The Hardy Orchid Society Newsletter

No. 24 April 2002

Your Membership Renewal is now due!

The Hardy Orchid Society Committee is…

President: Richard M Bateman
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Chairman: Richard Manuel, Wye View Cottage, Leys Hill, Ross-on-Wye, Herefordshire, HR9 5QU
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Treasurer: Tony Beresford, Pound Farm, Wearne, Langport, Somerset, TA10 0QJ
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Ordinary Member (Seed & Fungus Bank): Ted Weeks, 74 Over Lane, Almondsbury, Bristol, BS32 4BT
Co-opted Member (BOC Rep.): Richard Nicol, 1364 Evesham Rd., Astwood Bank, Redditch, Worcs, B96 6BD

Contents

Annual Subscription Renewal is included as an insert between pp. 12 and 13.

Enclosed with this Newsletter: Application Form for the Spring Meeting.

Cover illustration: *Cephalanthera rubra*, by Bob Watson

With This Newsletter……

Your subscription for 2002 will be due in May. This will be the last Newsletter that you receive unless you make arrangements to renew. (See centre pages for renewal details and note below about Newsletter mailings.)

Spring Meeting 2002. An application form and map are included with this Newsletter.

HOS Rule Changes

The Committee will ask the AGM to agree the amendment of two of the Society's rules:
Rule 3. **Membership** to be open to all. Membership may be refused or withdrawn at the discretion of the Committee. Anyone whose membership is so refused or withdrawn to have the right of appeal in person to the Society in General Meeting on giving 3 weeks notice to the Secretary.
Rule 4. **Subscriptions** to be determined at a General Meeting and payable from 1st May each year. Any member whose subscription remains unpaid at 31st December shall cease to be a member of the Society, will have to rejoin (and pay the joining fee) in order to rejoin, and will not receive a Newsletter during the time that the subscription remains unpaid. Membership entitlement of Newsletters shall be four per year.

Autumn Meeting 2002

Colin Clay - Meetings Secretary

A provisional date - Sunday 27th October 2002 - has been booked for the Autumn Meeting at the RHS Gardens, Wisley. The Photographic Competition will be a good opportunity to exhibit your latest images in print or slide format – expose some film soon or collect some pixels (if you have converted to digital). There will also be Illustrated Talks and Plant Sales to look forward to.

Conservation Project

An area in Oxfordshire containing about 400 White Helleborines (*Cephalanthera damasonium*) is to be converted into a hotel next year. There is therefore an urgent need to move these plants, a secure area 400m away, with an existing population, has been selected. Volunteers will be needed both to dig the plants up and to replant them immediately afterwards. Could any possible volunteers please contact Bill Temple by E-mail at bill@wtemple.f9.co.uk or by telephone 01235 831449. No date for the task has been set yet, but it is likely to be Sat/Sun April 20-21.

Spring Meeting, 2002

Colin Clay, Meetings Secretary

The next meeting will be on Sunday 28th April 2002 at Horticulture Research International, Wellesbourne, near Warwick and incorporates the tenth Annual General Meeting (AGM) and the Spring Show.

A sketch map plus Application Form is enclosed with this Newsletter. Use of the application form is **essential** to give us information on attendance and for catering requirements – lunch, drinks etc. Those not paying for lunch will need to pay a small amount in advance to cover the cost of coffee, tea and biscuits etc. Guests may accompany members but must pay an ***additional charge*** of £3 – please include them on your application form.

Members are asked to bring their Membership cards with them and are reminded that the Annual Society Subscription is due on 1st May.

Please bring your competitive entries for the Plant Show (see next article in this Newsletter for Plant Show schedule); also there should be room to display any other orchid-related material that you would like to exhibit (please forewarn us of large amounts or posters etc.). All proceedings are on the ground floor and cars may pull-up adjacent to the Conference Facility for easy unloading / loading of plants.

'Trade' Plant Sales tables will be subject to a charge of £25, payable in advance and booked with Richard Manuel. A Sales Table for Members plants will be present and people are encouraged to bring their spare plants. Plant Sales will not be restricted to orchids; please bring any plants that may appeal to hardy orchid enthusiasts. Double labeling, to indicate plant name and selling price should be adopted if possible. Sellers will be expected to donate 10% of monies to the Society. The Plant Sales room will be locked when not attended.

Nominations are invited for officers and committee posts. The following positions will become vacant at this meeting – Vice-Chairman, Secretary, Newsletter Editor, Meetings Secretary, Conservation Officer, Website Officer and Ordinary Member (Newsletter Distribution). Co-opted or 'Ordinary' Committee Members are also sought. All nominations for the committee should be received by the Hon. Secretary 14 days prior to the AGM, with the names of a proposer, a seconder and the consent of the nominee. Nominations have already been received for some of these posts but please **do** apply if you are interested. In the event of no nominations for an office being received, nominations shall be accepted from the floor.

A small and very local B&B list is available from Richard Manuel or Colin Clay

(please send a s.a.e.) but there is no shortage of B&B establishments in the area, due to the proximity of Stratford upon Avon. Accommodation information may be found on the following websites http://www.stratford-upon-avon.co.uk/soaaccghouse1.htm and http://www.hotels-england.co.uk/warwickshire.htm.

Programme

08:30 Set-up Trade and Members Plant Sales Tables.

09:00 Meeting opens: Coffee / Tea, informal chat. Plant Sales Tables open. Staging of entries for the Plant Show and non-competitive materials before 09:45.

10:50 Chairman's introduction and welcome to HRI-Wellesbourne

11:00 Annual General Meeting

12:00 The recovery of native orchids - Dave Stone

12:50 Results of the Plant Show from the Show Judge, plus Prize giving

13:00 Lunch (a brief walk to the HRI Restaurant). Viewing of the Plant Show

14:15 Evolutionary relationships and conservation biology of Neottieae (Helleborines and their relatives) - Richard Bateman and Peter Hollingsworth.

15:15 Third Speaker to be confirmed

15:45 General discussion on any HOS issues

16:00 Tea and informal chat

17:15 Meeting closes. Vacate by 17:30

HOS Plant Show, 28th April 2002

Doreen Webster, Show Secretary

As usual, the Annual Plant Show will take place during the HOS Spring Meeting at Wellesbourne. The Show Rules and the Schedule of Classes are printed below. All you have to do is turn up **before 9:45 a.m.** with your plants, and we will try to find a class to fit them in. Pot size doesn't matter – provided you can carry it! Photos of

winning plants will appear on the HOS website, and the owner of the best entry will be allowed to borrow our "Best in Show" trophy for a year.

If you have any other orchidy odds and ends that you think might interest others, please bring them along to go in our usual non-competitive exhibition.

The Hardy Orchid Society - Show Rules

1. ELIGIBILITY All classes are open to all members of the Hardy Orchid Society.

2. ENTRY FEES No entry fees will be payable.

3. SHOW DETAILS Advance entry is not required. Members will be informed in a Newsletter preceding the Show of the time by which exhibits must be staged, and the earliest time at which exhibits may be removed.

4. OWNERSHIP OF EXHIBITS All exhibits must have been owned by the exhibitor for at least six months.

5. NUMBER OF PLANTS PER POT Unless otherwise stated, each pan may contain more than one plant, provided all plants are of the same variety. However, when more than one flower spike is present, 'uniformity' will be one of the judging criteria.

6. LABELLING All plants should be correctly and clearly named. However, incorrect or unclear labelling will be considered only in a close competition.

7. JUDGING The judge is empowered to withhold awards where entries are not of adequate standard.

8. PROTESTS Any protest must be made to a member of the Committee within one hour of the opening of the hall after judging. The decision of the Committee will be final.

9. LIABILITY While the Hardy Orchid Society will endeavour to take good care of all exhibits, it will not be liable for compensation for any damage or loss, however caused.

SCHEDULE OF CLASSES

1. Six pots hardy orchids, distinct varieties.

2. Three pots native British orchids, distinct varieties.

3. Three pots native European (non-British) orchids, distinct varieties.

4. Three pots non-European orchids, distinct varieties.

5. Three pots hardy orchids distinct, any country of origin.

6. One pot native British orchid.

7. One pot native European (non-British) orchid.

8. One pot non-European hardy orchid.

9. One pot *Dactylorhiza*..

10. One pot *Orchis*.

11. One pot *Ophrys*.

12. One pot *Serapias*.

13. One pot *Cypripedium*.

14. One pot, any other genus of hardy orchid.

Apologies from Heinrich Beyrle

The following letter has been received from Heinrich Beyrle, seeking to explain and clarify the truth of the press report contained in the last Newsletter. It is printed without alteration or comment.

Last year, at the end of October, I travelled for the first time to South Africa. Already on the first day of my arrival I was lucky to find large populations of terrestrial orchids of the genera *Disa*, *Satyrium* and *Holotrix* on a mountain pass near Citrus Dale (West Cape). In fact I could not resist to collect altogether about twenty small orchid seedlings of about 8 to 10 different species. This was private land and I had no permission from the owner to collect plants. It was 3 days later, close to a nature reserve at Porterville, when I was stopped on the road and my car was controlled. Because I panicked and tried to hide the tubers during the control, I was arrested. Bail was refused because I had no friends or relatives in South Africa.

My intentions have been to isolate mycorrhizal fungi out of small plants or seedlings. These symbiotic fungi strongly support seedling growth. As the plants

become older, they often switch to different fungi. The fungi of adult plants are therefore not always useful to seedlings. I maintain a large collection of mycorhizal fungi, which were legally acquired during numerous scientific projects of myself and other scientists. In South Africa, I had no way for obtaining these fungi legally. Other than in Europe, North America and Australia there is no work done on the physiology of orchids and no fungal collection is available. For African orchids sometimes but not always Australian fungi are suitable. Please understand that I showed great care not to harm nature and the environment. I collected only a few small orchid plants within large populations. This was also understood by the judge, otherwise the fine would have been much higher. The judge himself stressed that I did no harm to South Africa or to orchid populations. I hope you can somehow accept the reasons for this certainly not good behaviour of myself. I never collected plants for resale.

Dubious Dealings in the Dark: Unearthing the secret life and fungal partners of orchids in the field

Report of a talk by Jonathan Leake

Jonathan's talk updated members on his work on mycorrhizal partners of terrestrial orchids, last reported in the HOS Newsletter 15 (January 2000).

He reminded us that orchids are not alone in the production of dust-like seeds that are so small that they require fungal symbiosis to provide carbon for germination and establishment. There are a number of plants that share a similar lifestyle to orchids, and these also have tiny seeds with inflated seed coats that aid wind dispersal and require fungal partners for carbon.

A number of features are consistent in most dust-seeded plants. They depend on symbiotic fungi for carbon, and have an extended period of underground growth. Some species cannot be grown even when sugar and nutrients are provided artificially. The distribution and identities of the fungi involved in the partnership are rarely known. Consequently, the early development of many terrestrial orchids remains a secret buried in the soil.

Conservation of some of our orchids depends on a better understanding of the fungi involved in the relationship e.g. is the distribution of orchids dependant upon the distribution of specific fungi? Terrestrial orchids vary in their dependence on carbon supplied by their mycorrhizal fungal associates. Most terrestrial orchids can be described as initially myco-heterotrophic since they depend upon fungal-derived carbon during germination and establishment but they eventually produce their own green leaves and then fix their own carbon by photosynthesis. Some species

are partially myco-heterotrophic e.g. *Cephalanthera* growing in deep shade, where they may continue to depend on fungal carbon even when leaves are developed. Plants which are fully myco-heterotrophic never produce green parts and often grow in deep shade (e.g. *Neottia nidus-avis*, *Corallorhiza trifida* and *Epipogium aphyllum*).

Jonathan described his current research, which uses the method of planting seed in wild sites in recoverable mesh packets. Once the seeds are germinating, trials are conducted on the abilities of the seedlings to establish following transplantation into pots of soil. Many of the experiments have been conducted on sand dunes since they contain a wide range of orchids and the sand is an ideal medium for insertion of seed packets. Amongst the species studied was *Epipactis palustris,* which one year after planting in the field was producing a small number of quite substantial seedlings. Following transplantation into a pot with soil from near established plants in the field, they can be grown on successfully indoors producing, after a further year, a substantial plant with the correct fungus in its natural environment. This method therefore represents a way of selecting effective mycorrhizal fungi for seedling production.

Good germination of *Dactylorhiza incarnata* was achieved in mesh packets, but it was found that the larger the number of seeds, the smaller the largest seedlings. This suggests that the fungal partner cannot supply enough carbon for maximum seedling development. Seeds of *Anacamptis pyramidalis* planted accidentally in a *Dactylorhiza* site germinated well, suggesting that many of the common orchids have rather low fungal specificity. In contrast to this, *Epipactis dunensis*, a species associated with woodland, gave much more patchy germination and appeared to be restricted in its distribution by the availability of a particular fungal associate. In this case, as with many fully myco-heterotrophic orchids, the critical fungal associates are not the usual mycorrhizal fungi, but fungi that are symbiotic on tree roots and obtain their carbon from these roots.

Germination of Coralroot Orchid in an appropriate habitat was found to occur both in sites where adults of the plant were present as well as in some sites where they were absent. This suggests that the orchid could be successfully planted in some areas as yet un-colonised by this species. In this orchid there is now convincing evidence that the fungal partners are highly specific and obtain their carbon from forming mycorrhizal associations with Birch, Willow or Pine trees. The high fungal specificity in this case extends to samples examined in Europe, North America and the U.K.

Bird's Nest Orchid also exhibits very substantial roots but there is no evidence of large numbers of fungal connections to individual plants, suggesting that where the fungus and the orchid do meet, they obviously function very effectively. Some

apparently viable seeds that have not germinated were noted in all of the mesh packets that were recovered, evidence of staggered germination. The breaking of dormancy seems to be triggered by a chemical reaction between the fungus and the seed. Bird's nest Orchids differed from *Dactylorhiza* in that in the early stages of germination, they did not appear to be carbon-limited and growth continued even in packets containing lots of seeds. It can also be evidenced that the large quantities of carbon involved are coming from the trees that the fungus associates with.

Key questions arising throughout this research are:

- What fungi are involved in germination and growth of orchids and is there high fungal specificity? In this work some of the fungal partners of orchids were identified and in the case of the totally myco-heterotrophic species a high specificity of fungal partners was confirmed.
- Is rarity in orchids linked to fungal specificity? - sometimes!
- What has been learned about germination? - in the cases researched, the same fungus was associated with both seed germination and adult plants.
  - germination of seeds is staggered and this may aid the plant species to survive a bad year.
  - seeds retain viability in the soil for some years.
- What has been learned about the fungi? - orchids with green leaves typically form associations with widespread soil fungi, but for fully myco-heterotrophic orchids specific mycorrhizal fungi of trees or shrubs are involved.
- Can the findings be applied to orchid conservation? - seed buried in the field provides an important tool for germination, and seedlings germinated in the field can be grown on.

Jonathan acknowledged a range of partners in his research but particularly thanked Dr. Sheena McKendrick of Sheffield.
Jonathan's talk was reported by Moira Tarrant.

Some Orchid Forays from Kyrenia, North Cyprus

Leslie Lewis

After visiting the south of Cyprus some years ago and being impressed by the large selection of orchids to be found, I had wanted to visit the North of the island. Unfortunately, a terrible fire in June 1995 destroyed 180 square kilometres of forest, maquis and olive groves on the northern slopes of the mountains where most of the orchids grew. It was therefore not until March, 2001 that my wife and I eventually went there for a week. Our base was the attractive port of Kyrenia on the north coast just a few miles from the mountains. Encouragingly, little now

remains of the charred reminders of the fire and the establishment of garrigue is well underway. Also, following a wet winter and spring, apparently the first for several years, the countryside was pleasantly lush.

We chose for our first foray, on 20 March, countryside around the village of Karaman. This lies at an altitude of about 300 metres under the northern escarpment of the mountains south-west of Kyrenia. It was formerly a Greek village. However, after the partition of the island in 1974, it was unoccupied until 1982. Since then, houses in the village have been leased to ex-patriots, mainly British and German. As these residents do not keep goats or sheep, the orchids on the slopes bordering the village have been spared the effects of grazing that were only too apparent in many other places.

In many places in the Mediterranean, there seems to be a particular orchid that is so suited to the environment that one seems to find almost everywhere that orchids grow. In North Cyprus, there are two such orchids: the predominantly eastern form of the Yellow Bee Orchid (*Ophrys sicula*, also called *O. lutea* ssp. *galilaea*) and the small form of Anatolian Orchid (*Orchis anatolica*) both of which were to be found in almost all the sites that we visited.

It was therefore not surprising that, after just a few minutes stroll along the track leading west from the village square opposite the church, these were the first two orchids to be found. These were quickly followed by another orchid that seemed to be widespread, the small-flowered form of Dull Orchid (*Ophrys funerea*) with its distinct, fairly broad, yellow edge to the labellum. A close relative, but only present in smaller numbers, was an Omega Ophrys (*O. israelitica*, formerly *O. omegaifera* ssp. *fleischmannii*).

Also in smaller numbers were Bornmueller's Orchid (*Ophrys bornmuelleri*) and its close relative *O. levantina* (also known as *O. bornmuelleri* ssp. *grandiflora*) sometimes growing in close proximity. These are very similar in appearance but can be distinguished by the fact that the labellum of *O. bornmuelleri* is inclined forward whereas that of *O. levantina* is directed vertically downwards or backwards. Also, the flowers of *O. bornmuelleri* look distinctly triangular, whereas those of *O. levantina* are more square.

In the garrigue, several late spikes of the eastern form of the Green-Winged Orchid, *Anacamptis morio* (*Orchis morio* ssp. *libani*) were still in flower. This subspecies is similar to the main species that grows in Britain but only the hood and sepals are coloured, the labellum being a clear white without spots. Further along, in the shelter of the few remaining bushes and pine trees, there were colonies of the pink form of Dense-flowered Orchid (*Neotinea maculata*).

Also under the pine trees, were Early Spider Orchids of the *Ophrys mammosa* family. These are characterised by an attractive velvety brown labellum marked with a shiny H-shaped speculum and lateral sepals that are generally green and purple bicoloured. However, the four members that grow in Cyprus are difficult to distinguish from one another. Here we found two members of the family growing separately. The first, which I think was *O. sintenisii*, had a square-shaped labellum with a broad yellow lower edge, a clear grey-blue speculum edged with white, recurved sepals edged with purple, and the petals in the form of two small horns. The second species, which I think was *O. transhyrcana*, had a triangular-looking, distinctly trilobed labellum, narrower lateral sepals, a square–tipped dorsal sepal and relatively long, narrow petals.

However, the real prize was the Cyprus Bee Orchid (*Ophrys kotschyi*). We had previously failed to find this in the south of the island. It was a therefore a pleasant surprise to find several plants near the beginning of the track with more growing under a few surviving pines further along. This plant, which is endemic to Cyprus, has a white-edged speculum on an almost black labellum. The colour is similar to the Cretan orchid (*Ophrys cretica*) but the pattern is larger and more complex. The largest plant was about 20 cm. Most were much smaller, the smallest being only 2-3 cm with their flowers almost touching the ground. Although tiny, these plants all looked very healthy and seemed to be young plants re-colonising after the fire rather than stunted ones struggling to survive.

On a track to the east of the village, starting from the Treasure restaurant, a few spikes of Carmel Ophrys (*Ophrys umbilicata*) were growing on the bank bordering the track. In addition, colonies of the Naked Man Orchid (*Orchis italica*) could be seen further up the steep slope above the bank. It seemed likely that these were accompanied by other orchids but, with the slope both slippery and unstable after heavy overnight rain, we chose not to investigate further.

Another place that is free from grazing is the area around the ruined Crusader castle of St Hilarion. This clings impressively to a mountain top due south of Kyrenia. Prior to the fire, the castle was an important botanical site with its own white-flowered alpine cabbage, *Brassica hilarionis*. Disappointingly, within the castle grounds itself we found no sign of this or of any orchids. However, a scattering of the more common orchids that we had found previously was in evidence along the side of a dirt track that starts from the right of the castle. These were mainly under the few scorched pines that had somehow survived the fire. The one new orchid was a single spike of Eastern Serapias (*Serapias orientalis*), growing in the open at the side of the track.

Two miles along the metalled road that continues past the castle there is a small area of pines that had also survived the fire and which was formerly rich in orchids.

Here we found the "elegant" Cypriot form of Argolis Ophrys (*Ophrys argolica* ssp. *elegans*), together with Rainbow Orchid (*O. iricolor*), *O. funerea, O. israelitica* and *Orchis italica.*

A trip west along to the Koruçam peninsula revealed only two sites of interest in otherwise rather bleak surroundings that clearly suffered from extensive grazing by both goats and cattle. The first was on the grassy banks of a dried-up stream bordering the road to the village of Kayala, about 4 miles west of Lapta (Lapethos in Greek). The attraction here was *Ophrys lapethica,* an endemic named after Lapethos. Although it very closely resembles a pink-sepalled form of the Woodcock Ophrys (*Ophrys scolopax*), it is classified as a member of the *O. umbilicata* family. Nearby was *Orchis italica* together with another orchid still in bud, possibly Monkey Orchid (*O. simia*).

The second site was a very small area of pinewood just to the west of the military base between Koruçam and Tepebaşi. Here we found what I think was a third member of the *Ophrys mammosa* family, namely *O. mammosa*, itself. This had a one-lobed labellum with a large protruding swelling on either side, green and purple-banded sepals and narrow triangular petals. Also of interest was a single specimen of an unusual colour variation of the *O. fusca* family. The labellum generally resembled that of *O. israelitica* but the speculum consisted of two large white "eyes" completely surrounded by broad blue-grey rings, with a thin yellow-grey omega shape at its tip. Close by were *O. israelitica* and *O. funerea*, possibly its parents.

The only other site that we found which warrants a mention is the track above the picture-postcard village of Bellapais with its attractive ruined abbey. Here, we found what I think was the fourth member of the *Ophrys mammosa* family that grows in Cyprus, namely *O. herae*. This had a square-shaped labellum with small rounded swellings, pale green sepals and yellow-green petals. Nearby were *O. iricolor, O. funerea* and the white form of *Neotinea maculata*.

It was pleasing to find such a good selection of orchids so easily in such a small area around Kyrenia despite the terrible fire in 1995. Clearly, there are other species to be found in that area and elsewhere in North Cyprus and it would have been interesting to have searched further afield. However, the large number of military areas, the poor condition of many roads and the almost total absence of waymarked paths were all deterrents to doing so.

I am grateful for the assistance on the identification of the members of the *Ophrys mammosa* family provided by Pamela Scraton.
Les can be contacted at: leslie.lewis@pwllmeyric.freeserve.co.uk

Re-discovery of *Anacamptis papilionacea* in the Republic of Cyprus, 2001

Pam Scraton

Have you ever dreamed of finding an orchid nobody else in the country has seen or knows about? That is more-or-less what happened to me early last March, in Cyprus, where I currently have my home.

I was visiting an area south of Nicosia, which I had neglected for some years, but which had in the past been a favourite spot for birdwatching. A birding friend, who knew that I was collecting material for a book, had mentioned that there were "lots of orchids" in a particular spot near a cereal field, so I went to see for myself. He was right! In the course of the morning I found nineteen species, including the endemics *Ophrys kotschyi* and *Ophrys lapethica,* and several specimens of *Orchis punctulata*, which is becoming definitely rarer in Cyprus. All the orchids were growing in an area of rough grass and light woodland, high above one of our rather depleted reservoirs, and bordered on one side by a cultivated field, on two sides by the reservoir, and on the fourth by a rough track. After a picnic lunch, I decided to explore a bit further.

On the other side of the track was an area of typical Mediterranean garrigue, at first appearing much less orchidiferous, but there was a large patch of *Anacamptis syriaca (Orchis syriaca)*, one of the commonest of Cyprus orchids. However, I have learned by now that **any** orchid population is worthy of close scrutiny, in case it may contain hybrids, or the peloric specimens that Richard Bateman wrote about recently, or indeed just to get to know a typical specimen at close quarters; and this time, it certainly paid off. Interspersed between the plants of *A. syriaca* were others, also in flower, and looking superficially similar, but different enough to demand a second - and third - inspection.

These orchid flowers were all of a similar size, but with great diversity in the colour and shape of the labellum. They ranged from plain pale pink to violet with fan-shaped markings, from slightly convex through flat to concave. The sepals and petals were a similar colour, paler at the base, and marked (like the *A. syriaca*) with green veins. There was only one possible identification: they had to be *Anacamptis papilionacea (Orchis papilionacea).*

J.J.Wood lists *A. papilionacea (O. papilionacea)* in Meikle, Flora of Cyprus, vol.2: 1546 - 1547.- Kew 1985 as having been reported only once in Cyprus (C. Sparrow, 1960, by N. side of Limassol Salt Lake) and concludes it may no longer grow there. Delforge Orchids of Britain & Europe: 239.- London 1995 includes Cyprus in its distribution with a query. Locally, at least, it was generally thought to be

extinct, and has been stated to be so in recent books on the subject.

Of course, in accordance with the usual way of things, I had gone out that morning without a camera, but at least with my trusty GPS and a notebook. I returned home to send out the information on the internet to orchid friends in Cyprus along with an invitation to visit the site with me. So armed with cameras (still and video) we went back; it was still there, and we counted fifty plants! We later submitted photographs and video to the Nicosia Herbarium, and to Kew, though their verdict will take time. I hope that we shall then know the sub-species and type, and whether (as I suspect) there is a degree of hybridisation with the *Anacamptis syriaca (Orchis syriaca).*

So how is it that this orchid can have been growing and multiplying unnoticed, in a country where many residents and visitors observe the native orchids, with at least some expertise among them? It is true that this site is in the east of the island, and the majority are in the west. It is also the case that the approach track is a difficult one, which has been used by the Cyprus Rally, and is currently used by Jeep Safari vehicles. The orchid was growing among another very common one, in a thorny uninviting area, previously grazed by goats, so maybe that was part of the reason, too. Whatever it was, we now know its location, and will keep a friendly watch over it; and on that day in March, it was my dream come true.

Growing Ophrys Downstairs

Svante Malmgren

It was with great interest that I read the paper by Carl Hardwick: "Growing Ophrys, a Waiting Game" in The Hardy Orchid Society Newsletter No 22, October 2001.

Two particular observations that I made were:
1: What a pleasant and successful game his hobby is!
2: How totally different his methods are from my way of growing *Ophrys*!

And my conclusion from those observations is that *Ophrys* are rather easy to grow, and can be grown successfully in several different ways!

In order, I hope, to stimulate the enthusiasm of other potential growers of Mediterranean orchids I would like to describe to you my method.

As neither Mr Hardwick, living in Great Britain, nor I, living in Sweden, has a Mediterranean climate outdoors, we have to make arrangements to provide *Ophrys* and *Orchis* with comfortable climatic conditions to make them "feel at home".

How we, or anyone else, arrange this, depends on local factors such as the climate and available space.

Southern Sweden lies between two climate types. Low pressure with rain and more rain coming from Great Britain alternates with high pressure from Russia bringing warm summers but COLD winters. Unpredictable and sudden shifts between the two can make sensitive plants as unhappy as it does us!

I have solved this problem by growing Mediterranean orchids INDOORS, in big cellars. I have a large old house in the city and another in the countryside. Both have spacious stone-walled and cool cellars. The cool and moist conditions are surely unhealthy for people, but suit the orchids very well. The temperature varies between 8° and 10° C in mid-winter and 18° C or so in summer. Temperatures fluctuate between 10° and 15° C in autumn and between 12° and 15° in spring. My plants are grown on tables and the temperature at plant level can be lowered by opening a small window just a chink, and increased by placing the artificial light 10 cm or so closer to the plants.

To keep procedures as "automatic" as possible, twelve to fourteen 11cm CLAY pots are plunged in moist peat in 40 x 60cm plastic trays obtained from my local gardener. These trays are, I believe, of Dutch origin and of an international design. The trays are lined with plastic sheet perforated with several holes. The compost itself is usually natural soil of local origin obtained from a nearby limestone area. Forest or meadow soil works equally well. For Mediterranean orchids, however, I add 25% fine quartz sand to enhance drainage, as the natural soil has a high clay content.

Sometimes I am asked whether or not the acid peat of the plunge affects the limestone soil and plants adversely. In my experience, obviously not!

I almost NEVER repot the tubers of adult plants after the growing season although in some years I prepare and add a little top-dressing to the soil. I have some extra large plants that have been grown in the same pot and soil for fifteen years. Some years I will add regular garden fertilisers to some of the waterings. The extra

nitrogen turns the leaves a darker green and some plants seem to grow a little larger. I have observed no harmful effects, but I think overall that fertilisers are probably not necessary.

The soil level in the pots can be placed either level with that of the peat plunge, or may be elevated an inch or so in order to keep individual pots a little dryer than others. In spring-time the pots can be elevated higher to facilitate drying out after the growing season.

I water every one to three weeks, the interval varying with the temperature and season. Maybe you should avoid watering in the evening as water left on the leaf rosette overnight can occasionally harm the plants.

The implications of my method are that the compost is NEVER dry during the growing season and that the growth period is LONG, producing big, healthy plants. With a compost of soil with 25% sand, and by keeping the peat plunge moist to the extent that you require, all combined with artificial light which gives SLIGHT heating of the leaves and soil surface, it is easy to avoid killing the plants by overwatering them during the winter.

Three 40 x 60 cm trays are positioned 40-50 cm beneath two 58 W fluorescent light tubes (second hand and obtained free from the local electrician). By lining up more three-tray sets next to them with similarly placed lighting, light will also be shared between neighbouring sets of trays. This amount of light is quite sufficient, and is controlled by a timer, which provides between 12 and 16 hours day length, depending on the season. Overnight the temperature decreases 3° to 4° C.

Under one pair of fluorescent tubes, therefore, you can grow 3 x 14 pots with at least 3 adult plants in each, making 126 plants in all. Every year I grow approximately 75 to 100 adult plants and 200 to 500 first year (on soil) seedlings and in most years I do not lose even ONE adult plant during the dormant or growing period with this method.

Seedlings are weaned from medium as follows: They are potted into compost sometime between April and June, depending on when they are mature and have produced tubers on the culture medium. The pots and compost are then allowed to

dry out completely at room temperature for a week or two. Each dry pot is subsequently placed in a small plastic bag, 50 to 75 ml of water is added and the plastic bag is sealed for dormancy. After summer storage at 18° to 20° C the pots are removed from the bags and plunged in the peat in September after which water is given freely. Depending on the size of the tubers when weaned from the culture medium, 80-100% develop leaves in autumn and 75-90% of these will bloom the following year at an age of 3 years from seed sowing.

As almost all *Ophrys* and several *Orchis* are very easy to propagate from seed and as almost any pair of plants within the same genus can be hybridised, there is much fun to be had! I have been growing *Ophrys* and *Orchis* downstairs for 16 years and will carry on forever!

With this automatic set up, I can go away and leave it all for up to two weeks, depending on the outside temperature. On the other hand, though, why should I want to? One of the few bright moments in a cold, dark Swedish winter is to go downstairs to look at and talk to little orchid plants that believe they are in Italy or Greece. If you wish you can take the pots into your apartment when the flowers are blossoming too!

I hope this description will give many people ideas of their own about growing Mediterranean orchids in their own particular circumstances and conditions. I have no Alpine House, but I have even grown Mediterranean orchids in an old (cow-free!) cowshed using the above methods. It worked well, but even if frost-free, was a little too cold in winter in my opinion.

(Photos by Svante Malmgren)

The Orchids of Cyprus and where to find them

by Joan Hubbard & Pamela Scraton. ISBN 9963 8615 0 4
Published by the authors

reviewed by Lesley Lewis

Cyprus is renowned for its rich flora, showing both Eastern and Western Mediterranean influences. Over 50 species of orchids grow on the island, including several endemics. However, many of these species are difficult to find, being both rare and local. Others, for example, *Serapias* and *Ophrys* of the *O. mammosa* family are notoriously difficult to identify.

This book is aimed at helping orchidophiles in both these respects. Each orchid that grows on the island, including *Anacamptis papilionacea (Orchis papilionacea)* that was only rediscovered there by the authors last year, is given its own page. These

pages list - in much more straightforward terms than is often the case - a general description of the orchid, details of its height, stems, leaves and flowers, identifying features, and species with which it could be confused and how to distinguish them. Most importantly, it indicates when and where to look for the orchid in question.

The book also contains a useful calendar of flowering times, a commentary on aberrant forms, as well as a list of recommended orchid sites, including nature trails and picnic sites established by the Cyprus Tourist Office.

As usual, the book also contains a photograph of each orchid. However, a special feature is that the book is accompanied by a video with a running time of 117 minutes. This shows shots of several examples of all of the orchid species on the island. Not surprisingly, this proves to be a much more effective way of depicting orchids for the purpose of identification than photographs alone. The video also shows some varieties, hybrids, orchids that have been affected by chemical fertilisers and peloric forms that may be encountered.

In summary, the book and video constitute a practical, easy-to-use, guide to the orchids of Cyprus that is clearly a must for forays on the island. It also provides a useful guide to identifying orchids elsewhere in the Eastern Mediterranean.

The book and video are available by mail priced at £14.50 plus £3.75 p&p from the contact address below, and further details are available on www.cyprus-orchids.freeservers.com

Contact addresses: scraton@logos.cy.net; PO Box 58287, 3732 Limassol, Cyprus.

Orchideen auf Rhodos

Horst und Gisela Kretschmar & Wolfgang Eccarius
Published by the authors, Bad Hersfeld, 2001
reviewed by Richard Manuel

Rhodes is one of the nicest places there is to go and look at Mediterranean orchids. A little 'earlier' than most localities - so that in theory you get better weather sooner in the spring - and being located on the Aegean fringes, snuggled up close to Turkey - it has a surprisingly wide selection of species to offer for a small island. The other flowers and various elements of the fauna add considerable interest as well. This book tells you all about the orchids and some of the other stuff, without too much turgid teutonic text to wade through. It follows the recent trend of not just showing one close-up photo of a typical flower, but often a selection of half a dozen or so, which certainly increases its desirability. Inevitably, one or two debatable species are included, and it even manages to squeeze in one not found in

Delforge. There is also what I imagine is a fascinating introductory chapter on the geology and topography of the island, but my knowledge of German is too feeble to understand it properly. This is a nice production, with excellent colour photography, and fills a very useful niche in the orchid literature. Although privately published this book is available from Summerfield Books, at about £35.00.

It is worth adding that a similar book from the same authors, on the Orchids of Crete and Karpathos, is imminent. To be reviewed at a later date.

Dutch Orchid Society Jubilee

The Vereniging Orchideeën Vermeerdering (Orchid Propagation Society) exists 25 years this year and we celebrate this with two special days in Oosterhout (near Nijmegen).
On 1 June there will be a symposium with lectures about orchids and on 2 June we organise a sell day were you can buy all sorts of orchids and learn a lot about in-vitro sowing and the cultivation of orchids.

The VOV is a workgroup of the Dutch Orchid Society with about 120 members who try to raise orchids from seed. Half of them are into tropical orchids while the rest are in love with hardy orchids from Europe, America and Australia.

Everyone is hereby invited to visit us at:
"het dorpshuis"
in Oosterhout (Nijmegen)
1 June 2002: 13.30-17.00
2 June 2002: 10.00-16.00

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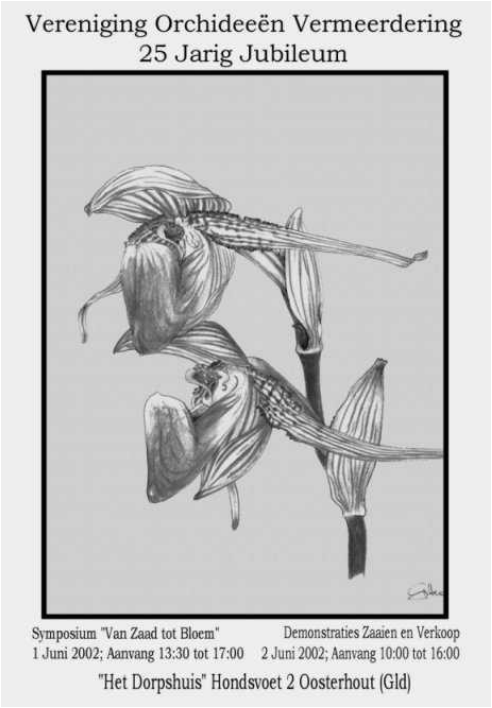

Orchid Seeds: Handle With Care!

Richard Manuel

Growing native orchids from seed is increasing in popularity, yet few of us realise how important it is to harvest, store, and transport the seed itself in a careful and sensitive manner. Orchid seeds are tiny and vulnerable, and demand that special care is taken in handling them. They cannot be treated like 'ordinary' plant seeds without risk of damage or destruction.

The best seed comes from plants in cultivation that are pollinated by hand, from known different parents; self-pollinating orchids rarely produce seed with good viability. Pollination is achieved by taking off the *pollinia* of one plant and placing them firmly on the *stigma (*or *stigmatic surface)* of another. The pollinia are two lollipop shaped structures lying in grooves underneath the column and the stigma is a cup-shaped cavity, often slightly sticky, just below the pollinia and often overhung by their bases (it is above the entrance to the spur, if one is present). The pollen itself forms an oval granular lump (the' head' of the lollipop) usually yellowish or greenish, sometimes another colour. Before attempting artificial insemination, first check that other pollinators (insects) have not already beaten you to it by looking, with a hand-lens, for traces of pollen already introduced onto the stigmatic surface (this will be from an unknown source, and therefore undesirable). If this is absent, go ahead with pollination. If present, try another flower and if a 'clean' one is found, remove the contaminated one.

The easiest way to transfer pollen to the stigma is with fine pointed forceps, simply grab the desired pollinia by their stalks, pull them out of their little pockets beneath the column, and squish their pollen masses onto the stigma of the mother plant. This should be followed by a note in the diary stating what was pollinated, who the father was, and when. Some growers like to tie a label to the stem (ovary) of the flower. Relying on memory is not good enough. If pollination is successful the flower segments usually start to droop and wither within a few days of the act, and a bit later on the ovary starts to swell.

Orchids such as *Ophrys* make relatively large pods, so it is a bad idea to make a plant carry more than one per year, as this can cause depletion of the new tuber. *Orchis, Serapias*, *Dactylorhiza* etc, which make smaller pods, can stand more than one to be pollinated, but with good pollination technique and careful harvesting, there is no reason to make more than one: there will still be plenty of seed.

Gathering seed from wild plants brings with it several problems. Firstly one does not know what the pollen parent ('father') was, one can only guess and hope; the date of pollination is unknown; and wild seed is often contaminated by mites, which can make it extremely difficult to sterilise the seed without killing it.

Secondly, there are legal implications over ownership of plants or parts of them, but I will not go further into this here.

Ripe seed is ready for harvesting about 6 (4 - 8) weeks after fertilisation, largely dependent on the weather. A good indication of ripening is a slight yellowing of the capsule, especially at the ends, and the capsule itself beginning to 'look' drier. At this time watch for the valves (segments) of the capsule parting slightly along the seams. Once this happens carefully cut off the capsule close to the plant stem, and place it in a warm dry place in a clean glass or porcelain (never plastic) dish to dry, loosely covered to keep out dust but allowing air circulation. After a week or two the valves will open wider and a cautious feel will determine that the capsule has dried out (it becomes crisp and no longer soft). Now, take a sheet of clean white paper, fold it in half and open it out again to leave a crease. Hold the ripe capsule over it (not in a draught!) and gently tap the capsule with something like a pencil to knock out the fresh seed onto the paper. It can sometimes help to break the dry pod across the middle, but don't try to squeeze every last seed from the pod, the reluctant ones are likely to be poor in quality and you will get plenty of good loose seed from a well-dried pod. Now, after picking out any unwanted fragments of dried pod, use the crease in the paper to pour the seed into a glass (not plastic) tube or vial. The tube should not be sealed with a lid, but is best just covered with a piece of muslin or similar and an elastic band. Sometime I use screw type lids on small vials but always leave these loose. Label it (parentage, date, source, at least) with a slip of paper inside the tube. I store my seed tubes in hard plastic 'lunch boxes' with a fairly loose fitting lid (not airtight) in a fridge at about 4ºC. One further tip here: when removing seed from the fridge for use, leave the box of tubes out of the fridge for about an hour to allow it to equalise with room temperature before opening it, otherwise condensation will form inside the tubes, moistening the seeds and causing them to stick to the glass. Seeds kept dry and stored like this will remain viable for at least 4 or 5 years for most genera; only *Spiranthes* seeds, of the European species at least, seem to be rather short-lived.

It is often necessary to send seed through the post. Some time ago, some painstaking research by Warren Stoutamire, in the States, showed that badly packed orchid seed is easily damaged in the post, and a high proportion of viability can be lost if seeds are not properly packaged. It is easy to imagine that such tiny objects as orchid seeds are difficult to crush. Not so. Mechanical crushing, probably aided by grinding together, can ruin a whole consignment of seed. The best way to send them is in a paper package, inside some sort of box. A paper package inside a film canister in a padded envelope is fine provided seeds are not left sealed in the canister for more than a few days, as the lack of air circulation can induce mould to attack the seeds. A padded envelope is not sufficient protection on its own. The paper package should NOT be a gummed envelope, and CERTAINLY NOT the sort of cellophane 'Glassene' envelope commonly used for

larger seeds. Anything with sticky areas or tight folds is a death-trap for orchid seeds, and any plastic generates a small static charge which will cause seeds to stick to it and be irrecoverable. Make your own package by folding a single sheet of clean white paper into an envelope, close it with a staple or two, and don't forget to label it!

Orchid seeds are precious; once properly dried and stored they will last for years, so it is well worth taking the trouble to give them the best possible chance of survival.

Orchis Nursery

Specialist in Native European Orchids grown from seed

This year, following the enormous demand of last year, I have greatly expanded the range of seedling tubers on offer, and the numbers available. So my list should include **20** or so ***Ophrys***, including several potentially delicious hybrids (how about *Op reinholdii* x *Op. kotschyi,* or *Op. tenthredinifera* x *Op. speculum* for a start?) **12** ***Orchis*** and **10** ***Serapias***, as well as many other odds and ends such as Australian ***Pterostylis***. Most of these are Mediterranean life-cycle plants which will start into growth in Sept or Oct, or later.

Newcomers please note: For postal sales I issue one list per year, at the end of June or early July, when the plants are dormant. All catalogues are sent out at the same time (a little earlier overseas) and then it is first come first served, in strict order of receipt. Those customers who received a list last year will be sent one this year automatically; otherwise, please send a C5 SAE by the end of June.

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