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### Editor's Ramble

I have been growing orchids for over 30 years and right from the early days, I specialized in Odonoglossum which seem to do very well where I was on the farm. I also dabbled in Miltoniopsis, the first 4 came from Andy Easton's Geyserland nursery. Although they flowered for me, I couldn't maintain the night temperatures they needed and so they didn't thrive and so eventually fell by the wayside.

Since then the farm has been sold and we moved to Kihikihi six years ago where we constructed a fit for purpose Orchid house which is easier to heat using 2 office type heat pumps.

At the Orchid Society's Xmas raffle Cheryl got a couple of Miltoniopsis and they thrived in the new green house. So this lead to a search for more and now we have about 50 of them.

At the beginning of this year Allan Watson started the NZ Miltoniopsis Facebook page which seem to meet a need and now already has about 90 followers. But it quickly became obvious that there was a group of keen growers that it didn't reach and they are those who, for whatever reason, don't, won't or can't use Facebook. So this Newsletter is to try and bridge the gap and bring more growers together. It will not replace the Facebook page but it will complement it.



To make the Newsletter work needs the input of all of you with your photos, articles, points of view and questions about the problems that you may be experiencing and answers that you may be looking for. It can also be used to sell surplus plants or locate plants that you may be looking for. To this end I have offered our commercial growers free space to advertise Miltoniopsis that they have for sale now and in the future and also to outline their plans for this genera in the future .

Alan.

## Why a Miltoniopsis Group?

The genera Miltoniopsis (Mps) can almost be considered a lost generation. Very few orchid growers have these plants in their collections. For many years they have been considered hard to grow requiring special conditions and the costly growing element **HEAT**.



Recently a group of likeminded orchid growers have gotten together to rekindle the growing of Mps. A facebook page has been established for NZ growers and so not all is lost on those who do not have access to this social media this newsletter is being produced.

The facebook page has attracted Mps growers from all corners of the world. These growers have been only too happy to share not only photos of their plants, but advice as to how they have achieved the results obtained thus far.

The overall aims and objectives of this Miltoniopsis group is: To foster and enhance the growth of likeminded Mps growers within NZ.

Some of the NZ registered Mps. Thanks to the late E. Perrott:

1. Mps. Aotearoa,  
(Mps. Zorro x Mps. Capitola)
2. Mps. Meryan Leigh,  
(Mps. Dumas Bay x Mps. Nancy Binks)
3. Mps. Sleeper,  
(Mps. Memoria Scottie Griffiths x Mps. Capitola)
4. Mps. The Universe  
(Mps. Harold Ripley x Mps. Demie de Pas)
5. Mps. Whale Bay.  
(Mps. Pam's Bay x Mps. Grouville)

There have also not been a great number of Mps. awarded within the NZ orchid judging systems and one could almost say even less registered crosses.

During research we have found that there are very few yellow Mps available hence a thought that an Mps. breeding program concentrating on Yellows may add value to the NZ Mps. Stock and not forgetting others enhance their growth profile and or shape.

This magazine aims to act as a hard copy medium sharing ideas and growing info among those who may wish to pursue the growing of Mps.

Allan Watson





# Miltoniopsis vexillaria

## Miltoniopsis vexillaria [Rchb.f] Garay & Dunsterville 1889

Planché XIII

### Discovery

*Miltoniopsis vexillaria* was first discovered in 1867 by the Victorian plant collector, David Bowman, who had been sent to South America by James Veitch & Sons of Chelsea, London. Bowman was unable to send a live sample back to England before he died of dysentery. Subsequently, other plant collectors, including Gustav Wallis and Benedikt Roezl, also came across the plant but the first collector to successfully introduce it to England was Henry Chesterton. In 1870, Chesterton had been sent by Harry Veitch to Colombia with the specific instructions to locate and bring back to England "the much-talked-of and long-desired "scarlet *Odontoglossum*". According to the account in Hortus Veitchii:

"Provided with but the scantiest information as to the native habitat, long kept secret and shrouded in mystery, Chesterton started, and not only succeeded in discovering the plant, but safely introduced it to Chelsea, where it flowered for the first time in 1873."

ORIGIN/HABITAT: Colombia and Ecuador. Originally discovered in Colombia, *Miltoniopsis vexillaria* is found in isolated patches in the central mountain region and on the western slopes of the Cordillera Occidental from the province of Antioquia southward into Ecuador. Plants usually grow on the margins of very wet mountain forests at 4250-7050 ft. (1300-2150 m). Although found in many Colombian locations, *Miltoniopsis vexillaria* occurs in moderate numbers in the cool mountains of Antioquia and Caldas. Veitch (1887-1894),

### Description

The plants are pale green and about 12 inches (300 mm) tall. Inflorescences are about 12 inches (300 mm) long and carry up to four blossoms. The large, showy flowers are 2 inches (51 mm) – 4 inches (100 mm) across. They may be pink, often with white margins on the segments, or they may be white, sometimes with a pink flush or pink stripes. The lip, which has yellow markings at the base, is also marked with maroon stripes and blotches. The blossoms are very flat.

### Distribution

*Miltoniopsis vexillaria* is found in isolated patches in the central mountain region of Colombia and on the western slopes of the Cordillera Occidental from the department of Antioquia in the north and also further south in northern Ecuador. It grows on the margins of montane forests at between 3,600 feet (1,100 m) and 7,250 feet (2,210 m).

### Culture

*Miltoniopsis vexillaria* is a cool growing species and thrives in a temperate, frost-free climate. It should be grown in moderate light with intermediate to warm temperatures and requires a humidity range of 50 to 90%. During hot summers, the plant should be watered daily. In the winter, when the weather is cold and dull, the plant should be watered sparingly, but the growing medium should not be allowed to dry out. The winter temperatures should not fall below 10° Celsius (50° Fahrenheit), and good ventilation



ODONTOGLOSSUM VEXILLARIUM RCHB. VAR. PURPUREUM

Miltoniopsis vexillaria — illustrated by Lindenia

P. De Fournier del.



## The Species Heritage

There are only Five recognised Miltoniopsis species and they are Mps. bismarckii, phalaenopsis, roezlii, vexillaria and warszewiczii. Of these five, three have made major contributions to the hybrid scene. Mps. vexillaria has contributed the most with 111 F1 crosses and a total progeny of 2635. Mps. roezlii is a close second with 88 F1 and a total of 2470 progeny. A bit further back, Mps. phalaenopsis comes third with 27 F1 and 1835 total progeny. The remaining two, Mps. warszewiczii and bismarkii come a distant last with 11 F1 and 13 total, and 6 F1 and 15 total progeny respectively. (*info source = OrchidWiz*)

As you can see, only the first three species are involved in the vast majority of Mps. Hybrids, which means that they are all very closely related with a great number having descended from a combination of all three.

In this issue, I want to look at the influence that Mps. vexillaria has had on the modern hybrids

When crossed with Mps. phalaenopsis



Produced Mps. Venus

Reg. in 1917 by Charlesworth

When Mps. Vexillaria was crossed with Mps. Venus, produced Mps.



Kenzie (left) reg. 1926 Black & Flory. Mps. Kenzie was used to produce Mps. Princess Margaret which was used to produce Mps. Lycaena (right) which was used to produce a further 63 hybrids many of which are in the background of today's hybrids. Below are three of our modern day hybrids showing the percentage of Miltoniopsis vexillaria in each of them



Mps. Taya Diggs

62% vexillaria, 34% roezlii  
0.6% Phalaenopsis, 3.5% unknown



Mps. Herralexandre

49.7% vexillaria, 39.8% roezlii  
2.7% Phalaenopsis, 7.8% unknown



Mps. Andrea West

45.6% vexillaria, 38.9% roezlii  
4.5% Phalaenopsis, 10.9% unknown

## MILTONIOPSIS BREEDING AND CULTURE

You may be aware that the Colombian genus *Miltoniopsis* has only recently been accepted as a genus separate from the genus *Miltonia*.

The genus *Miltonia* was based on the Brazilian species *Miltonia spectabilis* by John Lindley in 1837.

*Miltonia spectabilis* is a beautiful species in its own right and is used in a lot of hybridizing. But due to sterility problems, it is rarely used with the Colombian *Miltonias*. It tends to reduce the numbers of flowers per inflorescence, since it is single flowered itself. When several flowers per inflorescence are produced by the hybrid, the flowers are not well displayed, but are bunched together at the end of the inflorescence.

In 1889 Godefroy-Lebeuf separated the six 'cool growing', or 'Colombian *Miltonias*', also called 'Pansy Orchids', into the genus *Miltoniopsis*.

The Andean Mountains in Colombia are the centre of distribution.

*Miltoniopsis* bloom in early spring to June, but the best quality flowers are produced in early spring.

### THE SPECIES

Virtually all the hybridizing has been done with four species.

- The most important species for hybridizing is *Miltoniopsis vexillaria*.
  - It occurs in Colombia and Ecuador
  - It imparts the large size and flat shape to its hybrids
  - It has a yellow mask on white to rose-pink flowers
  - The next important species we can only speculate about at present, because it apparently became extinct before it was recognized to be a species different from *M. vexillaria*. One important plant considered to be that species, was known as *M. vexillaria* 'Mem. D.G. Owen'. This species had:
    - Smaller flowers than *M. vexillaria*
    - Cupped lips, not flat as in the true *M. vexillaria*
    - A dark instead of a yellow mask.
    - It also has different breeding characteristics, in breeding 'Waterfall' *Miltoniopsis*.
    - The third species which is also very important is *Miltoniopsis roezlii*.
    - It occurs in Columbia, Panama and Costa Rica.
    - It is used in red breeding with the normal forms of the previous two species.
    - The alba forms are used in yellow and white breeding. Unlike the alba *M. vexillarias* the alba *M. roezlii* are vigorous.
    - The last species of importance is *Miltoniopsis phalaenopsis*.
    - It occurs in Colombia,

It is indispensable in 'Waterfall' breeding.

There are two more *Miltoniopsis* species.

- *Miltoniopsis warscewiczii* is used in a bit of breeding as *Miltonia endresii*. (Since the name *Miltonia warscewiczii* is already used for an entirely different species, now properly called *Miltonioides warscewiczii*, the species epithet 'warscewiczii' could not be used in the genus *Miltonia*. It did not turn out to be a noteworthy parent even though used in crosses such as *Miltoniopsis* Ellen Letcher, M. San Roberto. M. Enchra, M. Halls Lake.

- It occurs in Costa Rica and Panama.

- *Miltoniopsis santanaei* is the last species and it is not well known. No crosses are registered with it.

It occurs in Venezuela.

### RED BREEDING

The famous *M. vexillaria* 'Hillian' imparted its good shape and large size to present day *Miltoniopsis*. *M. roezlii* is the best parent providing the colour to red hybrids.

Many crosses of *M. vexillaria* using both the true *M. vexillaria* and the *M. vexillaria* 'Mem. G.D. Owen' were made with *M. roezlii* resulting in the important M. Bleuana hybrid. By selecting progeny in which the basal colour spot of *M. roezlii* was bleeding upward on the petals, a solid red colour was finally

achieved.

Then shape and substance of the above M. Bleuana was improved with further crossing and selecting using such important parents as:

M. Bleuana 'Princess Elizabeth' and in later generations M. Mem. H.T. Pitt. The M. Mem. H.T. Pitt was an early, often poorly shaped cross, but producing a significant number of red clones. M. Lycaena 'Stamperland' CCM/AOS and M. Limelight 'Imogene Smith' CCM/AOS, both have red and white flowers and are further important parents and best of all they are still in cultivation today.

Their crossing produced M. Lola Lane. 10% of the plants in this cross had solid red flowers.

## **PINK BREEDING**

This is similar to red breeding but concentrate more on selecting from richly coloured clones of *M. vexillaria* and those that are well shaped such as:

*M. vexillaria* 'Lambeaiana' FCC/RHS - this is not a true alba clone, but contributes excellent shape and good light colour to its progeny. (Mericlones are available from Oak Hill Gardens).

M. Dearest 'Dark Pink' CCM/AOS and M. Marie Riopelle 'Portland Rose' FCC/AOS are some of the best available today.

## **YELLOW AND WHITE BREEDING**

*M. vexillaria alba* is crossed with *M. roezlii alba* where the latter species introduces vigour to the crosses.

Most of the progeny will be white, but the odd one will show a hint of yellow. The yellows are then crossed with each other in the hope of intensifying the colour in some of the progeny. Fading of mature flowers is also a problem. There is still lots of work to be done in that area.

## **WATERFALL BREEDING**

There are two genes involved, but they are dominant when both are present.

This type of breeding gets its distinctive genes from *M. phalaenopsis*.

Depending on whether the true *M. vexillaria* or *M. vexillaria* 'G.D. Owen' is used as the other parent we get black or white waterfalls.

White Waterfalls - Or Celle-type - with white circles on red background. These all have *M. vexillaria* 'G.D. Owen' in their background.

M. Celle 'Wasserfall' HCC/AOS, CCM/AOS is widely available but is a poor parent producing few seedlings.

M. Beethoven 'Lyoth Tycho' AM/AOS looks much like M. Celle, but supposedly contains no *M. phalaenopsis*. This is almost certainly a case of mixed up labels! Unlike the M. Celles, it is a good parent.

Black Waterfalls - These use the real *M. vexillaria* with the yellow mask! Important milestones were several M. Venus clones such as 'Burnham', and 'Facinator' as well as M. Violet 'Tears' (M. Lypatia x M. Lingwood).

This was the only plant in the cross to produce the teardrop pattern. It therefore became a cornerstone plant in further breeding.

This type of breeding needs improvements in size and number of flowers per inflorescence, but crosses such as M. Woodlands, M. Cindy Kane are attractive anyway and are used in lots of further breeding.

My favourite clone in this type of breeding is M. Echo Bay 'Midnight Tears'. It combines both types of waterfalls. It has a black waterfall outlined in white on a dark red background.

I think it is super!! - even if the lip curls when grown less than optimally! (Mericlones available from Doug and Terry Kennedy, Thornhill, Ont.)

A note on Miltoniopsis intergeneric crosses - Miltoniopsis is a very reluctant breeder with other genera and the progeny of such crosses are not very fertile. As a result, there are very few such crosses.

References. AOS bulletins - Oct. 1982, Nov. 1982, Jan. 1977

## **CULTURE**

The three pointers marked with an asterisk are of the utmost importance. Remember that the plants originated on the moist but windy Andean mountains.

- Water - \*CONSTANT moisture - use rainwater (Ph of 7 to 7.5 is best)
  - Potting - repot \*ANNUALLY in fresh medium.
    - o Repot during cool months only. Repotting in the spring is best.
    - o New growth should be 4-5cm (1.5 - 2") tall at repotting time.
    - o Do not overpot - give plant 2-4cm (1-1.5") room around the edge.
    - o Keep plant size to a minimum of 4 - 5 bulbs when dividing.
    - o Potting Medium - Must be well drained. eg:
      - o Fine bark and perlite
      - o Rockwool and coarse perlite
      - o New Zealand Sphagnum (advisable in warm and dry environments).
    - o Light - 1000 (summer) - 1500 (rest of year) footcandles. 2000 footcandles for the Brazilian species. A light meter in footcandles may be obtained for about \$100 from All-Lighting in Mississauga. Tel 416-564-5483
    - o Humidity - 60% min
    - o Air Movement - \*Constantly and from BELOW
    - o Temperature
      - o 60F at night, 45 - 55F can be tolerated if plants are slowly acclimated to it and if air movement is excellent and the plants are kept on the dry side. Epsom salts (magnesium sulphate) at 1/2 teaspoon per gallon helps cold tolerance.
      - o 70F during day. 80F can be tolerated and even 95F for short periods.
    - o Feeding - Light feeders
    - o Use half the concentration recommended for other orchids.
    - o Using 18 - 22% of Nitrogen in the form of urea appears to be very beneficial.
- Epsom salts as mentioned above, for more flowers and cold tolerance.

Reference: Miltoniopsis Culture by E.J. "Woody" Carlson.

*Inge Poot - Southern Ontario Orchid Society*

*This article was published in the Canadian Orchid Congress News vol. 5.2, April 1993—Ed.*

*Miltoniopsis santanaei is considered to be synonymous with Miltoniopsis roezlii by Kew—Ed.*

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This concept allows for the owner of the plant to manage their pollen if they choose to, it simply requires the existence of that pollen to be registered in a central register (Bank) or alternatively allow the Pollen Bank to hold the pollen and manage the distribution.

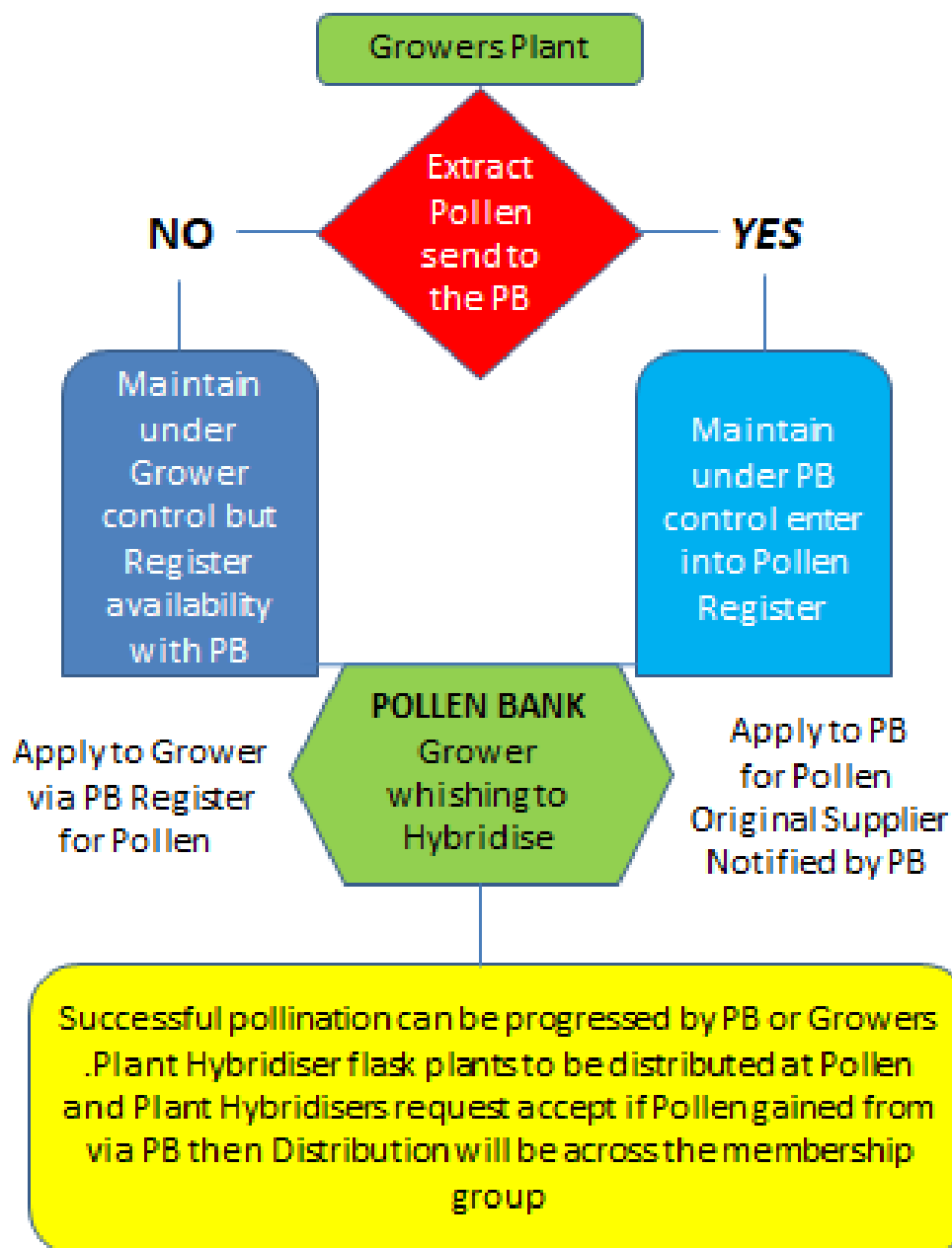
An independent lab has been sourced (no commercial alliance) where growers can get their seed pods turned into flask's and or the Pollen Bank can do the same. Difference being that grower held flasks are

distributed at the discretion of the grower. Pollen Bank Flasks are disputed to NZ members of the Pollen Bank at cost. Those interested in being part of this exercise will receive formal protocols on the gathering and storage of Mps. Pollen. (*advised under controlled conditions can last 2 years*)

One of the key advantages of this process is the maintenance of a single register allowing those wishing to undertake hybridization access to a wider variety of pollen and an indication as to whether or not a particular cross has been attempted before. If you wish to be part of this process please contact the editor.

**The flow chart presented provides a basic outline of this concept.**

## Flow Chart for Miltoniopsis Pollen Bank





## Temperature and Photoperiod Regulate Flowering of Potted *Miltoniopsis* Orchids

by RG Lopez - 2006 -

*Miltoniopsis* orchids have appealing potted-plant characteristics, including large, fragrant, and showy pansy-like flowers that range from white and yellow to shades of red and purple. Scheduling orchid hybrids to flower on specific dates requires knowledge of how light and temperature regulate the flowering process. We performed experiments to determine whether a 9- or 16-h photoperiod [short day (SD) or long day (LD)] before cooling the plant, during the growing season, to initiate flowering (vernalisation) and vernalisation temperatures of 8, 11, 14, 17, 20, or 23 °C under SD or LD regulate flowering of potted *Miltoniopsis* orchids. Flowering of *Miltoniopsis* Augres 'Trinity' was promoted most when plants were exposed to SD and then vernalized at 11 or 14 °C. Additional experiments were performed to determine how durations of SD at 14 °C influenced flowering of *Miltoniopsis* Augres 'Trinity' and Eastern Bay 'Russian'. Plants were placed under SD or LD at 20 °C for 0, 4, 8, 12, or 16 weeks and then transferred to 14 °C under SD for 8 weeks. Another set of plants was placed under SD or LD at 20 °C for 8 weeks and then transferred to 14 °C with SD for 0, 3, 6, 9, or 12 weeks. After treatments, plants were grown in a common environment at 20 °C with LD. Flowering of *Miltoniopsis* Augres 'Trinity' was most complete and uniform (>90%) when plants were exposed to SD for 4 or 8 weeks before 8 weeks of cooling at 14 °C. Flowering percentage of *Miltoniopsis* Eastern Bay 'Russian' was >80% regardless of cooling, photoperiod or duration.

*Plant material.* Plants of the vegetatively propagated 'Trinity' clone of the hybrid *Miltoniopsis* Augres (*Miltonia* Pam-pam × *Miltonia* Alger) were transplanted into 8- and 10-cm pots with a medium containing 80% fine-grade douglas fir bark and 20% medium-grade perlite (by volume) Plants of the 'Russian' clone of the hybrid *Miltoniopsis* Eastern Bay (*Miltonia* Andy Easton × *Miltonia* Le Nez Point) were transplanted directly into 10-cm pots. Plants were grown at about 25/14 °C day/night under natural day length under 60% shade Three hundred fifty of these 'Trinity' and 'Russian' plants were received on 22 July (~NZ Jan) 2002 and 22 Sept. (~NZ March) 2003, respectively, and were subsequently grown at a constant temperature of 20 to 23 °C. on a constant 16 h (0600 to 2200 HR), daylengths with day-extension lighting extra 10% light at plant height [long day (LD) HPS]. The greenhouses had a permanent woven shade curtain that reduced light by about 55% and by applying whitewash to a maximum PPF of 60% shade.

*Experiment 1* was growing the plants under different day length at different cooling temperatures for 8 weeks. *Miltoniopsis* Augres "Trinity" were grown at 23°C under 9hr Short days and 16 hrs Long days from 28 August (NZ February) Year 1 and 8 Dec (NZ June) Year 2, The day length was created by retracting the black out cloth and turning on the lights from 5pm to midnight. On 23 Oct (NZ April) Groups of 20 plants were grown at 8, 11, 14, 17, 20 and 23°C for 8 weeks at about 40 % Relative humidity.

*Experiment 2* The *Miltoniopsis* were grown from 0, 4, 8, 12,,16 weeks from 28 August (NZ Feb) 2002 and 25 September (NZ March) 2003 under 9 hour days at 20° C then 8 weeks at 14 ° C.

*Experient 3* *Miltoniopsis* Augres 'Trinity' (Year 1) and Eastern Bay 'Russian' (Year 2) were grown for 8 weeks at 20 °C under Short days or Long Days beginning on 28 Aug (NZ Feb) 2002 and 25 Sept (NZ March) 2003, respectively. The plants were then cooled for 0, 3,6,9,or12 weeks at14°C. After the cold treatments, plants were grown at 20 °C under Lights.

Plant were irrigated as necessary with water soluble fertiliser (mg/L or ppm) 125N, 12P, 100K, 65Ca,

1Fe, 0.5Mn, Cu, and Zn, 0.3 B and 0.1Mo. In 80% fine-grade douglas fir bark and 20% medium-grade perlite (by volume).

**Results** Flowering of *Miltoniopsis Augres 'Trinity'* was most complete and uniform (>90%) when plants were exposed to Short Days for 4 or 8 weeks before 8 weeks of cooling at 14 °C. Flowering percentage of *Miltoniopsis Eastern Bay 'Russian'* was >80% regardless of precooling day length or duration.

Time to flower from 20 °C was similar for all treatments and averaged 76 and 56 days, respectively, for *Augres 'Trinity'* and *Eastern Bay 'Russian'*. The number of flowers per plant and their height were not influenced by normal



**Mps. Augres 'Trinity' AM/RHS**

growing, day length or cooling duration.

We postulate that, similar to that of other flowering plants, a juvenile phase exists in *Miltoniopsis* and plants must reach a certain stage of growth before attaining the capacity to flower. Thus, sexual reproduction is delayed until plants reach a size sufficient to maintain the energetic demands of flowering and seed production. If an immature pseudobulb

(<6 cm in height) was placed in an

inductive treatment, it was incapable of initiating flowers. However, immature pseudobulbs >7 cm had the capacity to initiate flowers, which could explain the variability in time to flowering.

*Phalaenopsis* orchids can be precisely scheduled into flower by maintaining vegetative growth at a high temperature (e.g., 28 °C) and inducing flowering at a lower temperature (<25 °C). Conditions that inhibited flowering of *Miltoniopsis* the most (constant exposure to Long Days at 23 °C) elicited heat-stress symptoms in plants, and plant vigour gradually declined. Therefore, we have not identified environmental conditions that can strictly control transition from the vegetative to reproductive state.

*First of 2 scientific articles simplified by Brian Pryor.*

**I hope to get the next issue out in early September but that will largely depend on you, the reader.**

**I need your input—your views, comments, questions, photos and ideas. In particular, photos of *Miltoniopsis* in shows or awarded, also how you grow your plants. Only by sharing will we progress.**

**Please send your contributions to me at [lochaven999@gmail.com](mailto:lochaven999@gmail.com) by or before mid August**



**Mps. Eastern Bay 'Russian'**