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# The CYCLAMEN Society's Journal

Editor: J. A. Mars

## CONTENTS VOL. XI No. 2



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## CONFERENCE — 1988

The Society's Conference 1988 will be held at Newman College, Bartley Green, near Halesowen, Birmingham on the 17/18 September.

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Note:
The opinions expressed by authors are not necessary those of The Society, its officers or the Editor.




THE

CYCLAMEN SOCIETY'S

VOL: XI No. 2 JOURNAL DECEMBER 1987


## THE SOCIETY'S OFFICERS 1987/8

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**HONORARY SECRETARY:**

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Mrs. H. Temple, [redacted]

**COMMITTEE CHAIRMAN:**

Mrs. E. Frank, [redacted] (retires 1988)

**COMMITTEE MEMBERS:**

I. A. Aird, [redacted] (retires 1989)
V. A. Aspland, [redacted] (retires 1989)
Mrs. R. Carr, [redacted] (retires 1988)
K. F. R. Pearson, [redacted] (retires 1988)
Miss E. Sadler, [redacted] (retires 1989)
I. White, [redacted] (retires 1990)
D. J. Wood, [redacted] (retires 1990)

**HONORARY SCIENTIFIC ADVISER:**

R. D. Meikle, [redacted]

## THE EDITOR'S PAGE

It may have been noticed that we have moved to a village only three miles from Haslemere. My only regret at leaving our last house is that I have had to leave behind a great many cyclamen. Many were in the garden when we moved there ten years ago but with fresh plantings and self seedings I have no idea how many there were.

I did however take up a nucleus for a new collection in our new garden which is much smaller in comparison. One I did take up is a *C. hederifolium* 'Apollo'. This had flowered every year but had never set seed despite every attempt to persuade it to do so. I potted it into a ten inch pot with mostly its own soil mixed with some fresh compost. This year it started to flower early in August and at its best had over 100 flowers, typical pink. It was much admired. As I write this in mid October there are still a few flowers among the mass of leaves. However, the sad thing is that it has again not set seed and there is not a single seed capsule. The pedicels just lean over and wilt away. I am at a loss to know what to do. I am told that this form is not good at setting seed but there must be seed. Perhaps some member can tell me how to persuade mine to set seed.

It is with great pleasure that I welcome the article by Mr. Edgar L. Kline of Oregon, U.S.A., whose name must be known to many members. The subject matter of our Journal is of international interest and importance and articles by overseas members will be very welcome and give the Journal a greater international flavour. I feel sure that they have much to offer us.

I am grateful for the articles which many members have sent me. I regret I am unable to publish most of them in this Journal because, as members will no doubt appreciate, space must go to the expedition reports. However those articles which I can't publish now will have first consideration for the June 1988 Journal. Despite this, please continue to send me articles. The ideal is to have enough material for two Journals ahead and I haven't reached that stage yet.



## MINUTES OF THE A.G.M. OF THE CYCLAMEN SOCIETY

### October 1987 at NOTTINGHAM UNIVERSITY

| | | |
|---|---|---|
| Present: | Mr. F. W. Buglass | President |
| | Mr. P. J. M. Moore | Secretary |
| | Mr. G. Simpson | Treasurer |
| | Mr. J. A. Mars | Editor |
| | Mr. R. H. Bailey | Publications Secretary |
| | Mrs. H. Temple | Seed Distribution Manager |

4 members of committee and 26 other members.

1. The Minutes of the last meeting were approved as a correct record.
2. Matters arising: there were none.
3. President's Address.

It has always been the President's first task to thank the organiser of the conference. This year it was someone I have known for over 80 years. I hope he has done his duty. In this connection I would like to thank Christine Walkden for corresponding with a wide range of universities and, while we have not yet fixed for 1988 we hope to be able to give you the location in the December Journal. However 1989 has been fixed for Bath.

It has been an interesting and exciting year, with colour in the December Journals and our first scientific expedition to Turkey.

Mr. R. D. Meikle had expected to be with us but Cyprus decided to honour him for his "Flora of Cyprus". We congratulate him and wish him all the pleasure of such an honour. He gave us some very interesting notes and questions for our conference.

Our thanks to Jeremy Wood for his leadership of our first expedition comprising Richard Bailey, Trevor Wiltshire and Jill White. You have seen the slides, listened to their comments and seen the display of paintings and photographs all of which constitute an excellent basis for the account of the exploration and ultimately for a monograph. This will, I think, be easier to handle if done species by species. Herbarium specimens have been shared with the University of Istanbul and we are indebted to Dr. Neriman Ozhatay of that University and to Dr. Tuna Ekim of the University of Ankara. Dr. Neriman Ozhatay will, it is hoped, be with us on our expedition in 1988. We have already received the Turkish licence for this.

We have had a good year with shows and I am delighted to tell you that Melvyn Jope has offered to be show secretary. Thanks to those who have lent us plants and have given time to man the stands.

Our Journal is really the Society and we could not be better served than by our editor, James Mars. It was said by certain elements that we could not keep up the standard but cyclamen will offer problems to write about for many years.

Thanks must go to Graham Simpson for his management of our finances. He would welcome a volunteer to assist him with a view to taking over.

Our thanks must also go to Richard Bailey, David Bent, Ron Dunning and Hilary Temple for their work in connection with publications, membership, publicity and seed distribution. Also to Erna Frank, the committee chairman and to all members of committee. Our founder, Gay Nightingale, regrets she could not attend due to other urgent business and we are grateful for her continued support.

We have ahead of us the compilation of and responsibility for the National Collection.

My thanks go to Peter Moore, our secretary, for all he has done to keep us on the straight and narrow and for getting our Turkish Licence organised.

To increase our knowledge of Turkish cyclamen, it would help if those members who have been to Turkey would let us have a look at their notes and a sight of their slides with permission to make duplicates if necessary.

To you, my captive audience, may I say thank you for coming for without you there would be no conference.

Finally, my thanks to the University Conference Office and particularly to Mrs. Macfarlane, the bursar of Cavendish Hall, and to all the staff for making us so welcome and comfortable.

4. Secretary's Report.

Membership remains at just over 800.

The librarian, Ken Pearson, has requested that if members have slides to spare he would be grateful to receive them. The present supply is often not able to meet the demand.

Members willing to serve on the committee will be very welcome.

5. Treasurer's Report.

Yet another modestly successful year as is evident by the accounts. Membership is slightly up on the previous year. The statement in respect of the scientific fund shows the cost of the expedition to Turkey and also the fact that the Society received generous grants from both the Royal Horticultural Society and the Alpine Garden Society.

6. Election of Officers and Committee.

President — Mr. F. W. Buglass was re-elected President

Officers: No nominations having been received, the present officers of Society offer themselves for re-election.

Nomination for Show Secretary.

Mr. M. E. L. Jope — proposed by Mr. F. W. Buglass
seconded by Mrs. E. Frank

Committee Members : The following members were nominated:

Mr. I. White — proposed by Mr. P. J. M. Moore
seconded by Mr. G. Simpson

Mr. D. J. Wood — proposed by Mr. I. A. Aird
seconded by Mr. P. J. M. Moore.

The officers, Show Secretary and new committee members were elected unopposed.

7. Mr. A. Childs, F.C.A., was re-appointed as auditor.

8. Any other business.

Mrs. H. Temple thanked the President for the organisation of a most enjoyable conference.

Mrs K. Dryden asked that consideration be given to a competitive show at the R.H.S. Halls at Vincent Square.

There being no other business the meeting was declared closed.



## SUBSCRIPTIONS — 1988

Subscriptions are due on the 1st January 1988. Members are asked to pay promptly using the renewal form enclosed. This will assist administration and also ensure continuity in the despatch of Journals in 1988.

All correspondence regarding membership and subscriptions should be addressed to the membership secretary, Dr. D. V. Bent, address as on the form.

## PROGRAMME OF SHOWS 1988

23rd-24th February
Flower Show — display of winter/spring flowering cyclamen.
20th-21st-22nd September
Great Autumn Show — display of autumn cyclamen.
1st-2nd November
Flower Show — display of autumn/winter cyclamen.

All Shows are at the R.H.S. Halls, Vincent Square, London. Members are asked to lend plants for these shows and to help in manning the stands. Please contact the Show Secretary.

## A.G.S. SHOWS OPEN TO CYCLAMEN SOCIETY MEMBERS IN 1988

| | |
|---|---|
| Early spring | 12th March |
| Morecambe | 19th March |
| Cleveland | 2nd April |
| Nottingham | 9th April |
| London — main spring | 12/13th April |
| Bristol | 16th April |
| Belfast | 16th April |
| Newcastle | 16th April |
| East Cheshire | 23rd April |
| Harrogate | 28/29/30th April |
| East Anglia | 14th May |
| Southport | 14th May |
| Midland | 21st May |
| Wirral | 24th September |
| Horsham — autumn | 15th October |

Entrance free. Schedules are in the A.G.S. Year Book and can be obtained from the A.G.S. local group secretaries.

## SEED DISTRIBUTION

### Hilary Temple

As always, my thanks, and those of the Society, are due to the many people who help with the seed distribution; to packers, to Elsie Sadler for help with the correspondence and above all to those who give seeds.

Seeds of the following are still available, subject to being unsold:

Code Letters: A, B, C, D, E, F, G, I, K, L, M, N, O, P, Q, R, T, U, Y, and some

wild collected C, D, and T. (For details of the species to which the letters refer, please see pages 3 and 4 of Vol. XI No. 1 June 1987).

There are also some packets of selected forms of a few coded species. These will be available on a first come first served basis to those who are willing to accept 'pot luck' (maximum 2 packets, per Member — Order Code Pot Luck). All seeds are 50p per packet.

U.K. Members ordering any of the above are asked to pay by limited amount cheque only, because of the small quantities available; while Overseas Members who cannot use this method are asked to give plenty of choice.

Please enclose a self addressed envelope (stamped or with 2 coupons) with your application, which should be sent to:

Mrs. Hilary Temple
The Cyclamen Society
[redacted]

## A MISCELLANY

Hugh Toye reports an oddity — a *C. coum* with dark red flower which does not coil its pedicels and seed capsules — they just bend to the ground like the wild *persicum*. He was rather disillusioned with his *graecum* which hadn't flowered in the 4-5 years he had had it. However persevering, he watered it all last summer. It wasn't until well into the spring 1987 that it lost its autumn 1985 leaves. It then flowered in May/June this year, has a lovely batch of leaves and now a few seed capsules well tidied away.

* * * * * *

Peggy Dawe has a *C. coum*, numbered MT4375 from Trabzon, Turkey, which flowered in July with crimson flowers. It had previously flowered at its proper time last winter outside in a pot. The leaf form was not unlike No. 3 in the colour plate in the December 1986 Journal.

* * * * * *

How hardy is *C. creticum*?

During the unprecedented bad weather at the end of April this year, Mr. Fremantle was staying on the plain of Omolos in the White Mountains in Crete. The snow settled as low as 400 m. below the plain. In the hill, at the north end of the plain, some 250 m. higher, are many *C. creticum* which were still flowering well despite the cold weather.

(Note: just how hardy are such plants in their native habitats? How deep are the tubers? Does the ground freeze sufficiently to affect them? In all probability it doesn't particularly when insulated by snow. The lesson is — don't tempt providence in this country with the more tender species. ED)

* * * * * *

Cyclamen Surprises
P.R. Cornish

In 1976 seed from a plant of *C. pseudibericum* was duly sown, the flowers of this particular plant were dark purple, typical of the species. The seedlings



grew very slowly and I began to wonder in 1983 if they were going to flower. They were still only about 1½ cm. Imagine my surprise when at last a few flowered, mostly white and a few pink. Of the whites the corolla is purple on the nose and very pretty.

This has given me great enthusiasm and I hope the seed from the whites will produce more.

Another interesting plant I have is *C. hederifolium* silver leaf form both pink and white. The silver leaf varies with white markings on the edges giving a lovely effect. Seed from this form will be distributed. Another *C. hederifolium* I have has leaves suffused with beetroot red.

I have *C. cilicium* white-flowered except for a pink nose which came from J. Archibald and was I believe collected.

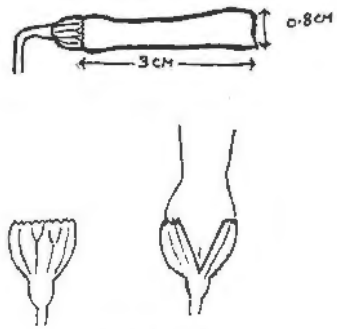
My *C. coum* Pewter Group has bicoloured flowers and is very prolific with many leaf variations.

* * * * * *

## *"... STRANGER THAN FICTION"*

C. A. Hollidge

I discovered recently, in a garden in Surrey, a plant of *Cyclamen hederifolium album* which was, to say the least, unusual. The foliage was perfectly normal, but every one of the flowers were as below: The calyx, instead of the usual five lobes, was a complete cup, the upper edge being very slightly serrated. The corolla was a complete white tube some 3 cm. in length and 0.8 cm. in diameter, there being no hint of separation along its length. The veins on the calyx were quite different from the norm for this species. As the flower aged a split occurred in the calyx at one point caused apparently by a slight swelling at the base of the tube. No other change occurred throughout the life of the flower. The stamens were much reduced and it seems difficult to imagine any fertilisation taking place. As the plant performs in this manner each year an attempt will be made by artificial means to pollinate, purely as a matter of interest, there being no desire to perpetuate such an abnormality.

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## COLLECTORS' NUMBERS — PART FIVE

### Gay Nightingale

| *Collectors'* | *species* | | *location, country of origin and comments* |
|---|---|---|---|
| P. H. Davies | | | |
| D.1982 | *C. cyprium* | 25.10.40 | Cyprus. 3500 ft. in shade under shrubs. |
| D.2016 | *C. cyprium* | 5.11.40 | Small plant with flower and floral trunk. |
| E. W. Kennedy | | | |
| EWK 684 | *C. cyprium* | 13.10.37 | Cyprus. Alt. 3200 ft. under *Quercus* on steep rocky mountainside above blue stream. Plentiful. |
| Lady Loch | | | |
| No. 4 | *C. cyprium* | 18.10.37 | Alt. 5700 ft. in dark shade. White sweet-smelling. Leaves later. |
| The above numbers were checked and signed by R. D. Meikle in 1978. | | | |
| Atherton | | | |
| No. 730 | *C. cyprium* | 20.10.55 | Cyprus. Alt. 2300 ft. at foot of rocks. In fl. without leaves. |
| P. H. Oswald | | | |
| No. 158 | *C. cyprium* | 18.10.59 | Cliff — inaccessible in rock crevices — leaves not apparent. |
| No. 177 | *C. cyprium* | 29.11.59 | Cyprus. Paphos Forest — rich soil. Specimen shows capsule, flower and leaf. |
| Albury, Cheese and Watson | | | |
| ACW 1678 | *C. parviflorum* | 22.6.66 | Gumashane, N. Turkey. Alt. 2300 ft. Zigana Pass. (Note the low alt.) |
| Furse & Synge | | | |
| PF/PS 175 | *C. parviflorum* | 17.5.60 | Pontus, Trabzon. Pontic Alps. Alt. 7000 ft. |
| Readers are directed to see also Furse and Synge 814, 185 and 820. | | | |
| J. C. Archibald | | | |
| JCA 300 | *C. rohlfsianum* | 21.2.66 | Libya, foothills Cyrenaican plateau E. of Tocra (N.E. of Benghazi). Gravelly clay full of limestone fragments. |



Much time was spent, during my days at Kew this autumn, rechecking numbers, in an effort to find *coum* CMW 3824 and *pseudibericum* CMW 3532 (see Vol. XI No. 1, p. 10). No luck yet regarding these two numbers, but there are more numbers to come, so I hope to have them for you in the next article.

### Kew Gardens after the great storm

*26th October*. At the now famous Mortlake Terrace, a familiar face appeared out of the morning mist. Professor W. T. Stearn put a foot down to the pavement as he turned into the road that runs beside the Green in front of St. Anne's near the Herbarium. He cycled on — a guiding figure dressed in grey greatcoat with a green satchel over one shoulder, his white hair easy to follow.

A 200-year-old zelkova lay on its side in the small garden between the Herbarium building and the gate — its giant multi-trunk structure nearly filling the space.

*28th October*. I had to return again to Kew to research some 'numbers' and as this was a sunny day, and the first day that part of the Gardens were re-opened to the public, I took a long route. In the Alpine House I found *Cyclamen cyprium* in flower.

Geese flew down and posed on half-sawn logs as I made my way towards the new Princess of Wales Conservatory. This impressive masterpiece of engineering was undamaged. Inside I stopped beside the *Victoria amazonica* giant waterlily which was in flower.

And in Zone 3 Dry Tropics, I was delighted to come upon *Cyclamen africanum* flourishing against rocks.

## THE SOCIETY'S CONFERENCE AT NOTTINGHAM UNIVERSITY

### 3rd/4th October 1987

This was a very popular venue for the annual conference with good attendance including a number of day visitors on both days. The whole arrangement, planned by Fred Buglass, was very compact under one roof, the accommodation, the show room, the lecture hall, the dining hall and the bar being close together.

There was a very fine display of cyclamen of many species in both the competitive and non-competitive shows, indicating care and expertise in the preparation of the plants for the show.

As always the social side of such a conference is invaluable. Discussion at all times was animated and many views were exchanged. Many new faces were present and the name badges which everyone wore helped introductions. Our thanks again go to the President for his cocktail party and the dinner and wines organised by him were of a high standard, enjoyed by everyone present.

All who experienced this conference with its relaxed atmosphere, will look forward to next year's.

### Competitive Show Awards

The Buglass Salver — for the best plant in the Show was awarded to M. E. L. Jope for a very fine *Cyclamen rohlfsianum*.

Congratulations go to Melvyn Jope

| | | |
|---|---|---|
| Class 1 | First: V. A. Aspland | *C. purpurascens* |
| | Second: I. White | *C. graecum* |
| | Third: T. B. Cresswell | *C. rohlfsianum* |
| Class 2 | First: R. Metcalf | *C. hederifolium* |
| | Second: R. Metcalf | *C. africanum* |
| | Third: M. E. L. Jope | *C. graecum* |
| Class 3 | First: T. Wiltshire | *C. mirabile* |
| | Second: B. Walker | *C. mirabile* |
| | Third: T. Wiltshire | *C. intaminatum* |
| | Highly commended: R. Metcalf | *C. graecum* |
| Class 4 | First: I. White | *C. cilicium* |
| | Second: M. E. L. Jope | *C. mirabile* |
| | Third: I. White | *C. mirabile* |
| | Highly commended: R. Metcalf | *C. hederifolium* |
| Class 5 | Third: T. B. Cresswell | *C. persicum* (florists) |
| Class 6 | First: M. E. L. Jope | *C. rohlfsianum* (best plant) |
| Class 7 | Second: R. Metcalf | *C. persicum* (florists) |

Prizes were generously donated by Phostrogen.

## THE DISCUSSION SESSIONS

## THE SOCIETY'S EXPEDITION TO TURKEY, 1987

The following account is based on a talk given by Jeremy Wood at the Nottingham conference. The talk was illustrated with colour slides, and on display in an adjacent room were a map showing the itinerary, a selection of the herbarium sheets, albums of colour prints taken by Trevor Wiltshire and his framed water-colour paintings.

*Introduction and Itinerary*

The expedition took place from the 20th March to the 9th April, the members being Jeremy Wood (leader), Richard Bailey (botanist), Jill White and Trevor Wiltshire. The itinerary is shown on the accompanying map, on which the sites where a survey of *Cyclamen coum* was carried out are numbered chronologically. Briefly, the members drove in a hired car from Istanbul via Ankara to Samsun on the Black Sea coast, then eastwards along the coast to Hopa, the last town before the Russian border. Cyclamen were found at intervals along this route, as indicated on the map, and along several of the roads leading southwards from the coast up into the Pontic Alps. The highest point reached was just below the Sumela monastery, south of Trabzon, at an altitude approaching 5,000 ft. After two nights at Hopa the return journey followed much the same route, with diversions to take in Kastamonu and Sile.

Thanks are due to Dr. Neriman Ozhatay of the University of Istanbul for a great deal of assistance, both prior to and during the trip, and to Dr. Tuna Ekim of the University of Ankara for his efforts to clarify the question of permission



with the authorities. Without the help of these two kind people the expedition would have been in serious difficulties.

*Objectives*

The general aim of the expedition was to carry out a study of *C. coum* in northern Turkey, gathering information and material in an attempt to answer some of the many questions surrounding this very variable species.

In somewhat more detail, the objectives can be divided into two categories: taxonomic and horticultural. On the taxonomic side, "Flora of Turkey" separates the species into two varieties: var. *coum*, to the west, is characterised by orbicular leaves, small flowers and broad, rounded petals; var. *caucasicum*, to the east, is characterised by ovate leaves, larger flowers and narrow, pointed petals. There is said to be a gradual transition from the one to the other as one proceeds from west to east. By carrying out the study over the whole length of northern Turkey it was hoped to shed further light on the distinction between the two varieties, and also to see whether other important characters, such as leaf hastate pattern and flower colour, are affected by geographical, environmental or genetic factors. Studies in the field were to be supplemented by bringing back herbarium specimens and a certain amount of live material. On the horticultural side, it was planned that a good proportion of the collected plants would be chosen for their merit as potential garden plants which, at some time in the future, would be a source of seed for distribution to members of the Society and other interested bodies.

*Methods*

At the various sites where cyclamen were found certain environmental details were recorded. These included geographical position, altitude, aspect, slope, degree of shade, accompanying plant species and soil type. In certain cases soil samples were taken for subsequent analysis. At most of the sites a sample of the cyclamen was selected and the following details of each plant were entered on a specially designed proforma: length and maximum width of a typical leaf; shape of the leaf on a 5-point scale, going from orbicular to ovate with a pointed tip, by reference to standards; hastate pattern of the leaf on a 6-point scale by reference to standards; length and width of a mature flower; shape of the petals on a 5-point scale; flower colour by comparison with the R.H.S. colour chart; and the presence of any unusual features such as scented flowers, fimbriated petals, self-coloured nose, exserted style, scalloped leaf edge. It will be noted that some of these characters relate to the distinction between var. *coum* and var. *caucasicum*, while others are important horticultural attributes. Specimens of detached leaves and flowers from the plants sampled were usually pressed. At sites where the cyclamen had finished flowering particulars of leaves only were entered on the proforma. Live plants were collected at some of the sites, to be cultivated in England under standard conditions.

Improvements in the above methodology could with advantage be introduced on subsequent expeditions. Recording of the hastate pattern needs to take into account its intensity as well as its distribution on the leaf, and the length and width of individual petals should replace the length and span of whole flowers.

*Habitat and Variability*

A wide range of cyclamen habitats was noted. Woodland sites were

common, ranging from *Fagus orientalis* in the Belgrad Forest near Istanbul to coniferous woodland (*Abies, Pinus*) at higher altitudes. Along the eastern Black Sea coast many sites were in cultivated hazel groves. In places cyclamen could be found under very sparse scrub, and in these conditions they were clustered round the base of each tree or bush for whatever shade was available. At one place on the Anatolian plateau, where a few 6 ft. high deciduous oaks were dotted about on an otherwise open hillside, cyclamen were growing round the base of the oaks and in deep fissures between the rocks.

One of the surprises of the trip was the extent of variation within a single population of cyclamen. Plain and marbled leaves, orbicular and ovate leaves were often to be seen on adjacent plants, with similar variation in flower size and petal shape. This variation had two consequences: first, it was impossible to pick out a single plant as typical of a population; secondly, it tended to obscure differences between populations, and made it difficult to observe the expected trends from west to east.

*Scientific Results*

(1) Distinction between var. *coum* and var. *caucasicum*

The survey extended over 33 sites at which 331 plants with both leaves and flowers were recorded on the proforma.

The proposition concerning a gradual transition from var. *coum* in the west to var. *caucasicum* in the east was tested in two steps. The first step was to look individually at the three characters — flower size, leaf shape and petal shape — that distinguish one variety from the other. The second step was to see how these three characters are combined together. Graphs of the three characters, individually, against longitude showed little or no sign of any positive relationship. However the use of a computer, and the addition of altitude to the data being examined, clarified the situation considerably. The computer results may be summarised as follows:

| | |
|---|---|
| Flower length | Increases eastwards |
| | Decreases with altitude |
| Leaf shape | Becomes more ovate eastwards |
| | Becomes more rounded with altitude |
| Petal shape | Becomes more pointed eastwards |
| | Altitude has no effect |

The relationships with longitude are in the expected direction, and support the idea of a transition from west to east. The relationships with altitude are interesting, particularly as it is believed that they have not been reported before.

With regard to the manner in which the three characters are combined, there does seem to be some positive tendency for small flowers, orbicular leaves and rounded petals to go together, producing plants that answer to the description of var. *coum*. They occur principally in the western half of Turkey and may be found at any altitude, but the numbers are small. However the tendency for large flowers, ovate leaves and pointed petals to go together, to produce plants that fit the description of var. *caucasicum*, is little more than would be expected on the basis of random combination. Such plants are concentrated in the eastern half of the country, although not necessarily in the extreme east, and principally at low altitude. The majority of plants in the sample occupy positions intermediate between var. *coum* and var. *caucasicum*, and in fact the characters combine together in all possible combinations.



(2) Other Findings

The survey produced a large amount of data, none of which has yet been examined in the same amount of detail as that reported above. Based on inspection of the data, a few very tentative statements can be made. Leaves with a large area of marbling seem to be commonest in the eastern half of Turkey below 2,000 ft. Scalloped leaves are also commoner in the east, though pronounced examples of this character were never found. Flowers with a slightly exserted style, and those with a bicoloured effect, both seem to be commoner at high altitude. A self-coloured nose is rare, and is definitely not related to longitude. Scent is sometimes present, and appears to be concentrated in particular populations, though with no obvious pattern. Qualitatively it resembles the well-known scent of *C. trochopteranthum*, and is totally distinct from that of *C. parviflorum*.

At Site 12 a large population was found in a gently sloping hazel grove, at the bottom end of which was a steep bank. Plants growing on this bank had much larger leaves, and slightly larger flowers, than those growing immediately above the bank. There was no difference in leaf shape between the two, but plants on the bank had a more pronounced hastate pattern. Because of the proximity of the plants concerned, it seems likely that the difference between the two is an environmental rather than a genetic effect. A possible explanation is that plants on the bank receive an extra supply of nutrients in the form of run-off from the bank above. There were no other examples where it was possible to compare plants on a slope with plants immediately above it, so the results at this one site have to stand on their own. However at two sites further east cyclamen were found on a steep bank below the edge of a tea plantation, and at both sites the leaves were particularly large, one leaf measuring 140 mm. across.

*General Observations*

*Cyclamen coum* was found in flower throughout most of the trip at altitudes ranging from sea level to approximately 4,500 ft. Flowering plants were usually interspersed with others that had finished flowering and set seed. No ripe seed capsules were found, though a number of capsules complete with pedicels were collected and brought back. Seed from these that appeared to have ripened was later sown, but so far none has germinated. It was possible in some instances to find the previous season's ungerminated seed by searching in the leaf mould around the base of a plant. A quantity of seed was collected in this way, and some of it has begun to germinate. At the very end of the trip western populations at low altitude had finished flowering, including the important population in the Belgrad Forest near Istanbul. It is very much hoped that this site can be visited next year when in flower.

Aberrations noted during the trip included several plants with more than the normal complement of petals and one plant with a fasciated flower stem.

At two separate places in eastern Turkey *Cyclamen parviflorum* was found. An article concerning this, written by Richard Bailey, will be found elsewhere in this issue of the Journal.

During the trip 57 plants were collected. Some of these were chosen for scientific reasons, but the majority were selected on the basis of horticultural merit. Included in this latter category were some particularly fine leaf forms. The plants are all being grown by Peter Moore at his nursery, and it will be

interesting to see whether the characters noted in the field will be maintained when the plants are all grown under standard conditions. It is understood that many of the collected plants are already in leaf, and that some marked differences between them are apparent.

At the end of the trip, when the expedition returned to Istanbul, the collection of pressed specimens was divided into two portions. One portion was deposited with Dr. Ozhatay at the University of Istanbul; the other was brought back to England where it will be housed at Kew.

*Conclusions*

Turning once more to the objectives, it has been shown that geographical and environmental factors affect quite a number of different plant characters in *C. coum*. Some of the indications are tentative, and require to be confirmed by future studies. The importance of genetic factors will only be fully seen when progeny from the collected plants, perhaps over more than one generation, has been grown to maturity. On the horticultural side, a wide range of material from the expedition is now under cultivation, and should eventually be a source of seed for members of the Society and other interested bodies.

In the discussion following the talk the following points were made.

It is not clear to what extent, during the survey of cyclamen at the various sites, truly random sampling was achieved. In future expeditions, if the results are to be examined statistically, the sample size per site should be increased and a recognised system of random sampling should be introduced.

There is a need to collect forms of *C. coum* with plain rather than marbled leaves, particularly coupled with small, squat, dark mauve flowers, as these are becoming scarce in cultivation. (Two plants with plain leaves were in fact collected by the expedition).

If possible, chromosome counts should be done on extreme forms of *C. coum*. Differences at the chromosome level would be much more relevant to the question of nomenclature than differences in gross plant characters.

In answer to a question about flower colour, it was stated that no white flowers were seen by the expedition, the palest forms having just a trace of pink. Mr. Bilgin, a bulb exporter on whom the expedition called, reported that white-flowered plants occur sporadically but are not associated with any particular part of Turkey. The commonest colour found during the trip was a medium pink (77C on the R.H.S. colour chart).

*Expedition Accounts*

| *Income* | £ | *Expenditure* | £ |
|---|---|---|---|
| Cyclamen Society | 1747.30 | Flights | 640.00 |
| Royal Horticultural Society | 250.00 | Insurance | 64.80 |
| Alpine Garden Society | 100.00 | Sundries (U.K.) | 52.50 |
| Expedition Members | 60.00 | Living Expenses | 817.00 |
| | | Car Hire | 449.00 |
| | | Petrol | 80.00 |
| | | Films & Prints | 54.00 |
| | 2157.30 | | 2157.30 |



Description of colour plates 8-10

8. Of the group known in gardens as *C. coum roseum*, this particular seed-raised plant is notable for the rim of colour on the corolla lobes, and for the very thin almost colourless leaf margin.

9. *C. coum* of the relatively homogenous group in commerce under the name Maçka. The foxy shading of the silvered leaf areas tends to emerge as winter progresses.

10. These large markedly cordate and well marked leaves are one of the features which have been held to distinguish plants from the eastern part of *C. coum*'s range as subspecies *caucasicum*. The pronounced scalloping has also been held to be commoner in the east. The Society's expedition throws further light on both these points.

Colour illustrations are from paintings by Mary Grierson.


## SOME NOTES ON *CYCLAMEN PARVIFLORUM* Pobed.

R. H. Bailey

### Introduction

*Cyclamen parviflorum* Pobed. is probably the least known species of its genus. Descriptions and illustrations e.g. Gorer & Mathew (1972), Saunders (1973), Meikle (1978), Mathew (1981) and Nightingale (1982) suggest a plant of but slight horticultural merit and provide little information for those attempting to grow the plant to best advantage.

Probably endemic to the mountains of north eastern Turkey the species was first collected, near Artvin, in 1914 and subsequently described by Pobedimova (1946). Since its first discovery other localities have been noted and Meikle (1978) records its occurrence at the Zigana Pass (the best known location), Karakapan and Ikizdere — all sites in the Pontic Alps south and east of Trabzon — at altitudes of no less than 1,200 metres. Other localities have, however, been known for some years. The Society's expedition to Turkey in 1987 investigated one of these sites, Meryemana below the Sumela Monastery, and also the Ikizdere area from which the species was reported by Meikle. Other sites where it might have been found, or from which it had previously been recorded, could not be studied owing to the depth of snow still lying.

Plants studied at Meryemana appeared to be more variable than is apparent from the literature and to be flourishing under conditions differing from those usually described. Above Ikizdere both plants and habitat conformed more closely to previous accounts.

The following descriptions of the plants and habitats examined are intended to amplify existing knowledge and to provide information for those attempting to cultivate the species to best effect.

### The plants

**i. Flowers.** *C. parviflorum* is usually described as having small, pale purple or lavender pink blooms with a purple basal blotch lacking any pale edge or eye. Illustrations in Gorer & Mathew (1972, reprinted in Saunders, 1973) and Nightingale (1982) show a flower with the reflexed petals characteristic of other cyclamen species.

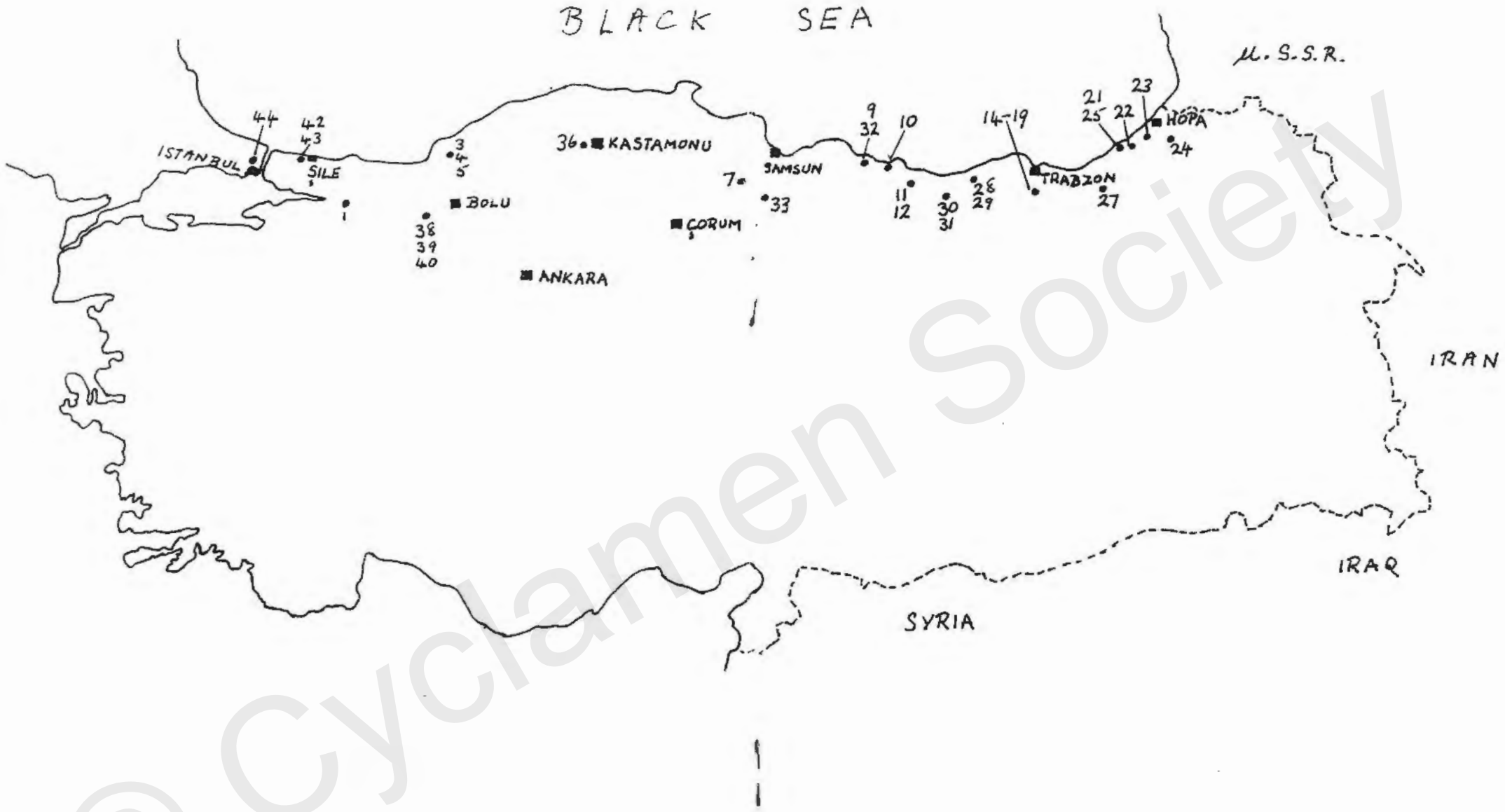
The range of colours recorded for the main part of the petal is shown in Table 1 where colours are noted according to the Royal Horticultural Society Horticultural Colour Chart, 1966. All these colours were assessed in the field. The basal blotches were more uniform in colour usually 77A (purple) or 80A (paler purple) although one plant had a blotch of 79A — so dark a purple as to be almost black.

Flower sizes often exceeded those previously reported. Saunders (1973) and Meikle (1978) suggest a maximum petal length of 10 mm. The largest flower recorded had, in the field during March 1987, a width of 25 mm. and height of 17 mm. Inasmuch as these dimensions could be remeasured on the same flower as a herbarium specimen in October 1987 they had shrunk to 22 mm. and 12 mm. respectively. These dimensions are not easily related to petal length, however, the petal length of this flower in October was 14 mm.

The most noticeable feature of the majority of plants examined at Meryemana was not size or colour but that they bore no flowers with



continued on page 47




Map of Turkey showing the areas visited by the 1987 expedition. Numbers refer to sites where a survey of *Cyclamen coum* was carried out.

**Table 1.** Flower colour (main petal colour) in *Cyclamen parviflorum*

| Flower colour — No. according to R. H. S. Colour Chart, 1966 | 75B | 75C | 76B | 76C | 76D | 77B | 77C | 77D | 78B | 78C |
|---|---|---|---|---|---|---|---|---|---|---|
| Description of colour | pale pink | very pale pink | pale violet | pale violet | very pale violet | mauve/ pinkish violet | mauve | pale pink/ lavender | pale lavender | very pale lavender |
| No. of flowers recorded of this colour. | 1 | 1 | 1 | 1 | 1 | 1 | 15 | 2 | 4 | 1 |

All flowers were from Meryemana except two of colour 77C and one of colour 76C from Ikizdere.

Description of colour plates 11-14

11. Raised from Moscow Botanic Garden seed, this is an example of the Caucasian form distinguished by Russian botanists as *C. abchasicum*, but retained by others within *C. coum*. It also exemplifies the practical difficulty of separating *C. coum caucasicum* from *C. coum coum*. Although it has many *caucasicum* features, the leaves are broad rather than long. Herbarium specimens which have been judged to be *C. coum caucasicum* generally have self-coloured corolla lobes (i.e. without the white eye around the darker basal blotch), but this and other live plants suggest that the white eye may in fact appear throughout the range of *C. coum*, and may not be a mark particularly of western plants otherwise characterised as *C. coum coum*.
12. Otherwise reasonably typical of the form known in gardens as *C. coum album* (truly albino-flowered plants which would be worthier of that name do exist), this plant shows the exserted style which crops up throughout the species' range, and shows an extreme version of the fasciation that may rarely affect cyclamen of other species too. The fasciated stems may develop adventitious roots as well as leaves.
13. Grown as *C. elegans* (a name used by gardeners but not botanists), this plant represents the extreme form of plants from the eastern end of *C. coum*'s range. Its large flowers with long elegant corolla lobes and its long cordate leaves are the most striking features of eastern plants normally held to exemplify *C. coum caucasicum* — though again this plant has the white eye which has previously been thought to be a mark of *C. coum coum* and of western populations.
14. This unusual plant, with superficial affinities to *C. trochopteranthum* and even to *C. parviflorum*, represents material collected by Mathew and Tomlinson at Bolu in northern Turkey, under their number M&T4051.

continued from page 43

completely reflexed petals. The flower shape characteristic of these plants is shown in Figure 1. Nearly 89% of plants examined (47 out of 53) bore only blooms of such a shape. Flowers kept overnight did not reflex their petals which, together with the fact that plants carrying pollinated blooms and coiled seed pods bore none with reflexed petals, suggests that this flower shape is characteristic. That there were in the same area a minority of plants with normal reflexed petals might indicate two genetically fixed strains. The flower shape illustrated by Pobedimova (1946) is, in fact, closer to that of Figure 1 than that shown by the authors cited above.

It was noticeable that of 29 flowers examined 25 were scented and that most plants were extremely floriferous, tubers with up to 37 fully open blooms were noted. Contrary to many reports the flowers were borne on long stalks (often 6-9 cm.) well above the foliage. At Ikizdere the plants studied conformed closely to existing descriptions.

**ii. Leaves.** Small (1-3 cm. diameter), suborbiculate, uniformly plain green leaves are reported for this species. Meikle (1978) notes that the margins can be entire or subentire and Buglass (1981) illustrates an interesting, but atypical, leaf — marbled with a scalloped edge. Figure 2 shows the range of leaf shapes noted. The length and width of leaves measured in the field are shown in the left hand columns of Table 2 while the right hand columns show the same dimensions of certain leaves (those retained as herbarium specimens) remeasured in October. As with flower size some shrinkage occurred in the interim period of drying.

Four plants had leaves with scalloped edges. All leaves examined were plain green above with beetroot red undersides.

**iii. Tubers.** The tubers are described as green or brown, pubescent, globose, small (1-2 cm. diameter) and rooting from the base. Illustrations are provided by Pobedimova (1946) and Buglass (1986). Fourteen tubers of mature, flowering, plants were examined and measured. Details of size, shape, colour and (for some only) the depth at which they grew are shown in Table 3. From this it would appear that mature tubers can be of substantial size, are usually brown and flattened when 12 mm. or over in diameter and when below this diameter can be, at least partially, green in colour.

Insofar as could be ascertained without uprooting this rare species the roots emerge from the base of the tuber. Floral trunks did not appear frequently and only two of the tubers examined in detail bore them — the fifth and tenth of those listed in Table 3 which had trunks of 15 and 3 mm. respectively. Pobedimova (1946) illustrates a tuber with a long floral trunk. The surface texture of the tubers was uniformly smooth.

**Localities and Habitats**

Most of the detailed information on *C. parviflorum* was gathered around Meryemana, some 35 km. south of Trabzon and northwards along the road to Maçka and Trabzon. This area is treated as one locality. The second locality visited lay above Ikizdere, beyond Dereköy.

**i. Meryemana.** The area studied lay along an 8 km. stretch of road extending north and south of the car park at Meryemana. The highest point examined was

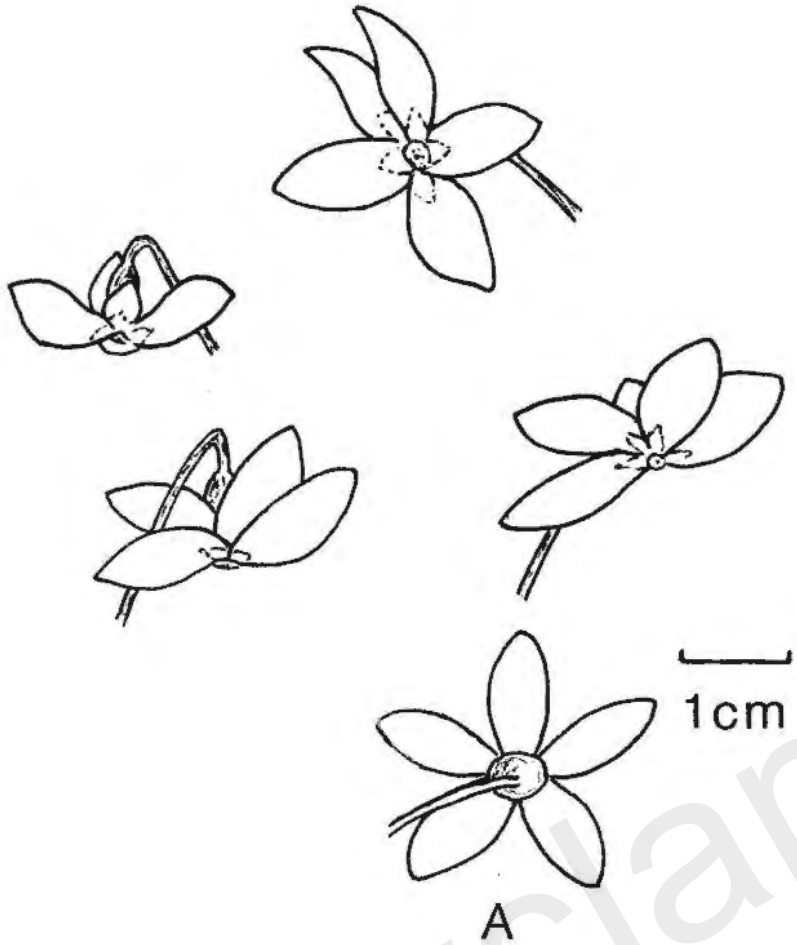



**Figure 1.** Flower shape of *Cyclamen parviflorum* at Meryemana. (A — seen from above)



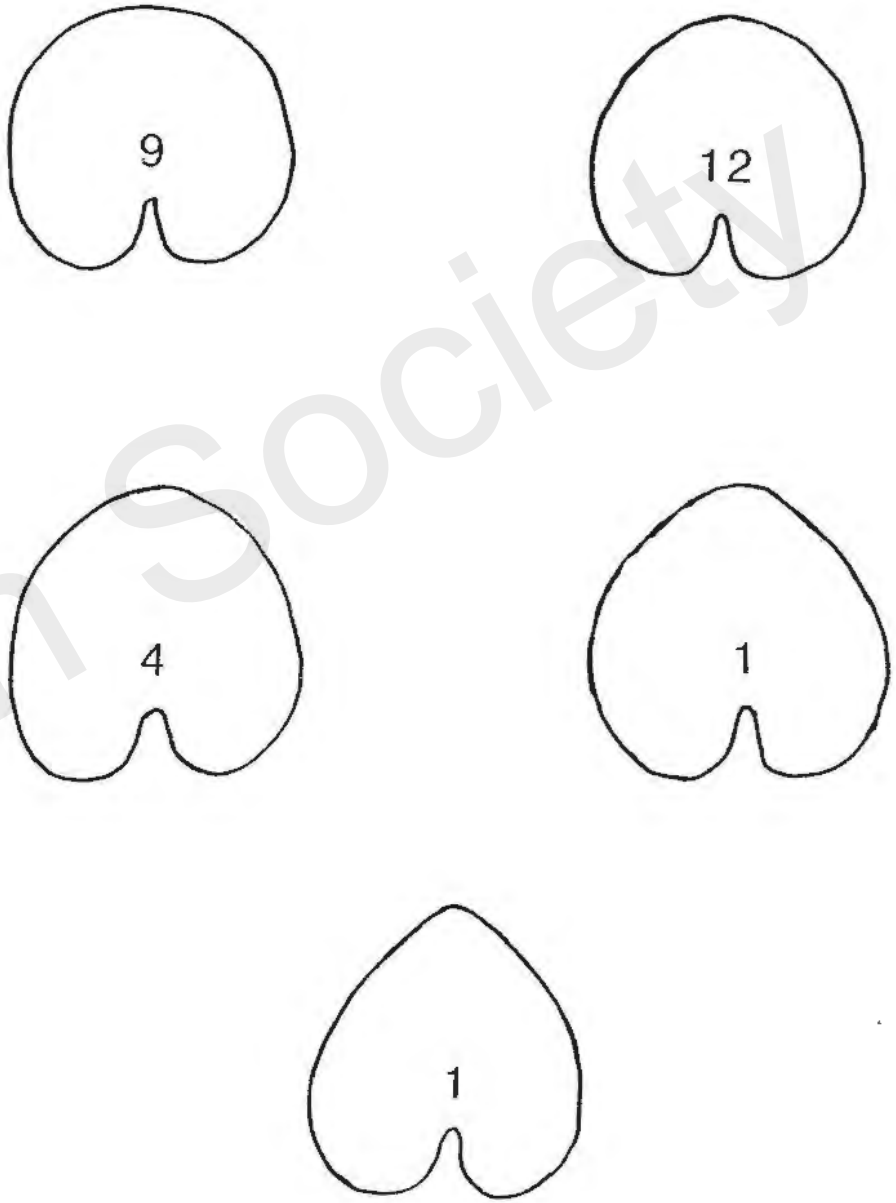



**Figure 2.** Leaf shapes of *Cyclamen parviflorum* recorded at Meryemana. (Figures inside each shape show the number of that shape noted.)

**Table 2.** Leaf sizes of *Cyclamen parviflorum* measured in the field and herbarium.

| *Specimen No.* | *March 1987 in field* | | *October 1987 in herbarium* | |
|---|---|---|---|---|
| | *Length (mm)* | *Width (mm)* | *Length (mm)* | *Width (mm)* |
| 95 | 30 | 34 | | |
| 96 | 24 | 25 | | |
| 97 | 25 | 31 | | |
| 98 | 29 | 32 | 25 | 29.5 |
| 100 | 29 | 30 | | |
| 101 | 41 | 45 | | |
| 102 | 29 | 31 | 27 | 29 |
| 103 | 38 | 41 | 37 | 39 |
| 104 | 34 | 37 | | |
| 105 | 23 | 29 | 22 | 26 |
| 106 | 19 | 21 | | |
| 106A | 15 | 15 | 13 | 13 |
| 152 | 24 | 25 | 23 | 24 |
| 154 | 18 | 22 | | |
| 155 | 23 | 24 | | |
| 156 | 24 | 24 | 22 | 22.5 |
| 157 | 15 | 17 | 14 | 16 |
| 159 | 22 | 23 | | |
| 160 | 19 | 17 | 18 | 17 |
| 162 | 22 | 25 | | |
| 163 | 25 | 26 | | |
| 171 | 24 | 24 | 23 | 22 |
| 279 | 16 | 16 | 14 | 15.5 |
| 280 | 19 | 20 | | |
| 281 | 19 | 20 | 17 | 19 |



**Table 3.** Size, shape and colour of *Cyclamen parviflorum* tubers examined at Meryemana.

| *Diameter (mm)* | *Shape* | *Colour* | *Depth (mm)* |
|---|---|---|---|
| 18 | flattened | pale brown | |
| 21 | flattened | dark brown | |
| 9 | globular | brown above green below | |
| 8 | globular | brown above green below | |
| 12 | flattened | brown | |
| 14 | flattened | brown | |
| 15 | flattened | brown | |
| 10 | globular | brown above green below | 5 |
| 9 | globular | brown above green below | 7 |
| 21 | flattened | brown | 5 |
| 27 | flattened | brown | 19 |
| 30 | flattened | brown | 9 |
| 14 | globular | brown tinged green | 3 |
| 37 | flattened | brown | 6 |

at an altitude of 1,370 m. (4,500 ft.) and the lowest 700 m. (2,300 ft.). Higher sites could not be studied as snow still lay deep. Although no sites were examined below 700 m. it is considered unlikely that *C. parviflorum* would occur at substantially lower altitudes in the same valley.

At the higher sites *C. parviflorum* was growing in deep shade beneath *Picea orientalis* on both the west and east facing slopes of a steep sided narrow gorge running roughly north south. Plants were to be found in rock crevices, sometimes on vertical rock faces or amongst stones of a dry stone wall and in deep but stony soil rich in leaf mould. In many places leaves and flowers were pushing through unmelted snow. Table 4 gives details of seven small areas (quadrats) in which the vegetation surrounding *C. parviflorum* was recorded — there is little doubt that more plants would have been identified later in the season. The figures for percentage cover indicate the area occupied by various plants in the quadrat ("+" indicate a species occupying less than 5% of the area). These suggest that *C. parviflorum* can be associated with a wide variety of other species. However, it is difficult to provide a synoptic view of the general conditions where it was found. Except quadrat 5, a small patch of gently sloping grassland at the bottom of the gorge, all were steep and deeply shaded, largely by *Picea orientalis* (although quadrats 2 and 4 were alongside a track in slightly more open conditions), quadrat 7 was taken on a substantial boulder and cyclamen (and galanthus) were growing with the tubers (or bulbs) one centimetre deep in living moss below which there was no true soil.

On the western slopes of the gorge it was noticeable that *C. parviflorum* grew extensively up to an altitude of 1,160 m. (3,800 ft.) while from 1,220 m. (4,000 ft.) it was replaced by *C. coum*. On the eastern slopes *C. parviflorum* appeared to be the only cyclamen to a height of some 1,220 m. (4,000 ft.) above which the depth of snow obscured all low vegetation. On the western slopes the change from *C. parviflorum* to *C. coum* appeared to correspond to a change in the tree cover when deciduous trees, notably *Acer cappadocicum, Corylus avellana, Juglans regia* and *Tilia* spp., begin to appear in numbers that would affect the winter light intensity and, perhaps, humidity. Close to Meryemana the two species did not seem to mix, although they could in places be found within 30 m. (100 ft.) one of the other.

Further north, at an altitude of 1,020 m. (3,350 ft.) *C. coum* reappeared, usually to the east of the road in open situations. Lower still some sites supported both *C. coum* and *C. parviflorum* growing intermingled. Such sites were always close to the river bed and most often on flat areas of alluvial gravel lying in bends of the river.

It was noticeable that all plants could easily be identified as *C. coum* or *C. parviflorum*. No evidence of hybridisation could be found here, or elsewhere. Populations with the two species mixed were always in the valley bottom beside the river and were noted from an altitude of 920 m. (3,000 ft.) to 730 m. (2,400 ft.) — although at the highest point it is possible that *C. coum* had been introduced with ballast for road building. However, by 880 m. (2,895 ft.) both species were certainly growing naturally together (or had been introduced sufficiently long ago to have become naturalised).

**ii. Ikizdere.** *C. parviflorum* was reported from this area by Meikle (1978). The site visited was some 50 km. from the coast and lay at an altitude of 1,310 m. (4,300 ft.). *C. coum* was common, constituting some 15% of the cover in



**Table 4.** Details of vegetation surrounding *Cyclamen parviflorum* in seven quadrats at Meryemana (nomenclature follows Davis, 1965 - 1985).

| *Quadrat No.* | *1* | *2* | *3* | *4* | *5* | *6* | *7* |
|---|---|---|---|---|---|---|---|
| *Species* | *% cover* | | | | | | |
| *C. parviflorum* | 30 | 40 | 10 | 10 | 15 | 50 | 15 |
| *Bryophytes* (mosses) | 50 | 10 | 30 | 70 | + | 45 | 80 |
| *Primula vulgaris* ssp. *vulgaris* | | | 5 | | 30 | | |
| *Graminae* (grasses) | - | + | + | + | 40 | + | |
| *Galanthus rizehensis* | | | | | 10 | | + |
| *Potentilla micrantha* | | + | 5 | | | | |
| *Lichens* | | | | 5 | | + | |
| *Lapsana communis* | | | 5 | | | | |
| *Geranium robertianum* | | | + | + | + | | |
| *Fragaria vesca* | | + | | + | | | |
| *Carex* sp. | + | | + | | | | |
| *Alchemilla* sp. | | | | | + | | |
| *Anemone blanda* | | + | | | | | |
| *Cardamine hirsuta* | | | + | | | | |
| *Cerastium fontanum* | + | | | | | | |
| *Galium* sp. | + | | | | | | |
| *Hedera helix* | | + | | | | | |
| *Polypodium vulgare* | | | | | | | + |
| *Stellaria holostea* | + | | | | | | |
| *Urtica dioica* | + | | | | | | |
| *Verbascum* sp. | | | | | + | | |
| *Veronica chamaedrys* | + | | | | | | |
| *Viola* sp. | | | + | | | | |
| Bare soil or rock | 10 | 30 | 40 | 10 | | + | + |
| Altitude (m) | 1250 | 1130 | 1220 | 1130 | 1110 | 1250 | 1110 |
| Slope | 1:15 | 1:2 | 1:15 | ver-tical | 1:50 | 1:0.5 | 1:3 |
| Aspect | NNE | W | W | W | SSW | SE | E |
| Quadrat size (cm) | 30 × 30 | 50 × 100 | 50 × 50 | 50 × 100 | 100 × 100 | 50 × 50 | 20 × 20 |

some places, but *C. parviflorum* was scattered in groups which seldom contained more than two or three tubers. These tubers lay some 6 cm. deep at the junction of the surface layer of humic, peaty, soil and an underlying layer of coarse alluvial sand. Tubers of *C. coum* at this depth usually had floral trunks but none were noted on *C. parviflorum*. The very limited area in which this species was found was part of a level grassy area below *Picea orientalis* in an open river valley.

The area approximated to the habitat from which *C. parviflorum* has previously been described. Patches of snow lay around and unbroken snow was less than 1 km. distant. Plants associated with *C. parviflorum* here included *C. coum, Ajuga reptans, Bellis perennis, Cerastium fontanum, Hieracium* sp., *Lapsana communis, Sedum reflexum, S. spurium, Trifolium* sp., the lichens *Cladonia chlorophaea, C. subcervicornis* and *Peltigera canina* together with many bryophytes. As at Meryemana there was no sign of hybridisation between the two cyclamen species.

**Discussion**

The plants studied, especially those at Meryemana, show far greater variation in form and habitat than published records suggest. Some differences in flower and leaf size could be due to the extensive reliance placed by taxonomists on herbarium material (and previous publications) rather than on field observations or living material. However, even the herbarium measurements of leaves (Table 2) and the measurements of tubers (Table 3) suggest that more variation is to be found than has been previously reported from wild plants. The range of variation in the population as a whole is not, however, such as would justify subdivision of the species (although the flower shape merits investigation). Nonetheless variation within the species would suggest that selective breeding might produce plants superior to many of those now grown — especially as forms from lower altitudes, although little known, are generally considered to be easier in cultivation than those from other locations.

The observations made would also support the accepted view that this species will benefit from cool moist conditions throughout the year. In addition they would suggest that conditions of low light intensity (*C. parviflorum* tended to occur below *Picea*) might be beneficial both in winter and summer. Perhaps a site below the staging of an alpine house would be suitable.

At all locations investigated the surface soil would be classed as a sandy peat according to the criteria of the Soil Survey of England and Wales (Ministry of Agriculture, Fisheries and Food, 1984). As important, however, is the fact that in all cases this surface soil lay above soils with extremely sharp drainage — coarse alluvial sands and gravels or rock debris. The classic state of a well drained moisture retentive soil would seem to have been achieved.

Most of the plants noted were blooming through snow or in areas from which snow could only recently have cleared. Undoubtedly flowers, leaves and tubers will withstand sub-zero temperatures. However, it is unlikely that the peaty soil would freeze, below snow, to the depth at which most tubers were found — drainage of melt water would therefore be rapid.

*C. parviflorum* and *C. coum* are often considered to be closely related species. The fact that at several sites both were flowering in close proximity to each other but showed no signs of interbreeding is powerful evidence that they



are truly distinct. Insects were not seen pollinating either plant where they grew together (although ants, *Lasius niger*, were active in *C. coum* elsewhere) and the flowers are not adapted for wind pollination. It seems, therefore, likely that both species are self pollinated in nature as is usual in cultivation and that this maintains their genetic isolation. While the production of artificial hybrids under garden conditions would be of extreme interest it would not necessarily mean that the two species should be merged.

Herbarium specimens under the collection numbers of Bailey, White, Wiltshire and Wood have been deposited at the University of Istanbul (ISTE) and others will be deposited at the Royal Botanic Gardens, Kew (K).

**Acknowledgements**

I would like to thank my colleagues on the expedition for their toleration and support, the Cyclamen Society, Royal Horticultural Society and Alpine Garden Society for financial support for the visit and the Department of Extra-Mural Studies, University of London, for allowing me study leave.

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## COMMERCIAL CYCLAMEN PRODUCTION IN OREGON

**Edgar L. Kline**

We started growing hardy cyclamen in the early 1930s on the suggestion of a prominent garden author who felt they would be a good addition to specialty crops our nursery was producing such as *Lilium* species, *Erythroniums* and *Trilliums*. At that time cyclamen were not grown commercially in this area except for some *C. persicum* hybrids (mostly imported) for florists' pot plant sale during the holiday season. The only information we had regarding the hardy species came from commercial growers who were propagating the *C. persicum* group by seed. We have followed these directions in the main since and found them quite successful for the generations of seedlings grown and marketed during the past 57 years.

We were able to obtain seed of only *C. hederifolium* (*C. neapolitanum* at that time) and started mother blocks of both pink and white to produce our own seed crops independent of any foreign source. Tubers of other species were gradually accumulated and seed crops grown in the same manner. From a collector's standpoint we were interested in all species available but for commercial production (since demand was limited in the early days) it was profitable to produce in quantity only those species which did well in the more moderate climates of the United States and optimistically for export if we could locate interested customers. With the enactment of the Endangered Species Act of 1973 domestic crops of cyclamen tubers were protected from imported collected stock except under special permit. This gave us more incentive to grow larger quantities for American gardens.

Growing conditions are most suitable to hardy cyclamen culture in Western Oregon — rarely do we have protracted cold or hot spells and moisture and soil conditions are very accommodating.

All of our cyclamen tubers are grown from seed of our own crop sown the same year as collected. A list of the sowing and germination dates of each species along with the elapsed time has proven helpful for later seasons. The seed is sown in greenhouse conditions about August 20th with night temperatures at 65°F in the commercial medium Pro Gro which we have found gives us best germination, totally weed free, of any available in this area. First transplanting can be done in late fall or early winter with all except the slowest germinators. The germination data is quite constant over the years.

| Species | Sown | Germinated | Days |
|---|---|---|---|
| *C. graecum* | 23/8 | 1/10 | 38 |
| *C. africanum* | 20/8 | 8/10 | 48 |
| *C. coum* (recd. as *atkinsii*) | 20/8 | 9/10 | 50 |
| *C. coum album* (recd. as *atkinsii album*) | 20/8 | 9/10 | 50 |
| *C. coum album* | 21/8 | 9/10 | 49 |
| *C. coum* | 21/8 | 10/10 | 50 |
| *C. coum* (recd. as *abchasicum*) | 23/8 | 9/10 | 47 |
| *C. coum* (recd. as *hiemale*) | 20/8 | 10/10 | 51 |
| *C. coum* (recd. as *circassicum*) | 23/8 | 10/10 | 48 |
| *C. coum album* (recd. as *hiemale album*) | 23/8 | 13/10 | 51 |
| *C. cilicium* | 23/8 | 14/10 | 52 |
| *C. hederifolium* (recd. as *neapolitanum*) | 23/8 | 14/10 | 52 |
| *C. hederifolium* (recd. as *neapolitanum album*) | 23/8 | 18/10 | 56 |
| *C. coum caucasicum* | 23/8 | 18/10 | 56 |
| *C. coum* (recd. as *orbiculatum* 'Urfa') | 26/8 | 24/10 | 62 |
| *C. pseudibericum* | 27/8 | 31/10 | 65 |
| *C. repandum* | 21/8 | 22/11 | 93 |
| *C. fatrense* (= *C purpurascens*) | 23/8 | 29/11 | 98 |



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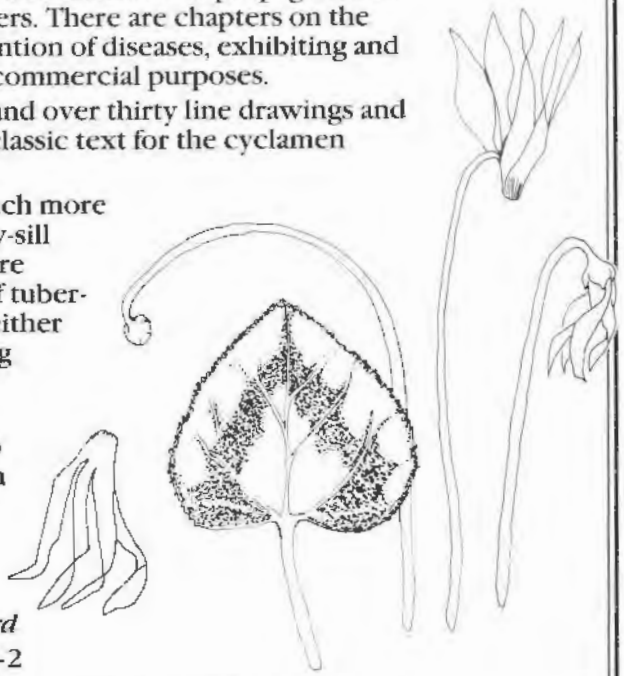

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