

Cyclamen

The Journal of the Cyclamen Society

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E-mail for the Journal or Editor may be sent to Editor@cyclamen.org Other Society e-mail may be sent to admin@cyclamen.org

Note: The opinions expressed by the authors are not necessarily those of the Editor, or of the Cyclamen Society.

The Society's web site, recently redesigned, extended and maintained by Martyn Denney, may be visited at www.cyclamen.org For the Society's Internet discussion list Cyclamen-L, visit http://groups.yahoo.com/group/Cyclamen-L

We welcome small advertisements from members and will print them free (at the Editor's discretion). There is a £5 charge if they are for commercial purposes.

SMALL ADS

WANTED - *Cyclamen repandum* seedlings. If any members have seedlings surplus to their requirements could they please phone me, Julie Adams, [REDACTED]

HARDY CYCLAMEN - most types by mail order UK and EU.
www.hardy.cyclamen.co.uk or 1st class stamp for catalogue to: [REDACTED]

CYCLAMEN FOR SALE. Sorry, no overseas. SAE for list please to: Mrs Jill White, [REDACTED]

GARDENING BOOKS: Fine, Out-of-Print & Antiquarian Books on Gardening, Botany, Plant Hunting and Natural History. Catalogue available. Valerie Merritt, [REDACTED]

ELM TREE NURSERY, specialising in hardy cyclamen by post within the UK, as well as an annual seed list (includes rarities such as *coum albissimum* 'George Bisson' and 'Golan Heights', *mirabile* and *purpurascens* silverleaf forms); all seed from our own stock plants. Cyclamen collections available for naturalising over wider areas. Please ring or write with stamp for brochure and price lists (sorry no overseas) to: Elm Tree Nursery, [REDACTED]

PANEL OF EXPERTS

You can get quick free advice on cultivation, pest and disease control and other topics from the Society's Panel of Experts. Please write to the Secretary to the Panel: Graham Simpson, [REDACTED]

You must enclose a stamped addressed envelope for the reply; overseas members are asked to send two International Reply Coupons.

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News

They're changing guard at

This year, there has been a considerable change in the Officers of the Society, as you can see from the minutes of the Society's AGM on p66. Our President until that date, Brian Mathew, has stood down after an eight-year stint. Peter Moore, our Secretary for the last 19 years, has passed the baton on to Martyn Denney. And Melvyn Jope has completed a further term as our Chairman with a long record of other posts behind him. While appropriate thanks were given at the AGM, it seems appropriate for me, as Editor of your *Journal*, to give a very heartfelt thanks to all three past officers on behalf of the membership as a whole. Brian, Peter and Melvyn have all given unstinting help to the Committee, to the Society as a whole and to individual members within it. Without their guidance, inspiration and plain hard work the Society would not be the respected and worthwhile organisation it is. So, from myself and all the Society members – THANK YOU. Needless to say, they have all been corralled into providing further work on behalf of the Society, so we are very fortunate not to be saying goodbye.

Book review

Marco ten Hoop writes: In the last *Journal* you will have read that a new cyclamen book, in Dutch, had been published: *Cyclamen handboek voor liefhebbers* written by Paul Hendrikk.

Among the subjects included are: botanical characteristics, cultivation, distribution and habitat (including distribution by variety and country), pests and diseases and cyclamen species. The species are described in alphabetical order in the chapter *Cyclamen species*, which facilitates searching for any particular species.

The author has made his own drawings of the tubers of each species (except *C. somalense*) and the book also contains a hundred good photographs. With the exception of one picture of *C. somalense* all the photographs are new and many of them show the plants in their natural habitat.

The book contains plenty of useful information for the reader but some of the author's ideas about the culture of certain species are questionable. For example, I disagree with his statement that *C. cypricum* always flowers less abundantly when cultivated than it does in its natural habitat. The constant use of the full botanical name of each species, eg *C. repandum* subsp. *repandum* var. *repandum*, can also distract while reading. These are only two small points of criticism about this long-expected book.

Despite the fact that most members are not able to read Dutch, it is certainly worth buying this book for the good photographs, and it's a pleasure to leaf through the pages and become even more enthusiastic about our beautiful hobby. You can order a copy using the Publications Order Form included with your *Journal*.

Plant health and CITES regulations for cyclamen

The Cyclamen Society has run into difficulty with export of cyclamen seed to the United States. Joyce Fingerut (President) and Tom Stuart (Seed Exchange director) of the North American Rock Garden Society (NARGS) have both written on this subject at length on Alpine-1 and the NARGS website (www.NARGS.org). Currently, an exemption is not possible for small packets of seed to enter the USA without a phytosanitary certificate; consequently recipients of seed are being asked to petition for a change in the regulation itself. Joyce and Tom point out that email is not considered correspondence and individual reasoned letters making a few points clearly and forcefully are more influential. However, Joyce also highlights that the USDA-APHIS-PPQ office has proposed a permitting system as an alternative to the phytosanitary certificate for imported "propagative material" (seed).

Using this method, the importer (either an individual or an organisation) would apply for permits. The permits would be sent to the overseas supplier (eg the Cyclamen Society), and would be pasted to the outside of the return envelope, containing the labelled seeds and the address of the ultimate recipient. Following USDA inspection, packages would be resealed and mailed to the ultimate recipient (purchaser or seed exchange). This would ensure the seeds are not on the list of noxious weeds, are clean and contain no extraneous material. However, at this point only the proposal has been approved, and implementation may not occur until some time next year.

All species of cyclamen are also included in Appendix II of the CITES Convention except artificially propagated specimens of *Cyclamen persicum* cultivars. Included are all parts and derivatives of *Cyclamen* except seeds, pollen, cut flowers of artificially propagated plants, and seedlings or tissue cultures obtained *in vitro*.

However, under European Union interpretation of the CITES convention, three species are treated as Appendix I within the EU: *Cyclamen baccaricum*, *C. creticum* and *C. graecum*. This means that for these species ALL parts and derivatives are included in the restrictions, and require permits to be traded. (For the purposes of CITES, any movement of material across international borders is considered as trade. All the countries within the EU of course count together as one single trading area. Once CITES material is legitimately in cultivation in any one EU country, that material can move freely without permit to any other EU country.) Collecting seed of the three species above without a CITES permit is therefore prohibited under EU regulations.

A CITES licence is also required for all movement of CITES listed material outside of the EU, whether or not it is wild collected (eg *Cyclamen*, *Galanthus*, *Sternbergia*). This includes any listed seed sent abroad from the UK to destinations including the USA and Japan (this is currently £7 per licence, soon possibly rising to £25 per species per licence). A phytosanitary certificate, issued by the UK's Department of the Environment, Food and Rural Affairs (DEFRA), is also mandatory for seed and plants sent to the USA, Chile, Israel and Cyprus.

Whilst societies like the Cyclamen Society and RHS try to keep abreast of current regulations around the world it is the applicant's responsibility to ensure they are aware of the permits and restrictions that apply to them. The Society cannot be held responsible if seed is seized by Customs.

Restrictions are being imposed more rigorously and the Society is fortunate that it is actively co-operating in scientific research. It is only by acting in this way that export and import permits have been granted to previous Society expeditions, as introduction of desirable forms to cultivation is no longer regarded by most governments as justifiable reason to collect wild plants.

2003 Conference

The Society has decided to stage the 2003 Conference at the Birmingham Botanical Gardens and Glasshouses again. At this stage, it is open as to whether the conference will be a one- or two-day event, but it will be held during the weekend of 27/28 September 2003. The Autumn Competitive Show will be held in conjunction with the conference.

It would be very interesting to hear from you as to what kind of conference would guarantee your participation – do drop a line to Roger Brook (address at the front of the *Journal*) or ring him on [redacted] if you prefer and let him know. Whatever format is eventually decided on, there will be the usual plant stall offering many cyclamen and other plants. Society members will be able to gain free entry to the gardens on production of their current membership card. Final details will appear in the June issue of the *Journal*.

Dutch subscriptions

In order to minimise expense to Dutch members of the Society, Jan Bravenboer has offered to collect all subscriptions from Holland centrally. Jan will then complete a single transaction to send the funds to the Society along with details of who has paid, which will avoid individual members having to pay exchange and bank charges. Jan has supplied his address and has requested that Dutch members pay him €13, which is slightly above the current subscription rate but will account for any exchange fluctuations between the Euro and Pound Sterling. If you wish to take advantage of this service, please contact Ian at the following address: Jan Bravenboer, [redacted]

Work of the Society's Officers

Members should be aware that the Cyclamen Society has no office or permanent staff operating on the membership's behalf. All the Officers of the Society have full-time occupations, and give generously of their own time to make the various services the Society provides operate smoothly. This means that if members contact an officer regarding a matter that is not within that person's direct remit, delays will inevitably result while the matter is passed on. The officers therefore ask that members try to contact the appropriate person (see list of roles and addresses on p33) and have patience if matters take a while to complete.

Cyclamen Society Conference 2002

Roger Brook writes: This year's conference was again a one-day event and despite numbers being down on last year seems to have been enjoyed by all.

The day started at 12.30 with the AGM, followed by a break for lunch, with the lectures starting at 2.00pm. The theme of the three lectures, if you can call it a theme, was looking at three species of cyclamen growing in their natural habitats. The first lecture was an account of the Society's expedition to Turkey in search of *Cyclamen pseudibericum* given by Vic Aspland. For those of you who have heard Vic lecture before, it will come as no surprise to know that Vic had us all enthralled within minutes as he recalled some of the encounters he, Harry Gill and Pat Nicholls had during their two weeks in Turkey in March 2002. I particularly liked the story of them being confronted by armed police: from a rather hairy start, the encounter turned into a very friendly affair after Vic showed the officer in charge a copy of the Turkish version of the Society's publication *The Cyclamen of Turkey*. This, it would seem, saved them from being 'led away in irons'. As usual the stories were accompanied by some fine photographs of not only cyclamen, but also the wonderful scenery where they can be found. For more about this expedition, see pages 25-27 of the June 2002 *Journal* and pages 44-50 in this issue.

The second lecture was from Trevor Wiltshire on his trip to Crete in April this year and centred around him finding *C. creticum* growing at the top of the gorge leading to the Omalos plain, in the area where *C. graecum* var. *candicum* is to be found. It seems that the season was late as snow had stayed from November 2001 right through until a week or so before Trevor's arrival. Again, wonderful photographs of the scenery.

The final lecture of the day was by Jan Bravenboer and entitled *C. purpurascens* around Lake Garda. Jan started by giving a marvellous tour of the area immediately around Lake Garda. *Cyclamen purpurascens* is found widely distributed throughout Northern Italy, but the best forms of the silver leaf form are found around Lake Garda. The surprise to me was the revelation that the best silver forms were found in the deepest shade, although Jan did show us plants found in more open sunny spots. These plants had much more leathery leaves than normal. They inhabit the moss covered gullies in mixed woodland, mostly beech and pine. You can read more about Jan's trips to Lake Garda in the December 2001 *Journal*, p44 and in this issue, p51.

The Autumn Competitive Show was held in conjunction with the conference, with plenty of good plants to be seen. There is a complete report and results elsewhere in this issue's *Newsletter*.

The Botanical Gardens were very pleased with the number of visitors – a total of 983, of whom 43 were society members (excluding exhibitors and organisers). So much so that they have invited us back next year.

I hope all who made it to Birmingham enjoyed the day. Do let me know what you thought (address at the front of the *Journal*) – some feedback would be nice, including on what kind of lectures you would like to hear.

Finally, I would like to thank our three lecturers for the enjoyment they brought to the day and a special thank you to that great band of willing helpers without whose support the conference could not be staged.

A miscellany

Flowering *Cyclamen graecum*

Gwen Baker writes: Reading in the June 2002 *Journal* (p4) about Tony Goode's difficulty in flowering *Cyclamen graecum* until he grew it in damp sand in the summer, made me think that other readers might be interested in my "portable plunge beds", which I have used for a number of years. I grow the non-hardy cyclamen species in a lean-to on the south wall of my house, along with other non-hardy plants such as *Echeveria* and *Aeonium*. I wanted to grow the cyclamen in clay pots in damp sand like I once saw them growing at Tile Barn Nursery. I bought a number of plastic troughs, 60 x 15 x 15cm (24 x 6 x 6in). In each end wall I drilled two small holes 2.5cm (1in) up from the base. The troughs were then half or three-quarters filled with sand. When I water the troughs, any excess water flows out through the holes but the bottom 2.5cm (1in) stays wet, and some water diffuses upwards. Each trough takes four 12.5cm (5in) clay pots, or one 15cm (6in) plus three 12.5cm (5in) pots. I used to be able to leave the pots in place, but at 79 years of age I now have to remove them before moving the troughs, and re-bed by screwing the pots into the sand. I now have flowers regularly on my *C. graecum*.

I have never had a problem with liverwort in my pots, even in twenty years of growing cyclamen this way. I find the drainage in the top dressing is important, and having sufficient depth of grit as a top dress prevents liverwort starting to grow.

Gwen Phillips writes: Adding to Tony Goode's note regarding the flowering of *Cyclamen graecum* outdoors, I had four plants in the greenhouse for several years but no flowers. They were then planted in the open ground in a small raised border beneath a short, south-facing, brick wall (60cm, 24in high). Plants were covered with small tent cloches from the end of November to March. The following autumn, two plants flowered and set seed successfully. Two years later and three plants have flowered well and two set seed. We live less than 2km (a mile) from the sea in Cleethorpes, Lincolnshire.

Seed donations to RHS Wisley

Trevor Wiltshire, superintendent, Rock Garden, writes to thank all the kind donors of seed for the garden at Wisley. He was inundated and has confessed he has been unable to answer all the correspondence – preferring to get all the seed sown on time.

This year it was especially important as most "home-grown" Wisley seed was consumed by large numbers of squirrels coming in from the adjoining common. Large quantities of seed have been sown direct. In the Pinetum, a member of staff was directed to spray off emerging chickweed under the pines, only to discover before he started that it was in fact emerging *Cyclamen hederifolium* (it was as thick as mustard and cress).

More than 10,000 one-year-old plugs of *C. coum* and 1,000 of *C. hederifolium* have been planted this season, and a similar quantity is under production for 2003. In the warmth of Wisley's propagation unit, one-year-old plants are near flowering size. Staff advised they were planting plugs for a whole week at a rate of one every 90 seconds.

The display of cyclamen at Wisley is improving year by year and now stretches all the way from Weatherhill Cottage to the Rock Garden. Species planted out include *C. cypricum*, *C. cilicium*, *C. graecum*, *C. intaminatum*, *C. libanoticum*, *C. repandum* and *C. persicum*.

A new hybrid?

Ian Wood writes: Included in the 1999 Society seed distribution I received a packet labelled "61", that should have been *Cyclamen libanoticum*. The seed were duly sown and early in 2000 all of them germinated. By September the largest 20 of the 30 seedling tubers were potted into 6cm (2.5in) pots, to be followed by the surviving eight smaller plants in June 2001. Apart from noticing that they seemed unusually vigorous young plants, it wasn't until autumn 2001 that doubts entered my mind when the leaves emerged. This was not just because of the timing of emergence but also because the leaves' patterning and colouring were those of a particularly engaging mix of *C. graecum*.

The two batches of pots were still separated on sand beds, and when I came to combine them I discovered thick fleshy roots protruding through the drainage holes. Had I mixed up my seeds? Whilst I had received a separate batch of *C. graecum* seed from the distribution, I was able to identify these, so I concluded that there must have been a mix up in the distribution. That was, until January 2002 when I noticed two buds appearing. Subsequently I had about half of the plants bearing typical *C. libanoticum* flowers.

Presumably if a hybrid had been created, *C. libanoticum* would be the seed parent, giving *C. libanoticum* x *C. graecum*. And presumably this could not have happened by chance.

Golden oldies

The Assistant Editor, who grows *Cyclamen hederifolium* commercially, has some good news for those who have seeds lurking in the fridge and who may be concerned about their sow by ... date. This year, she ran out of seeds from 2002, with some bays still to sow. So, in desperation, she used seed from 2000 and 2001, which had been stored in a normal domestic fridge. All seeds were treated the same (in early August soaked for 24 hours, sown and watered well, then covered with plastic sheets for 21 days). Lo and behold, the 2000/2001 seed germinated well ahead of the 2002 seed and as the *Journal* went to press was showing a good covering in all bays. The 2002 seed were lagging badly with so far only a modest covering of seedlings. Have any other members found aged seeds proving their worth in this way?

Growing *Cyclamen graecum* in unusual containers

Pattie Peck writes: In an earlier *Journal* (Vol 24, No 2, p41), I wrote about growing *C. graecum* in cut down Sunny Delight bottles. I can now report on their progress. *C. hederifolium* definitely do not like them – they hardly grew and were obviously unhappy. However, *C. graecum* have done very well. Six two-year old seedlings were planted in one plastic bottle and now nearly two years later five of the tubers are over 2.5cm (1in) across and all are bearing flowers or buds – only two or three flowers however. One plant died, but the other plants' thick roots are nearly 15cm (6in) long, having had a better root run than they would have in a normal pot. I have now potted them on individually. The Sunny Delight pots cost nothing so are expendable after use.

Seed distribution

Almost 700 members participated in the seed distribution this year. Due to the restrictions on the import of plant material it was not possible to send seed to members in the USA. I understand that the regulations may be changed so that American members should be able to receive seeds from the 2003 distribution (for more on this, see p35).

For the third year running the five most requested varieties were the same though in a different order. This year they were as follows with the first figure showing the number of requests received, the second the number of donors.

<i>C. colchicum</i>	195	2 (just 14 seeds)
<i>C. purpurascens album</i>	187	4
<i>C. trochopteranthum</i> , white flowers	184	3
<i>C. coum albissimum</i> 'Golan Heights'	160	7
<i>C. parviflorum</i>	160	11

Seeds of the following are still available, some being from late donations so you may find something you missed earlier.

Code numbers: 1, 2, 3, 7, 8, 9, 10, 11, 15, 18, 23, 23 & 24 mixed, 26, 28, 29, 31, 32, 33, 35, 36, 38, 40, 41, 42, 43, 47, 49, 50, 51, 54, 55, 56, 57, 58, 59, 60, 61, 63, 64, 67, 69, 70, 71, 74, 76, 80, 82, 83, 84, 86, 87, 88, 93, 95, 100, 101.

Also available are these named forms of *C. hederifolium*: 'Antiochus', 'Coquette', 'Green Ring' and 'Lysander'.

There is wild-collected seed of:

C. cypricum (from three sites)

C. persicum (from three sites in Israel and some from 2001 collected in Tilos)

C. hederifolium and *C. purpurascens* (only a few packets of each).

There is also some 2nd generation wild-collected seed of *C. graecum*.

There is some interesting seed of *C. rohlfianum* from plants growing at the Cruikshank Botanic Gardens in Aberdeen. Some of the seeds come from old plants collected in Libya in 1952 and some from offspring sown in 1981 and 1982.

All the above are 50p a packet. Please use code numbers where applicable when ordering. Details are in the June *Journal* (p8). (Please note that the Seed Distribution Manager does not have spare copies of this.) Also offered are:

Offer 1 - 6 packets Society's choice £2) Limited to 1 offer

Offer 2 - 9 packets Society's choice £3) per member

Apologies must go to members ordering CSE seed for once again there was hardly any seed of *C. trochopteranthum*, *C. cilicium* or *C. persicum* this year.

There is still some CSE seed. While supplies last, one packet each of *C. graecum* 93644 and *C. hederifolium* 93071 will be included free of charge with every order. Please state if you do not wish to receive either. Other CSE seed will be sold in packets of 10 seeds of one specific number at a cost of 10p per packet. The following are available:

C. graecum 93642, 93645, 93646

C. repandum peloponnesiacum 92060, 92106, 92124, 92155, 97068, 97123G.

In some cases, only small quantities of seed remain, so members are advised to give as many alternatives as possible. Payment should be by LIMIT CHEQUE ONLY.

Applications should be sent with a SAE (overseas members, please add an extra 50p instead) to reach this address by 31 JANUARY 2003: Miss Patricia Short,

Cyclamen diversity project: Phase 1 report

James Compton, Alastair Culham and Simon Thornton-Wood

The *Cyclamen Diversity Project* aims to establish a stable classification for the genus *Cyclamen* based on a combination of morphological and DNA sequence data. The project was proposed in two major stages with four elements within stage 2. Stage 1 of this project is now complete. Its aim was the addition of a second gene to the molecular phylogeny of Anderberg et al and improvement of sampling to cover all species. Four possible DNA regions were evaluated and the best one chosen. This was part of the DNA from the chloroplast.

The project required access to substantial numbers of cyclamen plants for DNA extraction. A number of Cyclamen Society members and others have provided this (Marty Denney, Jill White, Paul Christian, Jim Archibald, Melvyn Jope, Trevor Wiltshire, Brian Mathew, Peter Moore, James Compton, Mike Grant). We supplemented their material with collections held in the Herbarium at Reading.

The addition of seven species to Anderberg's study (Anderberg, 2000) namely: *C. cilicium*, *C. colchicum*, *C. parviflorum*, *C. repandum* and *C. alpinum* (ex *C. trochopteranthum* Grey-Wilson 2002) as well as the recently recognised species *C. peloponnesiacum* (Kit Tan, 2001) and *C. elegans* (Clennett, 2002) were needed to complete the sampling of species. On top of this a further five infra-specific samples were added: *C. hederifolium* var. *confusum*; *C. hederifolium* from Corsica; *C. graecum* subsp. *anatolicum*; *C. repandum* subsp. *repandum* var. *baborense*, and *C. peloponnesiacum* subsp. *rhodense* (Kit Tan, 2001). The sampling has therefore been expanded from 15 to 27 cyclamen.

The publication of a study of Mediterranean endemic cyclamen by Gielly et al (2001) has added further data of relevance to our study. We now have DNA sequence data totalling 68,100 characters spread among 27 taxa. An analysis of this provided strong evidence of relationship among particular species groups discussed below.

Overall the results support parts of the current classifications (Grey-Wilson 1997; Anderberg 2000; Clennett 2002) but none of them fully. It is not good for taxonomy to have three new systems of infra-generic classification published over a five year period.

Detailed study of the relationship highlights some new factors. *Cyclamen repandum* was separated, in the analysis, from *C. peloponnesiacum*, *C. peloponnesiacum* was grouped with *C. creticum* and *C. repandum* grouped with *C. balearicum*. The relationships among these taxa are proposed for further investigation. At present the data suggests that the new species proposed by Kit Tan (2001) might be legitimate, but we believe that further evidence is needed before widespread acceptance of the change. More surprisingly, considering current classification is the grouping of *C. cypricum*, *C. libanoticum*, *C. pseudibericum* and *C. parviflorum*. The support for this grouping is good. Substantial variation is evident among the *C. hederifolium* samples sequenced so far. This level of variation is equivalent to that seen across the whole *C. repandum*, *C. peloponnesiacum*, *C. creticum* and *C. balearicum* group suggesting an inconsistent species concept within *Cyclamen*. It is possible that there are further infra-specific taxa to be recognised within *C. hederifolium*.

For a Glossary of scientific terms, see p59.

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Cyclamen hunting in Greece

Pattie Peck

I went with my husband to southern Greece in early June this year, much later than we would normally go, because of getting a baby-sitter for our three ponds/two cats/three greenhouses etc. I wondered if it would be too late to see any cyclamen. We had a two-centre holiday, the first week on the island of Aegina, just south of Athens, and the second in Tolon in the eastern Peloponnese. The weather was hot and sunny for the two weeks we were there but Aegina was not particularly dry. It is a lovely little island. We found *Cyclamen graecum* in many places from near sea level to the highest point, and around ancient sites. We found many seed pods nearly ripe in several places. The leaves that I saw were not particularly good examples of the species and of course at this time of year no flowers were in evidence.

We then moved over to Tolon. The mountains here are much higher than they were in Aegina and a friend had given me notes on *Crocus* on Mount Didima so we spent a day trying to find them. The road up to the summit was awful, full of potholes with a sheer drop on one side – my husband was not happy at driving up here. Animals used the road constantly because the surface was covered with their droppings. At the summit (1,040m, 3,380ft) we found that the Greeks had built a huge communications installation recently and much of the habitat had been destroyed. The tiny little church which stood there was completely dwarfed by the masts. However, after spending some time on hands and knees looking for crocus seedpods I did find some but with them were *C. graecum* leaves. It was quite cold on this mountain although the sun was out. There was no evidence of seedpods or regeneration although the area was right – limestone rocks with fissures and terra rossa in between with *Quercus coccifera* dotted about. There were also some small irises (*I. attica*?). On the way down we saw *C. graecum* leaves several times but mainly on the north side of the mountain.

A few days later we decided to drive up Mt Arachneo, which was not far from Tolon, to see if we could find any more plants and there were a few *C. graecum* there too, with a scattering of crocus in seed which I collected for the Crocus Group exchange. This mountain has not been "written up" as far as I know but it is as high as Mt Didima so it might be worth someone having a closer look as the terrain is very similar.

Showing cyclamen

Pat Nicholls

This short article is intended to encourage new exhibitors and hopefully provide a few useful tips to existing ones. I have been exhibiting at Alpine Garden Society shows for 15 years, and more recently at Cyclamen Society shows, and have been fortunate to achieve reasonable success at both. I have a tried and trusted method of approach to all shows and this begins about 10 days before the actual event.

The first step is to know your plants' flowering window, that is how long a particular plant will be in show condition and with cyclamen this can be quite some time. I begin by looking carefully at my plants at around 10 days before the show and selecting out likely candidates and of every plant I ask myself the same questions:

- how long has it been in flower?
- how much longer will it last?
- can I hold it back?
- if it is not fully out then can I get it to flower in time?

The answer to both of these last two questions is, with a little care, yes!

I always give a wry smile when I hear people say "I had a lovely so and so but it went over yesterday" or "I would have had so and so but it won't be out till tomorrow". With a bit of forethought, neither of these need apply – you can take steps to make sure a plant doesn't miss a show by one or two days. So, plants that are fully out are now placed on the floor of the greenhouse, out of direct sunlight and watered well. Plants that need bringing on are brought indoors overnight and returned to the greenhouse during the day and watered well. With this treatment you can make a difference of several days either way providing you begin the treatment early enough.

Assuming the show is on a Saturday, on the Sunday before I clean my plants. I begin by removing any dead flowers and damaged leaves, I also add a little new top dressing. Cleaning the pots is very important and although tedious will do much to enhance your plants. I use clay pots and find warm soapy water and a pot scourer to be most effective. I then carry on with the indoors/outdoors, sun/shade regime throughout the week. On the Wednesday I will begin looking for plants for the following week as I often have several shows in succession and using this regime I have been known to take the same plant to three different shows and win with it. On the Thursday I oil my pots with linseed oil. This is applied with a cloth and will improve the look of even the oldest pot and do much to disguise marks that could not be removed by cleaning. Plants are then watered for the *final* time before the show. Friday, a final check on the plants and the car is loaded for an early start Saturday morning.

I would like at this point to go into a little more detail on a method that I find works very well with many species of cyclamen, and that is double potting. I find this works best with the species that have leaves fully formed before the flowers are visible and these would include *Cyclamen coum*, *C. pseudibericum*, *C. alpinum*, *C. persicum* and all the *C. repandum* group. This is the way to do it: when the leaves are fully expanded drop the pot into a larger pot and surround the whole thing with grit, ensuring that the leaves finish just above the grit. The grit in turn should finish flush with the top of the pot. You will then find the flowers will come through as normal but the leaves will stay at the height you have placed them. When exhibited they will look much better than a plant that is too leafy and with its leaves falling over.

Study your show schedules carefully and leave your options open, for you will usually find that many plants are eligible for several classes and a little swapping around on the day can reap rewards. I make no apologies for this; I don't spend twelve months growing a plant just to waste it in a class where its chances are limited. Fill in your entry card and place it face down in front of your plant but for goodness sake not under it as all you end up with is a stained and water soaked card. Above all take pride in what you do and always show clean, well-presented plants and the red stickers will follow. Our shows, after all, are our shop window and part of the purpose is to encourage new members. If you pull a plant out of its plunge on a Friday night, give it a quick wipe over and stick it on the bench the following morning with no preparation then you are letting yourself down and spoiling the spectacle for the visiting public, and you certainly will not gain any red stickers.

There are always classes for novices and this is a good place to start, but don't be afraid to talk to the more experienced exhibitors and to ask questions but, above all, listen to what they tell you for they have a knowledge that you will not find in any book and will freely share it with you. In a few years time it will be you who has that knowledge and it will be up to you to pass it on to complete the circle. So come and join us and I promise you will enjoy it and come back for more. It can be as serious as you want it to be, but you will learn more about your plants than you ever will by reading about them.

Turkey Expedition 2002: *Cyclamen pseudibericum*

Vic Aspland

Published observations of *Cyclamen pseudibericum* in the wild are few, since the Albury, Cheese and Watson Expedition of 1966. The strain now well known in cultivation, as *C. pseudibericum* var. *roseum*, seems to have arisen from collections made then, and is sometimes seen associated with the number ACW 664. The aim of this Society expedition was to increase the knowledge of *C. pseudibericum* in the wild. With the advance of modern scientific methods, a further purpose has been added: to collect specimen plants from which the Society can supply material for DNA and other molecular studies.

The time span of the expedition (10-24 March 2002) was a topic of some debate, but was largely determined by the availability of the expedition members. Some of our Turkish collaborators were concerned that this would be too early – snow might still be lying on the mountains with no flowers to be seen. Others were concerned that it would be too late – the snow long gone and all of the flowers over. A flight to Istanbul, a very short overnight stay and a bleary early morning flight to Adana gave us the opportunity to study Anatolia as we approached. Our spirits lifted. It was going to be all right: except for the higher peaks, much of the snow had already gone, and it looked as if the altitudes likely to be of interest to us were clear.

As it turned out, the timing was just about perfect for most areas, as spring comes very quickly here. Our travels in the area were enlivened by vibrant splashes of colour provided by *Cercis siliquastrum*, the Judas tree (which flowers in mid-April in the

Midlands of England) and clouds of rich pink blossom on Almond trees. An early morning walk in Adana also gave us the pleasure of seeing a handsome *Wisteria sinensis*, bearing splendid racemes of lilac-purple blossom.

We planned to base ourselves in Adana, Osmaniye and Kahramanmaraş, and from these three centres conduct radial forays into the surrounding arc of mountains. With helpful advice from the manager of our Adana hotel, we were set to go. The earliness of the Adana flight made an afternoon excursion possible, so the team set off to the north-west, seeking *C. pseudibericum* near the western limits of its distribution. Navigation proved to be interesting. The team had a range of maps, which differed widely in the position of roads, and even more widely where place names were concerned. For the physical geography of the area, a Tactical Pilotage Map (reference TPC G-4A) was superb. Unfortunately, it gave no information on the size or quality of the roads depicted (not perhaps surprising, as it is intended for the use of military aircraft). Pat Nicholls undertook most of the driving, and mid-afternoon found him taking us steadily northwards along the valley of the mighty Seyhan River. Stops at the roadside revealed *Anemone blanda* in a range of forms, many with a contrasting white centre, and specimens of *Daphne sericea*, taller and far more open than the forms I had seen in Crete in the past. An impassioned cry of "Stop-stop-stop" announced our first sighting of *C. pseudibericum*, in what proved to be the most variable population found. A north-facing bank lay beside us, liberally scattered with cyclamen, so work began. Finding plants is fun, but the work of documenting the finds is not. While Pat and Harry Gill settled down to collecting, measuring and recording leaves and flowers from 50 randomly selected plants, I documented and photographed the site and plants. A representative selection of the specimens was transferred to the herbarium press, for later use by the Society and by Istanbul University Herbarium. This proved to be the lowest site found, at 240m (790ft).

Early the following day we collected Dr Murat Ekiçi of Gazi University, Ankara, who was to be our companion for part of the expedition. The team set off once again towards the fruitful north-west. On an un-named pass to the south of Aladağ, a quite different habitat was encountered. The road travels almost due north and rises to the pass quite gently. To either side rise low ridges of dissected limestone. An inspection of the natural shelves in the slope to the west of the road (ie east-facing) revealed *C. cilicium* growing with *Scilla sibirica*. The slope had little tree-cover other than a few scattered *Pinus halapensis*, so was likely to be quite dry in summer. This accorded well with observations of *C. cilicium* made during the *C. trochopteranthum* expeditions; it is a plant of rather dry habitats. In the other direction, the ridge was set back further from the road, but a trek of a few hundred metres brought us to its foot. It was impressive! Imagine a deeply dissected limestone pavement with razor-sharp edges. Then tilt it to an angle of perhaps 30-35 degrees. Within clefts, and under overhangs, nestled *C. pseudibericum*. The only other plant which grew in any quantity was the immensely prickly *Quercus coccifera* (Kermes oak). Moving about on this inclined surface was very hazardous (and could be painful too). The risks were emphasised in one area by the faint but unmistakable odour of dead goat. A full survey proved to be impossible, and measurements were obtained on only 14 plants. In general, *C. pseudibericum* occupies moister habitats than those typical of *C. cilicium*. We may theorise that in this specialised habitat more moisture is available to it within the clefts and under the rocks, and the altitude, 1,070m (3,500ft) and westerly aspect may keep it cooler too. It was not possible to determine the extent of this ridge, but 1km might be a reasonable guess.

Moving east, the next site found was north of Feke at an altitude of 770m (2,500ft),

and offered a completely different habitat. Considerable shade was cast on the west-facing slope by woods of *Pinus halapensis* with occasional *Quercus cerris* (Turkey oak) and *Platanus orientalis* (Oriental plane). The ground flora included *Anemone blanda*, *Viola odorata*, *Bellis perennis* and *Cistus salvifolius*. Although the location was moist at the time of our visit, it would undoubtedly become quite dry later in the year. The heavy shade would, however, moderate the soil temperatures. The rock here was highly metamorphosed to an irregular schist type.

The next day saw a move to Kahramanmaraş, from where we could strike north to revisit a site known to Murat from eight years previously. At this distance in time, his recollection of the precise access to the valley in question was a little hazy, so a stop was made at a small wayside establishment. With considerable help from locals, we made our way – somewhat perilously – to a wide valley surrounded by snow-covered hills. The views of the limestone landscape were wonderful, with a waterfall, and streams disappearing into a sinkhole. We found not only *C. pseudibericum* but, poking from the hard-packed terra-rossa soil, a perfect flower of *Iris persica*, one of several we saw. At an altitude of 1,420m (4,700ft), this was our highest record for *C. pseudibericum*. Pressing on north, we visited the Puren Pass area. En route we encountered children at the roadside selling bunches of flowers, which proved to be those of *Hyacinthus orientalis*, with a remarkably strong sweet scent. This remained even after they had spent many desiccating days on the minibus dashboard. Diligent observation by the team failed to reveal any flowers in situ as we travelled; it seemed that the children were as diligent as the goats in their searching. During a roadside foray just south of the pass, Murat found a single plant in flower, and a queue immediately formed to take advantage of the photo opportunity. The pass itself and the meadows adjacent to the road were clear of snow, but it lay deeply over the surrounding hills. The meadows were liberally scattered with drifts of *Colchicum szovitzii*, the bunched flowers ranging in colour from white to a quite deep pink. On a south-facing slope grew an equally impressive very dense colony of a bright yellow crocus, later identified by Brian Mathew as *Crocus chrysanthus*. This is possibly the eastern-most location for this species.

The next target area for exploration was the Amanus Mountains, as an early Society expedition researching *Cyclamen coum* had recorded *C. pseudibericum* from the north side of the Belen Pass, which crosses the central Amanus. Contrary to our expectations, Belen, on the west side of the pass was a very large and traffic-choked place, with the inevitable chaos caused by road reconstruction. After a couple of false starts the route up was located. We soon found the lower of the two recorded populations, but as the road was very narrow we pressed on to the second, a mixed population of the two species. There were easily sufficient plants in flower to merit a full survey; the plants were growing mostly in a fair amount of shade, in woods consisting mainly of *Pinus halapensis*. Unfortunately, as Harry described in the *Journal* in June (p 25), armed police quickly moved us on – we were close to a sensitive site.

We pressed on eastward over the pass, intent on exploring the eastern flank of the Amanus. Almost immediately we began the descent, we concluded that there would be no cyclamen. The soil type changed abruptly to a very fine pale khaki type, similar in appearance to siltstone-derived soils that I had seen to the west of Antalya on earlier expeditions. The pines continued, but ground flora was almost completely absent, presumably due to lack of nutrients. In addition, it was clear that we were moving into a rain-shadow area. As we descended, a silted-up river valley came into view. The former flood plain was intensively cultivated, mainly with cereals. From the brilliance of the green, we deduced that there was adequate water available for the crops, but no

niche remained for cyclamen. The lower range of hills rising to the east looked even drier. These were visited at a later date, when our diagnosis proved to be correct. The typical ground flora was very Mediterranean, with *Anemone coronaria* and *Romulea bulbocodium*: this was certainly not *C. pseudibericum* country. (A later search, to the south of the Belen Pass, also produced no sightings of our quarry; areas visited were either intensively cultivated, or too hot and dry.)

At about this point Murat had to leave us, so for various reasons we were unaccompanied for the rest of the expedition. The centre of operations moved to Osmaniye to allow the exploration of the northern Amanus, where we discovered the “pseudibericum gap”. Like most distribution maps published in recent years, that contained in the Society publication, *The Cyclamen of Turkey*, shows the distribution of *C. pseudibericum* covering an arc through the eastern Taurus, anti-Taurus and Amanus Mountains. Despite searches in the Nur Dağı Pass area (where *C. coum* was confirmed), and several penetrations from the north and north-west, no *C. pseudibericum* were found. This absence seemed to be largely related to the nature of the soils, which varied from the impoverished khaki type referred to above, through highly metamorphosed types with, in places, what was very obviously serpentine, with



Checking flower colour in *Cyclamen pseudibericum*. Photograph by Vic Aspland

its high content of toxic heavy metals. Thus, as far as we were able to establish, there is a large break in the distribution in the northern Amanus.

A further attempt was made to penetrate the Taurus Mountains north of Osmaniye, in order to "fill a gap" between our recorded sites. But, in the absence of a four-wheel drive vehicle, it proved impossible to proceed. An earlier expedition had also recorded *C. pseudibericum* north of Osmaniye, east of the village of Düziçi. With local help once again, we reached a north-northwest facing slope clothed with *Fagus orientalis* (Oriental beech), *Platanus orientalis* and occasional *Quercus cerris*. The ground below was carpeted with *C. pseudibericum*, growing in some areas with *C. coum*. Before we had commenced a full survey, a large pickup truck drew up and disgorged four members of the Forestry Service. *The Cyclamen of Turkey* (which had been so helpful in earlier encounters) was produced again. Our new friends spoke virtually no English. We spoke only a few words of Turkish. However, by a mixture of pantomime and gesture, we explained what we were up to and were allowed to do our survey. Descending a hill from this site gave a view into a declivity splashed with patches of colour. Investigation revealed a very large area in which *C. pseudibericum* grew in company with primroses (*Primula vulgaris*). The whole area was moist, with a healthy stream at the bottom. The plants grew in the open, with the cyclamen spreading up the hillsides under *Fagus orientalis* scrub, bare of leaves at this time of year, and reaching as far as we were able to walk. The main ridge extended away to the south-east for many kilometres, much of it covered by *Fagus* scrub, so it seems likely that the cyclamen habitat is quite extensive. Lower down, a sharp eye spotted three splendid cyclamen growing at the top of a roadside bank, fairly obviously planted by the local villagers.

At this stage of the expedition, few plants had been collected. In most of the populations observed, the variation between plants was relatively small, with the majority looking "just like an average plant in cultivation". A return to our first site was agreed, as here we had seen the greatest variation. Discoveries included three plants with white flowers (one with only a very faint basal blotch), and a plant with vivid glowing flowers for which Harry coined the description "cherry pink". After considerable searching a mate was eventually found for it, so it is hoped that seed will set in cultivation, to be passed on to Society members.

The story so far is of plants, places, people and incidents, but the real purpose of the expedition was to gather information on *C. pseudibericum*, so what did we discover?

Habitat

Cyclamen pseudibericum was found at altitudes between 240 and 1,420m (790-4,700ft). In the lower half of the altitude range, the habitats faced from west, through north, to east, and were clothed by tree cover of varying density, from quite dense woodland to rather sparsely scattered trees. The principle trees here were *Pinus halapensis*, with the occasional *Platanus orientalis* and *Fagus orientalis*. At higher altitudes the dominant tree became the deciduous *Fagus orientalis*. Only at altitudes above 850m (2,800ft) was the cyclamen able to occupy more open situations, but here the situation invariably comprised deeply dissected limestone pavement. Here *Quercus coccifera*, often either stunted or heavily goat-browsed, was not uncommon.

Substrate

The underlying rock types at sites observed included sandstone, highly metamorphosed schist and limestone. Where it was possible to examine the structure of the soils (at the lower sites with tree cover), the cyclamen tubers were almost invariably positioned on the top surface of a purely mineral soil, or lay just within its upper boundary. Above and often around the tubers lay a much more organic-rich soil, which was open in texture and moisture-retentive. In the higher, limestone habitats, the soils were rich and heavy, with minimal organic content. The soil pH was determined at each site studied. The range of variation was modest, between 6.8 and 7.8. Note that even limestone-derived soils were not highly alkaline. It could be expected that these would experience considerable leaching, either by winter rains, or by spring snowmelt, which would reduce the pH.

Range of variation

Cyclamen pseudibericum is a remarkably uniform plant. The first reaction on looking over a new site was "They all look the same!". The measurements performed bore this out. A total of 226 plants were fully recorded, of which 55% had flower colours that fell within the RHS Colour Chart group 74 (red-purple), and 38% were group 78 (purple). Excluding the three whites and two cherry reds described above, the remainder departed from these shades to only a minor extent.

Leaf shapes and patterns were classified using pre-determined scales. The shape scale ran from 1 (reniform, like classical *C. coum*) to 8 (very pointed, like *C. repandum*). The pattern scale ran from A (very narrow hastate pattern, rest of leaf silvery) to G (hastate pattern very large, indistinct, little other markings or flecking). Leaf patterns were quite uniform, with 91% of all those graded being in grade C or D. This is the type with which we are all familiar in cultivation: a moderately-sized, dark green, hastate pattern at the centre of the leaf surrounded by a more-or-less continuous silver band, and the outer margin of the leaf also dark green, often with some silver flecking. Leaf shape was slightly more variable, but nevertheless 54% of plants were of types 5, 6 or 7: a rather broad heart shape. Again anyone who grows the species will be thoroughly familiar with this.

Distribution

Sites visited ranged from the Seyhan River valley 60km north of Adana, along the Taurus and anti-Taurus mountain chain eastwards to a point 35km north-north-west of Kahramanmaraş, then southwards into the Amanus, as far as the northern side of the Belen Pass. The distribution of *C. pseudibericum* is constrained by a number of features. The plain surrounding Adana is intensively cultivated, with no ecological niches available to it. I infer, however, that even in the absence of cultivation, the higher temperatures at this low altitude would probably render it unsuitable. As far as we could determine, *C. pseudibericum* was absent from a 30km stretch of the northern Amanus, running south from the main Osmaniye-Gaziantep road. On the western and northern sides this was attributable to the nature of the rocks, some of which appeared to be highly nutrient-deficient siltstones, and others highly metamorphosed types including serpentines with their burden of phytotoxic heavy metals. On the eastern flank the influence of the former rock type was supplemented by the rain-shadow effect, the climate being far too dry. This rainshadow effect extended across the valley to the east, and to the lower range of hills beyond this, an area with a distinctly Mediterranean feel. In both of these areas no cyclamen were found.

Conservation status

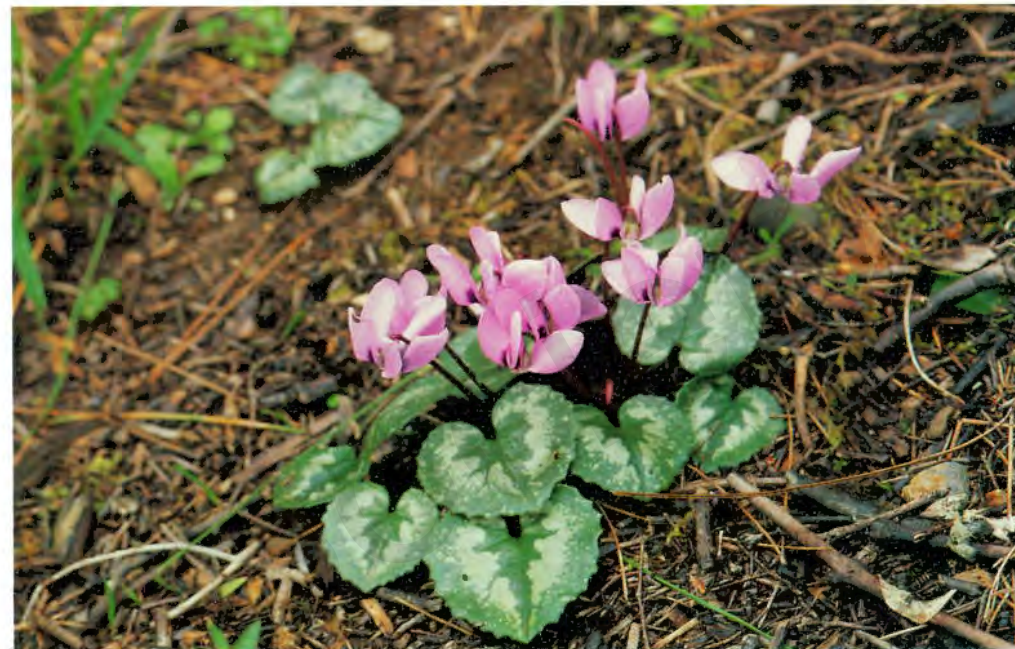
One of the higher limestone pavement habitats was adjacent to a village near Honaz Dağı, and horizontal areas had clearly been intensively grazed, but the cyclamen were quite safe in their crevices. This ridge extended for several km, and others could be seen in the distance across and down the valley. There was recent tree planting activity in the area (the trees carefully wrapped in bundles of brushwood to protect them from harsh weather), so the general habitat conditions might be expected to improve in the future. One other limestone area seen was the subject of minor terracing, but the massive nature of the rock meant that substantial limestone faces remained for colonisation by the cyclamen. Other higher-altitude limestone environments were remote from obvious human habitation. Although some evidence of grazing was apparent, the expected impact on the cyclamen would have been minimal. Lower altitude sites appeared to be unsuitable for agriculture due to their generally smaller extent and slope (especially given the proximity of the plain) so appeared to be reasonably secure. To the east of Düziçi the picture was even more positive. The Forestry Service was actively conserving the habitat, and villagers further down the valley were clearly aware of the attractiveness of the plants. This habitat was very extensive indeed. The team could easily have spent two weeks determining its extent. I am aware of no record in the UK of wild-collected tubers of *C. pseudibericum* having been offered for sale. The comparatively remote (from Istanbul) habitats would probably militate against collection anyway. From our brief sampling of the area, I conclude that the future of *C. pseudibericum* in the area is secure for the present.

Implications for cultivators

Cyclamen pseudibericum is clearly not a plant of the familiar Mediterranean climate, which has comparatively moist winters with little or no frost, and very hot, dry summers during which geophytes go dormant, and is frequently the home of many unfriendly spiny plants. Although the habitats where *C. pseudibericum* was found might well be fairly dry in summer, the tubers would not be subjected to the very hot conditions to be found at lower altitudes nearer to the Mediterranean. Temperatures would be ameliorated by the aspects seen, from west through north to east, in places supplemented by shade from trees. In limestone pavement areas, the location of the tubers in clefts or under shelves in the native rock would similarly modify their environment. Most of the higher habitats were snow-covered as late as February, and in the absence of snow cover the climate would be cold. The association with primroses suggests that given good drainage, *C. pseudibericum* should be an excellent plant for the open garden in Britain. In my own experience, this has proved to be the case. I have now had it growing outside for four years, and in 2001 the first self-sown seedlings appeared. It occupies a west-facing site beneath *Euonymus alatus*, in a sandy humus-rich soil and to date, the lowest temperatures experienced have fallen to -7°C (19°F). Readers in North America may like to note that my climate corresponds to USDA Zone 5, which is also shared by most of France, northern Italy, Belgium, The Netherlands, and much of north-central and north-eastern Spain.

Acknowledgements

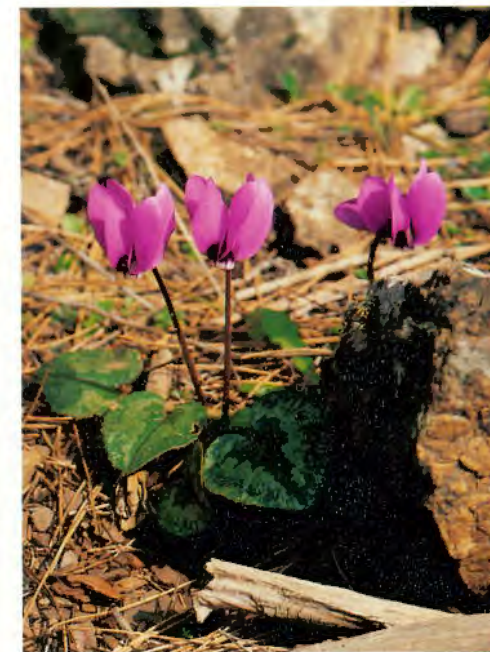
The support of Dr Prof Neriman Özhatay has already been acknowledged in the June *Journal*, but her tireless efforts before, during and after our time spent in Turkey cannot be over-emphasised. Bob Wallis, an accomplished observer and cultivator of cyclamen supplied invaluable information and advice. Dr Murat Ekiçi, our Turkish companion was not only very pleasant company, but unobtrusively smoothed our path.



Cyclamen pseudibericum at Site 1, 2002 Society Expedition to Turkey. Photographs by Vic Aspland



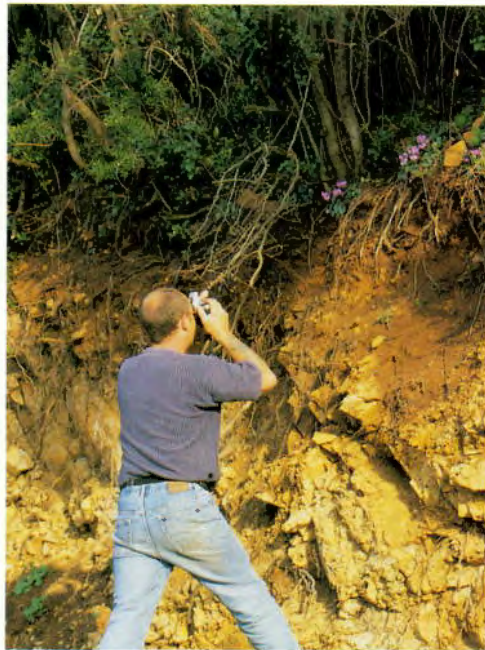
Cyclamen pseudibericum in habitat at Site 2



Cyclamen pseudibericum in habitat at Site 3



Habitat of Site 5



Pat Nicholls photographing plant south of Site 5



Cyclamen coum featured in Curtis's Botanical Magazine (Vol1 t4, 1787)



Spode plate design taken using Bot Mag illustration. Photograph by Brian Mathew



Very pale flowered *Cyclamen pseudibericum* at Site 1. Photographs by Vic Aspland



Lago di Ledro in Italy. Photograph by Jan Bravenboer



Variation in leaves of *Cyclamen purpurascens* in Lake Garda area, Italy. Photographs by Jan Bravenboer



Habitat of *Cyclamen purpurascens* near Lake Garda



Cyclamen purpurascens near Lake Garda

Cyclamen purpurascens and the Lake Garda area

Jan Bravenboer

On 26 January at the Wisley Winter Show, Roger Brook asked me to come to the Birmingham Conference in September and give a talk about *Cyclamen purpurascens* in the Lake Garda area. Because of a storm, my legs were still shaking from the Channel crossing, my mind was already on the ferry back home. However it was a great honour to me, after only six years' experience in cyclamen growing. Where do I start without making a copy of the little article I wrote in the December 2001 *Journal* (Vol 25 No 2 p44)? Maybe it is a good idea to make a combination of holiday and *C. purpurascens*, telling something about the area for those who never visited this part of the world and maybe intend to.

Cyclamen purpurascens is my great love. Is it the smell, the beautiful leaf pattern, the very long flowering period? I cannot tell you. In any case the fact that *C. purpurascens* keeps its leaves is important, you can enjoy the plants the whole year round. I worked 21 years at the Germination Department for the Government Seed Testing Station in the Netherlands. *Cyclamen purpurascens* germinates very slowly – was that the reason that I loved that species?

In September 2000 I showed some *C. purpurascens* slides when I participated in the Telford Conference, it was the last “three day Conference”. Many of those slides were not good enough, so my wife and I decided to go to the Lake Garda area to take some new ones.

The road to Lake Garda

From England most people will drive through France and Switzerland; some will drive through France (Alsace) and Germany to reach Lake Garda. We have to drive 1,100km (680 miles) – we always drive through Germany and in the south of Germany we take the A7 from Ulm to Füssen. From Füssen we drive on the Fernpass, a lovely road through the hills and mountains of southern Germany and Austria. As usual, the volume of traffic is high at the weekends – don't drive at the weekends unless you drive early. If you have time enough and you want to see much of that part of Austria, take the Reschenpass, it is signposted. The Reschenpass is a beautiful mountain road (with great views) which brings you from Austria to Italy. The road ends in the neighbourhood of Bolzano where you can take the Brenner motorway (toll motorway) to the Lake Garda area. If you want to drive as quickly as possible to the Lake Garda area, go on the motorway from the Fernpass to Innsbruck. From Innsbruck, take the Brenner motorway to Rovereto South, from where Lake Garda is signposted. Those who have time, and want to take time, can visit some beautiful places in the Bolzano/Bozen area. At the eastern part of the Brenner, high in the mountains, you find the wonderful Alpe Siusi/Seisser Alm, a wonderful habitat full of alpine flowers. From there you can climb on the Schlern, a great “flat” mountain. For those who think that *Vitaliana primuliflora* is rare, on the Schlern (at the end of June) you will find so much *Vitaliana* that it looks like a yellow meadow. In this part of Italy (South Tyrol) people speak German, as they belonged to Austria for many years. If you are a wine lover, visit South Tyrol and enjoy the wine. Holiday in this part of the world means that Austria (Carinthia), Italy (Dolomites, South Tyrol and Lake Garda) and Slovenia (Lake Bled)

are close together, a paradise for *C. purpurascens* lovers. Driving the Brenner motorway, the South Tyrol vineyards will accompany you till about Trento, from there the vineyards belong to Trentino.

The road from Rovereto South to Lake Garda (about half an hour) is not interesting, but as soon as you see Lake Garda the cyclamen (and holiday) feeling starts. The north side of Lake Garda has two villages, Riva and Torbole. There is almost always a lot of wind, a paradise for windsurfing. Sometimes you can see hundreds of people windsurfing. In my opinion Torbole and the north-east part of Lake Garda is the place for young people, Riva and the western part is a bit more for older people. North from Riva and Torbole is the Grappa area (Grappa is a distillation made from grapes). It is common knowledge that the more expensive the Grappa, the better the quality.

Where to start searching for *Cyclamen purpurascens*

Of course I will not give the exact locations where I found my *C. purpurascens*, you will find them everywhere around Lake Garda. You can find them at the eastern part (among the Monte Baldo), the northern part (among Lake Molveno and many other small lakes) and the western part (all forests around Lake Ledro, Lake Idro and Lake Valvestino). From Limone you can take a road to Valle di Bondo and/or Valle St Michelle, a *C. purpurascens* paradise. Don't expect that silver-leaved, Christmas tree patterned and plain leaf plants are common – to find the very special plants there is a lot more to do. The mountains around Lake Garda are not child's play. In Germany, Austria and Switzerland, mountain paths often rise slowly, but it will be a long path. The Italians however mostly know only one kind of path, as short as possible, straight up. As soon as you are high, many paths stay on the same level. Some people like the climbing, others like to go down. The next day some will have muscle pain below their knees, others above their knees. Don't walk close to the abyss, the soil often is very dry and hard and after rainfall, very slippery. We have some slides of people who tried to see how far they could go and fell off. They were lucky – people in a helicopter could pick them up.

Notes about geology

A very long time ago (235 million years), the Lake Garda area was a deep sea, that's why we find pure clay. You will find a huge mass of limestone, dolostone and granite. The limestone in the Lake Ledro valley is mainly stone from the Jurassic period (195-140 million years ago). The dolostone we find reaches back to the period at the limit between the Trias and the Lias. On this stone only a black and poor soil develops, which allows the growth of rare firs and a sparse understorey. Only a few botanical species grow here: *Globularia*, *Carex baldensis*, *Primula* and *Rhododendron*. You will not find a single cyclamen on dolostone. The Lake Ledro area often turned into a battlefield, and in many places soldiers made holes in the rocks to protect and hide themselves.

Flora and fauna of the Lake Garda area

The Lake Garda area is a paradise for ornithologists, birds will wake you up in the morning. I saw an eagle this summer as well. Walking on sunny mountain path reptiles fly under the leaves, beautiful butterflies will accompany you. In shade and sunshine you will find more than 30 different kinds of orchids. On rocks you find primulas, saxifrages, the beautiful *Physophlexis comosa*, *Viola dubuyana*, *Silene elisabethae*, and on mountain meadows you will find a beautiful 10cm (4in) orange-flowered lily (*Lilium*

bulbiferum). Where cyclamen grow they are mostly accompanied by *Hepatica nobilis*, *Hedera* and *Helleborus niger*. Some hepaticas have a very interesting leaf pattern. Lake Ledro is a great place for the anglers among us. You can see the trout in the water; some are between 50-75cm (20-30in) long and weigh between 3 and 7kg (6½ to 15lb).

Where do *Cyclamen purpurascens* grow?

Cyclamen purpurascens likes to grow in mixed forests which is why you will find so many extraordinary plants in the Lake Garda area. In the mixed forest you will find beech, red-deal, larch, silver-fir, scots pine, hornbeam, ash, oaks, elms, maples, laburnum, hazel trees and wild fruits like the walnut. *Cyclamen purpurascens* likes clay and limestone – it's all there. The tubers and roots always grow in pure clay and above the clay there are some centimetres of humus. Many plants have floral trunks, but you will find tubers growing on the surface as well. In many places you find "naked" tubers hanging on the rocks, waiting for some water. As soon as the forest changes to a pine or beech forest, you soon find no *C. purpurascens*. The best and most beautiful silver leaved plants you will find in the very steep and dark gorges. The humidity in these gorges is high; you cannot keep your t-shirt dry.

Sometimes you find a place where trees are cut down and the cyclamen are in full sunshine. Most of the plants look very poor, but sometimes an individual plant will survive. Those plants have very thick leathery leaves. Most cyclamen grow in complete shade in steep wet gorges. Along the path, where sunshine gives more light, you will find them less but the flowering period starts much earlier. Most cyclamen are north-facing, you will find enough south-, east- and west-facing as well. On average the Lake Garda area is coloured pink from the beginning of June till the end of September (sometimes until the first night frosts in November/December).

Ticks!

I want to warn everybody who wants to visit the Lake Garda area: in the forests live dangerous enemies TICKS! It is a very serious problem. As long as you stay on the path you will have no problems, but leaving the path and climbing through gorges and searching under bushes you will get them. Five or more ticks a day is normal. Each day you will have to check your body and remove these very little animals. They are only 2mm long but after a week, filled with your blood, a lot bigger! If you are alone you have to be very supple to find them all. Most ticks wait on your clothes and will find your body later when you are sitting somewhere. Bring a pair of tweezers from home, you certainly will need them. There is a special pair of tweezers for ticks, which a chemist will sell you, but they are too big for the little ticks. The best pair of tweezers is the one in the Swiss army knives.

The weather

The Lake Garda area has great weather in spring, summer and autumn. Of course it can rain as well but usually for no longer than one or two days. When it rains for a whole week you have bad luck, it is not common. In summer, day temperatures around Lake Garda are about 30°C (86°F) or more. But, in the valleys, for every 100m higher you go, on average the temperature is 1°C colder. Sometimes the nights are cold, 7°C (45°F) or lower. Almost each year hail showers destroy grapes and fruit trees. I have seen vineyards without any leaf or grape in July. This year in August, the Lake Garda south area was hit by a devastating hail storm. Hail stones like meat balls (I don't mean the little ones in soup) – unbelievable. Broken car windows, damaged tents, and so on.

Growing *Cyclamen purpurascens* from seeds

Sow *C. purpurascens* seeds in November and place the seed pot outside in a cold frame (*C. purpurascens* needs night frost). In June/July seeds will germinate like hairs on a dog. Seeds that did not germinate probably will germinate one year later. After many years of crossing, sowing and throwing many seedlings away I succeeded in breeding some *C. purpurascens* varieties that give seedlings 90% (or more) true from the type. My soil mixture is not a secret. Two parts Park Goud (a yellow lime-based loamy kind of sharp sand from Belgium); two to four parts usual potting soil (two parts for the adult plants, four parts for the seedlings); one part each beech leaf mould and pine duff; two parts clay (dry granulated clay from Sweden, cost about £5 a 40kg bag); one part little stones/grit and last but not least one part of the grit chickens and pigeons eat.

Summary

For those who want to visit the Lake Garda area: always wear mountain shoes, gorges can be very slippery after rainfall. Buy a good map, Italy is very poorly or not signposted. (The Italians are famous for a signpost around the corner.) Around Lake Garda it can be very hot in summer, but in the valleys temperatures will be up to 6°C (11°F) lower. The Monte Baldo (on the east side of Lake Garda) is very interesting in April-June, less interesting in summer. For those who want to see some pictures of my *C. purpurascens* plants, look at the Cyclamen Society website or send me an e-mail. If you have questions, I'll help you. Some good advice – buy many films for your camera, you will need them.

Jan Bravenboer can be contacted at: [REDACTED]



Cyclamen purpurascens 'Green Ice' raised by Jan Bravenboer.
Photograph by Jan Bravenboer

Recent research on cyclamen

Chris Clennett

Few members of the Cyclamen Society are trained in botany or taxonomy. A greater number, but I suspect still a fairly small proportion, are interested in why plants carry the names they do, and the reasons behind changes to long established plant names. It has always been the case that when an established plant name is replaced by another, horticulturists and gardeners are either slow to adopt the new name or refuse to do so point blank!

Over the last few years there has been a series of publications in scientific journals concerning cyclamen and the family Primulaceae. Only a few of the conclusions have reached the membership, and there is still debate over some of the results, even in the scientific community. One of the peculiarities of taxonomy is that there is often no "correct" answer to the questions of relationships between plants. Although the rules of botanical nomenclature usually mean that only one of a list of old published names is currently valid, opinions between botanists can vary, and with them different interpretations of the evidence. For example, the spring flowering cyclamen found on Rhodes and Kos has white blooms with a pink band at the mouth of the corolla. No-one disputes what it is, but it has been given various names, all of which have been validly published by an author who believed the name they were using fitted the facts perfectly. So we have *Cyclamen rhodium* Gorée, *C. repandum* var. *rhodense* Meikle and *C. repandum* subsp. *rhodense* (Meikle) Grey-Wilson. None of these names is necessarily incorrect, it's just a matter of checking the arguments each author uses to support their viewpoint and selecting the best version of the facts to use. In time, one variant always ends up in general use until new research suggests a different interpretation is needed.

The development of DNA analysis has allowed scientists to re-examine many relationships between plants. Depending on the genes chosen for examination, different degrees of separation can be looked at, so species can be separated within a genus, genera within a family, or even families within an order. Those botanists looking at plant evolution are particularly interested in the relationships of genera and families, as these can reveal how apparently unrelated plants have something in common. Primulaceae, and with it *Cyclamen*, has not escaped this research. A fundamental change that affects cyclamen has now been published in the literature. However, in the course of writing this article, I have found that support for the new arrangement is confined to other researchers using DNA analysis.

A team of scientists working in Sweden has produced a series of papers dealing with relationships amongst the order Primulales. Primulales contains closely related families that were the subject of this research: Primulaceae, Myrsinaceae and Theophrastaceae. An analysis of the three families based on morphology (that is, the physical appearance of the plants) was published in 1995, and these data were combined with DNA evidence from three gene regions in 2000. The results are surprising, and possibly a bit disturbing, for growers of cyclamen.

The superficial similarity between two of the Primulaceae family, *Cyclamen* and *Dodecatheon*, is dismissed as parallel evolution, and growers of both genera would tend

For a Glossary of scientific terms, see p59.

to agree with that. The two have very little in common in terms of their growth, plant habit and physical appearance, as well as habitat preferences. The fact that they come from such widely separated places also supports the idea that they are only distantly related. In fact *Cyclamen* has no obvious relations in the Primulaceae, or indeed anywhere else.

The family Primulaceae consists of a number of genera, some of which show close affinities whilst others are less obviously related. *Primula*, *Dionysia*, *Androsace*, *Douglasia*, *Omphalogramma* and *Cortusa* share many characteristics in common, showing a gradual change from the leafy woodland *Cortusa* and *Primula* to the highly reduced cushion species of *Androsace* and *Dionysia*. Other members of the family are more varied. *Anagalis*, *Lysimachia*, and *Trientalis* are somewhat similar although *Lysimachia* has a huge range of variation within a single genus. Also normally included in the family are *Glaux* with reduced petal-less flowers, *Samolus*, *Soldanella*, *Bryocarpum*, *Coris* with its unique zygomorphic (not radially symmetrical) flowers, and *Cyclamen*.

The Swedish team also looked at the members of the two related families, Myrsinaceae and Theophrastaceae. The genera in these families are all woody, varying from small shrublets to tropical trees. One genus in Theophrastaceae has many peculiarities that contradict the majority of the family, and results suggested that it should form a new family of its own (Maesaceae).

The DNA and morphological characters produced from this work were subjected to a cladistic analysis. Generally, with cladistic analysis the greater the number of individual variable characters, the better the result and the more likely it is to stand up to close scrutiny. By using morphology and three separate DNA regions, the team believed they have strong support for the results achieved. These results break Primulaceae apart, moving many of its genera to Myrsinaceae, and *Samolus* moves to Theophrastaceae. Of those genera tested in the experiment, those remaining in Primulaceae consist of: *Primula*, *Douglasia*, *Dodecatheon*, *Cortusa*, *Omphalogramma*, *Soldanella* and *Dionysia*. Many of the familiar genera of Primulaceae are moved to Myrsinaceae, and these include: *Anagalis*, *Glaux*, *Trientalis*, *Lysimachia*, *Coris* and *Cyclamen*.

Few members will be familiar with the family Myrsinaceae, as most of the genera are tropical trees and shrubs. Only two of these genera have much of a toehold in cultivation, *Myrsine* and *Ardisia*. Both are shrubs and most of their species require heated glasshouses to grow. From a grower's point of view, they share no similarities with cyclamen (or *Lysimachia* and its relatives) whatsoever.

This is not the first case where new analysis using DNA evidence has changed the classification of plants. It is widely accepted amongst the scientific community that the overall appearance of a plant (its gross morphology) is often highly adapted to circumstances, which might be habitat pressure, pollinator relationships or other factors. The underlying relationships may be hidden when looking at the morphology, but are shown up by the plants' DNA. There is greater correlation between these relationships and micro-morphology, which includes the characters of pollen, some parts of the flower, surface hairs and cell shapes of the stem or leaves.

DNA work has been used to suggest relationships between species of cyclamen. However, the published results so far have used only one gene region. Stronger results come from using several genes, and if possible combining these with morphological characters. This is exactly the work the Cyclamen Society is supporting at the University of Reading, and initial findings are encouraging (see page 41)

Whilst we may not willingly start referring to cyclamen as members of Myrsinaceae, other name changes within our chosen genus are of more immediate interest. Recently, two changes have been proposed for species of cyclamen, and in both cases the plant reverts to an old name that has been out of favour.

The variations on *Cyclamen coum* have long plagued growers and taxonomists alike. Recent work, including my own (see Clennett, 2002), suggests the populations from Iran should be separated as a different species. The name they come under is not new, as these plants were initially described as a species in 1860. It is only now that on balance we support that particular interpretation, and *C. elegans* reappears in the literature, bringing our species list up to 21.

The case of that tongue twisting species from south west Turkey is rather different. When Professor Otto Schwarz published the name of *C. trochopteranthum* in 1975, he did so based on his opinion of evidence at the Berlin Herbarium. Schwarz studied the information available to him in detail, and believed that all references to the name *C. alpinum* were correctly at most variants of *C. coum*. Two separate authors had in fact published the name of *C. alpinum*: Sprenger in 1892 and Hildebrand in 1898. The Berlin Herbarium lost all the relevant material in the Second World War, so no one today can verify what the plants actually were. However, Hildebrand's monograph contains detailed descriptions and line drawings of the plants he studied. When I was researching at Reading University in 1995-7, I was fortunate to examine closely an original copy of Hildebrand's monograph and my opinion at the time was that, just from the line drawings and the very little German I can read, Hildebrand's *C. alpinum* was identical with the plants grown now as *C. trochopteranthum*. Being a mere fledgling taxonomist I felt unable to proceed on this basis, but Chris Grey-Wilson has now done so, following the publication of the Cyclamen Society's translation of Hildebrand. Members should refer to this excellent translation where there can be no doubt – the two species are identical. Strictly speaking, Sprenger's use of the name predates Hildebrand. However, this is not a unique situation, and Grey-Wilson produces supporting arguments that the original publication was also of this species. So *C. alpinum* hort. Dammann ex Sprenger reappears as the oldest published name for this plant.

Interestingly, I can vaguely recall in my teens when my interest in cyclamen was developing that growers were incensed that they had to use the unwieldy name of *C. trochopteranthum*. Now, no doubt we shall bemoan its departure even if the correct name is easier to say, and certainly to spell!

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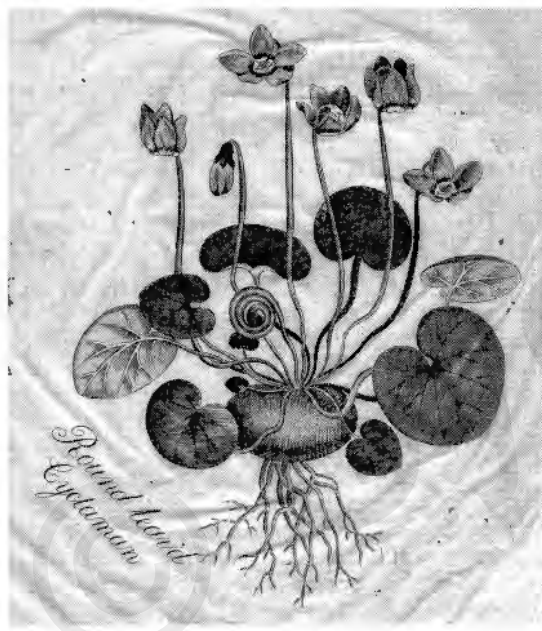
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Spode Ware, Curtis's Botanical Magazine and Cyclamen

Pam Woolliscroft and Brian Mathew

Botanical subjects were used on Spode ceramic wares from the early 1800s onwards and it is clear that many of the designs were influenced by watercolours taken from *Curtis's Botanical Magazine*, which first appeared in 1787.

One of the earliest illustrations in *Curtis's Botanical Magazine*, in the very first issue, was of *Cyclamen coum*, drawn by James Sowerby (Vol 1: t4, 1787) and this is one of those selected by Spode. In fact it was this illustration that instigated the research (by PW) into the influence of the Magazine on Spode designs, by a sequence of events. In 2000, one of us (BM), then President of the Cyclamen Society and Editor of *Curtis's Botanical Magazine*, was visiting Valerie Finnis, the founder and secretary of the Merlin Trust. She was displaying some dessert plates on a table and one of these bore an image of *C. coum* (see photograph on right hand page of centre spread). Although reproduced wholly in green, including the flowers, it was immediately recognisable as illustration no 4 from the Bot Mag (see centre spread, left hand illustration). It was one piece of a dessert service given to Valerie Finnis by her late mother-in-law, Lady Charles Montagu Douglas-Scott. Following this encounter, the researching began and it soon became clear that other images from the Botanical Magazine were used as well in this particular service.



Tissue "pull": courtesy of Spode Museum

As a background to this story, it is interesting to provide an outline of the techniques involved in utilising published artwork in the decoration of pottery. In the case of the Botanical Magazine, the images were transferred on to the pottery by a process known as Transfer Printing, at the biscuit ware stage (ie after the first firing). Before the printing could begin the pattern was first engraved onto a sheet of copper. The ceramic colour was then applied to the warmed copper plate and the surplus removed, leaving the colour only within the engraved design. Specially prepared tissue paper was laid carefully in place and pressed onto the copper plate with a hand-powered press. The paper was then removed taking the colour with it (see illustration of a tissue "pull"). It was then cut to the shape of the pottery and

applied colour side down to the biscuit ware and rubbed hard by hand with a stiff brush. Once the colour had been successfully transferred from the paper the pot was washed, removing the thin paper and leaving the colour behind. The next process was a low temperature firing to "harden on" the colour.

The Spode factory records show that the *C. coum* image was used under the pattern no 1678, the first recorded use of which was in about 1812. It is interesting to note that the engraver did not follow the original exactly, presumably attempting to improve it slightly, for whatever reason. The upper-most flower in the original illustration is a side view, whereas on the plate it has been turned up to show the central "eye" of the flower. Other than this, the ceramic version is nearly identical. The cyclamen appears also on an oval plate ("Devonia shape") in the same set. Several other Bot Mag images depicting various plants were used in this service. The original hand engraved copper plates for these 'Botanical Studies' still exist at the Spode factory and the head engraver located them amongst the 25,000 other coppers. From these, the printer kindly printed off some tissue "pulls" (one of which is reproduced here) to help in the identification of these images.

Editor's footnote. A more extensive and well-illustrated article on this subject by Pam Woolliscroft, Curator of the Spode Museum, appears in *Curtis's Botanical Magazine* Vol 19, Part 3, p183-213 (2002).

Glossary of scientific terms

Chris Clennett

This issue of the *Journal* contains several detailed and scientific articles. Although members may wish to read these in detail, the language used can sometimes be off-putting to many, or worse be unintelligible. In order to help as much as possible, this glossary has been drawn up to include many of the terms used, and it is hoped this will assist members when tackling the latest research topics covered in this and future *Journals*.

Abaxial. The lower surface of a leaf or flower, that is the surface that is nearer the roots. Because of twisting in some plant parts, this can sometimes appear to be the upper surface. In cyclamen flowers this is the surface of the petals that is generally hidden once the flower opens, but visible in the buds.

Adaxial. The upper surface of leaves or flowers, furthest from the roots.

Anthocyanin/proanthocyanin. Chemicals found in plants, and giving purple or pink coloration. Most often found in flowers, these chemicals can also occur in the leaves.

Chloroplast. This is a small oval object (correctly known as an organelle) within the cells of most plants. It is green in colour due to the presence of chemicals within it that carry out photosynthesis (see below). In common with the organelle that carries out respiration (mitochondrion), chloroplasts hold their own strand of DNA, independent of the rest of the cell. This changes over time in the same way as the cell's DNA, and can be used to trace relationships between plants.

Chromatography. A system of chemical analysis where spots of the chemical being examined are placed on paper or another absorbent surface. The edge of the paper is then placed in a solvent, which is allowed to travel through the paper by capillary action. As it passes over the chemical being examined, the solvent picks it up and transports the constituents of the chemical different distances, thus separating them

out. Depending on the system being used, separation can be in one direction (one dimensional) or two directions (two dimensional).

Cladistic analysis. Roughly speaking, this means creating an enormous spreadsheet (see below) of data, where each row is a different plant (whether it be a species or genus depends on the questions being asked). All the many characters being examined then form the columns of the sheet, and with DNA this can run into many hundreds. The vast array of data is then entered into a computer program that looks for similarities and differences between the characters for each row of data. The program tests the data against all the possible variations in position of each plant over and over again. Eventually a series of trees are produced with the plants at the tips of the branches. The tree does not necessarily show how the plants have evolved to their positions, but does show how they are related. The shortest possible tree is taken to be the best model for these relationships.

Clinal. Gradual variation in a plant across its distributional range. At the extremes of distribution, plants are obviously different, but through the distribution the variation at each point is slight, so making it difficult to separate the variants with different botanical names.

Colporate. This refers to the apertures in pollen grains. **Colpi** are openings in the outer wall of the pollen grain, and **Ora** are openings in the inner wall. Where the openings are only in the outer wall, the grains are **colpate**, and where openings are present in both layers the grains are described as **colporate**. The number of openings is usually attached to the description, so a grain with four openings in both layers is "4-colporate".

Cytology. The study of chromosomes within plant cells. This is examining the entire chromosomes, and the number of them found in each cell, but does not include the DNA from which these chromosomes are made up.

Data matrix. Essentially, a data matrix is the same as a spreadsheet (see below). This is information on a set of plants (genera or species) set out in rows and columns. Usually, the different plants form the rows and the information about them form the columns. The data is usually converted to numbers by using a guide to that particular characteristic (for example, the Cyclamen Society leaf shape codes described on p49).

Derived. In a taxonomic sense, this means the most recently evolved, and therefore the most different from any ancestor.

DNA. The substance that carries all the genetic information in cells (it actually stands for De-oxy Ribo-Nucleic Acid). The information that creates all the parts of a plant is held in repeating sets of molecules called base pairs, of which there are four types. The order in which they come is known as the **DNA sequence**. In DNA analysis, the sequence is converted into numbers and entered into a data matrix (see above).

Endemism. This is the occurrence of a plant limited to one place (usually a single country) only. It can then be said to be an endemic of that country.

Flavenoids/flavonols. These are types of chemical found in the leaves of plants. They are yellow in colour and are resistant to breaking down. Because of this, these chemicals can be extracted from pressed leaves some time after they have been collected.

Hydrolysed/hydrolysis. A process which changes chemicals in a plant by reacting them with water. A new chemical is produced, which may be easier to separate and identify.

Infra-generic. Literally "within a genus", this term describes variations between species.

Infra-specific. Literally "within species", this describes variation below the species level, so includes subspecies, varieties and formas.

Marginal serration. The teeth-like edges of leaves, found in some cyclamen species, such as *C. persicum* or *C. hederifolium*.

Micro-morphological. Very small physical characters of the plant, such as the appearance of pollen grains, or the detail of the surfaces of the leaves, flowers and stems.

Mitochondrion. This is a small object found within all cells that carries out respiration, and generates energy for the cell to operate. It carries its own strand of DNA, which can be used to trace relationships between plants (or animals which also have these organelles). The plural is mitochondria.

Morphological. Referring to the morphology, or appearance, of the plant.

Palynology. The study of plant pollen and fern spores.

Papilla. A small projection from a surface, usually in the form of very short hairs or glands.

Phenetic analysis. This is a statistical system in which a computer program compares characters from large numbers of specimens and displays the degree of similarity they show in a graphical form. The closer they appear in the diagram, the more closely they are thought to be related. There are several types of phenetic analysis, and the final result is displayed in a different way. **Phenetic ordinal analysis** uses several characters to plot in a two or three dimensional graph in which the separation of points represents the degree of difference between specimens. **Phenetic cluster analysis** produces a type of graph resembling a tree, with the most similar specimens on adjacent branches.

Photosynthesis. This is the process by which plants use the sun's light, water and carbon dioxide in the air to create sugars and starch. It is too complex to explain here, but the molecule that carries out the process is green, and gives plants their characteristic colour.

Phylogeny. This is a theory about the relationships within a group of plants. It is supported by research evidence and usually represented by a tree-like diagram produced from cladistic analysis (see above).

Phytochemistry. The study of plant chemistry. This can include chemicals in the leaves, roots and flowers, and would include the scent analysis being carried out with the help of the Society.

Phytotoxic. This means toxic (poisonous) to plants, and can apply to chemicals from rocks, pesticides, or any other substance that harms plants.

Proforma. This is usually a recording sheet where the information to be gathered is set out in boxes. This ensures all the necessary data is obtained.

Reniform. Literally "kidney shaped", this refers to a leaf shape – wider than long, and rounded or elliptical, without any point at the end furthest from the petiole or stem.

s.l. This is a shortening for *sensu lato*, meaning in the broad sense. This includes all similar variants of a species, whereas **s.s.** or *sensu stricto* means in the strict sense and includes only the one type of plant described when a name was first used.

Spreadsheet. A large mass of data held in squares or cells like "electronic graph paper". Each cell holds one piece of information, and the spreadsheet usually has names for each row and column of cells, to which the information refers. For example, the name for each row might be a species of cyclamen, and the name for each column a particular character of its appearance.

Taxon/taxa. This is an individual type of plant. A taxon can be an individual species, or subspecies, or variety or forma. A group of these plants are then taxa.

Trichome. A multi-celled hair present on the surface of a plant. This is usually on the stems and leaves, and the shape and construction of these hairs is often unique in different plants.

The season

May was mainly cool and dull, and wetter than normal – enough to keep the ground pretty moist after the cool damp spring. Except in the west country, which started the month wet and cool, early June had some pleasant summery days, but things then turned unsettled again, so that on balance temperature and rainfall that month ended up fairly average in most of England and Wales, though in total there was less sunshine than usual, and most people remember June as a dull month; Scotland had its wettest June since 1938. This dull weather lasted well into July, with rain bucketing down virtually every day to start with. Some parts of the south and west ended July with two or three weeks of fine summery weather, but in most places there were just a few hot days at the end of that month. By the end of July Met Office figures showed that some parts of the UK – most notably Northern Ireland – had had their wettest year so far (January-July) since 1900. Farmland was by now so waterlogged that in August the European Commission relaxed set-aside rules, allowing farmers to graze or mow set-aside grass (subject to certain conditions), throughout Scotland, Ireland, much of the north of England, and in Somerset, South Gloucestershire and Wiltshire. August also started wet and rather warm, with torrential thunderstorms for many. But it then became generally drier, with some very warm days at least in the south and midlands in the middle of the month, though it was often overcast. September was generally dry and summery, and in most places October started dry and sunny too. So although summer arrived late for most people, it did arrive, and lasted further into autumn than usual. Then autumn waded in with a vengeance: the second half of October was cooler than average, dull, wet and stormy – with earthquakes too for one of our growers.

In theory, all this should have been good for cyclamen in the open garden: a dull wet spring, allowing a long growing season, without a hot bright spell hurrying them into premature dormancy; then a definite dry summer, with some warm or hot weather, but with enough residual moisture below the surface to keep roots reasonably happy; and finally a plunge of almost mediterranean suddenness into a cool, wet growing season. Moreover, the wet June-July spell should have suited *Cyclamen purpurascens* well, as in its homeland this species generally gets more rain at that time than is normal in England then.

In practice *C. purpurascens* did do well for those who had the typically wet June/July. In Somerset Joan Loraine found them more fragrant than ever before, and in Cheshire Frank Nunnerley felt this was the first year they had ever performed really well for him. Most of our barometer growers had them in flower from June or July till September; up in Yorkshire, for Trudy Charlesworth they started in late May. However, in the West Midlands and Gloucestershire Stewart and Janet Richards and Meg Baker had much drier weather in June and July, and this species did not flower well for them. Meg (whose soil, over rock, drains very quickly) found that the plants closest to trees, and therefore the driest, were the worst performers. She is not certain whether it was the dryness or the dullness which the plants disliked most. Her silver-leafed plants seemed to do the best.

In general there has been a good long flowering season for the autumn-flowering species, and most would agree with Peter Moore in Kent that all of them have started flowering earlier than usual – and that this is becoming the regular pattern. Again, the Richardses in their dry West Midlands garden reckon that this has not been a good season for them.

Cyclamen hederifolium started flowering much earlier than usual for some people:

early June for Trudy Charlesworth in Yorkshire, early July for Frank Nunnerley in Cheshire (some of his plants scarcely went into dormancy at all this year), later that month for most others – including the fine bank of plants in Erna Frank's Surrey garden, which originates from a couple of Woolworths tubers planted some 20 years ago and, left to its own devices, is now three tubers deep in places. But in Somerset Joan Loraine had to wait until 14 August for her first flowers. The display of flowers has been generally good, and long-lasting. Strains mentioned as being a couple of weeks earlier than the general run this year have been 'Ruby Glow' and 'Perlenteppich'. Two of the *C. hederifolium* which Mike and Mary Saunders have kept an eye on to compare seasonal dates for these reports are 'Nettleton Silver' and a beautiful 'Ruby Glow', both planted in the garden of a cottage which they let to visitors. Unfortunately both were stolen this year – as she says, at least the thief has good taste.

Peter Moore reports that *C. hederifolium* var. *confusum* is now well established in his garden, usefully prolonging the season as it flowers a few weeks later than the type. Another advantage is that the leaves seem to come almost at the same time as the flowers for him.

For most people *C. intaminatum* is normally the first of the autumn-flowerers, and this held true for some this year – in Nottinghamshire Ron Evans had a few flowers by June. The Saunderses in Devon usually have it starting in that month, but this year found fewer flowers than usual then. Jeremy Wood, also towards the west country (Wiltshire) commented that, planted in a sink, it was late coming into flower this year – but it was still in flower at the end of October. Peter Moore noted that for him it changed places with *C. mirabile*, still being in full flower when *C. mirabile* was virtually over. Meg Baker has *C. intaminatum* in the drier parts of her garden, finding it prone to rot in damp soil, and this year has found it very late to start flowering.

In the open garden the other autumn-flowering species seem to have behaved more or less as usual for most people. Meg Baker says that in most years her plants of *C. cilicium* seem more prone to slug-damaged petals than *C. hederifolium*, but that this year, drier during their flowering, they came through particularly well. She has also noticed that the leaves of *C. cypricum*, *C. libanoticum* and *C. pseudibericum* were by early October well advanced in the drier parts of her garden, while there was no sign yet in what would normally be the damper places. Trudy Charlesworth in West Yorkshire now feels that she is on the edge of *C. pseudibericum*'s garden range; it hangs on where she plants it, but does not thrive, and this last year set no seed for her (nor did *C. repandum*).

Cyclamen coum has come into leaf earlier than usual for most people: plenty of leaf growth in early August for Frank Nunnerley in Cheshire, and flower buds visible by September for Ron Evans in Nottinghamshire. Peter Moore is taking bets as to whether they will be in flower before Christmas, or whether they will slow down; Meg Baker wonders whether the dry conditions in early autumn will mean fewer flowers than usual.

Under glass, seed ripening has generally been good; Jeremy Wood was harvesting seed from *C. intaminatum* in May, and had sent off nearly all seed for the Society's distribution at the end of July. However Mike and Mary Saunders had very little seed from their *C. graecum* this year, with most pods aborting; and flowering of this species has not been good for her this autumn. So far seed set among the autumn-flowerers seems generally good for others in southern parts, aided by the sunny breezy spells. Further north, the Richardses in the West Midlands have found *C. graecum* flowering very well. Ron Evans in Nottinghamshire has also been particularly pleased with this species, as even under glass it is normally shy-flowering for him, but this year it has

flowered well – though still no flowers for Frank Nunnerley, even further north in Cheshire. Frank has not had good seed set among most other species, either. However, he had *C. colchicum* flowering for a good two months under glass, and setting a good deal of seed. And he has had a good year apart from seed set, with his new plunge bed keeping the potted plants happier.

Mike and Mary Saunders have had particularly good seed set on *C. purpurascens*. These days they have taken to removing leaves covering the tops of the plants to allow better air flow to the body of the plants, which often seem very wet, giving a wonderful climate for moulds and botrytis.

Joan Loraine has had a lot of trouble from grey squirrels, which have taken to eating cyclamen seed. She has lost almost all this year's seed crop to them, even from pots on the verandah. She is thinking of putting wire netting over the pots next year.

Several people have found slugs and snails more active than usual this year. Under glass, most have found hand picking does the trick. Mike and Mary Saunders found silver-leaved *C. graecum* a particular target for them – but only plants in pots, one in a bed and surrounded by grit escaped completely.

Mike and Mary spotted some vine weevils in late August. A drench with Nemasys H killed most before they had done any real damage. Watering the pots and beds daily for six weeks to keep the compost wet and the Nemasys active had the bonus of noticeably improving the foliage and growth of the seedlings.

An unusual invader was the small red deer (presumed because of droppings and knocked-over pots) which investigated Mike and Mary's glasshouse one night in October. It didn't appear to have developed a taste for the cyclamen, though.

Thanks to our barometer growers Mike and Mary Saunders (Devon), Joan Loraine (Somerset), Jeremy Wood (Wilts), Meg Baker (Gloucs), Peter Moore (Kent), Erna Frank (Surrey), Stewart and Janet Richards (Worcs), Ron Evans (Notts), Frank Nunnerley (Cheshire) and Trudy Charlesworth (W Yorks).

Minutes of the AGM of the Cyclamen Society


22 September 2002 at Birmingham

1. Minutes of the last AGM were approved.
2. Matters arising from the Minutes: Melvyn Jope reported that whilst the focus group has been active, it was felt that with new officers in place fresh direction would be provided.
3. President's report: Each year the AGM provides me with the opportunity to say thank you to all those who have helped to plan, organise and execute the various activities in which the Society is involved. This year, my last as President, I extend my annual thanks to include all those who have given freely of their valuable time during the eight years of my term of office and made it all such a pleasant experience. I can say without reservation that I have enjoyed it all a great deal, largely thanks to the support and friendship I have received from the officers, committee and many of the members.

Although I now stand down as President I hope to continue my close association with the Society. I intend to carry on with the 'big book' project and hopefully see it through to completion. This will contain contributions by various people covering a wide range of topics not dealt with in the standard monographs, for example Cyclamen in art, on stamps and ceramics, accounts of the Society's field work in various countries, a history of the Cyclamen Society by Gay Nightingale, an analysis of the range of scents encountered in cyclamen species, medicinal and other uses of cyclamen and personalities from the cyclamen world. We are very fortunate in having secured the artistic talent of one of the world's leading botanical illustrators, Pandora Sellars, to prepare a set of paintings of all species for the book. The estimated completion date for this project is 2006. My thanks go especially to Hilary Temple and Helena Wiesner who have spent much time in dealing with the contractual and copyright aspects of this, and with the requirements of the Charity Commissioners.

While on the subject of publications, Chris Clennett is settling into the editorial role with great support from Helena Wiesner. As always, the editorial team appeals to members to write in with articles or notes on any aspect of cyclamen in the garden or in the wild, successes and failures or interesting observations. The December *Journal* contained 18 superb colour photographs from the very successful competition, illustrating just how much photographic talent there is in the Society's ranks. The *Cyclamen of Turkey* booklet has been selling steadily. In spring 2002 Brian Mathew and Trevor Wiltshire attended a press launch of the Turkish language version of this at the DHKD headquarters, at which they gave presentations and poster exhibits about cyclamen and the Society. The displays were much enhanced by exhibition material provided by our publicity officer, Vic Aspland. The preparation of a similar booklet on the *Cyclamen of Greece* continues. Thanks go to our Publications Secretary Richard Bailey who deals with the orders and distribution of our published works.

The Shows are a very important part of the Society's activities as they bring together members who otherwise may not meet up, and act as a showcase to the wider public. Jim Novis and his team have done a great job in organising these, and we must not forget the valuable input by Trevor Wiltshire who arranges and sets up the facilities at Wisley, both for Shows and some of the committee meetings. Thanks go also to the exhibitors, without whom we would have no shows. We wish Jim Novis all the best for his continued recovery after a serious heart operation. The excellent and ever popular Seed Distribution too is one of our core activities and we are very grateful to Patricia Short and Elsie Sadler for their on-going involvement in this most important service to members. In the area of research, last autumn saw a team comprising Richard Bailey, Ian Robertson and Jim Novis visiting western Turkey to study *Cyclamen intaminatum*. They recorded a much greater range of flower size variation than was known, and deeper pinks, but were unable to locate the species outside its previously known area of distribution, so it still appears to be one of the most restricted in nature. In spring 2002 Vic Aspland, Harry Gill and Pat Nicholls did a survey of *C. pseudibericum* in southern Turkey and the preliminary results of this expedition are to be presented at this AGM. The Research and Exploration Sub-Committee organised a one-day workshop in December at Wisley, bringing together researchers from



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Reading, Wisley, Montpellier and Istanbul so that they could meet to present and discuss their research programmes. Although the Society does not have the facilities or expertise to carry out its own primary research it can, and does, act as an important catalyst for others, including some funding and supply of plant material.

After 19 years as our Secretary we are sad to see Peter Moore stepping down. During all this time Peter has steered us quietly and efficiently through, not only providing wise counsel on the organisational aspects of the Society but also setting an example as a grower of cyclamen to which few of us can hope to aspire. On behalf of us all I would like to thank Peter for his unstinting devotion to the Society and we wish him a happy 'retirement' from this post, although he will I am sure remain very much involved.

Another of the pillars of the Society, Melvyn Jope, has come to the end of his current term of office as Chairman of the Committee. Melvyn was first elected on to the Committee in 1986, was Show Secretary from 1987 to 1991, Chairman 1991-1994, Chairman of the Research and Exploration Sub-Committee 1996-1998 and again Chairman of the Committee 1999-2002. He has put in a lot of work and provided invaluable guidance concerning the estate of our past President, Fred Buglass, from which the Society has greatly benefited. Nobody could have served the Society more willingly and cheerfully and in appreciation the Committee has rewarded Melvyn with an Honorary Life Membership.

Following the success last year of the combined one-day show and AGM at the Birmingham Botanical Gardens it was decided to repeat the format for this year and I am sure you will all join me in thanking Roger Brook and his team for organising the event at this excellent venue.

4. Secretary's report: Best wishes were sent to Peter Moore and his family for the speedy recovery of his son following his recent heart operation.

5. Treasurer's report: The big event from the financial point of view during the past year was the receipt of Fred Buglass's legacy – it has completely changed the overall bottom line. I have to say it has probably arrived in a most timely manner. With the fall in the stock market our general funds were once again in deficit. Luckily we have sufficient money on deposit not to have sell any stocks while the market is so depressed.

The President has told you about the activities which have been financed, partly, from the Buglass Fund already and we look forward to using this money for other projects which could not come from our accumulated funds.

As always I must express my thanks to Peter Hill, our Independent Examiner. He managed to complete his checks in record time, having sent me helpful notes on the corrections needed. I am glad to say they were all presentational (the arithmetic was OK) and e-mail certainly proved its usefulness.

6. Election of Officers and Committee:

President:	Peter Moore	Proposed Brian Mathew	Seconded Melvyn Jope
Vice-President:	Brian Mathew	Proposed Peter Moore	Seconded Hilary Temple
Secretary:	Martyn Denney	Proposed Helena Wiesner	Seconded Roger Brook
Committee:	Roger Brook	Proposed Vic Aspland	Seconded Peter Moore
	Arthur Nicholls	Proposed Melvyn Jope	Seconded Martyn Denney
	Trevor Wiltshire	Proposed Peter Jones	Seconded Hilary Temple

Proposals were adopted en bloc. The remaining Officers of the Society were re-elected.

7. Appointment of Independent Examiner: Mr P Hill was reappointed as Independent Examiner.
8. Any Other Business: Melvyn Jope thanked the members for the donated trophies. The new trophy for *C. intaminatum* was not awarded this year. Melvyn Jope said how grateful he and the Society were to Brian Mathew for all his work during his term of office as President. He was delighted that the Society would continue to benefit from his input as Vice-President.

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