sheet of glass, and flowered better. Bulbs such as *Tulipa Batalinii* and *dasystemon* seemed to like it. Androsaces showed no apparent preference between wool and glass.

Far more prolonged trials on a greater scale than are possible here would be required to prove anything definite, but having in view the fact that the wool does not get blown off in a gale and is little trouble to apply, it would seem well worth while to give the substance a better trial. JAMES C. DUNDAS.

PAROCHETUS COMMUNIS.

Apart from the Gentians, there are not very many rock plants having really good blue flowers, but such a one is *Parochetus communis*, sometimes called the "Blue Flowered Shamrock." The half-inch flowers are like those of a pea, but with the true blue of *Gentiana verna*. Both leaves and flowers are borne several inches above the trailing stems, which root as they creep along. Given suitable conditions—it likes a sunny but moist situation—a plant of *P. communis* may easily clothe several square feet of ground with a mat of lush green clover-like leaves, through which its lovely blue flowers will appear from late summer onwards. Indeed we have a number still flowering gaily as I write this at the end of the year. But frost will curb its adventurous spirit, for it is not reliably hardy, although with us it has stood at least 20 degrees. In any case, it is a very simple matter to break off a few pieces in the autumn to winter under glass, and *Parochetus communis* is well worth this little trouble.
Wigtownshire. A. WALMSLEY.

LEWISIA BRACHYCALYX.

As most of our members are probably aware, the Lewisia is a rather difficult and fickle class of plant to cultivate; at least, that has been the writer's experience. They have, however, no equal for beauty

and profusion of bloom, the plant referred to being no exception, having blossomed from middle April until end of June.

Every flower seems to be fertile, and the consequence is a profusion of seed vessels in the centre of the rosette. It is better, however, to pluck these off and so lengthen the duration of the bloom. I have found no difficulty in raising this kind from seed, and have quite a number of young plants coming on. Having had such disastrous experiences with other Lewisias, I begin to wonder whether this one is more easily cultivated or whether it has been simply good fortune.

The compost is two-thirds sharp sand and grit, the remaining third half loam and half leaf-mould. The plant is watered freely during the time of growth, but from July onwards is kept fairly dry. By the end of July the leaves have mostly died down and by autumn have disappeared altogether. This plant began to show growth in January in the Alpine house, and grew so quickly and developed flower buds that I had to remove it to a cool greenhouse early in March in case the growths should be damaged by frost.

H. A.

The Shortias.

Both *Shortia galacifolia* and *Shortia uniflora grandiflora* form evergreen mats of rounded leathery leaves and flower in April. In the case of the former the flower stems rise a couple of inches above the foliage and each carries a solitary fringed white bell. Apart from the dainty beauty of its flowers, *S. galacifolia* is well worth growing for the lovely red autumn colouring of the leaves, which persist through the winter. It

appears to like shade, and does well in a lime-free vegetable soil with good drainage. *Shortia uniflora grandiflora* is suited by similar conditions, and if not quite so floriferous or having quite such good leaf colouring, the flowers are larger and of a lovely shell pink. Moreover they are usually out a week or two earlier than those of *S. galacifolia.*

A. W.

PHYLLOTHAMNUS ERECTUS.

Closely allied to the Phyllodoces, *Phyllothamnus* (*Bryanthus*) *erectus* is a dwarf ericaceous shrub well worth growing in a lime-free soil. In late April the ends of the shoots break into loose trusses of pitcher-shaped flowers of a clear rosy pink, in size between those of a Menziesia and an *Erica cinerea.* The fresh green of the young growth and compact habit of this heathlike plant give it an attractive appearance throughout the year. *Phyllothamnus erectus* seems quite hardy and, although it may eventually attain a height of some 18 inches, is slow growing and will flower when only a few inches high.

A. W.

John Blackie, Featherhall Printing Works, Corstorphine, Edinburgh 12