National Pleione Report

incorporating

Hardy Orchids

2000

NATIONAL PLEIONE REPORT 2000

incorporating

HARDY ORCHIDS

Cover artwork by Trevor Jones

Cover picture Disa kewensis by Ian Butterfield

Report compiled and produced by Peter Bradbury. Publication date 22:06:2000.

SPHAGNUM MOSS FRIEND or FOE

In 1987 I bought my first PLEIONE bulbs and because I had only got six bulbs I potted them up in purchased Orchid compost. In the spring of 1988 I had all six flowering so I went mad at Harrogate Show and bought another twelve bulbs already growing in pots.
At the end of '88 all had made decent bulbs roughly the same size as purchased. During the winter months I read as much as I could get my hands on, mainly to decide which compost to use the following spring.
For ten years I had been a top exhibitor at Southport Show with tuberous begonia's using a modified John Innes compost i.e. more grit to improve drainage. I had tried peat composts but never had any success, also tried plastic pots but they did not work. I was always told that you must have soil in your mix because it always acted as a buffer in case of any build up of toxins from feeding etc..
I therefore settled for a mix of equal parts sterilised soil, peat, grit, pine needles and five millimetre Perlag. I used clay half pots with a layer of twenty-five millimetre Perlag at the bottom, then the compost filled to twenty-five millimetres of the top. All the books I had read stated that Pleione grow best in composts that contained sphagnum moss, but all the sphagnum I could find at garden centres was brown so I did not like it. The nearest I could get was fresh field moss. I put a layer of this on top of the compost, placed the bulbs on this then filled between bulbs with pine needles.
Again I bought more bulbs and they all gave me a good show. I also grow species cyclamen and these do not like strong feeds so I use Chempak African Violet feed on these at full strength. Pleiones it's stated have delicate roots so I

decided to use this fertilizer on them at full strength once per week. At the end of the season all had increased in size plus had good size bulbils as well. All went well for a few years and I started to buy hybrids from John Craven in Yorkshire who I have made good friends of at Harrogate, also Rainer Kretz who lived down the road at Warrington. With the increase in stock I also did swaps through the Pleione Report.

Soon these hybrids started to produce large bulbs, I recorded weights on **Shantung Ducat/Ridgeway/Silver Wedding** and **Vesuvius Phoenix** between 50 and 60 grams. I got to the position in the autumn of 1995 with that many bulbs I swapped four hundred mixed Pleiones for other plants with a nursery. I also got to the position that I did not want the bulbils on the standard varieties so I planted these out in the garden expecting them to die over winter.

In the winter of 95/96 I was walking in the Pennines when I came across some SPHAGNUM MOSS. It was growing by the side of a stream which ran for over one hundred metres with moss on both sides. I thought - great there is enough here to last me more than a lifetime!!!

I had also read that sphagnum moss had antiseptic properties and that Begonia growers in Scotland used it to root their cuttings in.

I could not wait to get going in 1996, I thought of bulbs 80 to 100 grames for that autumn.

At the end of January I potted up all my Pleiones but instead of the field moss under the bulbs I used sphagnum moss. I had one of the best shows that spring with **forrestii** flowering at the end of February through to **Vesuvius Leopard** at the end of April.

It was at this point that we decided to install a new staircase with hard wood spindles so for the first two weeks in May I was otherwise engaged, with just a quick dash into the greenhouse, spray over the Pleiones and out.

It was not until the middle of May that I noticed some of the Pleione leaves leaning over, I then found most of them were rotten at the bottom of the stem. The compost was completely saturated not like it normally was the previous years, when the problem was keeping it wet.
That year ended with no large bulbs but I had managed to get some very large bulbils from the top of the old bulb. The sphagnum moss I found out after is just like a sponge and holds a large amount of water, this was my problem.
I thought 1997 was going to be a flower-less season, instead of one side of a sixteen foot greenhouse full of Pleiones the pots only covered an area of three foot square.
As they say you find out who your friends are when you are down, as I certainly found that year. The first person I spoke to about my problem was Rainer he immediately said to go to his home and I ended up with about twenty flowering size bulbs plus others.
Later I received a phonecall from a real gentleman in Ireland Harry Adams, each year we usually did swaps, we made contact through the Pleione Report. After I told him my sad story and that I would not be doing any swaps, he said he was sorry and would give me a ring the year after.
A few days later I received a parcel, inside was six flowering size bulbs, all from Harry.
A few days later I got another call this time from a young man Lucas Kelly, he had only been growing Pleiones for two years, I had let him have some surplus bulbs previously. The next thing I knew he was at the front door with a dozen flowering size bulbs.
Thanks to the above kind gentlemen, I had some blooms to look at that year. I believe if they had not helped I would have given them up.
My stock is on the increase now with the bulbils coming into flower, and filling

half way down the greenhouse.
I would like to thank everyone via this letter for their help, and finally those bulbils outside are still alive. The three main patches are **formosana Avalanche, Iris** and **Blush of Dawn**, they are under Acer and Pieris bushes on ground that is elevated three hundred millimetres above the norm. I have never divided them just top dress each year with pine needles.
They have all flowered for the past three years and survived the cold winter of 1996/7 when it went down to -12°C in these parts. I believe they can stand our cold winters as long as they are reasonably dry.

John Walker, Lancashire.

****

OPEN CAST ORCHIDS

When an ecological survey was done for the next phase of mining at an existing opencast coal site in Lanarkshire, several colonies of the fragrant orchid, **Gymnadenia conopsea** (sub species **borealis**) were found to be growing on the slopes of a steep sided valley. The flora here is indicative of unimproved acid grassland, reflecting a historically low level of grazing, and lack of fertiliser use by the farmer. As well as the beauty of stunning flowers, the valley shows the impact of mining over several hundred years. Spoil heaps, old tramways, derelict buildings, gouges in the hillside, and pools orange with ochre are all testaments to the past industrial activity of the area.

As some of these orchids would be destroyed by soil stripping as the void

moved into that area, the decision was taken to try and move as many as possible. This has been done in several ways, and has included giving some specimens to the Royal Botanic Gardens in Edinburgh. They flowered successfully there, and now we wait to see if they have overwintered safely. Seed was collected from all the flowers over the grassland, and professionally stored, for future sowing on the reinstated ground after restoration. Maybe some orchid seed will grow successfully in this way too. Other plants will be lifted and planted on similar slopes, not being touched by the machinery. They will be matched as closely as possible according to aspect, slope, existing flora and soil type.

The area of land available to them will be increased as the dereliction is removed, and there may well be more colonies established than were there before. Because the grassland is so botanically rich, the farmer will be encouraged to keep to a similar grazing regime on the restored areas, in the hope that they establish and then blend back in with the areas not affected. Whatever people think about the effects of opencast upon the countryside, the future for these orchids looks bright.

Rosemary Booth BSc, Scotish Coal, West Lothian.

****

GROWING PLEIONE MACULATA

This is a very pretty species, flowering in the autumn. Unfortunately it is one of the most difficult pleiones to grow successfully over several years. As

a rule it is easier to kill than it is to grow it.
I was given one bulb of a supposed white clone early in 1999, so I was extra careful with the compost and the watering. Although I used a large percentage of wood moss in the compost, by the end of May I had managed to rot off two lots of roots. I was well on the way to killing it.
I suddenly remembered a lecture on Disas, where a very difficult one called **D. longicornu** was grown in a pot with a wick (a piece of soft string) inserted into the compost. This Disa was never watered. The only moisture came from a raised container of water and through the wick. This reminded me that I had seen **P. hookeriana** in Bhutan, growing in deep moss, which always appeared to be moist, but never dripping wet.
As I had nearly killed this **P. maculata** I thought it was worth trying it in similar conditions. The single bulb was put in a $4\frac{1}{2}$" pan which was filled with large pieces of wood moss only. The bulb was planted to half its height in the moss and the wick was then inserted into the moss.
The wick was made out of two pieces of soft string (fillis) wound around a thin piece of galvanised wire to give it stability. Do not use copper or aluminium wire as these metals can kill plants.
Ordinary tap water (mine is very limey) was used in the raised container.
Within a week the leaves had started to grow, and it never looked back all the summer. Quite quickly the moss grew all over the surface of the compost. It was liquid fed when all the other pleiones were fed and occasionally lightly watered over the leaves. Most of the water came via the wick. At the end of the season it had made a good sized bulb.
However, this is only one year's growth. If I can grow it successfully for three more years using this method I think I shall have learnt something.
I also believe it is worth trying any pleione which is difficult to grow with

this system.

SOME MORE THOUGHTS ON LEAFTIP DIE BACK

A number of articles have been written on this subject, giving various reasons for it - various deficiencies, too much heat etc. All of these will have some effect, but from my observations it also appears to be a physical problem as usually a poor root system and leaf tip die back go together.
The problem usually only shows when the days and nights are hot, during July and August.
This started me thinking that the leaf tip dies because it cannot get enough moisture from the roots quickly enough. Growers who keep their pleiones outside and not in a greenhouse, never get leaf tip die back. Under these conditions the temperature will be consistantly lower, which means that it is much easier to keep the compost in the pans uniformly moist.
In late July 1999 my **P.chunii** started to get leaf tip die back. These plants were in a greenhouse with light shading. All the dead parts of the leaves were cut off with scissors. Within a week the same leaves were dying back again.
The dead parts of the leaves were cut off again and all the plants were moved into heavy shade, and given a very moist atmosphere by keeping the floor wet. The plants were only watered lightly over the leaves, but the compost stayed just moist because of the moss in it. **P chunii** appears to like a good percentage of moss in the compost so that it never gets too dry or stays too wet when it has been watered.
There was almost no more leaf tip die back until the plants were moved back onto the greenhouse bench in mid September, in light shade, to ripen the bulbs. The weather turned warm and sunny and all of a sudden - leaf tip die back again.

Some species and varieties appear to be more susceptable - **P chunii** in particular.
I suggest that if leaf tip die back appears:
1. Cut off all the dead parts.
2. Put the plants in heavy shade.
3. Keep the atmosphere moist.
4. Keep the compost just moist. Do not fluctuate between wet and nearly dry.

Most pleiones that suffer with this complaint benefit from a generous portion of moss in their compost. Wood moss is probably better than sphagnum as it will hold more air.

Ian Butterfield, Bourne End, Bucks.

****

A TERRESTRIAL EXPERIMENT IIII

As the last weeks of the old century slip into history, time to analyze the past year, which for me still had a few surprises, for my outdoor site containing the **Ophrys Apifera** tubers produced fourteen flower spikes. In ten years of attempting to grow hardy orchids it was the best result to date. In previous years I had planted the tubers on a grass slope and was content to produce new tubers of 1.5 to 2gms., but in '99 notes I mentioned that I would convert the site without the grass and leave the tubers in situ for the summer, but with these results I decided to lift and investigate. All of the stock had improved in size, and out of the fourteen that flowered the weight of the tubers had increased to between 3 and 4 gms., with two coming in at 5gms. Most of the tubers

of this group increased by 2 or 3 but the 5grm. tubers produced 4. Clearly something had gone right but what had I done to bring about this change.

The site was cleared down to the foundations. I relaid the broken brick drainage, upon this I placed the large stones bedded in fine sand, a compost of John Innes No3, Dolomite lime, and horticultural grit was mixed and rammed between the large stones. The slope was increased to about 30 degrees, a top dressing of half an inch was added, JI No3, Dolomite lime and sharp sand all put through a fine sieve completed the rebuild. The large stones which are now sunk to within one inch of their tops stops the soil from sliding, and the top dressing goes as hard as brick during a dry spell, but still retains moisture below the surface, and in heavy rain the water runs over the top. The same situation was retained this year '99. The new tubers were stored for the summer as already outlined in '99 notes, but in August they were removed from their paper and laid out on a small plastic netting clear of the tray bottom, similar to an egg rack and sprayed every two or three days until I saw signs of growth and then planted out. Observation in the following December showed improvement in growth but this may be due to the fact that I started with larger tubers. I will have to wait until the spring to see the flower results, and in July what's underneath. This year I went for broke, all my stock of Apifera were planted in my outdoor site. One further point, no slug damage.

One further thought on the slope site there might be a spin off. When growing the Paphiopedilums, the compost of bark never dries out evenly when the pots are stood horizontally on the bench, there is always a small amount of water left in the bottom of the pot and this causes the compost to break down early. Try drip watering a plant in a bark based compost, stand on a horizontal bench

for five minutes, then tilt the pot over at a slight angle. And as the growing year progresses this decomposition moves slowly up the pot damaging roots I therefore decided to change one of the benches in the greenhouse and put in a small slope, I should see the results of that in February. I also did the same to my hardy orchid box but that was to keep water away from the Ophrys crowns. Paphiopedilums do have one thing in common, get sloppy with your watering and you will pay.

Having had some thirty odd years of growing the warm Paphiopedilums, it was in 1987 when I first started to take an interest in the Ophrys. At that time I was growing the paph. seedlings using Thomale 1954 successfully so it seemed a good place to start, so a series of experiments was started. I wish I could say it was all very scientific, but the truth is I took the six macroelements of this culture medium and varied their quantities until I obtained results. The sugars were reduced to 7gms. Glucose, 3gms. Fructose, later on I added microelements plus the vitamins and 20ml. of strained Pineapple juice, the pH was then adjusted to five. As I had already purchased large quantities of these chemicals the total cost of producing this culture medium was far cheaper than the purchase of a commercial product. The only seed I could obtain legally at that time was **Orchis Morio** and **Ophrys Apifera,** a limited choice but there was enough to get satisfactory results to indicate I was going in the right direction. The timing of replating was an accident, having made alterations to my sowing cabinet, and to run through the sowing procedure took six old jars where seed had not germinated, sterilized and sowed with Apifera seed and to my surprise two jars germinated I therefore waited until the protocorms started to show chlorophyll, then replated onto full strength Thomale with no problems. Receiving another supply of European Ophrys seed I again made a series of

sowings using my modified Thomale. Sown in June '98, and considering the seed was fresh, germination was poor. I did mention this in '99 notes and increased the amount of seed to be sown. There was nothing wrong with the protocorms that germinated, just small quantity. However in July '99 I sowed the same seed left over from '98 on the same culture medium, this time much improved germination. Considering old seed was used with some jars growing like cress, while the current seed of Apifera from my own plants sown by packet and by green pod results were poor, I have therefore decided to hold back seed until '00 and see what results are like then.

As I bring these notes to an end, still a busy time ahead I have just finished building a simple light box based on the results of '98, and with 30 jars of Ophrys seedlings this year to replate it is already too small. Thoughts for the coming year, and here are two big ifs, firstly the replates do well, and secondly my outdoor site gives me the results of last year. If so I am thinking of enclosing the outdoor site with glass, instaling some heat and then having another go at my weaning problem with the European Ophrys. With this in mind in '98 I grew several reserve Apifera tubers at a minimum temperature of 55°F just to see if there were any problems - there were none.
One further point of correction in my '99 notes, last paragraph should read, 'As I conclude these notes, the Paphs are in flower'. It looks like I gave our editor a hard time sorting out my hand writing, and until we meet again through these notes I bid you all good growing.
P.S. Liked the front cover photograph '99.

G C King, Amateur. Oxfordshire.

PLEIONES - DREAMS, MEMORIES and REFLECTIONS

I have admired Pleiones for about twenty five years now, it seems an incredible length of time but even my limited powers of calculation says it must be so.

I first encountered these delightful plants, in of all places; the greenhouse attatched to the rural science block of a Worcestershire school. The rural science teacher was one of the most relaxed and but at the same time enthusiastic people I have met. He was perfectly content to have boys of about 13 yrs. old weild sharp knives in the greenhouse happily taking slices out of anything that looked as if it might be propagatable in there. There was a small section that other teachers used and there I saw for the first time **Pleione formosana** and later in the year **Cyclamen hederifolium.** Strange that after all these years, two collections built and dispersed later that these remain my two favourite genera. The mystery of the plants was solved a few years later when I found that my history teacher was a very talented and well-known grower of alpines.

An enthusiasm for alpines ensued and my first Pleione was **Pleione pricei** (now **P formosana "Oriental Grace"** or **"Oriental Splendour"**), purchased from Percy Picton's idiosyncratic but marvellous Midland nursery. I also bought **Pleione yunnanensis** (now **Pleione bulbocodioides "Yunnan"**) in flower, vivid in colours of magenta passion and **Pleione limprichtii.** I bought an old copy of the RHS journal which had an article by Rev. Blakeway-Phillips about **Pleione pogonioides** (now aptly **Pleione speciosa "Blakeway-Phillips"**) and was enchanted by the picture of this elegant and richly coloured orchid flowering in a pot carpeted

with emerald green moss. At a price I think I finally tracked down a plant in flower and kept it on my bedroom windowsill. Alas I never persuaded the plants to flower again and moved on to **Dionysias** and such like, passing by the orchids after this disappointment. Alpine Garden Society shows were a source of inspiration to me at the time and I witnessed the arrival of the stunning Shantung hybrids on the show benches. I would have liked to have tried these exquisite plants, that seemed to lead the way for the rash of peach/apricot flowers developed within the alpine world by hybridising pink and yellow species. Unfortunately the Shantung hybrids were very expensive when they first appeared and so were well beyond the reach of my school boy purse.

About twelve years later, long after my original collection was run down while I left for university, I moved to my present address and discovered a greenhouse in the garden. My interest was rekindled. I visited a local nursery and asked for ideas for plants for my newfound "alpine house". The owner disappeared for a few minutes and returned with a plant of **P.formosana.** I was doubtful but took it. I think I then saw a segment within "Gardner's World" and discovered that my old Pleione world had been turned upside down. **P.yunnanensis** was no longer an explosion of colour, but a refined and delicate study in lavender pink, **Pleione forrestii** was a small bright yellow flowered species and **Pleione formosana** and **bulbocodioides** were swallowing up familiar names like a pair of horticultural Ghengis Khan's. And the hybrids had arrived with a vengeance.

I added **Pleione limprichtii** to my collection. I found it pleasant, it grows and flowers well but somehow did not "light my fire". Something about the intensity of the colour I think. I like plants that are either "pale and

interesting", have a solid rich mid colour or a deep colour. Compared to the other species and the hybrids it just does not match up, even though I find it hard to admit. I have noticed that I am starting to move slowly away from my alpine "roots" (yes, that pun was intended) changing my tastes to a set of criteria more aligned with the mainstream orchid world. However, I still admire the elegance of Pleiones and blanch at some of the monstrosities being created in the tropical orchid camp.

I was clearly ready for the hybrids. I found several suppliers and the excellent Pleione exchange hosted by Peter and started building a collection. I found some to be very similar to each other to my eyes, even different grexes. Indeed I learnt that different clones within a grex may vary more than plants of different grexes.

My favourites out of the forty or so varieties I grow? In the "pale and interesting" corner we have **P.Piton**, a vastly underrated grex in my opinion. I have several clones, one with some yellow on the lip, and one almost identical to a plant of **yunnanensis** exhibited by Ian Butterfield. I love the long stems, the understated pastel colours and the fascinating flecks of darker colour on the petals. **P.formosana "Clare"** is a beautiful white with lemon yellow on the lip and a clear attraction for the local aphid population. I find it makes good fat pseudobulbs and flowers freely. This year I have splashed out on two more white formosana, **"Red Spot"** and the delicious **"Kate"**, can't wait until spring. When I can flower it, **P.x confusa** is stunning. Large pale yellow flowers to die for but unfortunately I just don't have the knack. I know that there are supposed to be good and bad forms but mine came from Eric Humphreys and I know he grows it brilliantly. Sorry Eric, I have kept them, but they are not

flourishing. I have had more luck with **Shantung**, I have three clones, **"Ridgeway"**, **"Maryfield"** clone and **"Muriel Harberd"**. Either my powers of discrimination are failing me or there has been a mix up because I cannot tell them apart. Even so they are very attractive, pale yellow petals with a hint of pink and fine pale yellow lips with dark red markings.

In the medium solid colour category I can only think of one. I think it is **P. El Pico "Kestrel"**, very solid matt pink flowers, and a similar coloured lip with large red spots. Very simple, very nice.

There are plenty of plants within the rich deep coloured category. My test for distinguishing who the real stars are, is the length of the period of stunned silence when I tip out the pots in January and discover the plant's verdict on my cultivation that season. One manages to have disasters regularly at all seasons. **P. El Pico "Goldcrest"** has managed to get itself eaten by a slug (this has only ever happened to one other plant, a **Piton**), fallen over in mid flower and get stem rot. I don't think any plant has had anything like as many misfortunes. But somehow I can't resist its cheeky stubby rich pink flowers, vibrantly spotted lip with white whiskers. **Pleione speciosa "Blakeway-Phillips"** still stands the test of time and holds its own against the hybrid onslaught, maintaining a poise and air of sophistication. The curve of the petals catches the imagination every time. For those explosions of intense colour I look to **P.Stromboli "Fireball"**, I am sure that there are some more spectacular Pleiones now but this one certainly meets my taste. Another exciting one is **P.Tolima "Moorhen"** which has a more unusual shape with a very wide lip.

There are the bicolours. The **Vesuvius** grex is a particular favourite. I have

three clones, one from R. Kretz with mid pink petals and the deeper coloured **"Phoenix"** and **"Linnet". Soufriere** tends to flower quite early in the main season, the clone I have is very vigorous with mid pink petals and a wide lemon yellow lip heavily blotched with blood red. My final selection is **Irazu "Cheryl".** Curiously when I first flowered it I didn't like it. Perhaps like fine wines and strange cheeses it is an aquired taste because this year I loved it. The colour is hard to define, mauve but with a hint of yellow, with a lip which is lemon yellow on the upper surface, but purple beneath.

My dreams? I think would to be to succeed with some of the species so far I have grown poorly like **P.bulbocodioides "Yunnan"** and **P.aurita.** The gift of being able to flower and increase **P x confusa** would also be most welcome. But the biggest dream might be that when I depart these shores for Brazil that I am able to overcome my present cultural difficulties and in the heat and grime of Sao Paulo, where the bugs are of a size that can easily fight back, I finally build a collection I can be proud of. Further I dream that people will see the collection and that someone will will fall in love with Pleiones, as I did so many years ago, and the story will start all over again.

Mark Griffiths, Berkshire, March 2000.

****

SALEP

Salep is the name given to the denatured dried bulbs of certain terrestrial orchids and to some of the products made from them. The name is said to derive from the Arabic "khusa ath-tha'lab" which was shortened to Sahleb and eventually to Salep. While terrestrial orchids in the UK may have suffered through loss of habitat and removal by collectors for planting elsewhere there has not been a great demand for them for culinary or medicinal purposes, or at least in recent years. Mrs M Grieve in 'A Modern Herbal' (1931) does say that before coffee supplanted it, Salep was sold at stalls in the streets of London but most was imported. However, some came from the UK and Oxfordshire was said to be the best source. Sturtevant (1919) in his 'Notes on Edible Plants' also mentions an inferior English Salep derived from **Orchis mascula.** In many parts of Europe the demand for orchid bulb products was and still is very high. Turkey in particular has a long history of using powdered orchid bulbs as a medicine, drink and as a binder in traditional ice cream. Turkey has exported Salep to many other countries including the UK and USA, but the major destinations for the product have been Germany, the Netherlands and Northrn Cyprus.

The European trade in Turkish Salep with particular reference to Germany was the subject of a study by Max Kasparek and Ute Grimm published in the December, 1999 issue of Economic Botany. The study itself was made in 1994 but, as I know to my cost, the time taken to reach publication in scientific journals is often long. Nevertheless the account is worth bringing to the attention of fellow hardy terrestrial orchid enthusiasts who may not have access to the original journal. I have taken some of the information from the study and included additional material gleaned from other sources.

Around ninety orchid species are represented in the Turkish flora. Pure Salep consists of the ground bulbs of only certain terrestrial orchids. **Dactylorhiza osmanica** is considered to be the main source but Turkish Salep may be derived from at least thirty orchid species. Those identified so far include:

Aceras anthropophorum (Man orchid)
Anacamptis pyramidalis (Pyramidal orchid)
Barlia robertiana (Giant orchid)
Dactylorhiza iberica
O.osmanica
D.romana
Himantoglossum affine
Neotinea maculata (Dense-flowered orchid)
Ophrys bombyliflora
O.ferrumequinum
O.fusca (Brown bee orchid)
O.holoserica (Late spider orchid)
O.lutea (Yellow bee orchid)
O.mammosa
O.scolopax (Woodcock orchid)
Orchis anatolia
O.coriophora (Bug orchid)
O.italica (Italian orchid)
O.laxiflora (Lax-flowered orchid)
O.morio (Green winged orchid)
O.pallens
O.palustris
O.pinetorum
O.provincialis
O.purpurea (Lady orchid)
O.sancta
O.simia (Monkey orchid)
O.spitzelli
O.tridentata
Serapias vomeracea

Additional orchid species listed as sources of Salep by other authors include:

Dactylorhiza maculata (Spotted orchid)
Orchis mascula (Early purple orchid)
Orchis militaris (Military orchid)
Ophrys bornmuelleri
O.phrygia

In Turkey, the orchids are collected by the villagers and nomadic shepherds when the plants are in flower and hence readily located. The old parent bulb is discarded and the swollen daughter bulb retained. Each collector is said to average around 1 kg of bulbs per day during the limited collecting period. The washed bulbs are boiled to prevent sprouting, rinsed and air dried. Once dry, the prepared Salep can be stored for many years. The dried bulbs are ground before use as required because the bulbs keep better whole rather than powdered. It has been calculated that on average 2620 orchid bulbs are needed to produce 1 kg of dry Salep. Collecting generally occurs only when orchid density is high enough to make harvesting worthwhile. On this basis, the practice would appear self-regulating but there was evidence that orchid density in the main collecting areas had decreased significantly.

The desirable constituent of Salep is the mucilage, which makes up over 50% of an orchid bulb and consists mainly of a mannose sugar. The mucilaginous nature of Salep has a soothing effect on the digestive system and in Turkey it is a traditional medicine for treating stomach ulcers. Salep is also used to treat respiratory problems. In Germany and other parts of Europe it is used as an anti-diarrhoeal and is given to children with enteritis.

Salep has long been thought to have aphrodisiac properties but this is based more on the resemblance of the bulbs to parts of the male genitalia than on any pharmacological evidence. Nevertheless it remains a key ingredient in preparations for male rejuvenation and the maintenance of a healthy prostate. In the past it has been fed to bulls to improve their reproductive capacity. Orchid bulbs themselves have also formed part of love charms.

The main culinary use for Salep is as a binder in the production of the Turkish ice cream 'Maras Dondurma'. Maras is a city in south-central Turkey where orchid ice cream has been made for over 300 years. The ice cream, which is traditionally made from goats milk, contains about 1% Salep. The dondurma is beaten and kneaded to a smooth consistency using hand-forged metal rods.

Salep is also valued as a delicious hot drink in Turkey and the surrounding areas where it is consumed in bars and cafes during the cool winter months. Men claim it strengthens the 'body'. The equivalent of around five orchid bulbs is needed per serving of this drink, which is often flavoured, with a sprinkling of ground cinnamon. The powdered Salep is stirred into hot milk for a period of up to fifteen minutes, until the correct level of viscosity is achieved. Glucomannan is the substance responsible for the viscose character of Salep.

True Salep is almost flovourless and the only justifications for its continued use are tradition and the difficulty in marketing as Salep products that contain no Salep. If the desirable characteristic is just the viscosity, a similar effect can be provided by Salep substitutes such as carboxy-methyl- cellulose (CMC) and rice powder. The time needed to prepare the traditional drink, has led to the marketing of instant Salep drinks that rely on chemical substitutes as the thickening agent. The main Salep product sold as a drink in Germany is said not to contain genuine Salep. The high cost of Salep and changes in consumer taste, have led to the traditional Turkish ice cream being replaced by industrially-produced ice cream that contains no Salep. Literature promoting holidays in Turkey still encourages visitors to sample the delights of Salep though. Better education of tourists, and of the Turkish people, is needed

to increase awareness about the origins of Salep.

The export of Salep from Turkey goes back a long way, with exports said to be 6500 kg per year at the time of the Ottoman empire. The trade was an estimated 25,000 kg per annum by the end of the 19 th century. In 1994, the year of Kasparek and Grimm's study, the annual harvest of Salep in Turkey was estimated at between 3750 and 7500 kg which would represent between 10 and 20 million orchid bulbs. Official export records have only been registered by Turkish customs since 1955. However, these figures do not distinguish between Salep and its substitutes. While the earlier records may have been true of Salep it is difficult to determine whether the recent increase in the export figures represents greater trade in Salep or in its substitutes. In addition it is not known how much of the trade in Salep has gone unregistered and therefore unrecorded. Turkish law does prohibit the collection and export of Salep from state, communal and private land. There is legislation too regulating the use of non-wood forest products that prohibits the collection of Salep in forests, and further legislation covering national parks. However, unless the trade in Salep is registered it cannot be controled.

On the positive side, Turkey acceded to CITES in 1996 so Salep imports should no longer be accepted by member countries in the EU as the import for commercial purposes of wild collected plant derivatives of the orchids used in Salep is not allowed. Also there is current research in Turkey on the in vitro multiplication and seed germination of Salep orchids on different culture media (Caglayan et al., 1998). Perhaps together with better support for the protection of the orchids and their habitats this may help to ensure that Turkey does not lose the wild orchids that are such a feature of the countryside.

REFERENCES

Caglayan K, Ozavci A, Eskalen A. (1998). In vitro multiplication of Salep orchids growing commonly in the East Mediterranean region of Turkey by embryo culture. Turkish Journal of Agriculture and Forestry, 22 (2), 187-191.
Kasparek M & Grimm U. (1999). European trade in Turkish Salep with special reference to Germany. Economic Botany 53 (4), 396-406.

Bill Bond, HRI, Wellesbourne.

****

ORCHIDS IN THE GREAT OUTDOORS

I've been growing hardy orchids on a modest scale for a number of years, generally in clay pans in various mixtures of loam, grit, sand, peat and bark, and with varying degrees of success: little or short lived success with Cypripediums and Ophrys, generally better with Dactylorhizas, Epipactis and Calanthe. However, the majority succumbed when I went to University, and the survivors were whittled down during the course of two house moves. As a result of the last of these moves, three years ago, we gained a much larger house and garden, and also took on four neglected allotments, so it was clear that the survivors might be further neglected for the next few years at least.

So, with some trepidation, I decided therefore that the pots had to go, and the orchids would have to take their chances in the big, wide world - namely the back garden! A site under a Japanese Maple was selected, partly because it

Dactylorhiza in the wild

Dactylorhiza ‘Lydia’ in cultivation

would provide some dappled shade, but mainly because it was an area we were least likely to want to dig up! The orchids were tipped out - about half a dozen **Dactylorhiza maculata** (Heath Spotted Orchid) and a small clump of **Epipactis gigantia** (Chatterbox Orchid - and the gritty compost from their pots was dug into the planting area in an attempt to improve the drainage. They were then re-planted and watered in. The soil was loamy, tending to clay in parts, and the Epipactis drew the short straw, ending up in a very heavy patch by the edge of the lawn. Their first year was encouraging - more robust growth, with the Dactylorhiza foliage looking much healthier and greener than it had previously: in pots, I'd found that the leaves tended to develop yellowish streaks, and I begun to wonder whether it was due to a virus infection. However, this streaking was no longer apparent, so I suspect irregular watering and a too much exposure to direct sun may have been responsible. The Epipactis, which had grown and flowered but without much enthusiasm in a pot, also flowered better than previously, with half a dozen spikes. By the second summer, the patch of Dactylorhiza had increased in size (to over 25 flower stems), and the Epipactis was covered in flower and had also spread significantly. Suitably encouraged, I also purchased a Frog Orchid (**Coeloglossum viride**) and an Early Marsh Orchid (**Dactylorhiza incarnata**) from Paul Christian and planted them out nearby (with added grit and fine bark mixed into the soil), and to date these also appear to be doing well.

As a result of this, I've been encouraged to try orchids elsewhere in the garden, namely Early Purple Orchids (**Orchis mascula**) and young Green-winged Orchids (**Orchis morio**) which were planted out in an area of the garden being used to cultivate wild flowers and attract wildlife. Early indications for the **morios** have been promising, with a couple of flower spikes appearing from the

largest of the plants in 1999, but I fear the **mascula** may have succumbed to the depredations of blackbirds who have become something of a menace digging around in their planting area, which was mulched with bark.

A recent garden development has been the construction of an 8ft X 4ft raised bed from a double layer of railway sleepers. As finances, time and muscle-power (!) permit, this will eventually be extended to around 50ft long. It is intended to use this to cultivate plants which require semi-woodland conditions (including **Arisaema, Cyclamen, Helleborus, Ferns, Meconopsis, Primula** etc) as well as a wider range of non-native orchids (especially **Cypripedium, Calanthe** and **Dactylorhiza**). For now the **Dactylorhizas, Epipactis** and the **Coeloglossum** have now been moved into this in order to allow re-development of their existing plot.

As well as encouraging me to experiment with growing orchids in the open garden another benefit of our house move was that we ended up closer to wild orchid habitats. In fact this wasn't obvious initially, the area in question being industrial wasteground, allowed to revert to nature over the past 30 years or so. However, knowing that orchids often do colonise old industrial sites, I thought that the low heaps of spoil around the site might be worth searching for orchids the following spring/summer. I'd half forgotten about this by the following year, when I came across an article in the local paper which reported that Bee Orchids (**Ophrys apifera**), Common spotted Orchids (**Dactylorhiza fuchsii**) and Southern Marsh Orchids (**Dactylorhiza praetermissa**) had been discovered on the site! A hurried visit the same day revealed the **Dactylorhizas,** but initially no sign of the Bee Orchids despite a close search amongst the short turf of the spoil tips which I thought would be an ideal habitat: well

drained, with a calcareous soil (indicated by the presence of Cowslips (**Primula veris**), Kidney Vetch (**Anthyllis vulneraria**) and other lime loving plants).

Then my wife discovered the first Bee Orchid: quite a tall specimen growing amongst coarse grasses on the flatter, low lying areas between the spoil heaps. Further searching revealed more, scattered over a wide area, and on this and subsequent visits we counted them until we had seen 65 in all! Most were surrounded by thick vegetation, but a few were growing close to the Common Spotted Orchids in what appeared to be a very clayey and damp situation, under hawthorn scrub. This was hardly the well-drained, dry and open situation which I had anticipated in my mind's eye, but then I guess orchids don't read textbooks! Close by also lay a much larger area of derelict land, and heartened by our success in the first area, we continued our search. Yet again, my wife found the first, but as it turned out, only Bee Orchid. However, Common Spotted Orchids were present in even greater numbers, especially in the damper ground at the base of a retaining wall running across part of the site. The vegetation here included Bracken, indicating much more acid conditions, and explaining, I believe, the lack of Bee Orchids - it's useful studying orchids in the wild to see how wide their habitat preferences can be.

This was all exciting in itself, and towards the end of last summer, to my great delight, I discovered the spotted leaves of a self seeded **Dactylorhiza** growing within a dwarf thyme plant planted in a rather neglected sink garden on our patio. The compost mix in the sink was based on John Innes with added peat and a large proportion of sharp grit, and was planted up several years ago in our old garden. Given that we have lived in our present house for over three years, I'm hopeful that this is a self-set Common Spotted Orchid from

the nearby waste ground. The leaves are certainly much spottier than the **maculatas** I've been growing, and I do try to dead head my cultivated plants promptly so that their energies are diverted into tuber growth rather than seed production. This orchid was also lifted and transferred to the raised bed, at which point I discovered there were actually two separate tubers. The largest tuber appears to be flowering size, so I may not have to wait much longer to find out what it really is.

So what of the future? The raised sleeper bed will be extended (the existing section is already full) and populated with more orchids, and the lower part of the garden will be further developed as a wildlife garden, with suitable areas for native orchid species (from cultivated sources - definately NOT dug from the wild!). As I've already mentioned, I'm already growing some native species in this area which currently includes a 'mini-woodland' area and a wildflower meadow. I hope to extend the range of habitats with a large pond and adjoining boggy area, together with areas for growing native mountain, moorland, heathland and seaside plants. In due time, it is intended that each of these will be planted up with appropriate orchids.

In conclusion, I've learned that it is worth taking the risk of growing orchids in the open garden: although some losses are inevitable, if nothing else, they look more at home and the amount of work in looking after them is minimised. Clearly, I wouldn't advocate planting all orchids outside, and certainly not if you have only a single cherished specimen!

It's also worth looking for orchids in unexpected places - it's surprising where they choose to grow themselves, and this should perhaps encourage us to

to be more prepared to experiment with growing conditions - although I still wouldn't plant an **Ophrys** in wet clay!

Tim Martin, Leicestershire. March 2000.

****

DISAS - TO FEED OR NOT

Introduction.

"Received wisdom" as they say, is that Disas need little, if any feed and that any fertilizer has to be very weak. Furthermore, I have often heard it asserted that feeding can be harmful. Only last summer I received a phonecall from a distressed amateur grower whose plants were losing leaves and roots following his attempt to experiment with low concentrations of feed (less than 100 micro-siemens!)

Unfortunately this is all anecdotal. To my knowledge nothing, rooted in exper-imental evidence, has ever been published. The pioneer South African Disa grower, Louis Vogelpoel in his booklet, which for years was my Disa-growing bible, considers that feeding, especially for plants growing in peat or inert media such as sand, is essential but "The temptation to over-feed" or "force" Disas with strong mixtures should be resisted in favour of a policy of frequent feeding with very dilute solutions". He uses one level teaspoonful of fert-ilizer in 10 litres of water but also wrote that some fertilizers could be used at twice this strength. In a recent article in the Australian Orchid Review,

Brian Milligan described fertilising "every month or two" with a liquid fertilizer at one-eighth of the recommended strength. Pui Y Chin, who grew some fabulous Disas in his San Francisco back yard, was reported in the American Orchid Society Bulletin as using one quarter strength 20-20-20 every month. All three are united in the need to use very good quality water, low in disolved salts. One of the problems however from the foregoing is that fertilizers differ in their formulation, strength and "recommended" dose and so to the recommendations, while useful, would have been more helpful if we knew more about the fertilizers used.

The consensus thus, from experience and successful growers seems to be that fertilising is O.K., even necessary, but that it should be "weak". But how weak is weak? And how do we explain away the reports of disasters arising from the use of even weak fertilizers? My own experience was that they grew well in my regime of fresh sphagnum and rainwater with very occasional, and weak, feeding. But I started to feel that it would be interesting to look at the topic more objectively, especially in the light of anecdotes reporting the successful use of routine feeding and equally the dismissal by a few of the harmful effects of tapwater.

The experiment

A small initial experiment was started in the autumn of 1998. I took 48 small divisions of various hybrids such as the various **DIORES** clones, 3 clones of **FOAM**, various **KEWENSIS**, some **unifloras** and some of the newer line-bred hybrids such as **UNIFOAM**. These were all growing in either straight fresh sphagnum or with about 25% Perlite added. They were divided into four groups of 12 plants,

put in trays and watered with either rain water (EC70-90), or fertilizer solutions with EC readings of 150, 330 and 450. The fertilizer used at that stage was the one I then used for all my orchids, home made with added Calcium nitrate, to finish up with an N:P:K ratio of 1:1:1 up to mid-March and then 2.5:1.5:1.5. The nitrogen source was ammonium nitrate, ammonium phosphate and potassium nitrate giving about 40% ammoniacal nitrogen and 60% nitrate nitrogen. Urea was not used, not because I considered it harmful, but because I fertilise my other orchids at every watering and use a lot of inert media such as rockwool or Perlite and, especially for cool growing plants, it can be a rather unreliable source of nitrogen due to slow breakdown.

Results

As usual, growth was slow through the winter months but, come the spring it speeded up. At each watering, which was infrequent until the warmer weather arrived, I knocked a few plants of each group out of their pots and examined the roots. Much to my surprise there was no discernible difference between the plants; certainly no evidence of root loss or impaired growth. Similarly with top growth. Here one might have expected, especially in spring and summer, that the added fetilzer would have given stronger and more luxurious growth; this did not appear to be the case.

None of these plants were of potential flowering size so I cannot report on this aspect with this small experiment. However, encouraged by the apparent lack of harm I ventured to give a few of the flowering-sized plants some of the two highest strength feeds. Again no discernible difference in growth-rate or size was noted and flowering was excellent.

So intrigued was I by this apparent lack of negative effect that I allowed the water/feed mixture in some of the trays to fall. The result was that it became even more concentrated and it was quite interesting to show visiting Disa growers the healthy plants and roots, even though on one occasion the EC in the tray was 680!

Discussion

Naturally I was pleased and even more surprised and puzzled by what had transpired. My initial conclusion was that, whilst feeding did no harm neither did it have any posititve effect. I mentioned this to an aquaintance who grows many Disas extremely well as a hobby alongside his lettuce-growing business. He grows in peat with his pots in trays filled with water. It transpired that he routinely feeds his Disas, from the same hosepipe he uses for the lettuce, without any apparent harm but he commented that my next year's growth would be bigger and stronger because the fed plants would have larger tubers. To me this sounded a very sensible possibility and I was only a bit sick that I had not reasoned this for myself. At repotting time I was impressed with the size of many of the new growths and certainly many tubers were large. But that is not very scientific.

I did mean to do a more tightly controlled trial in the year 1999/2000 in which I hoped to be more rigorous in measuring plant growth but left it too late to start, so it will have to wait. What I can report though is that I do have some of the strongest growing, flowering-sized Disas I have ever had and still no deleterious effects.

So, what about my friend in the introductory paragraph of this article? I have no idea what his problem could have been. I am certain it could not have been his fertiliser, not at the concentrations he was using, even if it was one of the popular ones which contain some urea. Could it have been pH? Grown in moss and using rainwater, the growing media and liquid my plants are in, is usually pH6-6.5. Other media and different water sources are unknown to me. Certainly I have never dared use our tap water. After standing to allow the chlorine to evaporate its pH is sometimes over 8.0 and it has very high bicarbonate content which is likely to act as a powerful buffering agent so making it very difficult to get the pH down to the level at which we are told, and my experience confirms, Disas do well. What about the calcium? This is an essential element for cell function and structure and my feed contained some, but at a low level of about 30 parts per million, compared with our hard tap water which contains 103 ppm. Certainly the calcium in my feed has done no harm, whether the so-called harmful effect of hard tap water is due to calcium, I could not tell; it may be that it is the bicarbonate which does the harm.

Conclusion

So called balanced feed, disolved in rainwater and given at a level up to 450 microseimens (about 350 ppm) had no harmful effect on hybrid Disas grown in perpetually wet sphagnum moss. There is some indication that a level of up to 650 microsiemens is safe. Added calcium at a level 30% of hard Sussex tap water had no harmful effect. No difference could be observed between those plants grown in rainwater and those grown in three increasingly stronger fertiliser regimens. Nevertheless, feeding may have a beneficial effect which is reflected in growth the following year, consequent on a larger tuber and a

more vigorous new plant which grows from this. These preliminary conclusions need testing in a more tightly controlled trial, which might investigate also the effect of using urea as a partial source of nitrogen, the use of low phosphate feed, pH and the effect of various tap waters from chalk and neutral or acid sources.

References:
Vogelpoel, Dr L. Disa uniflora. Its propagation and cultivation. Disa Orchid Society of South Africa.

Milligan, B. Growing Disas. Australian Orchid Revue (1999) 64, 4

Hamilton, R. AOS Visits: Pui Chin. Amer. Orchid Soc. Bull. (1994) 63, 766

John Davison, West Sussex

****

THE LADY'S SLIPPER STORY

The Lady's Slipper Orchid **Cypripedium calceolus** is the rarest British wild flower. It has been illustrated, photographed and written about since it was first discovered as a native European plant in 1568 by the herbalists Dodoens and Censius. Their fine woodcuts were reproduced unchanged in Gerard's Herbal of 1597.

The earliest record of a British plant is a dried herbarium specimen from

Parkinson dated 1640 and from the Ingleton area. It still survives in the Natural History Museum in London. In 1629 John Parkinson Wrote:
"It groweth likewise in Lancashire, near upon the border of Yorkshire, in a wood or place called Helkes which is three miles from Inglborough the highest hill in England and not far from Ingleton as I am informed by a courteous Gentlewoman, a lover of these delights, called Mistress Thomasin Tunstall, who dweleth at Bull-Bank near Hornby Castle in these parts and who hath often sent me up the roots to London which have borne fair flowers in my garden"

In his book "My Rock Garden" (1907), Reginald Farrer rebuked the same lady in his characteristic prose:
"A worthy Gentlewoman indeed! O Mistress Thomasin if only you loved these delights a little less ruinously for future generations! Do you sleep quiet, you worthy Gentlewoman, in Tunstall Church or does your uneasy sprite still haunt the Helks wood in vain longing to undo the wrong you did?" "Accursed for evermore, into the lowest of the Eight Hot Hells, be all reckless uprooters of rarities".

Old records show that the Lady's Slipper grew in England in the limestone areas of Yorkshire, Cumbria and Durham. Many plants were collected from the mid-eighteenth to the end of the nineteenth century by botanists, for their dried flower collections and gardners wishing to grow the plant. Concern was expressed about its diappearance by Lees in his Flora of West Yorkshire in 1888 and in 1917 the species was declared extinct in Britain.

So it remained until a single flower was discovered in 1930 in another remote location. Its presence was a closely guarded secret but over the years the news

spread until in the 1960s the flower was once more threatened by collectors. Different individuals and groups attempted to devise their own schemes to protect the plant and this led to conflict and confusion. The late Edgar Milne-Redhead of the Botanical Society of the British Isles wisely got everyone together to pool their ideas and resources. He invited representatives from the Nature Concervancy (now English Nature), The Yorkshire Wildlife Trust and the Yorkshire Naturalists Union to join him for lunch in a local pub and so the Cypripedium Committee came into being. The first task was to ensure the safety of the surviving plant. The site was guarded round the clock and this wardening continues to the present day. Under protection the plant has slowly increased in vigour and flowering performance. The site is fragile and privately owned so appeals have gone out every year requesting people to stay away and not pass on the location to others.

One of the aims of the Cypripedium Committee has always been to propagate the plant and re-introduce it to some of its former haunts where it could be enjoyed by all but this has been a long and difficult process. In 1983 a generous donation from Sir Robert and Lady Sainsbury established the Sainsbury Orchid Conservation Project at the Royal Botanic Gardens, Kew. Natural pollination of Lady's Slipper Orchids can be unreliable so each year the flowers are hand pollinated and some seed capsules sent to Kew for micropropagation. At first attempts to get the seeds to germinate met with little success but eventually consultation with European specialists and long and patient trials using different media were rewarded and a reliable technique for mass producing seedlings has now been established.

Further difficulties were encountered when the delicate seedlings were removed

from their sterile glass laboratory homes and transferred to pots prior to planting out in the wild. Different compost mixtures were tried until a method of weaning was found.The first six seedlings were planted out into the wild in the Autumn of 1989. Three of these are still alive but none have flowered yet. The small seedlings are vulnerable to many predators such as slugs, snails, voles and rabbits so it will be years before we have a healthy population of flowering plants free from the threat of extinction.

We now know that two other specimens of our native Lady's Slipper survived in cultivation since they were collected from the Ingleton Woods at the turn of the century. One was discovered growing in the grounds of Hornby Castle close to the home of Thomasin Tunstall (where it no longer survives). These plants provide important genetic material and are being maintained in cultivation so they can be cross pollinated with the surviving wild plant to increase genetic vigour and variability.

English Nature's Species Recovery Programme is coordinating efforts to introduce plants to a number of sites within the previous natural range. The process has started and will continue for several years as it is important to establish populations which have a natural age structure and are big enough to be self supporting, attracting enough pollinators to ensure their future survival. It will be a long process and already twenty years have gone into the project but we are optomistic for the future of the Lady's Slipper Orchid in Britain.

English Nature Cypripedium Committee.

NEW PLEIONE SPECIES

The past few years have been truly exciting for Pleione enthusiasts! Into cultivation have come several new species together with new forms of already known species. For those of you who have not yet seen or grown them, this article aims to outline what some of them are like and to illustrate some with photographs. I have tried to avoid technical terms as much as possible and where used I've tried to define them, so the plants will be described as I see them as a grower. Sorry to the botanists. I should also point out that many of the plants described are NOT ones in my own modest collection!! Rather, I am indebted to Ian Butterfield and other growers who have generously allowed me access to their collections and given me freely of their knowledge.

1 **Pleione chunii** (formerly P.aurita)

Though described in 1933, this wonderful Pleione from southern China only came into cultivation in the late 80s. It has a showy flower which can vary from pale pink through to a deep rosy purple. (See photo 1). The lip is wide and flared open with an attractive wavy edge and a central stripe of orange. In some clones (forms) this stripe widens at the front of the lip to form a discreet triangular shaped patch; in others this area is a more diffuse patch of colour. Some clones have neither and the stripe simply ends abruptly. The callus (i.e. the ridges down the middle of the lip) is made up of hairs. These are quite long, yellow to orange and there are four or five rows of them. The pseudobulbs are rather elongated and can get surprisingly big - up to 7cm tall. P.chunii is easily available now as seed raised plants which will hopefully take pressure off wild stocks. Recently a white form has appeared in cultivation

Pleione chunii

Pleione grandiflora (two white clones)

Pleione grandiflora (two pink forms

Pleione saxicola

but as yet this is rare and only available at vast expence!

2 **Pleione grandiflora**

From southern China and north Vietnam comes another spectacular new species. It was first introduced about the same time as P.chunii but has been more extensively introduced only in the last three years. Both white and pink forms are known and both are extremely variable:

a) White forms

The white ones have a variable amount of yellow suffusion inside the lip; some have none at all, others are quite a deep yellow (see photo 2). Most I've seen are somewhere between the two. In some clones the yellow extends to the outside of the lip but only to about 1cm back from the front edge. The lip is also spotted inside to varying degrees in colours from pale brown through browny-reds to purple. The lip is also well frilled. In many clones, as the bud forms and starts to eventually open, the flower looks more of a cream or creamy yellow colour but this usually fades to white as the flower expands. I do know of one plant where the creamy yellow colour is retained. The petals can also vary from being narrow and pointed to wide and rounded and may or may not reflex. This means some forms look rather untidy while others display well.

b) Pink forms

These are much more variable than the whites. The basic flower colour varies from pale pink through deep rosy pink to almost violet. Some have a yellow

suffusion in the lip like the white forms, some have just a small yellow patch or dot and some have no yellow at all. In many, the pink shades to white at the base of the petals and a few have white tips also. The size of the flower varies enormously as does the shape of the petals. In fact no two flowers I have yet seen have been the same! (see photo 3 for two examples). This, together with the vigour the plants show strongly suggest to me that at least some (if not all??) of the pink forms turn out to be hybrids, possibly from a hybrid swarm. Thus it may be that only the white forms represent the true species. Time will tell.

The pseudobulbs of both forms, like those of chunii, can get quite large. They produce bulbils which have characteristically very long, thin, whispy leaves which often curl at the ends. Both white and pink forms are available commercially (sometimes at over-inflated prices!). Seed raised plants are coming along nicely and should be available in the not too distant future, presumably at more realistic prices.

3 **Pleione saxicola**

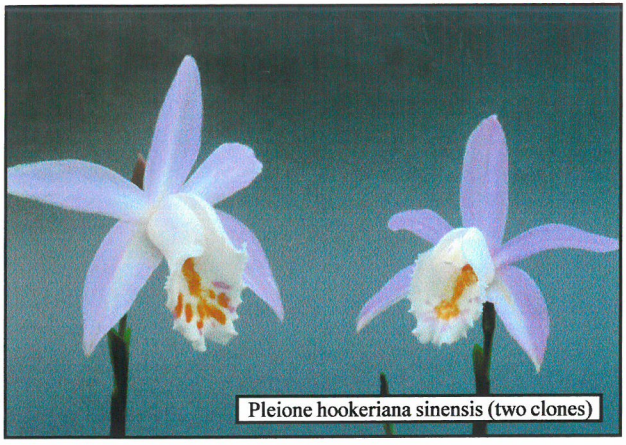
Previously only two autumn flowering species were known, P.maculata and P.praecox. Now we have a third, P.saxicola (see photo 4). This has only been introduced in the past three years or so in the U.K. It was well described in last year's Report by Gunther Kleinhans, particularly the instantly recognisable pseudobulb which is "very flat with a long neck". The flower is a good rosy-pink to lilac-purple with darker markings on the lip. The petals tend to point forward somewhat, making it look as if the flower hasn't fully opened. The callus is made up of three ridges which can be white or yellow. The few flowers

I've seen were all very similar. The species is known from Bhutan and China though a recent introduction is said to be from Burma. It will be interesting to see if the flowers on the latter vary from those from the other locations. One encouraging point is that the limited experience to date suggests that it is easier to grow than the other autumn flowering species! It seems to keep some live root at nearly all times and may be best if never totally dried out and is repotted immediately the flowers are over - but we are still experimenting with culture.

3 **New forms of known species**

a) P.hookeriana

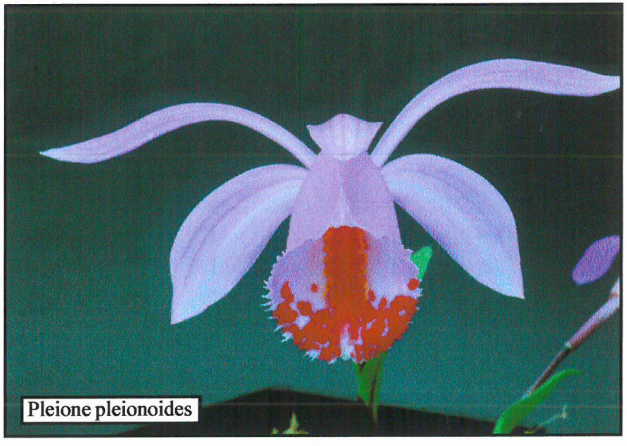
Most plants in cultivation are probably Indian in origin and have proved difficult to grow. Recently Chinese forms of this species have been introduced and labelled accordingly P.hookeriana sinensis (see photo 5). The flowers I've seen seem usually paler than the Indian forms though others say somewhat darker forms do exist. Lip markings vary as with the Indian forms with spots (if present) varying from brownish through yellow and orange to violet. The callus hairs may be white or orange. The pseudobulbs can become **much** larger than any hookeriana we have previously seen and they also produce large numbers of good sized bulbils. It seems so far altogether more vigorous and easier to grow than the forms we have known (and lost) before. The bulbils give rapid increase of stock - so much so that one grower calls it "a grateful weed". Recently some plants labelled hookeriana sinensis have flowered with larger flowers that appear to be a possible natural hybrid with P.chunii, but this still has to be confirmed.



Pleione hookeriana sinensis (two clones)

Pleione forrestii alba

Pleione pleionoides



Pleione pleionoides

b) P.forrestii alba

White forms of the usually yellow flowered forrestii have recently been introduced (see photo 6). Most of the ones I have seen had white or creamy flowers with maroon spots on the lip and some also have varying degrees of yellow edgeing to the lip. Other variations exist such as one with creamy petals and the inside of the lip is all yellow with bright red spots and a bright red edge to the lip (a photo of a plant like this appears in the recently published second edition of the book "The Genus Pleione" by Ian Butterfield and Philip Cribb). In some clones the petals also carry some maroon spotting, in the same way that some of the yellow forms have some red spotting on the petals. Some appear to be halfway between the white and yellow forms with very pale lemon petals and reddish maroon spotting on the lip and are presumably a cross between the two. The size and shape of the flowers of the white forms are similar to the yellow forms and they are also scented, though the scent of white and yellow forms is somewhat different. Perhaps the main difference between white and yellow forms other than the colour is that the white ones are even easier to lose!

c) P.pleionoides. (formerly P.speciosa)

Very few clones of P.pleionoides have been in cultivation until recently when several new clones have appeared. These have shown that P.pleionoides can be much more variable than previously thought, both in size and in the depth of colouration and lip markings. Some of the best new forms have super lips with large areas of bright red patches (see photos 7&8) Others have a callus a particularly rich orange colour.

5 **Still to come.....**

a) P.vietnamensis

Plants collected recently in Vietnam in 1995 have recently been described as a new species, P.vietnamensis. A photo of this also appears in the new edition of "The Genus Pleione". As far as I know, no plants of this are currently in the U.K. so I have not seen it or been able to photograph it. It is another autumn flowerer, apparently closely related to P.praecox. The photo in the book shows a plant with mauvey petals, speckled with a darker mauve and a lip with large red blotches. The callus consists of two lines of hairs with a vestigial third line towards the apex. Strangely, all flowers so far examined have had the sepals fused together in the bottom half.

b) P.albiflora

Though various plants under this name have been offered in cultivation, none have proved to be the real thing. Those offered as P.albiflora "Pinchbeck Diamond" are almost certainly a clone of the hybrid Eiger. More recently, plants offered as simply P.albiflora have almost always turned out to be P.grandiflora. The true albiflora has not been in cultivation at all or even seen in the wild in recent years. Until now that is. This year plants beleived to be the true thing were found amongst an importation of Pleiones from China, from the area around Baoshan and will be formaly described, with photos in the near future. I have seen a photo which shows a white plant rather similar to P.humilis but with larger flowers with more substantial petals and a lip with a red stripe and a callus of white hairs. There are maroon spots at the

apex of the lip. It is hoped that this find will mean that it will ultimately be brought back into wider cultivation. Also of interest is that other plants from the same region look like a possible natural hybrid between albiflora and a pink flowered Pleione, possibly a pink grandiflora.

Summary

What an exciting time it has been with all these new introductions to see and enjoy. Who knows what others may be out there waiting to be discovered? Of course new discoveries often lead to frustrating name changes and other nomenclature problems. Sometimes "new species" are offered or described which are, in the eyes of others, just variants of already known species. Some examples of these that you may see are:

P.pinkepankii, P.mohrii, P.barbarae, P.haberdii, P.moellerii, P.braemii - all these are probably just variants of P.grandiflora. Two others are P.hubiensis and P.voltolinii which are probably variants of P.pleionoides. But no doubt others would disagree with this view!! Good news though - Kew has recently started some DNA analysis work on Pleiones which should hopefully eventually clarify some of the naming and relationships between the species. Finally I would like again to thank those who have allowed me to see and describe their plants, without whose help this article could not have been written.

Paul Cumblton, 881 Oxford Road, Tilehurst, Reading. RG30 6TR. 01189 427676.

THE LAST ROUNDUP

This spring, flowering of pleiones for me and a number of people I have spoken with has been eratic and a great many were reluctant to break dormancy. I don't have any idea why they have behaved like this as I think I took more trouble with them this year than I have ever done. Perhaps this is the cause of the problem. Just being on the neglectful side of overcaring will be the better thing to do. On the whole last seasons cultivation determines this year's flowers. Perhaps the 'care' will pay off next spring. The Disas performed well and I had a lovely show of flowers over a long period.

I hope you have enjoyed reading the Report and have been pleased with the additional colour. The year 2000 Report is the 13th I have produced and as the above title suggests, a change is on the way. From 2001 I am handing the Report over to Paul Cumbleton. He will do a first class job and the Report will I am sure become even better. Paul is a very conscientious person and will deserve your support in the coming years. Although Paul has computer and internet knowledge he can still read pencil and paper so don't feel that you are unable to contribute to the Report. Send all your articles to Paul at his Reding address give at the end of his article on page 42.

I can't bow out without thanking the many people who have helped me in so many ways - a BIG thankyou to you all. Through the Report I have made many friends most of who I will never meet but hope to keep in contact by letter or phone-call. Please give Paul the same sort of encouragement you have given me.

CHEERIO FOR NOW - I'LL BE AROUND.

Peter Bradbury. Buckinghamshire.