



THE MONTHLY BULLETIN OF THE KU-RING-GAI ORCHID SOCIETY INC.

(Established in 1947)
A.B.N. 92 531 295 125

February 2020 Volume 61 No. 2
Annual Membership : **\$15 single, \$18 family**

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Next Meeting : Monday, 17th February, 2020 (*The roof is fixed, we are back at our old hall from this month*)

Venue : *The Lindfield Community Centre, corner of Bradfield Rd and Moore Avenue, West Lindfield.*

The hall is open from 6.30pm. Please try and get there early to help set up tables, chairs and lighting.

Benching is available shortly after 7pm but please be patient and wait until tables and dividers are in place. Or our Culture Class this month we will have Peter D'Olier talking about *Preparing different potting mixes to suit your watering practices*. This is a hugely valuable subject. Peter has recently changed his watering regime and has had to change his potting mixes to suit both the location in the greenhouse and the types of plants. Not all orchids are the same and to grow a wide range of them in one greenhouse you need to understand each plants requirements and be knowledgeable about all the tools you have to help you meet them.

The main meeting **commences at 8pm**. After the formalities of the general meeting, the judging, and the tea break, we have one of our favourite guest speakers – Garrie Bromley, who will show and tell us about all the awarded orchids from 2018. You will see some magnificent orchids and hear about them from one of Sydney's best growers.

Our **supper volunteer** for Feb. is **Pauline Onslow** - thank you. Some extra help on the night will be needed please.

Popular Vote last month – with changed arrangements and a temporary hall for the night, we suspended formal benching and classes last month and just held a popular vote among members present for the reduced benching. There was a lovely display of about 40 or so orchids. Great variety and wonderful quality to admire and desire. They couldn't all end up winners of course but here are a few of the very worthy runner up's.



Catt. leopoldii ↑
↓ Oedcm Hilo Daze



Brassavola nodosa ↑
↓ Sarc. Cecilliae



Paph. Susan Booth ↑
↓ Den. unknown



Laelia marcaliana ↑
↓ Onc. Aka Baby



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Society News (if anyone has a news item, please phone Jim on 9476 3383, or email at jimbrydie@bigpond.com)

President Dennys' Desk – Member's Social Event: At noon until 3.00 pm on Saturday the 28th March, a sausage-sizzle-BBQ and tea fest will be held at Janine's and Dennys' home in Hornsby Heights. The society will be using drinks and alcoholic beverages left over from the Christmas Party. The fare will be very simple and, the society will be paying for your bread roll, sausages, onions and some salad. Complimentary coffee and tea and tea and tea and more tea will also be provided. You are most welcome to bring other drinks as you need and/or a sweet if you like. This should be a good time to really get to know new folk in an informal and relaxing atmosphere. It is also a good time to think about ideas and suggestions to benefit members for the forthcoming year. **If you would like to come**, please RSVP by 17th March via the KOS email address or ring/SMS Dennys directly on 04388 77689. We will do our best to accommodate everyone who wishes to come but we will need to limit the number to between 30 and 40. Address details will be given on receipt of your RSVP.

Plants as prizes – One of the problems with offering small plants as prizes in raffles and such, is that they fail more often than larger plants. Over the year, KOS will endeavour to offer larger plants as prizes and thereby improve the chances of success and reduce the growing time to first-flowering, which will provide a more enjoyable experience.

Disposable cups - Many orchid societies are moving to reduce the number of non-degradable cups that are used for supper. KOS still has disposable cups in stock which can be run down over the next few months. So, as a suggestion, if you can bring your own cup for the night it would be good practice until we finalise a mutually acceptable policy.

New Members – We had 3 new members join us in January. A big welcome to Matt Roberts and Denise and Nigel Hendy. I hope you all enjoy our club, and would all members please make them welcome at our meetings.

Coming Event Dates

- 23 Feb – Hills District Orchids Open Day, 183 Windsor Rd, Northmead
- 21-22 Mar – Sapphire Coast Orchid Society Workshop, Merimbula RSL, plants also available for sale
- 2 x garden tours NZ & Timor-Leste – *outline circulated – brochures on request*
- 28 March – (Saturday noon – 3pm) Members home visit at the Angove's. See detail above.
- 28-29 March – Collectors Plant Fair, Hawkesbury Race Club, Clarendon Rd, Clarendon

First in Popular Vote last month – *Dendrobium Pixie Princess* – *grown by Trevor and Pauline Onslow*



Trevor and Pauline have been growing this lovely orchid for many years. It is just a magnificent hybrid. The flowers are almost exactly what you might imagine for a giant version of one of its parent species, and Australian native orchid *Dendrobium canaliculatum*, which is one of its parents and a species that was covered in great detail in an article in our newsletter in last year's February bulletin. Trevor and Pauline have won a few Best of the Evenings in the past, but not recently, so I have decided to write it up once more. It really deserves it.

Den. Pixie Princess was registered in 1986 and the parents are Den. Pixie Nani and Den. *canaliculatum*. The resemblance to *canaliculatum* is understandable given that that species is not only one of the direct parents but also features two generations back in its breeding. It represents 62.5% of the gene pool

compared to just under 8% for the next highest species contributor. Just the same though, Pixie Princess is quite a complex hybrid with breeding going back seven generations and involving 7 other species in its make-up.

The second direct parent – Den. Pixie Nani has two infusions of the big purple flowered species Den. *phalaenopsis* in its background (very similar to our Australian Den. *bigibbum*) but you would hardly guess that from the appearance of Pixie Princess. The other 6 species in the background are all members of the group known as antelope orchids (as is *canaliculatum* itself) because of the spiral twist nature of the petals, giving them an appearance reminiscent of the spiral horned African antelopes. All 8 progenitor species are what is known as hardcane *Dendrobiums* (as opposed to "softcane" species like Den. *nobile*). The 'hardcanes' are nearly all warm growers from lowland areas and are difficult to grow in Sydney without a heated growing area and a good understanding of their cultural needs.

As Garrie Bromley told us last meeting, Pixie Princess can be a temperamental type to grow and flower. Even when it is growing satisfactorily, it may not flower as well in some years. We can only guess that, that may be due to some unusual climatic trigger that in some seasons doesn't quite hit the button, but whatever it is, Trevor seems to have mastered its culture to perfection.

I admire this one in wonder every time I see it but as I have trouble even keeping Den. *canaliculatum* alive, I have never been tempted to try and acquire a piece. You have to know your limitations when you grow orchids. There will always be some that your particular conditions or skills make impractical for you. Hardcanes are one of mine.

Luckily for us, the Onslow's grow this one beautifully, so we all get to enjoy it most years. Congratulations Trevor and Pauline. Pixie Princess is a thing of great beauty.

Second in Popular Vote last month – Paphiopedilum philippinense – grown by Jim Brydie



Now how is that for coincidence. Last month we discussed Paph philippinense as a parent in a champion hybrid, and this month philippinense gets selected in the popular vote. I will try not to be too repetitive in providing information.

Philippinense is found mostly in the Philippine Islands but is also found in northern Borneo. In both locations it's habitat is leafy debris on limestone cliffs and boulders, at low elevations, sometimes in quite exposed situations. The picture here shows a small, scattered colony of philippinense plants growing in a rocky limestone area in the Philippines on Palawan Island. You can see that it is shaded but not too much so. The orchids are most likely growing in decayed plant material among cracks and fissures in the rock. Any rain that falls here would wet everything but run off very quickly, and the orchids would never be drowned.



As you might imagine from a lovely orchid like this, philippinense has been used a great deal in hybridizing. It has been a direct parent in 190 registered crosses so far and figures in the background parentage of nearly 900 Paph. crosses. That is a lot of variety to choose from if you fancy trying one.

Perhaps its most famous hybrid is Paph. St. Swithin, which results from its crossing with Paph. rothschildianum which is a close cousin and even more magnificent species. Paph. rothschildianum comes from only two places on the lower slopes of Mt. Kinabalu in North Borneo. Like philippinense, the plants grow in leafy humus clinging to the ledges of steep limestone cliffs and slopes. It occurs between 600-1200 m elevation and is found in both high light and shady situations.



Rothschildianum is really the queen of Paphs. It does vary a little from clone to clone but I have never seen one that wasn't magnificent. It can have up to 6 huge flowers on an inflorescence. Perhaps the main problem for a grower with these lovely orchids is that they are awfully slow growers. As a seedling they may grow for a number of years with the single fan of leaves they start with as a seedling. The initial fan will get bigger and bigger as the seedling gets stronger before it finally matures enough to start making additional fans of leaves. For me, these orchids can take 10 years or more to get big enough to flower for the first time although you do have to make allowances for me learning along the way. Specialist growers will no doubt do better.



The picture of St. Swithin here, is one I bought as a small plant many years ago. I can't recall if it was a seedling or a division but it sure was puny. The picture here shows its first flowering for me. It was a short inflorescence and just a single flower. It is not a champion. The best ones tend to be more like rothschildianum but mine looks about half way between the two parents. Boy was I pleased to see that flower, and naturally, as it is mine, I think it deserves an FCC.

The multiflowered Paphs are quite different to the standard single flower Paphs. They tend to have stiffer, longer leaves and slower, more epiphytic style. So stately and royal, but patience is one of the core requirements if you want to grow them. I think it is worth it.

Humour

A moment of tension in the Vatican.
If the Bishop moves forward, →
the Queen can take him.

A married man should forget his mistakes. There's no use in two people remembering the same thing!

Did you know that you can't use 'beefstew' as a computer password?
It isn't stroganoff.



A history of Orchid Propagation (Part 1)

Jim Brydie

At our last meeting there was a lovely orchid benched that I knew all about but had never seen in the flesh. There is an amazing story of orchid history that flows from it, so pull up a chair and I will try and tell you about it.

First up, the orchid to which I refer was a beautiful specimen of *Calanthe masuca* benched by Garrie and Lelsey Bromley. The Bromley's plant was magnificent. It must have had 8 or so fleshy new leafy growths developing from a cluster of tuberous pseudobulbs and a number of flower spikes.

The flowering style of this evergreen type of *Calanthe* is for the inflorescence to come up through the centre of the developing leaves, provided the pseudobulb beneath is big enough and mature enough. On the



Bromley's plant there was one advanced flowering spike and 3 or 4 slightly younger spikes still developing. Each inflorescence can carry between 10 and 15 flowers but they open rather successively from the bottom up, usually with 5 or 6 fully open at a time.

Calanthe masuca occurs naturally in many countries from Sri Lanka to India, across the foothills of the Himalayas – Nepal, Tibet, Bhutan, through Myanmar, Thailand all the way to China and Vietnam, and the Ryukyu Islands, but also down through Malaysia, Indonesia, and Borneo. Its elevation range is 400-1500 metres, so I would imagine it would tolerate shadehouse conditions in the coastal areas around Sydney, but might need some winter protection in harsher areas. These evergreen *Calanthes* (as opposed to the separate deciduous *Calanthe* group) are quasi terrestrial growers in shady moist areas, usually on very sloped ground that drains well.

I started out this article to tell you that *Calanthe masuca*'s place in orchid history is that it is one of the parents of the very first orchid hybrid to be registered but upon further research, I think it may have just been the second. The problem is that among the very first few hybrids registered, Veitch's Nursery registered both *Calanthe Dominyi* and *Calanthe Domini*. How confusing. I suspect that they were made about the same time but registration was generally done when the hybrid flowered, and history tells us that *C. Dominyi* (*Calanthe sylvatica* x *triplicata*) was the first registered in 1856, and *C. Domini*



(*triplicata* x *masuca*) was second in 1858. The parents of this second **Calanthe Domini** hybrid were actually registered as *furcata* x *masuca* but the name *furcata* is now accepted as a synonym for *triplicata*. All of which means Garrie and Lelsey's lovely *Calanthe masuca* is a parent of the second orchid hybrid ever made.

Both of these first orchid hybrids were made, raised, and named for John Dominy, a famous horticulturist who worked for the famous Veitch nursery in England at that time.

It sounds so simple doesn't it? 'Made and raised an orchid hybrid'. But did you know that it wasn't all that long before that time that it was still widely accepted that orchids didn't even have seeds?

In a wonderful paper titled "History of orchid propagation: a mirror of the history of biotechnology" which was written by Joseph Arditti (Professor Emeritus University of California,) and Tim Wing Yam (Senior Researcher, Singapore Botanic Gardens), and published in the Botanical Journal of the Linnean Society in 2008, they give a wonderful insight into the way early botanists were thinking, and their sequence of developments as they struggled to understand orchids as a plant group and the way they propagated in nature.

The article gives great detail of the significant individuals that make up the journey, the many instances of progress and dead ends along the way. It includes cross references to other publications and documents, a scope way beyond what I can offer you here but I have tried to provide you with some of their parts of the puzzle and information that I thought you would find interesting. The following is drawn almost entirely from their article and some parts which could not be told any better way than by the original authors, I have included as quotations (with some abbreviations to remove references etc, for which I offer my apologies to the authors). -----

And so to begin. Seeds? And if they don't have seeds, then what? – For perhaps two thousand years or more, many ancient cultures were aware of orchids as a different kind of plant. Some revered them. In Japan only the rich

and the aristocracy were allowed to cultivate certain types. Some cultures used parts of them for medicines or foods or other related purposes, but it seems that none in the early centuries wrote of orchid seeds. It seems that the dust like nature of orchid seeds made their nature and purpose go unnoticed by early thinkers and writers.

It is very likely that some here and there did realise that the flour like dust in orchid pods was seed. The article acknowledges 3 men in western cultures that wrote of or described orchid seeds. The earliest known of these was Conrad Gesner (1516–1565), a Swiss scientist who described and drew orchid seeds in 'Plinius Germanicus'. The second was Georgius Rumphius (1627 – 1702) in a six volume work ("Plinius Indicus") in Ambon Indonesia and although this work wasn't published until half a century later, after his death, Rumphius's was actually the first description published. The problem is that these sparks of understanding were not replicated and understood, and most plant studiers of that period had no idea how orchids reproduced.

There were many fanciful proposals as to how baby orchid plants arose in nature.

In the early 16th century, Jeremy (Jerome) Bock who was also known as Hieronymus Tragus wrote: "As soon as orchid flowers abscise, little pods arise in which no more is found than pure dust or flour. ..." He went on to suggest "that orchids came about from semen of birds and beasts which fell to the ground when they copulated."

The same thinking was behind an interesting proposed association between goats and a large terrestrial orchid (*Himantoglossum hircinum*), which occurs widely across Europe. It has large cylindrical heads of strangle looking, foul smelling flowers, the smell being likened to the smell of goats, which led to the belief that they derived from goat semen which dropped to the ground during copulation by goats and then "fermented" into orchids.

In the early 17th century, a German Jesuit Athanasius Kircher expounded on Bock's ideas in his 'Mundus Subterraneus' writing that "these plants arise from the latent survival force in the cadavers of certain animals [and] animal semen [that] falls to the ground in mountains and meadows." As proof, Kircher drew images of flowers which resemble animals (birds, goats, humanoid, sheep) whose cadavers and semen gave rise to orchids.



All of this may now seem rather silly, but remember that man was advancing very slowly down a path of scientific discovery. Dr Google had not yet been invented. Information was not being universally shared and built upon. Time moves slowly until it suddenly moves fast. The referenced paper goes on to tell us :

"As the nineteenth century started, the general belief among botanists was that orchids rarely produced seeds which, even if present, never germinated. However, on 5 January 1802 British botanist Richard Anthony Salisbury read a paper to the Linnean Society describing germinating orchid seeds and developing seedlings for the very first time. The talk was published 2 years later and included illustrations of seeds and seedlings of *Orchis morio* and *Limodorum verecundum* (*European terrestrial orchids*). Despite this being the first modern description of seeds and seedlings it once more did not seem to have drawn much if any attention and/or to have stimulated additional studies and/or reports at the time regarding British or other European orchid seeds and/or seedlings."

"Sometime between 1835 and 1838, David Cameron, Curator of the Birminham Botanical Garden at the time, saw 'self-sown seedlings in several of the pots' which contained 'British Orchidaceae [which were] cultivated [with] alpine plants.' Some of the seedlings were 'very small, and evidently seedlings of that year, others were much stronger. Of plants so obtained several...*Gymnadenia conopsea*, *Orchis maculata*, and *O. latifolia*...' flowered."

So now, the knowledge that orchids did have seed seemed more certain. Unless of course, there had been some funny business going on with cadavers, goats, or other such things in the greenhouse. Even so, the knowledge of how to germinate orchid seeds, if it existed, was not described. However, many horticulturists were now investigating.

After Salisbury and Cameron's publications, many must have been working to achieve a practical method but the first to succeed in raising and germinating orchid seeds in a botanical garden was David Moore who was Director of the Glasnevin Botanical Gardens in Ireland. In addition to seed growing, he was also interested in fruit production through hand pollination in a number of types of plants and is believed to have pollinated *Cattleya forbesii*, *Epidendrum crassifolium*, *Epidendrum elongatum*, and *Phaius albus* and produced seeds.

He started to experiment with the germination of these seeds around 1844 and published his findings in 1849, commenting that "at the present time there are few subjects connected with plant growing on which there is less recorded information than that of growing Orchids from seeds..." and added that the reasons why orchid seeds do not germinate in large numbers like those of other plants is not clear. After that he asserted that "when Orchid seed does vegetate under favorable circumstances, a very large number of the myriads of extremely minute seeds contained in the ovaries are perfect, whether artificially impregnated or not."

He proceeded to describe his germination method. "The manner of sowing the seeds, and treating the young seedlings, has been to allow the fine dust-like seed to fall from the ovaries as soon as they show symptoms of

ripeness, which is readily known by ovaries bursting open on one side. When this takes place, they are either taken from the plant and shaken gently over the surfaces of the other Orchid-pots, or on the loose material used for growing them in, or on pots prepared for the purpose, after which constant shade, a steady high temperature, with an abundance of moisture, are all requisites which are absolutely necessary to ensure success.

In the course of eight or nine days after sowing, the seeds, which at first had the appearance of fine white powder, begin to assume darker colour to the naked eye, and if looked at with a .. [magnifying device] .. evident signs of approaching vegetation may be perceived, which increase until the protrusion of the young radicle and cotyledon takes place which varies from a fortnight to three weeks. From this period of their growth the young plants grow rapidly and the rootlets lay hold of whatever material is supplied to them. If the seeds happen either accidentally or intentionally to be made to vegetate on bare wood, as in some instances has been the case here, the young roots extend themselves in different directions, adhering closely to the bark, and make great progress compared with the growth of the stems, thus affording beautiful examples of the manner in which epiphytal plants fix themselves so firmly... "The principal difficulty to contend with in rearing the young seedlings has been found to consist in their treatment during the first year, particularly the winter months... The second year's growth has been one during which the plants made much progress and the only two kinds which have been brought to a flowering state have bloomed the third season. These are *Epidendrum crassifolium* and *Phaius albus*, the latter being now in flower, exactly 3 years from the sowing of the seeds."

So now the ball had started to roll. After Moore published his report, at least two other British horticulturists also shared their experiences - Richard Gallier who was gardener for J. Tildesley, Esq., of West Bromwich, Staffordshire, and J. Cole, who held a similar position for J. Willmore at Oldford near Birmingham shared their experiences with all in the *Gardeners Chronicle* (the most important horticultural publication in the world at the time).

Cole's note was the first to be published after Moore's report. He wrote that his employer informed him: "that *Bletia* [now *Phaius*] *Tankervillæ* was some years since obtained from seeds sown in common soil; also *Epidendrum elongatum* sown on blocks of wood covered with moss. I have sown other sorts of Orchids at various times and in different ways, but without success... a few have been hybridised successfully here, so far as obtaining seed to all appearance perfect... and it has been sown, but it did not vegetate. *Cattleya labiata* was crossed with *C. guttata*, and swelled its pod (sic); *Calanthe veratrifolia* with *Bletia Tankervillæ*; *Dendrobium moniliforme* with other *Dendrobes*; and *Stanhopea Wardii* with one of the other *Stanhopeas*... I have the hybridised seed pod of *Stanhopea Wardii* by me, and shall be pleased to present some of the seeds to Mr. Moore or any other gentleman who may take an interest in raising seedlings."

Gallier reported in the 'Chronicle' that he crossed *Dendrobium nobile* with *Dendrobium chrysanthum*, obtained seed and : "sowed it in three ways: some on a log, with natural moss growing on it, suspended in a shady part of the Orchid-house; some was sown on an inverted flower pot, the inside of which was stuffed with sphagnum, and placed in a pan of water... neither of these two sowings vegetated."

For his third method, Gallier used two pots, one filled with sand and the other with water. He spread the seeds on a floating piece of cork covered with a bell jar. Then he placed the entire contraption in a shady part of the green-house. Two seeds germinated after three weeks. Eventually, Gallier had five plants all of which died when he removed the cork from under the bell jar and suspended it from the roof of his greenhouse.

A Belgian journal also reported Moore's, and Cole's experiences and stated that orchid propagation through seed germination in the greenhouses of Europe would open a new avenue for the culture of "these bizarre plants".

Which brings us to our first registered orchid hybrids - *Calanthe Dominyi*, and *Cal. Domini*. Mankind had a way to make and raise orchid seedlings but the process was very hit and miss and some orchids were more easily propagated than others. There was obviously much more to learn but progress was much more likely now we knew it was at least possible. ---***For more, read Part 2 next month.***

Reference : "History of orchid propagation: a mirror of the history of biotechnology" which was written by Joseph Arditti (Professor Emeritus University of California,) and Tim Wing Yam (Senior Researcher, Singapore Botanic Gardens)

Ice Fishing - A blonde wanted to go ice fishing. She'd seen many books on the subject and finally getting all the necessary tools together, she made for the ice. After positioning her comfy footstool, she started to make a circular cut in the ice. Suddenly, from the sky, a voice boomed "THERE ARE NO FISH UNDER THE ICE."

Startled, the blonde moved further down the ice, poured a thermos of cappuccino, and began to cut yet another hole. Again from the heaven the voice bellowed, "THERE ARE NO FISH UNDER THE ICE."

The blonde, now worried, moved away, clear down to the opposite end of the ice. She set up her stool once more and tried again to cut her hole. The voice came once more, "THERE ARE NO FISH UNDER THE ICE."

She stopped, looked skyward, and said, "IS THAT YOU LORD?"

The voice replied, "NO, THIS IS THE MANAGER OF THE HOCKEY RINK."