Programme

2008

Sat. Sept 27  Autumn Show  Beaufort Community Centre
Fri 31 Oct  *  Andy Philips  Phragmipediums
Fri 28 Nov  *  Roger Bowden  Starting from Scratch
Sat 13 Dec  *  Christmas Dinner  Marsham Court Hotel 12.30 for 1.00

2009

Fri 30 Jan  Malcolm Moodie  Orchid Nutrition
20/21/22 Feb  50th Anniversary Show
Fri 27 Mar  *  Plant Clinic & Brains Trust
Fri 24 Apr  *  Max Hopkinson  Catasetinae
Fri 29 May  *  AGM  Followed by Plant Auction
Sat 20 June  Coach Outing  Peterborough Orchid Show
Fri 26 June  *  Sally Mill  Encyclias
Sun 19 Jul  *  Garden Party  Hosted by Nina Gregson; 2.30 p.m.

3 Ashley Park, Ashley Heath. BH24 2HA

Fri 21 Aug  Ray Creek  Stop the Rot
Sat 19 Sept  Autumn Show

*  Members may sell plants only at these meetings

Front Cover: Cypripedium formosanum ‘Highcliffe Castle’

All photos by Allan Burdis unless otherwise indicated.
Now that all the Spring shows are over it is time to concentrate on our plants and get them sorted for the growing season ahead. You should be well on with potting your plants, leaving it any longer will disrupt their growth and damage any emerging new roots. If you are not sure if a plant should be repotted I would tend to do it anyway as orchids always respond well to being put into new compost. You can always gently turn out a plant from its pot and inspect the condition of the roots and compost. Give the damp compost a good sniff, it should still have a ‘sweet’ odour and not sour. The roots should be in good condition with no soggy dead ones. Clear pots for phalaenopsis are useful for seeing how things are doing without the need to disturb them and I often use them for other genera, but put them into another standard pot to shield from the light. I can then lift them out of the outer pot at any time to see how things are doing and if necessary I will repot.

Our 50th Anniversary Show was a stunning success and so a special edition of Top Orchid will be issued to celebrate this and should be out for the June meeting. If you have anything related to the show you would like to be included then please send it to me no later than the end of May.

I am grateful for all who have sent articles to fill the pages of Top Orchid and its success is measured mainly by these articles. Over the years the flow of articles has dwindled and I have found it increasingly more difficult to persuade members to contribute. It is, therefore, with regret I will have to reduce the number of issues to three per year; Spring, Summer and Autumn.

The inclusion of monthly meeting reports has always been a welcome feature, especially for members who have missed a meeting for whatever reason. I preferred to have these reports covered by other members of the society as this encourages different writing styles which makes reading them more interesting. Unfortunately I have again found it difficult to find volunteers to do this. If you feel you would like to cover a certain talk then let me know and I will gladly hand you the clip board.

Finally, I can report our President Keith Andrew is out of hospital and back home after surgery and is feeling much better. We all wish him a speedy recovery and hopefully he will be back with us soon.

Allan Burdis
We are familiar with propagating orchids by division, removing backbulbs and keikis, but there is another, rather curious, way some orchids can be propagated.

A common way of increasing plants is to remove growths, known as keikis, which are formed on the pseudobulbs or flower stems of many orchids but another less common form of keikis are those which are produced on the roots of some orchids. Phalaenopsis have two forms of keikis, the first are plants which form on the flower stem where a flower would normally form. It seems that in the right conditions a flower bud can suddenly develop into a plant, which after a time can be removed and potted up to grow into an adult plant which will be genetically identical to the ‘mother’ plant. The second is a strange phenomenon where keikis can emerge from the roots and a plant of Phalaenopsis stuartiana I have in my collection started to show the tell tell signs of this type of propagation earlier this year. Figs. 1 to 4 show the stages of a keiki emerging from a root approximately 1 cm from its tip over a 6 month period.

It is possible to propagate the cane type Dendrobiums by removing a complete cane and laying it in a shallow tray of sphagnum moss where over time will sprout keikis at the nodes. Unfortunately this method cannot be applied to the phalaenopsis roots, they have to be attached to the plant and not all Phalaenopsis will do this. As far as I am aware it seems to be isolated to those plants that have flattened roots such as P. stuartiana and schilleriana.

Phalaenopsis are not the only genera to display this phenomenon - Several years ago I noticed a small growth appearing on a root of a Mormodes species I was growing and over several weeks watched as it developed into a small plant with leaves and roots in the same way as the Phalaenopsis stuartiana.

I can understand the mechanisms which could make a flower bud turn into a new plant, as the plant hormones are already located in these areas, but what are those hormones doing in the root and what causes them to be activated and why only a few members of the orchid family show this trait??

The first leaf emerges, no roots at this stage.
The first root has developed

After several weeks there are now two roots and two leaves.

The root was cut off the ‘mother’ plant and the keiki potted in a 5 cm pot
Another example of this strange phenomenon occurred in my greenhouse many years ago on a plant of *Mormodes maculatum* in July 1987. This plant was grown mounted on a piece of cork oak and had flowered several times when suddenly it sprouted three plantlets from one root. As can be seen from Fig. 5 they have at this stage already started to produce their own roots.
Mormodes maculatum is an epiphytic orchid from Central and South America, belonging to the subtribe Catasetinae and, like other members of this group, has strange flowers with a sprung loaded column which, when stimulated by a visiting male bee, is released and the pollinia are propelled in an arc over the lip to land on the back of the bee where it is glued, ready to be carried to another flower and so complete pollination.

As can be seen from the photograph below the narrow lip is uppermost and both it and the column are twisted to form an essential element to aid pollination.

Grow in a minimum temperature of 13 deg C either potted in a medium to course grade bark or mounted on a slab of cork or other material. A deciduous orchid that requires a cooler rest in winter if possible. All members of this group are very rewarding exhibiting flowers having some of the most complex mechanisms for pollination.
As a subject, orchid nutrition does not immediately make the heart race with excitement but somehow Malcolm managed to hold the member’s attention all through his talk.

He did this by first making us take part in a quiz he devised. There were six questions all about various topics of plant nutrition which we had to answer as the talk progressed. The point of this was first to keep our attention from wandering and secondly educate us at the same time. With a promise of a prize for the person with the most points at the end, this ensured there was never a snore to be heard all evening.

If there was one thing we learned, it was nothing is simple about orchid nutrition. Malcolm went through all the main aspects of orchid culture such as:

**Light**
With the importance of shading and using the correct materials, Malcolm recommended a woven material with Aluminium. Shading must always be placed on the outside to be effective.

**Temperature**
Try to aim for a night/day differential. Modern electronic thermostats can control this.

**Air**
Good Air movement is very important within the greenhouse.

**Humidity**
Keep a good level of air moisture for optimum growth.

**Water quality**
This was a most important subject and Malcolm explained how the use of a PH meter and salt meter are worth purchasing for the accurate measuring of water quality. He explained how all plants have a maximum salt tolerance and depending what water you are using will dictate how much feed can be added. If your mains water is hard (contains calcium) then this will show up on the salt meter and indicate a figure such as 600 micro Siemens (mS). If your plants have a maximum level of say 700 mS then you can only add feed of 100 mS to be safe. Rain water collected from a clean source should be low in dissolved salts and this water would give a good starting point use as a base for feeding orchids. Water collected from other sources such as streams and lakes must not be assumed to be safe as Malcolm recounted a story concerning a grower who was experiencing poor results from using a recommended feed. Malcolm suggested he tested the water and to his surprise found it was as high as 700 mS. Added to this was the feed and it took it well over the safe limit for any orchid. It appeared the stream run along a farm which used chemical fertilisers and this was leaching into the water course.

**PH**
This is the measure of the acidity of a substance and should be 5 - 6.5 for most orchids.
Compost
“You are trying to balance air to moisture”
Purchase orchid compost from a specialist orchid nursery. Repot every year or two with bark.

Malcholm asked what was the most important of all the above topics and the answer was “all are equally important”.

Orchid Feed
This was perhaps the most complex of his talk and I will only give a brief summery.

Three major elements in plant nutrition:
1. Nitrogen (N) for growth
2. Phosphate (P) for fruit and stem cell structure
3. Potassium (K) for flowers. (The ‘K’ comes from the Latin word Kalium which has its origins in the Arabic word for ‘Plant Ashes’ and is used to avoid confusion with the Phosphate.”P”)

Another element which could be taken as the fourth important element for plant health is Magnesium which is connected with the production chlorophyll, the green part of plants and ultimately the production of sugars. Using extra magnesium will help cure magnesium deficiency, shown by yellowing of the leaves, a common problem found with many plant species that require an acid soil.

Always purchase feed specifically made for orchids that does not contain Urea as a form of nitrogen. Urea requires the presence of bacteria to help release the nitrogen and this is not readily available in bark mixes and therefore plants would not be able to absorb this essential element.

Spring - feed with a high nitrogen fertiliser March to early June (10.5.5)
Late summer - feed with a low nitrogen feed (7.9.5)
Winter - Feed with a high phosphorous fertiliser (3.12.6)

Liquid feeds are the best as you will not need to flush through with plain water as is usually recommended unless you use Rockwool and then flushing should be carried out. If you go for a crystal form of feed this should be dissolved in water for 24 hours before using to ensure all the crystals have dissolved. Flushing occasionally with clean water will be required if you use crystals.

This was a thoroughly informative talk of real value to the orchid grower.
Colin Carter gave the vote of thanks and members showed their appreciation in the time honoured way.

Allan Burdis
On October 25th and 26th 2008 the British Orchid Council held its Congress at the Langstone Cliff Hotel, Dawlish Warren, Devon. The event was sponsored by the Devon Orchid Society, who organised the displays and programme of events. We were not initially going to attend as we did not receive an invite, possibly due to an oversight. However, Bournemouth are not to be easily discouraged and a series of increasingly polite requests produced an offer of a round 2 m table. Thus our display was going to be an island, to be viewed all round. How to proceed? Fortunately a member of very long standing indeed recalled a round display he had been involved in and after some exciting amateur archaeology in his garage managed to unearth the four disks of hardwood used to construct it. A brainstorming session produced the bones of the display - a raised central disc with the surrounding table quartered by light trellis work, the whole surmounted by a 1 m high moss covered obelisk. Friday 24th October was allowed for setting up and the show committee duly convened at the hotel. Some arrived later than others and one member was roundly told off for his unpunctuality. Since, however, he had made a long arduous detour up the Piddle Valley to collect plants from our President, been royally plied with flapjacks and coffee and then had managed to get lost round Exeter, he was none too bothered. The display took about five hours to complete and looked very effective. With the work done, the team retired to their digs to recover and get ready for the buffet and preview. This was a great success with an excellent sit down meal when we had been expecting a buffet. When the doors opened to the public after the judging we found that we had a modest total of one first and two seconds. Later our display was awarded third place. Considering we did not have any outstanding plants, just a lot of very good ones, we did well. It proves that a well constructed display is greater than the sum total of the elements in it. Saturday was spent attending lectures, admiring the plants - there were some outstanding specimens on display - and snapping up any ‘goodies’ we could find. A successful and enjoyable Gala Dinner on Saturday evening was followed by a quiet Sunday and at 4.00 pm breakdown commenced. By 5.30 the last of the team were heading home. It was a successful and enjoyable show. My thanks to Allan Burdis, Colin and Christine Carter, Graham Smith, Ken Griffiths and Pam Miles for mounting and organising the display and to all those members who so generously loaned plants.

Mike Powell
Show Secretary
Speakers

At our meeting on Friday evening 26\textsuperscript{th} June our speaker is Sally Mill and her favourite orchid species is Encyclias. Sally will be putting us right on the cultivation of Encyclias and showing us their many forms. Sally may also bring a few of her spare plants to add to our plant sales table.

As our Garden Party hosted by Dr Nina Gregson is being held on Sunday 19\textsuperscript{th} July, where we hope to meet up with you all for a very pleasant afternoon, our following meeting will not be until 21\textsuperscript{st} August when Ray Creek will be travelling down from Scunthorpe to speak about “Stopping the Rot”. I know I have my fair share of “Rot” and Ray gives an interesting talk on the cause and his method of prevention. As he is also an Orchid Trader he will be bringing a good selection of plants for you to purchase and grow on to brighten up your homes during the coming autumn so don’t forget your wallet!

Roger Russell
Programme Secretary

Coach Outing
Saturday 20th June
Bookings are being taken for the coach outing to the Peterborough International Orchid Show (PIOS).

Cost of coach £20 (same as last year)
Show entry cheaper if pre booked, see Pam Miles for bookings.
Pick-up point BNSS car park
Leaving Bournemouth 7.30 am
Leave Peterborough Show 4.00 pm
Arrive back at Bournemouth 7.00 pm

Please give your name and booking fee to Pam Miles
Telephone 01425 672492

For Your Diary
50th Anniversary Dinner
The Dudsbury, Ferndown
12th December 2009

This will be the final celebration of the Bournemouth Orchid Society 50th Anniversary year
On Tuesday 30th March this year Christine and Colin Carter accompanied Allan Burdis to the Royal Horticultural Society (RHS) in Westminster London.

The Westonbirt medal was awarded to our very own Vice President Allan Burdis for a superb Cypripedium formosanum ‘Highcliffe Castle’.

The award was presented to Allan prior to the opening of the RHS spring show on the raised dais overlooking the show.

This was carried out jointly by the President of the RHS, Giles Coode-Adams and Chairman of the RHS Orchid Committee, Johan Hermans.

The Westonbirt medal was awarded for the Best Orchid Plant put before the RHS orchid committee during the previous year.

The President congratulated Allan and remarked that this signified the pinnacle of a persons orchid career.

Johan Hermans described the plant in detail, a Cypripedium formosanum some 70 cms across with 34 beautifully formed pale pink flowers set off by the pale green fan shaped foliage.

The Westonbirt gold medal is awarded annually on a three year cycle:

Last year for the best orchid plant exhibited at the RHS

This year for the person contributing most to orchids.

Next year for the best orchid display at the RHS.

A brief history of this plant:

2005 1st place and best cypripedium at the World Orchid Conference in Dijon France.

2007 unfortunate encounter in transit to London Orchid show (plant shunted out of pot & damaged flowers).

2008 Cultural Commendation and Westonbirt Medal.

2009 best amateur orchid plant exhibited at London orchid show.

This plant is now getting too big and heavy to transport and may have to be divided next year.

Congratulations Allan from all your orchid friends on receiving this award.

Colin Carter
At the OSGB Spring Show held in the new glasshouse at RHS Wisley March 27 Christine Carter was awarded the Jeremiah Colman Bowl for her superbly grown and flowered *Phalaenopsis leuchorroda*. This was the second time Christine has won this award, with this plant.

Christine has a collection of fine *Phalaenopsis* which she cultivates on most of the windowsills in her home. Many of them have graced the Bournemouth Orchid Society displays at shows throughout the country.
Raising orchids from the flask with a Dew-point cabinet (DPC)

I never did well in raising orchids from flasks until I started to use a DPC; then my success rate rose from 5% or worse, to 95% or better. My best results were flask to flower in just over 18 months – that was with a Paph hybrid. This was not just with the odd exceptional seedling in that flask – the whole of that flask (10 plants) flowered within 2 years. Of course many flasks take much longer, the multi-flowered Paphs are much slower for example. Lest this give the wrong impression, a DPC is good not just for paphs, but for all orchid seedlings – and much else too. (I originally bought one for a quite different non-orchid horticultural purpose, and only found the possibilities with orchid seedlings by chance; if I had known as much about plant pathology as I have learnt since, I would have got to the DPC much sooner!)

What is the secret of success with orchid seedlings?

What is needful for growth of any plant is of course photosynthesis. That demands an adequate amount of light. Adequate, here, means sufficient level of brightness, and sufficient length of time at that level of brightness. It is possible that in the open greenhouse, the right level of brightness is hard to achieve at all in our winter months because the sun is too low, or is absent, or does not shine long enough non-stop. To illustrate this last point, about “non-stop”, a few years ago I had the pleasure of a conducted tour of one of the large Dutch “plant factories” – a single greenhouse covering 14 acres, turning out 3 spike cymbidiums by the thousand, in under 2 years from planting the seedling plugs – a fantastic level of culture by any standard; my visit was in late May, lovely Summer weather, but there was a short rain shower. I was surprised to see grow-lamps come on over the benches and asked about that. I was told that the plants would stop growing whilst the cloud was overhead. I asked if the expense of the lamps etc really justified for 10 minutes loss? The answer I was given was that it would take 4-5 hours before they would restart once the cloud cleared away. Effectively they would lose a day of growth. I think this a bit exaggerated, but I have to be slow to doubt anyone who maintained that standard of culture, and at the very least there is a more than a germ of truth in what they said.

My own research into the technical literature shows that when photosynthesis – or at least the “light reactions” part of the process stops, it has to start again, not from where it left off, but from the beginning. I have found out why, and won’t go into the technicalities of electron orbits, electron charge and photon count which explain it; anyone interested in the whys and wherefores can nowadays find it all on the internet or even ask me.

Photosynthesis, is the conversion of carbon dioxide (CO$_2$) from the surrounding air and water from within the plant cells into plant sugars using light as the energy source and chlorophyll as the catalyst. The CO$_2$ enters via the stomata which are tiny openings in the leaf wall, present in their thousands to every square centimetre of leaf area.
Now the stomata allow free interchange of gases in the leaf with those outside the leaf. Air in the leaf cells flows out, and outside air flows in. If the incoming air is of low humidity the stomata close automatically in self-preservation, so as to prevent desiccation. When the stomata are closed, no CO\(_2\) can enter, and no photosynthesis can occur. Some plants do have a mechanism for storing CO\(_2\) but orchids are not in this category. But what this means in practice is that if the humidity of the air around the plant is too low, there cannot be growth, irrespective of light.

These problems – erratic and inadequate light, and low humidity are controlled in the DPC, giving vastly accelerated growth rates.

I left my purpose-made off-the-shelf DPC behind when I moved to Dorset, as part of a down-sizing operation and thinking I would never need it again. Now, driven by a desire to obtain certain species which I cannot find on offer as adult plants anywhere in the world, or – where I can find them - by the complexities of CITES and cost not only of the plants but also the documentation and of air freight charges, but finding them on offer as seedlings in flask, largely avoiding those problems, I decided to get myself a DPC again, and this time build it myself.

My new cabinet is made of Perspex; I could have used plywood if I had intended to install in my garage, for example, but this one rests on the greenhouse bench.

A small degree of heat over and above what is provided by the greenhouse is given by an electric heating mat. Mine is I think 130 watt and some 1.30 x 0.35m, which is in a cabinet 1.5m long and 0.5m wide – big enough to take half a dozen standard seed-trays generously spaced, or as many as eight more closely filling the cabinet. However, the trays should not touch edge-to-edge. My mat is thermostatically controlled which is important for obvious reasons and (less obvious perhaps) to avoid the plants overheating in summer weather. Photosynthesis like all chemical reactions has an optimum temperature; below that it goes slower, and above that it also goes slower. In fact it doesn’t even start until the thermometer reads above say 12, or perhaps higher (depending on the species) and certainly stops completely when the mercury reaches say 30. Probably 25 deg. C. is the peak (fastest rate).

In practice, on frosty nights, my cabinet is holding 17, and in the day is rising to 21 (December weather). In Summer the heating will be inoperative, and held down to a (hoped-for) maximum of 27 in the day time by the swamp coolers, shade cloth and opening vents provided to control greenhouse temperatures more widely. Success in this respect will depend on the Summer. In 2008 high temperatures were no problem – they never happened.

Plants are supported on wooden slats located above an ordinary gravel tray filled with water which rests on the heating panel, and in turn the heating panel rests on some insulation I used four layers of polystyrene ceiling tiles for this. There will be some condensation on walls and roof; with careful design all this can drain back into the water tray to minimize topping up. If using plywood I would have lined the walls with kitchen foil and used that to guide the condensation back to the tray.
A small diameter tube is laid on the base of the water tray and connected to a series of outlets, and also to aquarium aerator ("bubbler"). The outlets may be via bubbler stones in the water. These are available from any aquarium shop; an alternative to the stones is to use irrigation drip feed parts sold in garden centres – but in both cases air from the aerator emerges at several distinct points under water, and bubbles up carrying water into the air – through the spaces between and around the trays. The bubbler runs 24 hours a day (it uses a mere 10 watts or so). This is maintaining humidity at 75% or above. The tray needs topping up with water periodically.

Light value is supplemented, and day length is extended by fluorescent strip lights. They contribute a little additional heat, when switched on – not much, as strip lights are very energy efficient, but some. In periods of hot weather (which sounds very unlikely writing this in December frost, but hopefully things will be better by the time this is read) any unwanted contribution to cabinet temperature from the lights could be avoided by locating the strip lights above the cabinet and outside it, rather than inside.

Cool white tubes are best for the lighting – the expensive Grow-Lux are not necessary for mere vegetative growth which is all we are interested in. Even so, I replace the tubes every 6-9 months, as the spectrum changes over time. The relative spacing is important. A distance of about 0.3 to 0.4 m between the leaves and the lamp tubes will give a light value of about 4-5k Lux on the leaves, which will be good for growth of most orchids; the only ones I can think of which will need it lower are jewel orchids (e.g. Anoectochilus and Goodyera) and they are not that popular nowadays so I doubt that any reader here will be interested in them (I can provide figures for anyone who is). Although Vandas, for example, theoretically will enjoy much higher levels, perhaps even three times as much, I have in the past had good growth rates, taking seedlings to a size where they had to go into the open greenhouse and then flower within 4-5 years, at these (4-5 Lux) levels. The lights are controlled by a time switch.

A few fine points about the design and use; you need to be able to access the plants without doing any serious dismantling, so some kind of lift off or swing open door is needful for the cabinet. Seedlings should be potted with a free-draining seedling compost – I often use well-washed coarse Perlite – and watered very little – kept moist all the time, but never wet or dry. The object is to get them to produce the best new root system as rapidly as possible, the roots made in the flask are adapted to Agar, and not to any kind of compost – this is of course the same point about changing an adult orchid from one kind of compost to another – the existing roots will not be adapted to the new compost and cannot change their structure, so a complete new set of roots is needed before the plant can function at its best.

Anti-fungal and anti-bacterial action is necessary on deflasking as a matter of routine, but if I wash off the Agar jelly – (optional) – then I use the kitchen cold tap and hope that the water is well-chlorinated this week; it is an excellent disinfectant. Or of course Physan, which I regard as an essential in the greenhouse, and personally I use it in all greenhouse watering and nutrition (1:1000 = 1 teaspoon in 1 gallon is a good normal rate; perhaps 3 times as strong when first de-flasking) and I never see crown rot despite drips from my upper tier of plants onto the lower tier, etc..

If you like all this and don’t want D-I-Y, Two Wests and Elliott will sell you a ready-made cabinet - 48 inch x 22 inch -(you have to assemble it) for £499-50.
My D-I-Y design will leave you enough change to fill the cabinet with orchid plants several times – not that I am knocking Two Wests; my reported experiences were with their excellent cabinets which I now regret not keeping… but that’s life.

Two strip lamps fitted to inside of cabinet

- Perspex panels
- Bubbles emerging
- Bubbler
- Hinged front door for access
- Water tray

Photo Geoff Hands
I have been unable to find the registered name to date. Flowered for the first time this spring and is basically white, flushed with pink and is, not surprisingly, very similar to *P. Joyce Hasegawa* (*delenatii x emersonii*)

*P. Ho Chi Minh* (*vietnamense x delenatii*)
Is now well known and has produced some wonderful cultivars. Both species are similar and the resulting hybrid is larger often with petals that have slightly ragged edges.
Life President               Keith Andrew Esq.

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Hon. Secretary
Ken Griffiths
Tally House
Hawthorn Road
South Bockhampton
Christchurch
Dorset
Tel. 01425 672492

Hon. Treasurer
John James
18 School Lane
St Ives
Ringwood
BH24 2PF
Tel. 01425 479223

Show Secretary        Mike Powell
Hon-Librarian             Leo Palmer

Committee
Glen Jamieson    Pam Miles
Colin Carter       Roger Russell

Top Orchid Editor
Allan Burdis
31 Heath Road
Walkford
Christchurch
Dorset
BH23 5RH
Tel. 01425 275251    E-mail : allanburdis@hotmail.com