

2002



INCLUDING HARDY ORCHIDS

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FRONT COVER : *Pleione maculata* – see page 33

Editorial

Welcome to your new-look Pleione Review for 2002. The magazine has a new title, a new format and more than double the number of colour pages compared to previous issues. As well as these changes, there are some new features in the contents too. There is now a section called “Bulbils” which is a new regular feature for your letters, observations, short news items and announcements. Another new regular feature is “Newly Registered *Pleione* Hybrids”. This year, this comprises a complete list of all the *Pleione* hybrids that have ever been registered. In subsequent years it will contain an update on all hybrids registered since the previous issue. Finally there is a new “Back to Basics” section aimed at those new to growing pleiones.

These changes are a response to the results of a survey of readers that I did last year. Just over 80% of you who ordered the magazine from me also completed the survey – a wonderful response, thank you! Of those responding, 85% of you agreed I should change the format of the magazine. Also, 80% affirmed you would accept a price rise if it resulted in extra colour pages, though there was also a strong feeling that extra colour should not come at the expense of less text. Finally, 67% of you agreed you would be happy with a change of title for the magazine. Of those that didn’t want this, the vast majority were not so concerned with the exact title but that the “hardy orchid” element should not be lost. As to what the new title should be, there was much less agreement and many of you suggested alternative titles of your own. In the end I have gone with “The Pleione Review” and retained the subtitle “including hardy orchids”, so a fairly minor change.

The overwhelming support for the changes I wanted to make have resulted in the magazine you are now holding. I hope you like the changes and enjoy reading this year’s Pleione Review!

Paul Cumbleton

Growing *Ophrys* - a Waiting Game.

Carl Hardwick shares with us his successful cultivation methods for these delightful orchids...

Over the last five years I have been building up my collection of *Ophrys*; however it has only been in the last couple of years that I have seen plants start regularly flowering. I believe this is due to a few changes I have made to my cultivation methods.

1. Throughout the year, the greenhouse in which I house my plants has all its vents open to allow maximum airflow. The only time I close the greenhouse vents are when frost threatens.
2. When temperatures dip and frost threatens I do use a little heat from an electric fan heater, which keeps the greenhouse just frost free while still maintaining some air movement.
3. During the period from mid-December to mid-February I reduce the watering to a minimum, only allowing the compost to remain barely damp to keep the plants from becoming too desiccated. This measure also reduces the risk of frost damage to the developing tubers.
4. As temperatures rise in spring the plants are watered liberally with rainwater, this having weak seaweed-based fertiliser added on occasions.
5. As the leaves of the plants turn yellow, in April or May, water is withheld or greatly reduced, depending upon the particular plant. As the leaves then dry and turn brown in late April and early May the plants are placed outside under cover for the remainder of the summer. They are not placed in direct sunlight so they are warm but not baked.
6. At the end of September the covers are removed from the plants and

they are exposed to any autumn rain that falls.

7. If the weather is extremely wet in autumn, then the covers will be placed back over the plants, preventing them from becoming too wet and reducing the chance of root-rot.
8. Growth of plants is usually fairly rapid at this time of year, with the rosettes of leaves fully formed by the end of November.
9. Once heavy frosts set in, the plants are moved inside into the frost-free environment of the alpine house.

Ophrys do not seem that bothered by the type of compost they grow in, as long as they have a mix that is not too rich and is gritty, producing free drainage. I personally like to re-pot yearly, this giving me the chance to inspect the tubers and see if I have had any doubling up or to detect any problems early on. The compost I use is a 50/50 mixture of sterilised Chiltern loam and sharp grit. The compost is topped off with a layer of grit; this forms a dry collar for the plants.

Some species seem to have two types of growth patterns. I have one form of *O. cretica* that flowers yearly but never produces a second tuber; however I have a second form that has a doubling of tubers every couple of years but only one of these new tubers seem to flower at a time. The year they all flower I will have a spectacular pot that should be appreciated on the show bench.

A puzzle for all growers out there: I have had a couple of plants that seem to have missed a year of growth. A new tuber has developed from the old without having developed any leaves; roots are present growing from the top of the old tuber. Do plants miss leaf growth in the wild?

Winter temperatures have a huge influence on flowering times; last year with the mild spell after Christmas I had plants come into flower by early February, whereas this year as I write these notes it looks like the earliest I will see a flower will be mid-March. This follows the very cold winter

this year where growth has remained static for almost a month.

The pots I grow my *Ophrys* in are mainly clay as this seems to suit them and prevents me over watering at the critical mid-winter period. Pots can be any shape but I find as long as the plants have 4or5 inches of compost they seem happy. The roots of *Ophrys* develop sideways from the top of the tuber into the surrounding soil; they then explore downwards into the compost for moisture and nutrient.

I have not grown any *Ophrys* from seed as yet, but thanks to the generosity of Adrian Blundell I have grown a few species from mini-tubers in agar. These have reached a decent size now and I look forward to seeing them flower. The first season out of the flask the seedlings were given a moist summer's rest so as not to desiccate the small newly-formed tubers. Once over this delicate stage they were treated as the flowering size plants.

I do hope this article is of some use to anyone thinking of starting to grow this interesting and spectacular genus.

My Pleiones In 2001

Jan Berg, who grows in The Netherlands, muses on climate change, cultural techniques and more...

Gradually I'm getting convinced that we cannot deny that the change of the global climate is a reality we have to take into account. A few years ago there were still scientists who argued that the extremities in temperature, rainfall etc. of the last decades still fell within the normal fluctuations and that there was no evidence that they were caused by the increased concentration of carbon dioxide. But more recently I do not hear or read this statement anymore. In the Netherlands we experienced the warmest October in 130 years, with temperatures at night more than 10 degrees centigrade. The pleiones which I grow outside dropped their last leaves at the beginning of December. In former years they did so one month earlier. *P. maculata* and *P. x lagenaria*, which I grow in a heated greenhouse¹, were also late in dropping their leaves, and they flowered with their leaves still attached. Did they miss cool nights I wonder? Some full-grown Lagenarias did not flower at all. I'm writing this in the first days of March. The average temperature in February was the highest but one in 100 years. *P. x confusa* and *P. Hekla* flowered 14 days earlier than in 1991 and *P. Eiger* 3 weeks earlier.

For the second year in succession I used fine gravel as a top layer for the spring-flowering pleiones¹ and again they liked it. With *P. yunnanensis* I added on the bottom of the trays some coarse, hard limestone. They did grow better than ever before but I also changed their growing place this year from under glass to the fully open. Never change two factors at a time - you will not be able to conclude anything!

From the new hybrid *P. Lagenaria x maculata* (*P. Liz Shan*)¹ I destroyed all clones which have flowered but for one. They resembled *P. maculata* too much and I do not want to encounter them in the future labelled as *P. maculata*. In the past I have seen too many labels with wrong names. In 2000 my home-made *P. Zeus Weinstein* (*formosana x forrestii*) were

flowering for the first time. Most of them were the usual magenta but a few clones had the same yellow colour with a very pale shade as in *P. x confusa*. Paul Cumbleton told me that some clones flower yellow the first year but may change back to magenta the next year. But they did not listen to him.. For the third time they are yellow now. (*Editor's note: I'm glad!*)

Even after growing pleiones for some forty years I still make some stupid mistakes. Having a few bulbs of *P. scopulorum*, I wanted to take some pictures of the flowers. So I planted them in the front of a tray with other species behind them. They got overgrown by the latter and did not grow well and I got no *scopulorum* flowers at all.

A lot of people asked if they could buy some *P. forrestii* from me. I have 3 clones, but neither increase very fast. So I decided to multiply them from seed. I took 2 clones from which, in the past, I have used the pollen successfully to make hybrids. One of them had also been successfully previously used as a seed-bearing plant. But pollinating the one with the other and vice versa was without result. Why ...?

In conclusion, I have two questions I wonder if anyone could help me with?:

1. From a Japanese fellow I have got a *Pleione* "Red Sander" but he did not know what cross it was. I cannot find a hybrid with this name in my list. Therefore I think it must be something like *P.* "x" var. Red Sander. Does anyone know what the "x" is?
2. In various back issues of the National *Pleione* Report I encounter "John Innes compost". In the Netherlands this is not available and I wonder what kind of mixtures they are?

Reference:

¹ See the National *Pleione* Report 2001 page 31

(Jan Berg. E-mail: jan.berg@zonnet.nl)

Pleiones – A Personal Perspective (Part 2)

Martin Hazelton continues his article by describing how he grows-on seedlings from flask and also describes new crosses he has attempted...

I will first discuss my own methods of growing on *Pleione* seedlings. You do not have to have an elaborate greenhouse complex to successfully grow on the seedlings, although it would undoubtedly be helpful to have the extra space for one's expanding collection.

The *Pleione* seedlings are normally delivered to me from the laboratory sometime in January or February. (This is approximately 14 to 15 months after sending the seed off in the post). I do not remove them from the flasks now but keep them close to a window, in a north-facing spare room on the top floor of the house. This room is used as a storage/potting shed/laboratory. The room has no specific heating apart from that emanating from a domestic freezer. However, some heat must come up from the floors below where there is central heating. The window is also double glazed and shading is used when necessary to prevent the seedlings from cooking. The seedlings grow well in this location and I leave them here until around early December. By this time they are starting to become dormant. They are then transferred to an unheated shed to vernalize for a few weeks – the exposure to cool temperatures helps them become fully dormant.

It has been found that seedlings of pleiones establish best if they are grown in flask for at least two years. The resulting seedlings are then of bulbil size, or can even be considerably larger, depending on whether they have been replated. If they were not replated, there can be many small seedlings which can prove more difficult to grow on.

Once dormant, the seedlings are de-flasked. This is usually early in the new year. Tepid water is used to soften the agar in the flasks. The seedlings are then put in a fine mesh sieve and washed with tepid water. All agar

jelly remaining on the seedlings should be removed as it can encourage fungal or bacterial infection. The seedlings are then temporarily placed into trays where they are watered with a systemic fungicide. I had been using “Benlate” fungicide, at normal spray strength for seedlings, with good results. But Benlate has now been withdrawn from use so I shall have to experiment with alternatives. The seedlings are allowed to absorb the fungicide for about a week or longer, excess liquid having been poured off earlier.

Next, the seedlings are graded according to size and then potted into small pots or trays. All pots and trays have been previously sterilised with a dilute solution of domestic bleach, allowed to dry and stored in clean polythene sacks a few weeks before use. The area where the potted seedlings are to be placed should also be sterilised. This sterilisation of pots and growing area is vital – failure to do it may result in heavy losses of seedlings. Here I can speak from personal experience! I lost an entire batch of new seedlings one year for failing to sterilise effectively. They were killed by grey mould (*Botrytis cinerea*).

I put a layer of drainage material (such as polystyrene chips or coarse bark) in the bottom of the pots and then fill the pots with compost. The seedlings are put on top of this and then covered with a layer of wood moss. The compost used for the seedlings consists of:

- 2 parts fine grade orchid bark
- 2 parts medium grade perlite
- 1 part peat-based ericaceous compost

I have settled on the above compost as it gives me the best results in my conditions.

After potting, the seedlings are housed in the unheated shed and grown on without any heating. All the benches are covered with Hortag (expanded clay granules) which is kept moist to provide a humid atmosphere. I also house some seedlings in a mini-greenhouse built on top of an old coal bunker. They are protected against frost by covering

them with newspaper or polythene sheeting as necessary. Incidentally, the more difficult species such as *P. forrestii*, *P. coronaria* and *P. scopulorum* seem to thrive in the west-facing window of the shed.

This year I watered all the pots with “Provado” insecticide (active ingredient imidacloprid) to control sciarid flies. This proved very effective. I feed the seedlings with “Phostrogen” at weak strength, supplemented with an occasional feed with “Maxicrop” seaweed extract.

Pleiones can flower after four years from seed. However, be patient and sometimes be prepared for a longer wait. (Exceptionally, one cross of mine, *Pleione* Tai Chi (*P. Etna* x *P. Vesuvius*) took 14 years to flower! Only one seedling survived to flower. This was a pale mauve pink with maroon lip markings and yellow-tipped keels). You never know for certain which crosses will be viable and come back from the laboratory, there is often an element of surprise. One cross came back as a solitary seedling in a small glass phial. The parentage was *P. Tarawera* x *P. Vesuvius*. The former is a winter flowerer, the latter a spring flowerer. The hybrid turned out to be spring flowering and I registered it as *P. Makalu*. It has pale purplish-pink petals and sepals, with a few purplish-pink spots on the labellum (lip). It has small purplish pseudobulbs similar in size to *P. limprichtii* (which forms part of its genetic makeup).

I have been trying to make a number of new autumn/winter flowering hybrids and have several potentially interesting ones in the pipeline which seem to grow quite well. I have managed to produce a number of seedlings with *P. praecox* as the pollen parent. These are: *P. Firecracker* x *P. praecox*, *P. Mayon* x *P. praecox*, *P. Erebus* x *P. praecox*, and *P. Piton* x *P. praecox*. Other crosses I have made with autumn/winter potential are: *P. Barcena* x *P. pleionoides* ‘Blakeway Phillips’, *P. Lassen Peak* (*P. praecox* x *P. x lagenaria*) and *P. bulbocodioides* ‘6x’ x *P. x lagenaria*.

In October 1997 I visited a flower show in the hall of the Royal Horticultural Society (RHS) in Vincent Square. I was surprised to see some specimens of *P. Lagenaria* on the stand of a Dutch orchid nursery. I managed to purchase these. At that time I was a full-time carer looking

after my elderly father and so had to make hurried arrangements to be able to return to collect these plants at the end of the show. The plants resembled large-flowered versions of *P. maculata* and were of similar colouring. I later discovered that they had been raised by Jan Berg in Holland. With the pollen from these plants, I made a number of crosses. One was a sibling cross between two clones of the Lagenarias. I also did two separate remakes of *P. Lassen Peak* (*P. praecox* x *P. Lagenaria*) using different clones of *P. praecox*.

The remaining pollen went into the fridge for me to use in the spring, when I did several crosses. One was *P. bulbocodioides* '6x' x *P. Lagenaria*. I eventually received some seedlings back from the laboratory. There was a good stock of *P. Lassen Peak* of several hundred seedlings, approximately twenty *P. Lagenaria* seedlings and also a few of the *P. bulbocodioides* '6x' x *P. Lagenaria* cross. In common with the experience of other growers, these particular seedlings have proven very difficult to grow outside the confines of the flask. The *P. Lagenaria* seedlings all eventually died and the *P. Lassen Peak* dwindled to about four seedlings. However, not all is lost; the seedlings of *P. bulbocodioides* '6x' x *P. Lagenaria* are doing well, as are the *P. praecox* hybrids and the derivatives of these mentioned earlier. I also made a number of crosses using *P. maculata* pollen. A number of pods set seed which was sent to the laboratory in October. It will be interesting to see if any seedlings materialise.

In March 2001 I visited the RHS London Orchid Show held in both RHS halls. This was a splendid show and there was plenty to interest the *Pleione* enthusiast. I managed to obtain several interesting unnamed *Pleione* species. One plant bought in flower seems to be the form of *P. pleionoides* that Dr. Gianantonio Torelli calls *P. hubeiensis*. Another plant obtained flowered later and also turned out to be a *P. pleionoides* with dark red lip markings and, interestingly, purple-edged developing leaves. I have another plant obtained at the show which has not flowered but has small, green, globose pseudobulbs and appears to be another *P. pleionoides*, described as *P. voltolinii*. These should flower this spring so I should be able to verify its true identity then. These identifications I have based on

the information in the Caesiana publication “The Genus Pleione” by Gianantonio Torelli, which can be obtained from Professor Bruno in Rome¹.

I must also report on the splendid exhibit at the show by “Butterfield’s Pleiones”. This moorland-like scene contained many fine and interesting plants. One of particular note was labelled *P. milanii*. This species is the same one as plants introduced as *P. hookeriana sinensis* and are now considered (by Phillip Cribb at Kew) to actually be the true *P. chunii*².

I am pleased to also report that in October 2000 I finally managed to erect a small 8’ x 6’ polycarbonate-glazed greenhouse. This has provided extra space that was badly needed. Shading was provided in the form of a green shade netting over the outside of the structure. This is being left permanently in situ. It may also help give a little frost protection as I am keeping this house unheated. Full ventilation is given in summer and the pleiones have grown very well. The netting also covers the door, supplemented with other material, to keep out Mr. Fox, Mr. Squirrel etc.

I will end here for this year but look out for part 3 of these notes in next year’s issue.

References:

¹ “The Genus Pleione” by Gianantonio Torelli. This was published in 2000 as a special edition of Caesiana, the Italian Journal of Orchidology, ISSN 1123-5217. As such it is not available in bookshops, but can be obtained only from Italy - send an email to the editor, Franco Bruno, for details: bruno@axrma.uniroma1.it . Alternatively, write to him at Dipartimento di Biologia Vegetale, Università La Sapienza, P.le A. Moro, 5-00185 ROMA Price is around £10 Sterling, softback only.

² “Little known and confused species of *Pleione*” by Phillip Cribb and Ian Butterfield, in “The New Plantsman”, September 2001 issue, pp 138-146.

Cultivar Registration and *Pleione*

Julian Shaw, the orchid registrar for the Royal Horticultural Society, asks for your thoughts about a proposed new scheme...

Cultivar registration now operates in many cultivated groups of plants. Its purpose is to provide an easily accessible checklist and register of cultivar names in use, with the main aim of avoiding the confusion that occurs when several names are used for one clone or the same name for several different clones. Such a list provides brief descriptions and references to published illustrations which is a useful starting point for identification and research.

Since 1961 the RHS has been engaged in registration of orchid grexes but not cultivars. As you will be aware a grex name applies to all the progeny of a particular cross between two species or grexes made at any time anywhere, whereas the cultivar name applies in orchids only to a single clone. This clone may have been selected from a batch of seedlings from a hybrid or self-pollination, from wild collected plants or from a 'sport' - a chance mutation with some desirable characteristic. Consequently the difference in the details registered is considerable. A grex is simply defined by its parentage. Originally grexes were interspecific or primary crosses, then species with grex crosses and later, as breeding progressed, grex with grex crosses. All these crosses at the grex level are regarded as of species equivalent status. Hence it is not possible to assign a grex name to a cross between two varieties of a species nor between two clones of a grex no matter how different they may appear. That is reserved for the cultivar name. A cultivar may be selected on any criteria and will be defined in a number of different ways. Therefore cultivar registration requires many more details than a grex registration, including a description and illustration of the plant, details of how to tell it apart from its next of kin, and so forth.

Cultivar registration also opens up the possibility of cultivar-group names, which could be used to designate a group of clones derived from a cross

between varieties within a species or between different clones within a grex. Such names could also be used to distinguish progeny within a grex from a cross and its reciprocal cross, which would both bear the same grex name but may appear significantly different.

A list of cultivar names in *Pleione* used in the UK has been compiled with the invaluable assistance of Ian Butterfield, holder of the National Collection of *Pleione*. This lists 212 cultivar and cultivar-group names in 191 grexes and species. As a result it appears that cultivar registration may be useful in hardy terrestrial orchids where these are widely grown outside the orchid fraternity, such as *Dactylorhiza* and *Pleione*, because the category of cultivar appears to be more important than in tropical orchid breeding. Also the clones named are of reasonably long duration.

If cultivar registration was to go ahead it is anticipated that there would not be a charge for it as there is for grex registration. The first stage would be the production of a preliminary checklist of all known cultivar and cultivar-group epithets, which would then be circulated for comment and amendment. The aim is to stabilise nomenclature and reduce confusion in the use of cultivar names.

The Orchid Registration Advisory Committee (ORAC) would like to hear from *Pleione* growers about their views on the usefulness of this proposed cultivar registration scheme.

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Please help Julian by sending him your views on this sub-

A Terrestrial experiment - Part VI

George King continues his series on hardy orchids & others...

These notes are the continued observations of a beginner to the field of *Pleione* growing. With the start of the current year things are looking up. Readers may recall that up to now I have had to make do with growing my very small collection of pleiones in an outdoor frame. But good news - I have been given a small greenhouse. As I have just retired it is a most welcome gift, and during the past growing season I have been impressed by the results, with the size of the bulbs I have grown equal to those supplied by a professional grower. So I know I am on the right track and with my new acquisition I have an opportunity to expand my horizons.

During the start of the season I like to set myself objectives. One problem I had when I first started growing was with limited cash flow, bulbs being planted up in single pots or in threes if there was a deal going with a supplier. But as years progress it will be noticed that varieties like *P. Hekla* produce masses of divisions whereas *P. chunii* are slower. As a beginner I took an interest in the article last year about *P. chunii* verses *P. aurita*. Being a practical individual I thought I would order some *P. aurita* and grow them on the bench together with *P. chunii* to find out what the experts are on about, but when I received the bulbs they came back as *P. chunii* so I am still non the wiser. One thing for certain is that it is a fine plant to grow and this year I look forward to flowering a pot of three bulbs. One observation that did come to mind was about the amount of small bulbils that grow from the base and top of the mother bulb. I am aware that new stock can be obtained from these but would it not be prudent to reduce the strain on the mother bulb by removal of some of these growths, concentrating on fewer but larger bulbs from the base of the mother bulb? This was the option I took but perhaps readers have other views. The objective as I go into my fifth year is to achieve the fine large pans filled with flowers like the ones we have all seen at the shows and with a little investment I will now start to bring that target into sight. One other observation: my greenhouse has three foot high benches. To

appreciate the flowers of the pleiones it might be a thought to raise them to save me having to bend down .

Now on to other orchids. I got caught out last year with heavy rain which coincided with the time that *Ophrys* *apifera* just finished flowering. They do need to be kept on the dry side as they finish off plumping up their replacement tubers and I did loose several tubers due to rot. So while the collection was dormant I implemented the following changes to my outside site: I raised the height of the soil to three feet at the rear, increased the slope and in the following August all tubers were planted near the top of the slope. The top of the structure was constructed of wood, all joints were slotted together and instead of glass I used air-spaced perspex pinned into place. The advantage of this structure is that if the weather is cold it can be sealed quickly and during fine spells the top can be completely removed.

Having just completed my notes from last year and putting them in the post I thought it was about time I washed out a collection of dirty seedling jars. It's one of those jobs that I keep putting off and to tell you the truth the drawer I keep them in was full. Half way down I found one jar of about twenty seedlings, all well grown. My records show that the jar was sown on the 3rd of January 2000 and contained mixed seed of Mediterranean *Ophrys* species. Clearly, on examination of the jar later in 2000 there had been no sign of growth and I had decided to dump the jar for cleaning. The seed must have subsequently germinated, and with the jar in the drawer the seedlings had endured poor light and no heat through out the following winter. There is a lesson here not to be too hasty in throwing things away, but on the other hand the information gained of the conditions these seedling had to grow in was invaluable. As these seedlings had survived without my help I decided to leave them in situ for the summer. About the end of July the top leaves started to turn brown while the small tubers at the bottom of the jar were still white, as shown in my first photograph (page 17).

When I first starting experimenting with Mediterranean *Ophrys* I had no trouble raising the seed; the disasters started on the weaning out process.

I had assumed that as I planted out my adult *O. apifera* tubers in August, seedlings would require the same timing. But later experiments showed I was more successful when I waited for the tiny tubers to start to grow before planting outside. (That reminds me - both of the Mediterranean *Ophrys* seedlings I mentioned in last year notes survived and are now in their second year). So based on my previous work I decided to wait, and on the 5th November 2001 leaves started to show above the agar. Growth was quite rapid so clearly they would have to be transplanted soon, as shown in my second photograph (opposite). The weather forecasters predicted that at the end of November there would be one week of mild conditions so a decision was taken to transplant. The jar was opened and all seedlings were washed to remove all traces of the agar. After allowing them to stand on kitchen roll to dry -see my third photograph (opposite)- the seedlings were then planted outside in rows between the *O. apifera* and some pyramidal tubers which were now in full growth. I was about to find out just how tough these seedlings are, for in the next fortnight the temperatures dropped to minus five. Wishing to give them further protection I now covered them with fleece material, which up to now I had only used for protecting my Acers. By placing all the *Ophrys* under several layers until the frosts had passed I was relieved to see no damage was done. These frosts were then followed by fog and when all around was wet through the plants underneath were dry. Later on the temperature dropped even further to minus ten. I reckoned I had pushed my luck far enough so I hooked up a small tubular heater until that danger had passed. The seedlings continued to grow and by the end of January 2002 each had started to produce a second leaf (photo 4, opposite). After the leaves have died off I shall be interested to see the size of the new tubers .

That brings me up to date and as I conclude my notes for this year I feel I have learned a great deal and had a little success. As I write, the warm *Paphiopedilum* hybrids are now starting to go over but *Paph.* Dannela ‘Chilton’ and Sparsholt ‘Jaguar’ are still providing late colour. I will have to start repotting soon. Of the *Paph.* species a seedling of *malipoense* just coming into bloom – a nice flower this, and it has a scent which is rare in *paphiopedilums*. Pleiones San Salvador, Deriba and Shantung ‘Ducat’ are showing flower. I have a soft spot for the yellows. In my

outside site my Mediterranean *Ophrys* seedlings continue to make progress and one *Ophrys* seedling sown four years ago has two flower buds. I am surprised as the plant is only one inch high. My notes record it should be *O. lutea* but I will have to be patient. It looks like spring is finally here. You know, this has got the making of a fine day so until we meet again through these pages may I wish all readers the same .



Photo 1: Small white tubers in flask

Photo 2: Seedlings ready to transplant



Photo3: Seedlings dried on kitchen roll

Photo 4: Second leaf beginning to show



Photo: P. Cumbleton



Pleione Ueli Wackernagel - a pale clone

Photo: Rainer Kretz



Pleione Jenny Kretz

New Pleione Hybrids

Ian Butterfield describes some of the exciting new hybrids produced in recent years...

This article is an update on the article in the National Pleione Report of 1996. Since I wrote that there have been some exciting advances in *Pleione* breeding. We have seen more hybrids with *P. aurita* as a parent. (Yes, what we had been calling *P. chunii* has now reverted back to *P. aurita*, the name we originally knew it by!). We are also just beginning to see hybrids with *P. grandiflora* as a parent. Finally, we are also beginning to see more orange and red colours appearing. In a hybrid grex these colours usually appear mixed in amongst the more usual mauve pinks. Here are descriptions of some of the new hybrids:

Hybrids of *P. aurita*

P. Ueli Wackernagel (*aurita* x *formosana*) has large flowers mostly in shades of pink, but a few very beautiful clones are almost white, with just a hint of pink. The lips have either a suffusion of golden yellow or rusty orange spots.

P. Burnsall (*yunnanensis* x *aurita*) has flowers mostly like *yunnanensis* with colourful lips and frilled keels.

P. Giacomo Leopardi (*aurita* x *limprichtii*) has flowers which are shades of rose purple with heavily spotted lips.

P. Ruby Wedding (*aurita* x *taliensis*) has very pale pink flowers shading to almost white and carried on long stems. Most clones have hairy keels and some orange or brown on the lip.

P. Jenny Kretz (*aurita* x *humilis*) has a very pretty flower which is intermediate between the parents.

Hybrids of *P. grandiflora*:

At present there are only two registered hybrids with *P. grandiflora* as a parent but I would expect to see quite a few more in the next few years:

P. Wenya (*grandiflora* x *limprichtii*) has flowers which are not unlike a large, pale *limprichtii*

P. Glacier Peak (*formosana* x *grandiflora*). All the flowers from this cross were white with yellow or brown on the lips (I used *formosana* 'Lucy Diamond' as the seed parent). I have heard of another cross using a different *formosana* clone which produced only very pale mauve flowers.

Hybrids of other species:

P. scopulorum had not previously featured in *Pleione* hybrids. The first now registered is:

P. Mawenzi (*yunnanensis* x *scopulorum*) has very dainty flowers rather like *scopulorum* in shape, but a little larger. All flowers so far are pale mauve. Some have a much darker edge to the lips.

Another cross worthy of note, with *yunnanensis* as a parent, is:

P. Callisto (Versailles x *yunnanensis*). This has been around for a while now. It has dark mauve pink flowers with heavy red to brown spotting on the lips.

Hybrids with yellow flowers:

Some hybrids have produced mostly yellow flowers:

P. Bromo (*yunnanensis* x *confusa*) has mostly pale yellow flowers, sometimes very lightly flushed mauve, which are held on tall stems.

Photo: P. Cumbleton



Pleione Wenya

Photo: P. Cumbleton



Pleione Callisto

Photo: P. Cumbleton



Pleione Masaya - mixed clones

Photo: P. Cumbleton



Pleione Masaya - a selected clone

Photo: P. Cumbleton



Pleione Edgecombe - one of the apricot/orange clones

Photo: P. Cumbleton



Pleione Edgecombe - one of the unusually coloured clones

Photo: P. Cumbleton



Pleione Askia 'Goldfinch'

Photo: P. Cumbleton



Pleione Askia - one of the crimson clones

P. Masaya (Piton x *confusa*) also has pale flowers which range in colour from very pale lavender to pale yellow, mostly with brownish red markings on the lips.

P. Salek (Krakatoa x Shantung). This cross did not produce many seedlings. The flowers are mostly yellow with dark red spotting on the lips. One clone, 'Eagle Owl', has extra large yellow flowers, carried on tall stems, with purple-red on the lip and also on the petals.

Hybrids with orange and red colours:

Hybrids with these colours in the progeny are the ones I find the most interesting. I have not yet seen a hybrid which has produced all orange/red clones – all of them have some of the more usual mauves in the mix too.

P. Edgcombe (*aurita* x *forrestii*). The flowers vary from white, pale lavender or pale yellow to apricot orange shades. It is a very variable and pretty hybrid, sometimes producing unusual colours, but is unfortunately not a very vigorous grower.

P. Askia (Egmont x Keith Rattray). These vary from yellowish shades to brownish/red, usually with a feint mauve sheen. The lips are usually yellowish, shading to orange with red spotting. The clone 'Goldfinch' is yellow, heavily suffused with red, giving it an orange hue. Another clone has distinct cream tips to the sepals and petals. Some very recently flowered clones have crimson-red petals.

P. Caroli (San Pedro x Egmont). Nearly all the clones in this cross were reddish-mauve. One clone however is ruby-red, with a dark orange lip spotted with dark red.

P. Betty Arnold (Orizaba x Marion Johnson). Most clones have some orange/red colour, but they all have a mauve sheen, especially as the flowers age. The lips are various shades of orange or yellow. One clone has a very heavily frilled orange-yellow lip.

P. Diller (Brigadoon x *forrestii*). Flowers vary from pale mauve-pink through to brownish yellow to one clone which is a dark orange-brown. (This clone is not named yet as it is under trial).

Hybrids with darker flowers:

Some hybrids have produced flowers which are darker than usual:

P. Mauna Loa (Shantung x Berapi) has flowers ranging from pale mauve through to a rich beetroot-purple. Most clones have lips which are heavily spotted with red.

P. Adams (Keith Rattray x Surtsey). A very variable cross with flowers from mauve pink, with very colourful lips, to almost orange-purple flowers that have a mauve sheen.

P. Mageik (San Salvador x Berapi). Most flowers are fairly dark purplish-pink with heavy red blotching on the lips. One or two clones are almost purple.

Future Hybrids?

I think in the future we will see better orange/red flowers, most probably without the mauve sheen that we usually see at present. It is also possible that we might eventually see true purple flowers, though this will probably take longer to achieve.

We have yet to see any hybrids with *P. x barbarae* as a parent. These hybrids will probably be very variable as *P. x barbarae* is itself almost certainly a natural hybrid between *P. grandiflora* and *P. bulbocodioides*. I think they are likely to be vigorous growers and some could produce large flowers.

So, a lot of new flowers have been seen since my article in 1996, but the future also looks very promising.

Photo: P. Cumbleton



Pleione Betty Arnold

Photo: P. Cumbleton



Pleione Diller

PLEIONES IN NORTH-EASTERN GHUIZHOU, CHINA

Not many of us have had the privilege of seeing pleiones in their natural habitat. Here Phillip Cribb describes his encounters...



Photo: Phillip Cribb

P. pleionoides on Fan Jingshan

since the 19th century because of their unspoiled forest cover and rich biodiversity.

Guizhou Province lies to the east of Yunnan and southern Sichuan and to the south of Chongqing. Much of the Province comprises the Guizhou plateau, a dissected plateau at about 1000 m elevation

Summary: The habitats of *Pleione yunnanensis* and *P. pleionoides* on Fanjing Shan, which is an isolated mountain massif in NE Guizhou, China, are described. Fanjing Shan, like Omei Shan in Sichuan, is one of the four sacred Buddhist mountains in China. These peaks have attracted naturalists ever



Photo: Phillip Cribb

P. pleionoides on Fan Jingshan

but with karst and other mountains rising from it. These are highest in the north-west, rising to over 3000 m while in the north-east a range called Dalou Shan reaches 2494m in the Buddhist sacred mountain of Fanjing Shan, which is renowned for its rich deciduous and coniferous forest and is home to the finest population of one of China's most famous trees, *Davidia involucrata*. The *Davidia* forest on Fanjing Shan extends for about 660 hectares with trees over 20m tall being commonplace.

Ghuizhou is well to the east of the centre of distribution of the genus *Pleione* in southwest China. Nevertheless, two species have been recorded from the mountain. On a trip to the mountain in May 2000 I was able to search for them during the few days I was there.

On the northwest side of the mountain a track suitable for four-wheel drive vehicles winds up the flank of the Fanjing Shan range providing sensational views to the jagged mountainous spine that tapers away to the west. The lower slopes are a patchwork of potato fields, grassy meadows and deciduous woodland. In late May the pretty snow poppy (*Eomecon chionantha*) was common on steep wooded banks from about 900-1200 m. The flowers stood out even as the mist swirled down from the peaks above. The woodland was itself rich in trees and shrubs, the pretty cherry *Prunus sargentiae* was in full flower. As the track climbed to 1500 m a small bamboo provided many of the slopes with a thick cover. Where the track had cut into the banks, small colonies of a pink-flowered orchid peeked out from under the dense bamboo. This proved to be *Pleione yunnanensis*, here at the eastern edge of its range which spreads from here across to northern Burma. Its pseudobulbs were buried 4-5 cm down in the humus and leaf litter beneath the bamboo stems. Its flowers were bright pink, rather darker than I have seen in many of its Yunnanese localities but not dissimilar to those above Dali on the Cang Shan range.

Where the drivable track finished at 1800 m we entered the National Park. From here we joined pilgrims and Chinese tourists and proceeded on foot to the summit where there is an ancient Buddhist temple. The track quickly entered shrubberies of pink and white-flowered

rhododendrons, *Pieris formosana*, a pretty *Symplocos* and hollies, all in full flower. Bamboo was still frequent as we worked our way along a ridge-top path where, in less misty weather, the views over the surrounding countryside are renowned. The track then began to climb through dense coniferous forest with a bamboo understorey. In light shade on a steep wet rock by the trackside I spotted a second *Pleione*. This was growing along the top of the rock and on ledges on the mossy almost vertical sides at 2200 m elevation. It was undoubtedly *Pleione pleionoides*, the first time that I had seen it in nature. The flowers were rose-pink with orange-red coalescing blotches on the lip apex and a callus of two yellow sinuous ridges running down the lip.

We spotted it again at lunch-time on a dripping misty rock at 2500 m near the temple and just below the summit. A large colony of about fifty plants, all in flower, flickered in and out of the mist. Bizarrely, I was being interviewed at the time by a camera-crew from Guizhou TV whom we had just met filming a programme on the mountain. I suspect that foreigners are rare visitors to the summit of Fanjing Shan because I was told by our Forestry Department guides that they broadcast footage on the main news programme the following day. As we descended the mountain we passed through various well-defined vegetation zones, the most striking being a spruce forest with an understorey of the white-flowered *Camellia cuspidata*. At points all the way down on our descent through the dense forest we spotted mossy wet rocks, often in deep shade, with *Pleione pleionoides* in full flower on them. Their pseudobulbs were growing shallowly on the steep rock surface covered by a thin layer of wet humus and moss. Other plants on the rocks included *Viola* spp., *Polygonatum* spp., *Maianthemum* spp. and sedges.

By the time we eventually emerged on the tarred road at the other side of the Park at 900 m it was dark and we were all pretty exhausted, having covered nearly 20 km on foot and all of it either up-hill or down-hill. We had a sound night's sleep in the Forestry Department's guest-house, its grounds planted out with *Davidia involucrata*. We returned to the Park the following morning, inspecting *en route* the Department's captive breeding stock of Guizhou golden monkeys (a large monkey with golden

shoulders, a very long tail and a flat blue face). Starting where we had finished our trek of the previous day, we walked down a long wooded valley through some of the finest mixed forest that I have ever seen in China. Undoubtedly, the woody highlight of the valley was the flowering Handkerchief tree (*Davidia involucrata*), a tree 20m or more tall with a large spreading crown, positioned at the bottom of the valley beside a fast-flowing mountain river. The track was at about the height of the tree crown so that I could look into it with ease. I was transfixed by the tree that ranks as my favourite and sat just looking at it for an hour or more. As I gazed I was amazed to see growing on its branches an epiphytic orchid. On closer inspection I realised that it was a soft cane *Dendrobium* with golden flowers. One of my colleagues on the trip, Gloria Siu of the Kadoorie Botanic Garden in Hong Kong, caught up with me and explained that she had recently co-authored its description as *Dendrobium fanjingshanense*, an endemic to the mountain.

A terrestrial orchid with pale yellow and white flowers proved to be quite common all the way down the valley, often growing with an *Epimedium* and *Chloranthus henryi* on shaded banks and rocks. On examination, this proved to be *Calanthe graciliflora*. On a dead tree we found a small colony of another epiphyte in full flower. This was the unusual buff-flowered *Thrixspermum formosanum*, an orchid first described from the island of Taiwan. All down the valley between 800m and 900m altitude we examined the wet rocks above the river. All had *Pleione pleionoides* growing on them, at this elevation mostly with the flowers fading fast. However, it was possible to see clearly that the flowers varied in degree of rose-pink colouring, in the colour of the lip markings and in the callus ridge colouration. Thus, the lip could be spotted with orange, orange-brown or deep purple, while the callus ridges were either white or yellow but always sinuous.

By the time we reached the temple of the Golden Buddha at the park entrance we had walked about 10 km and had sampled the finest forest I had ever seen in China. To have seen *Davidia involucrata* in the wild was marvellous, to have seen it in full flower was to have a wish fulfilled. The pleiones were merely the icing on the cake!

“Bulbils”

This is a new, regular feature for YOUR observations, short news items, announcements and general letters. Many of you may not feel able to write a whole article for the Review, but here you could contribute just a sentence, a single observation or a short paragraph. And if you have a bit more to say, you can send a longer letter. Please send all contributions to your editor (see contact details, inside front cover). I'll start the ball rolling with a question on hardiness about which I would like to hear your experiences...

Frost-Hardiness?

How hardy are pleiones? Most of us probably play safe and keep them just frost-free, but I guess they may be hardier than we think. Do you grow them without heat? How many degrees of frost have they survived? Please write in with your experiences.

Paul Cumbleton

Cooking oil for pest control?

I notice that “Naturem”, an organic pesticide, is based on oilseed rape oil. Could one use oilseed rape oil itself (bought as cooking oil from the supermarket)? This would be much cheaper!

Ray Holder

Flower colour and temperature

I've noticed that the precise colour of my *Pleione* flowers varies each year. I believe it may have something to do with temperature – the colours often (but not always) seem to come out darker after a colder winter. Has anyone else noticed this?

Colin Everett

Growing *Pleione maculata*

I was interested in the article last year by Jan Berg that mentioned *P. maculata*. I am now believe that it loves warmth almost all year round. Last year I purchased a plant in October. It didn't flower and I brought it into the bathroom for warmth. The shoots slowly started into growth but with no flowers. I left it there all winter where it received central heating temperatures (15 – 21 C), though with a cool draft from the always open top window. Temperatures in the bathroom rose in early spring with the sun moving round to shine in the late afternoon (NW facing) and the shoots were well advanced by the beginning of June. In fact, they were already bulbing up. I put them in the greenhouse at the end of June. Growth was slower here but by autumn the bulbs were enormous and I had a superb display of flowers. How do other people grow your *Pleione maculata*?

Simon Retallick

False Spider Mite - *Brevipalpus*

I would like to congratulate you Paul on the 2001 Pleione Report, the first to be edited by you. The contents show you have put a lot of hard work into it. I was particularly pleased with your article on *Brevipalpus* which was EXCELLENT and put this subject in a balanced way. For the person with just a few pleiones this will have given them new hope. I'm sure your practical and rational piece of writing will be inspirational to so many in the *Pleione* world, in knowing that this pest can be so easily controlled. Thank you once again.

John Craven

Launch of The Pleione Website

Paul Cumbleton gives news of an exciting new resource for *Pleione* lovers...

I had been promising a website devoted to pleiones for a long time and this year I finally made time to produce it. For those of you with computers and access to the Internet I hope it will prove to be an invaluable and inspirational site. You will find it at:

www.pleione.info

The main part of the site is a photo gallery with, at launch, over 300 photos of pleiones. These include almost all the species (showing various clones of each to demonstrate the variability), natural hybrids and a large number of the man-made hybrids. These include many of the very latest advances in breeding which, although they will not be available for some time, are shown to wet your appetite for the good plants to come in the future!

As well as the photos there are sections on cultivation, taxonomy, sources of supply, a complete list of all the Pleione hybrids and their parents... and more! I have spent a lot of time trying to ensure the photos look good but also download quickly - most take about 5 seconds on a 56k modem. I hope you think I've got the balance between quality and speed about right. I've plenty more pages and pictures to add as time goes on. Please do contact me with any thoughts on what else you would like to see on the site and feel free to make any comments in my Guest Book.

I hope you will enjoy the site and find it a useful resource to complement the Pleione Review.

Back to Basics

This is a new, regular feature aimed at those new to growing pleiones. The first contribution is an article giving an overall guide to *Pleione* cultivation...

A Guide To Growing Pleiones

Rick Lambert (with additional material by Paul Cumbleton) gives us an excellent overview of *Pleione* cultivation...

Introduction

Orchids in general are sometimes conceived of as being difficult to grow. This reputation is not really deserved and pleiones in particular are fortunately amongst the easiest of all orchids to grow. Coming from cool regions they also do not require the high temperatures that tropical orchids need during the winter months, which means heating costs need not be a prohibiting factor. Meet their basic and simple needs and they will reliably reward you with beautiful flowers year after year.

Cultivation – The Basics:

Pleiones require 8 basic things to ensure good growth:

1. A cold, dry dormancy
2. A very open well-drained compost
3. Care with watering at the start of growth
4. Plenty of water while in full growth
5. Some shade when in full growth
6. Regular, weak feeding when in growth
7. Attention to pests and diseases
8. Annual re-potting

Let's look at each of these in turn:

Dormancy Requirements

Pleiones shed their leaves in autumn and are dormant from about end of November to the middle of February. If stored in their pots during this time, the compost should be dry. The bulbs will be quite happy resting in their pots on or under a greenhouse bench, in a garden shed, in a garage or in a cool room such as a porch or outhouse. An alternative is to un-pot them, throw the old compost away and keep them as loose bulbs in pots or trays. During this dormancy they need to be cold, particularly at night. Most growers keep them just frost-free, between 0 and 5 degrees centigrade, though it is likely that many pleiones would take a few degrees or more of frost if kept dry, especially if covered with some fleece or old newspapers.

Compost

An open, free-draining compost is essential. One simple but very successful compost can be made by mixing 3 parts of medium grade orchid bark with one part of moss (which can be wood-moss or sphagnum). But many other ingredients are possible – the mix can include things such as perlite, chopped leaves or leafmould, peat, grit – there are as many mixes as growers! The important thing is to end up with a compost that contains plenty of air spaces and which drains very easily.

Watering

Most pleiones flower in Spring. Watch for the swelling bud on the side of the bulb, which grows up and from which the flower emerges. When you see the buds growing up it is time to start watering, but at first give only a very little – just enough to dampen the compost. It is at about the same time as flowering that new roots begin to emerge from the base of the flowering shoot. If the compost is too wet at this time, these new roots can rot, which is why care is particularly needed then. The aim is to make the new roots go looking for water, so have the compost only just

damp. Most failures with pleiones can be attributed to over-watering at this critical stage. After flowering, the leaves begin to grow quickly and the roots are also developing further. Watering can now be increased gradually. Pleiones are a bit odd in that while they want care with water at this stage, later on - once you are sure you have a good root system present - you can water very freely for the rest of the growing season. In the wild at this time they get summer monsoons with huge amounts of rain, so they are used to frequent and plentiful supplies of water. Remember though this assumes a really well-draining compost! If you can keep them outside at this time so the rain falls on them, so much the better. When you see the leaves start to turn yellow/brown in autumn, reduce and finally stop watering as the plants are now entering their dormant stage. They do not require any watering at all during dormancy, though an occasional misting is fine if they start to look very shrivelled.

Shade

Their natural habitat is mostly well shaded, giving a clue to their requirements regarding light levels. A shade cloth giving around 40 or 50% shade can be used over a greenhouse, or the glass painted with a traditional whitewash. The latter has the added benefit of keeping the temperature down more than shade cloth seems to do. Or they can be stood outside for summer in dappled shade. It may be the heat under glass rather than light levels as such that is really important, as one commercial grower grows his stock outside in full sun during summer. He thinks this works because outdoors they are much cooler and that if given full sun under glass they would scorch.

Feeding

Pleiones respond well to regular feeding with dilute liquid fertilisers. Start feeding once the leaves are actively elongating and there is plenty of root present. The precise type of fertiliser doesn't matter too much, though many start the season with a balanced type (equal ratios of N, P and K) and switch to a high potash type around August. Feed

approximately once a week to once a fortnight and use a dilution of half or even a quarter of the full strength recommended on the packet.

Pests and Diseases

As with any plants, keep an eye out for pest and disease problems and treat these the same way you would on any other plants. Pleiones do not seem to be overly sensitive to pesticides so they can usually be sprayed safely, but it obviously make sense to try any chemical new to you on a few plants first.

Repotting

Although pleiones can be left in the same pots and compost for several seasons, most think it good practice to repot annually. This helps reduce any possibility of pests or diseases building up in the pot and also gives you an opportunity to inspect all your bulbs to see how they have grown. Repotting can be done any time during dormancy. Trim off most of the old dead roots, but leave about half an inch length of them on each bulb to help anchor it in the new compost when potting. The bulbs should only be partially buried in the compost, to about two-thirds of their depth, leaving the top one third of the bulb sticking out above the compost, and planting about half an inch apart.

So, these are the basics of cultivation. What can you expect in response? A mature bulb will put up one, two or occasionally even three flowers. Younger bulbs will just put up a leaf. After flowering a single large leaf will grow (occasionally two). Later in the year, the base of each leaf starts to swell and eventually forms a new bulb. The original bulb dies, partially shrivelling away, usually to a dry husk which can be removed and discarded during repotting. On top of the new bulb you may see little baby bulbils growing. When these are mature they will fall off with a slight tap and can be planted around a pot to grow on. This helps build up your bulb numbers more quickly, or you can pot them on in three's or fives in a larger pot and you will soon have some to give away as presents.

In autumn the leaves will turn yellow and finally brown and the slightest wind or movement will make them fall off. The bulbs are now entering their dormant phase, which brings us back to where we started this guide.

Though most grow them in pots, one idea for something different is to find a piece of soft rotten wood, drill holes in it and plant the bulbs in these. (This is best done as a spring re-potting) and for the next month the roots will need to be kept moist. The effect of this arrangement when in flower is remarkable.

Through the Year Summary (Northern hemisphere!)

<u>January/February</u>	Good time to repot
<u>February/March</u>	Water carefully when growth starts
<u>March/April</u>	Enjoy the flowers!
<u>May</u>	Increase watering as roots and leaves grow vigorously. Start feeding
<u>June to September</u>	If desired, put pots outside in light shade. Water & feed as necessary
<u>October</u>	Bring plants in if outside and reduce watering as leaves die
<u>November/December</u>	Dry off and keep cold

The above notes apply to the easier species and cultivars. Beware of very expensive bulbs unless you are ready to build up a collection!

Newly Registered *Pleione* Hybrids

Each year this new, regular feature will list all the new *Pleione* hybrids that have been registered since the previous *Pleione* Review was published...

But for this year it will start by giving you a complete list of all the *Pleione* hybrids that are currently registered. I am grateful to the Royal Horticultural Society, who are the International Registration Authority for Orchid Hybrids, for their kind permission to publish this list for which they have copyright.

IMPORTANT: The *Pleione* species names used in the list below are those that were in use when each grex was registered; some are now synonyms, but the RHS database hasn't been updated to reflect current nomenclature.

<u>Grex name</u>	<u>Parentage</u>	<u>Registered By</u>	<u>Year</u>
<i>Pleione:</i>			
Adams	<i>P. Keith Rattray</i> x <i>P. Surtsey</i>	I. Butterfield	1999
Alishan	<i>P. formosana</i> x <i>P. Versailles</i>	M. Hazelton	1979
Archie Goodwin	<i>P. bulbocodioides</i> x <i>P. yunnanensis</i>	H. Pinkepank	1988
Arkengarthdale	<i>P. limprichtii</i> x <i>P. Confusa</i>	A. D. Smith	1988
Asama	<i>P. speciosa</i> x <i>P. Vesuvius</i>	I. Butterfield	1983
Askia	<i>P. Egmont</i> x <i>P. Keith Rattray</i>	I. Butterfield	1998
Axel Shan	<i>P. hookeriana</i> x <i>P. humilis</i>	J. Berg	1999
Baker	<i>P. Vesuvius</i> x <i>P. forrestii</i>	I. Butterfield	1998
Bandai-San	<i>P. Matupi</i> x <i>P. speciosa</i>	I. Butterfield	1991
Barbarae	<i>P. grandiflora</i> x <i>P. bulbocodioides</i> (?)	natural hybrid	
Barcena	<i>P. formosana</i> x <i>P. praecox</i>	I. Butterfield	1982
Beerenberg	<i>P. Vesuvius</i> x <i>P. Eiger</i>	I. Butterfield	1989
Berapi	<i>P. Tongariro</i> x <i>P. bulbocodioides</i>	I. Butterfield	1988
Betty Arnold	<i>P. Orizaba</i> x <i>P. Marion Johnson</i>	I. Butterfield	2000
Brigadoon	<i>P. Confusa</i> x <i>P. speciosa</i>	I. Butterfield (B. Williams)	1982
Britannia	<i>P. formosana</i> x <i>P. Tongariro</i>	S. James	1992
Bromo	<i>P. yunnanensis</i> x <i>P. Confusa</i>	I. Butterfield	1998
Burnsall	<i>P. yunnanensis</i> x <i>P. chunii</i>	D. Harberd	1998
Burrator	<i>P. coronaria</i> x <i>P. forrestii</i>	I. Butterfield (P. Bradbury)	1995

Grex name	Parentage	Registered By	Year
Buttertubs	<i>P. Arkengarthdale</i> x <i>P. Confusa</i>	D. Harberd	1998
Callisto	<i>P. Versailles</i> x <i>P. yunnanensis</i>	K. Fairhurst	1996
Captain Hook	<i>P. hookeriana</i> x <i>P. formosana</i>	D. Harberd	1988
Caroli	<i>P. San Pedro</i> x <i>P. Egmont</i>	I. Butterfield	1998
Cathay	<i>P. Tolima</i> x <i>P. Confusa</i>	M. Hazelton	1991
Charlie Chan	<i>P. formosana</i> x <i>P. Alishan</i>	M. Hazelton	1994
Chinese Dragon	<i>P. formosana</i> x <i>P. Soufriere</i>	M. Hazelton	1989
Christianii	<i>P. yunnanensis</i> x <i>P. forrestii</i>	(natural hybrid)	
Confusa	<i>P. albiflora</i> x <i>P. forrestii</i>	hort. (natural hybrid)	
Cotopaxi	<i>P. limprichtii</i> x <i>P. Vesuvius</i>	I. Butterfield	1982
Coverdale	<i>P. Jorullo</i> x <i>P. Confusa</i>	A. D. Smith	1993
Danan	<i>P. limprichtii</i> x <i>P. humilis</i>	I. Butterfield	1982
Deriba	<i>P. Versailles</i> x <i>P. forrestii</i>	I. Butterfield	1989
Diller	<i>P. Brigadoon</i> x <i>P. forrestii</i>	I. Butterfield	1998
Edgecombe	<i>P. chunii</i> x <i>P. forrestii</i>	I. Butterfield	1996
Egmont	<i>P. Rakata</i> x <i>P. Surtsey</i>	I. Butterfield	1989
Eiger	<i>P. formosana</i> x <i>P. humilis</i>	I. Butterfield	1979
El Misti	<i>P. bulbocodioides</i> x <i>P. chunii</i>	I. Butterfield	1995
El Pico	<i>P. Versailles</i> x <i>P. bulbocodioides</i>	I. Butterfield	1980
Eleanor Lavinia Hazelton	<i>P. Fu Manchu</i> x <i>P. Surtsey</i>	M. Hazelton	2000
Elgon	<i>P. El Pico</i> x <i>P. forrestii</i>	I. Butterfield	1991
Erebus	<i>P. Versailles</i> x <i>P. Vesuvius</i>	I. Butterfield	1982
Erh Hai	<i>P. speciosa</i> x <i>P. Etna</i>	D. Harberd	1990
Etna	<i>P. speciosa</i> x <i>P. limprichtii</i>	I. Butterfield	1979
Europa	<i>P. chunii</i> x <i>P. Vesuvius</i>	K. Fairhurst	1997
Falcon	<i>P. Vesuvius</i> x <i>P. Rakata</i>	I. Butterfield	1989
Fiona Hall	<i>P. formosana</i> x <i>P. Archie Goodwin</i>	R. Kretz	2000
Firecracker	<i>P. Versailles</i> x <i>P. Yu Shan</i>	M. Hazelton	1989
Follifoot	<i>P. Fuego</i> x <i>P. Arkengarthdale</i>	D. Harberd	1998
Frank Kerr	<i>P. Shantung</i> x <i>P. Stromboli</i>	R. Kretz	1994
Fu Manchu	<i>P. speciosa</i> x <i>P. Eiger</i>	M. Hazelton	1984
Fuego	<i>P. formosana</i> x <i>P. bulbocodioides</i>	I. Butterfield	1990
Fujiyama	<i>P. El Pico</i> x <i>P. Shantung</i>	I. Butterfield	1986
Gerry Munday	<i>P. forrestii</i> x <i>P. Tongariro</i>	I. Butterfield (G. Munday)	1990
Giacomo Leopardi	<i>P. chunii</i> x <i>P. limprichtii</i>	H. Pinkepank	1991
Glacier Peak	<i>P. formosana</i> x <i>P. grandiflora</i>	I. Butterfield	2001
Gopfridstutz	<i>P. Tolima</i> x <i>P. Shantung</i>	H. Pinkepank	1991
Haegar	<i>P. Zeus Weinstein</i> x <i>P. Shantung</i>	H. Pinkepank	1992
Heathfield	<i>P. Erh Hai</i> x <i>P. Soufriere</i>	K. Redshaw	2000
Hekla	<i>P. speciosa</i> x <i>P. humilis</i>	I. Butterfield	1982
Helgafell	<i>P. Eiger</i> x <i>P. yunnanensis</i>	I. Butterfield	1986
Hubberholme	<i>P. Versailles</i> x <i>P. Katla</i>	D. Harberd	1998
Irazu	<i>P. Etna</i> x <i>P. Shantung</i>	I. Butterfield	1982
Iris Butterfield	<i>P. forrestii</i> x <i>P. Confusa</i>	I. Butterfield	1994
Izalco	<i>P. Shantung</i> x <i>P. Rakata</i>	I. Butterfield	1989

<u>Grex name</u>	<u>Parentage</u>	<u>Registered By</u>	<u>Year</u>
Jenny Kretz	<i>P. chunii</i> x <i>P. humilis</i>	R. Kretz	2001
Jokull	<i>P. Shantung</i> x <i>P. Confusa</i>	I. Butterfield	1991
Jorullo	<i>P. limprichtii</i> x <i>P. bulbocodioides</i>	I. Butterfield	1982
Josée Morel	<i>P. Versailles</i> x <i>P. pogonioides</i>	Marcel Lecoufle	
Katla	<i>P. limprichtii</i> x <i>P. Versailles</i>	I. Butterfield (B. Williams)	1980
Katmai	<i>P. Etna</i> x <i>P. Matupi</i>	I. Butterfield	1990
Keith Rattray	<i>P. bulbocodioides</i> x <i>P. forrestii</i>	I. Butterfield	1989
Kenya	<i>P. Brigadoon</i> x <i>P. Keith Rattray</i>	I. Butterfield	1995
Kettlewell	<i>P. Erh Hai</i> x <i>P. Tongariro</i>	D. Harberd	1998
Kilauea	<i>P. formosana</i> x <i>P. Eiger</i>	I. Butterfield	1986
Kiranshu	<i>P. Alishan</i> x <i>P. Etna</i>	M. Hazelton	1987
Kituro	<i>P. Matupi</i> x <i>P. forrestii</i>	I. Butterfield	1991
Kohala	<i>P. Eiger</i> x <i>P. humilis</i>	I. Butterfield	1991
Kohlsii	<i>P. chunii</i> x <i>P. forrestii</i>	(natural hybrid)	
Krakatoa	<i>P. yunnanensis</i> x <i>P. forrestii</i>	I. Butterfield	1992
Kublai Khan	<i>P. formosana</i> x <i>P. Stromboli</i>	M. Hazelton	1994
Kungfu	<i>P. bulbocodioides</i> x <i>P. Tamerlane</i>	M. Hazelton	1994
Lagenaria	<i>P. maculata</i> x <i>P. praecox</i>	hort. (natural hybrid)	
Laki	<i>P. Erebus</i> x <i>P. Stromboli</i>	I. Butterfield	1989
Lamington	<i>P. Captain Hook</i> x <i>P. Litton Dale</i>	I. Butterfield	1997
Langstorthdale	<i>P. Etna</i> x <i>P. Confusa</i>	A. D. Smith	1989
Lascar	<i>P. Fuego</i> x <i>P. limprichtii</i>	I. Butterfield	1986
Lassen Peak	<i>P. praecox</i> x <i>P. Lagenaria</i>	I. Butterfield	1985
Lipari	<i>P. bulbocodioides</i> x <i>P. Vesuvius</i>	I. Butterfield	1982
Litton Dale	<i>P. hookeriana</i> x <i>P. Irazu</i>	A. D. Smith	1991
Liz Shan	<i>P. Lagenaria</i> x <i>P. maculata</i>	J. Berg	1998
Loulan	<i>P. formosana</i> x <i>P. Piton</i>	M. Hazelton	1998
Lucky Luke	<i>P. Tolima</i> x <i>P. Vesuvius</i>	H. Pinkepank	1992
Lucy	<i>P. Eiger</i> x <i>P. forrestii</i>	H. Pinkepank	1992
Lydford Tor	<i>P. Shantung</i> x <i>P. Kilauea</i>	P. Bradbury	1992
Mageik	<i>P. San Salvador</i> x <i>P. Berapi</i>	I. Butterfield	1999
Makalu	<i>P. Tarawera</i> x <i>P. Vesuvius</i>	M. Hazelton	1989
Marco Polo	<i>P. bulbocodioides</i> x <i>P. Shantung</i>	M. Hazelton	1987
Marianne	<i>P. Brigadoon</i> x <i>P. Surtsey</i>	I. Butterfield	1991
Marion Johnson	<i>P. Keith Rattray</i> x <i>P. forrestii</i>	I. Butterfield	1995
Masaya	<i>P. Piton</i> x <i>P. Confusa</i>	I. Butterfield	1997
Matupi	<i>P. limprichtii</i> x <i>P. Shantung</i>	I. Butterfield	1983
Mauna Loa	<i>P. Shantung</i> x <i>P. Berapi</i>	I. Butterfield	1998
Maurice George	<i>P. Fu Manchu</i> x <i>P. Berapi</i>	M. Hazelton	2000
Hazelton			
Mawenzi	<i>P. yunnanensis</i> x <i>P. scopulorum</i>	I. Butterfield	1999
Mayon	<i>P. Vesuvius</i> x <i>P. Danan</i>	I. Butterfield	1987
Mazama	<i>P. Alishan</i> x <i>P. Soufriere</i>	I. Butterfield	1989
Meru	<i>P. El Pico</i> x <i>P. Vesuvius</i>	I. Butterfield	1991
Millennium Dawn	<i>P. Versailles</i> x <i>P. Rakata</i>	M. Hazelton	1999

<u>Grex name</u>	<u>Parentage</u>	<u>Registered By</u>	<u>Year</u>
Myojin	<i>P. speciosa</i> x <i>P. Soufriere</i>	I. Butterfield	1987
Nero Wolfe	<i>P. praecox</i> x <i>P. bulbocodioides</i>	H. Pinkepank	1985
Nick Knatterton	<i>P. limprichtii</i> x <i>P. yunnanensis</i>	H. Pinkepank	1988
Novarupta	<i>P. Versailles</i> x <i>P. Soufriere</i>	I. Butterfield	1986
Orinoco	<i>P. Tongariro</i> x <i>P. Eiger</i>	S. James	1992
Orizaba	<i>P. Novarupta</i> x <i>P. Matupi</i>	I. Butterfield	1991
Pacaya	<i>P. Paricutin</i> x <i>P. Erebus</i>	I. Butterfield	1990
Paricutin	<i>P. Tongariro</i> x <i>P. Confusa</i>	I. Butterfield	1986
Pavlof	<i>P. limprichtii</i> x <i>P. forrestii</i>	I. Butterfield	1991
Pelee	<i>P. El Pico</i> x <i>P. Surtsey</i>	I. Butterfield	1991
Pichu-Pichu	<i>P. Rakata</i> x <i>P. forrestii</i>	I. Butterfield	1991
Pinatubo	<i>P. Rakata</i> x <i>P. Asama</i>	I. Butterfield	1992
Piton	<i>P. formosana</i> x <i>P. yunnanensis</i>	I. Butterfield	1986
Pocahontas	<i>P. formosana</i> x <i>P. Firecracker</i>	M. Hazelton	1995
Quizapu	<i>P. Rakata</i> x <i>P. Matupi</i>	I. Butterfield	1990
Rainier	<i>P. Shantung</i> x <i>P. humilis</i>	I. Butterfield	1991
Rakata	<i>P. speciosa</i> x <i>P. Shantung</i>	I. Butterfield	1982
Riah Shan	<i>P. bulbocodioides</i> x <i>P. maculata</i>	J. Berg	1995
Ruby Wedding	<i>P. chunii</i> x <i>P. Archie Goodwin</i>	J. S. Craven	2000
Rumpelstilzchen	<i>P. hookeriana</i> x <i>P. Versailles</i>	H. Pinkepank	1989
Ruth	<i>P. pricei</i> x <i>P. humilis</i>	A. Bristow	1979
Sajama	<i>P. limprichtii</i> x <i>P. hookeriana</i>	I. Butterfield	1986
Salek	<i>P. Krakatoa</i> x <i>P. Shantung</i>	I. Butterfield	1997
San Pedro	<i>P. Etna</i> x <i>P. forrestii</i>	I. Butterfield	1987
San Salvador	<i>P. Shantung</i> x <i>P. forrestii</i>	I. Butterfield	1991
Sangay	<i>P. limprichtii</i> x <i>P. praecox</i>	I. Butterfield	1982
Sanpan	<i>P. Tolima</i> x <i>P. pricei</i>	M. Hazelton	1987
Santa Maria	<i>P. Volcanello</i> x <i>P. chunii</i>	I. Butterfield	1994
Santorini	<i>P. Soufriere</i> x <i>P. coronaria</i>	I. Butterfield	1991
Shangri La	<i>P. Alishan</i> x <i>P. Shantung</i>	M. Hazelton	1989
Shantung	<i>P. formosana</i> x <i>P. Confusa</i>	D. Harberd	1977
Shasta	<i>P. Sajama</i> x <i>P. chunii</i>	I. Butterfield	1992
Shepherd's Warning	<i>P. formosana</i> x <i>P. Shantung</i>	D. Harberd	1988
Shogun	<i>P. Versailles</i> x <i>P. chunii</i>	M. Hazelton	1985
Shukoran	<i>P. Alishan</i> x <i>P. Versailles</i>	M. Hazelton	1987
Skaptar	<i>P. Fuego</i> x <i>P. El Pico</i>	I. Butterfield	1989
Sorea	<i>P. hookeriana</i> x <i>P. bulbocodioides</i>	I. Butterfield	1983
Soufriere	<i>P. Versailles</i> x <i>P. Confusa</i>	I. Butterfield (B. Williams)	1981
Special Prayer	<i>P. speciosa</i> x <i>P. praecox</i>	A. Akam	1994
Starbotton	<i>P. Fuego</i> x <i>P. Confusa</i>	D. Harberd	1998
Stromboli	<i>P. speciosa</i> x <i>P. bulbocodioides</i>	I. Butterfield	1979
Surtsey	<i>P. Shantung</i> x <i>P. Versailles</i>	I. Butterfield	1983
Sven Glueckspilz	<i>P. chunii</i> x <i>P. Shantung</i>	H. Pinkepank	1992
Swaledale	<i>P. Versailles</i> x <i>P. Stromboli</i>	A. D. Smith	1988
Taal	<i>P. Etna</i> x <i>P. El Pico</i>	I. Butterfield	1995
Tacana	<i>P. speciosa</i> x <i>P. forrestii</i>	I. Butterfield	1987

Grex name	Parentage	Registered By	Year
Tai Chi	<i>P. Etna</i> x <i>P. Vesuvius</i>	M. Hazelton	1998
Taliensis	<i>P. bulbocodioides</i> x <i>P. yunnanensis</i>	(natural hybrid)	
Tambora	<i>P. Brigadoon</i> x <i>P. Rakata</i>	I. Butterfield	1990
Tamerlane	<i>P. Alishan</i> x <i>P. Tolima</i>	M. Hazelton	1984
Tarawera	<i>P. Versailles</i> x <i>P. praecox</i>	I. Butterfield	1982
Teide	<i>P. Berapi</i> x <i>P. Keith Rattray</i>	I. Butterfield	1997
Tibesti	<i>P. chunii</i> x <i>P. speciosa</i>	I. Butterfield	1992
Till Eulenspiegel	<i>P. Tolima</i> x <i>P. Soufriere</i>	H. Pinkepank	1991
Toba	<i>P. Brigadoon</i> x <i>P. Vesuvius</i>	I. Butterfield	1991
Tolima	<i>P. formosana</i> x <i>P. speciosa</i>	I. Butterfield	1979
Tongariro	<i>P. Versailles</i> x <i>P. speciosa</i>	I. Butterfield (B. Williams)	1981
Toot	<i>P. Soufriere</i> x <i>P. Firecracker</i>	M. Hazelton	2001
Topolino	<i>P. Eiger</i> x <i>P. chunii</i>	H. Pinkepank	1992
Tsingtau	<i>P. humilis</i> x <i>P. praecox</i>	H. Pinkepank	1985
Ueli Wackernagel	<i>P. chunii</i> x <i>P. formosana</i>	H. Pinkepank	1991
Versailles	<i>P. formosana</i> x <i>P. limprichtii</i>	Morel	1966
Vesuvius	<i>P. bulbocodioides</i> x <i>P. Confusa</i>	I. Butterfield	1978
Virunga	<i>P. Alishan</i> x <i>P. Surtsey</i>	I. Butterfield	1989
Volcanello	<i>P. bulbocodioides</i> x <i>P. Soufriere</i>	I. Butterfield	1987
Wenya	<i>P. grandiflora</i> x <i>P. limprichtii</i>	H. Perner (W. Mehrens)	1999
Wharfedale	<i>P. Hekla</i> x <i>P. Lassen Peak</i>	A. D. Smith	1993
Witwe Bolte	<i>P. Brigadoon</i> x <i>P. Shantung</i>	H. Pinkepank	1991
Wunzen	<i>P. Erebus</i> x <i>P. yunnanensis</i>	I. Butterfield	1986
Yu Shan	<i>P. pricei</i> x <i>P. speciosa</i>	M. Hazelton	1984
Zeus Weinstein	<i>P. formosana</i> x <i>P. forrestii</i>	H. Pinkepank	1988

Total number of artificial hybrids registered to date = 172

Number of natural hybrids recognised = 6

Note: Names in brackets indicate the breeder where this is different to the registrant

This Year's Contributors

Jan Berg is an amateur grower living in the Netherlands. His first *Pleione* was given to him about forty years ago. He enjoys doing his own hybridising and some of his hybrids are registered by the RHS.

Ian Butterfield is a British nurseryman who has specialised in growing and hybridising pleiones for many years. He is co-author of the book "The Genus *Pleione*", holds the National Collection of Pleiones and has won many Gold Medals for his displays at RHS shows.

Phillip Cribb is curator of the Orchid Herbarium at the Royal Botanic Gardens, Kew, and is well known in the orchid world for his many publications on orchids. He has travelled widely including studying pleiones in the wild on visits to China, Bhutan and Taiwan.

Carl Hardwick grows cypripediums to keep him busy in the summer and *Orchis* and *Ophrys* to keep the winter from becoming dull! He has been growing hardy orchids for 10 years, starting with *Pleione limprichtii* and still grows some species pleiones.

Martin Hazelton lives in London and has grown pleiones since 1964. He enjoys hybridising and his first cross, *P. Alishan*, was registered in 1979. Since then he has registered another 28 hybrids.

George King is an amateur grower whose interest started over forty years ago. His main passion is the warm *Paphiopedilum* hybrids, but stumbling on *Ophrys spruneri* on holiday triggered an interest in hardy orchids which ultimately led him to pleiones.

Rick Lambert lives in Northamptonshire and has been growing pleiones over the last 25 years. He is a retired teacher and now able to spend more time also growing alpines and bulbs. He enjoys propagating including growing plants from collected seed to select better forms.

