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# More Than Just a Flower

## *The Orchid's Manifold Faces*

The 20<sup>th</sup> World Orchid Conference will once again be held in Singapore from 13–20 November, at the Marina Bay Sands Expo and Convention Centre. This major event is regarded as the “Olympics of Orchids”. World Orchid Conferences were initiated in 1952 by Gordon W. Dillon, from the American Orchid Society. He was also the editor for American Orchid Society Bulletin from 1943–1967, and from 1970–1973. The first conference was held at St. Louis, Missouri in October 1954. Since then, it has been held once every three years. Regarded as the most significant event in the international orchid circuit, it attracts academics, orchid breeders and enthusiasts who gather to share about the promotion, cultivation and study of orchids.

The 4<sup>th</sup> World Orchid Conference was held in Singapore in 1963 from 3–10 October. It was jointly sponsored by the Malayan Orchid Society, Royal Horticultural Society and the American Orchid Society. This first major orchid event hosted in Asia included an orchid show at the Singapore Turf Club, a proud showcase of the rich variety of orchids from all over the world. This event attracted 700 delegates from 45 countries.<sup>1</sup>

### Parade of Orchids

Flower shows have had a long history in Singapore. According to *The Straits Times*, they were held in Singapore in 1884–1900 and in 1931–1937. When the Singapore Gardening Society was formed in 1937, they took over the organising of flower shows till 1941, when the “Grow More Food” show took their place.<sup>2</sup> Orchids were the mainstay in these shows. The flower or horticulture shows continued after the war, growing in magnitude and scale. Apart from domestic exhibitions and events, Singapore’s orchid hybrids also participated in overseas competitions.

Singapore’s inaugural international garden and flower show was held in December 2006. Known as the Singapore Garden Festival, it was a major attraction, to welcoming approximately 200,000 visitors<sup>3</sup> throughout the event. And the numbers kept increasing for the subsequent Garden Festivals held in 2008 and 2010.

Competitions to judge award-winning orchids are common in flower shows. Cups, medals and other special prizes have

been awarded to the winners ranging from gardening hobbyists to firms in the horticulture industry. The oldest awarding body for orchids is the Orchid Committee of the Royal Horticultural Society.<sup>4</sup> It classifies its awards as follows: First Class Certificate (FCC), Award of Merit (AM), and Highly Commended Certificate (HCC). In Asia, the oldest awarding organisation is the Orchid Society of Southeast Asia.<sup>5</sup>

According to Teoh Eng Soon, an orchid enthusiast, awards from these particular societies are most highly valued: the Royal Horticultural Society, American Orchid Society, Orchid Society of Southeast Asia, Orchid Society of Thailand, Hawaiian Orchid Society, South Florida Orchid Society and the Australian Orchid Council.<sup>6</sup> These awards recognise the best orchids grown, encourage research and reward the growers and breeders for their efforts.

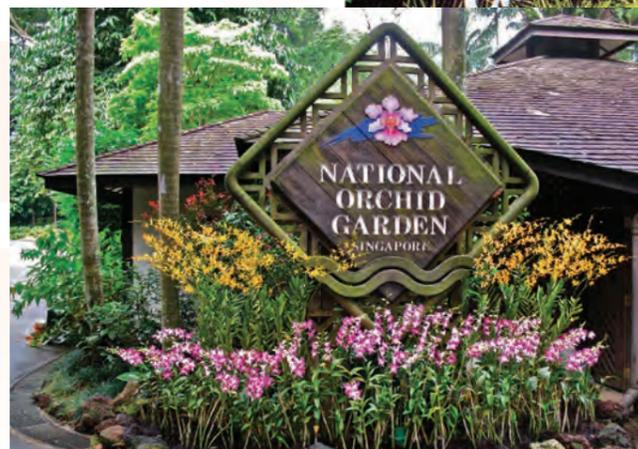
### Orchids — More Than Just a Flower

Orchids have enjoyed admiration from generations of artists, gardeners and philosophers. Confucius said, “acquaintance with good men was like entering a room full of fragrant orchids. One barely notices the scent, but as time passes a subtle influence will

**The 20<sup>th</sup> World Orchid Conference:  
Where New and Old World Orchids Meet**

Home to a botanic gardens famed for its orchid research programmes, one of the oldest active orchid societies in the world — the Orchid Society of Southeast Asia (OSSEA), and to Vanda Miss Joaquim, its national flower, Singapore is one of the most important producers of orchids in the world. A key international marketplace for orchids from both the east and the west, Singapore is the perfect venue for 20WOC, and the only Asian city to have had the rare privilege of hosting the iconic international event a second time. Set to take centre stage on the world’s floricultural calendar, this triennial international event will be held at Marina Bay Sands Expo and Convention Centre from 13 to 20 November 2011.

Courtesy of the 20WOC.



A

The National Orchid Garden offers a permanent showcase of the largest display of tropical orchids in the world, including "hand-crafted" orchids bred by the Gardens' horticultural staff. Source: Simon McGill.

B

Before the three-hectare National Orchid Garden was constructed, the one-hectare Orchid Enclosure at the Singapore Botanic Gardens was home to the many varieties of orchids that were developed through the orchid breeding programme. Courtesy of Singapore Tourism Board.

C

Freshly cut orchids are prepared for export, delivery and arrangement by the staff at Toh Orchids at Sungai Tengah. Courtesy of Ministry of Information, Communications and the Arts, Singapore.

D

A watering machine traverses the greenhouse aisles at Toh Orchids. Courtesy of Ministry of Information, Communications and the Arts, Singapore.

E

Luscious orchid blooms thrived at the Mandai Orchid Gardens, which closed on 31 December 2010. Courtesy of Ministry of Information, Communications and the Arts, Singapore.

be exerted to one".<sup>7</sup> There is even has a legend attributed to one of its species. According to the Javanese, the foliage of *Macodes petola* (also known as jewel orchid, famed for their striking leaf patterns) arose from shreds of a magic silk scarf that had been placed on jagged rock by a beautiful goddess.<sup>8</sup>

The orchid family, *Orchidaceae*, is one of the largest families of flowering plants and has about 25,000 species. With the sheer amount of the species under this family, some are still waiting to be discovered, while new species are being found and hybrids being created all the time. The orchid derives its name from the Greek term, *orchis*, meaning "the testicles", an association made by Theophrastus (c. 370–c. 287BC), with reference to the shape of the root tubers of species in Greece. The ophrastus was a Greek philosopher who wrote two large botanical treatises, *History of Plants*, dealing with classification and distribution, and *Causes of Plants*, dealing with structure and physiology. Later, Carl von Linnaeus (1707–1778), a Swedish naturalist and physician, who is well known as the "Father of Plant Taxonomy", retained this name in his *Species Plantarum* (1753), which introduced the concept of binomial nomenclature.<sup>9</sup>



B



C



D



E

Orchids can be commonly found in homes, hotels and offices. Flourishing in all parts of the world, they come in different colours, shapes and sizes, and can be found growing in a wide range of environments. Teoh summarised it best, when he drew attention to the resemblance of orchids to insects and even slippers:

" There are orchids which resemble moths (*Phalaenopsis*), butterflies (*Psychopsis papillo*), the slippers of Aphrodite or moccasins (*Paphiopedilum* and *Cypripedium*), dancing ladies (*Oncidium*), spiders (*Brassia*), scorpions (*Arachnis*) and bees (*Ophrys*).<sup>10</sup> "

Orchids also have several uses, in addition to their being ornamental plants. The vanilla seed capsule is a common ingredient used in baking. Derived from *Vanilla planifolia* orchid, it is also used in beauty products like perfume and aromatherapy oils.

Certain orchids are also used for food or food supplements. For instance, the leaves of one species *Anoectochilus* have been sold as a vegetable in Malaysia, and the leaves of *Dendrobium salaccense* are cooked and added as a seasoning with rice. In 2005, chef Choo Kwang Keong tried to introduce the eating of orchids in Singapore. Classes were held at the Mandai Orchid Garden as part of the Singapore Food Festival, to teach people how to cook with orchids.<sup>11</sup>

Some orchids have been used in folk medicines and cures. In the Malay Peninsula region, women in Malaysia would make a drink from the boiled leaves of *Nervilia aragoana* to prevent sickness after childbirth. In Malacca, boils are treated with a poultice made from *Oberonia anceps*.<sup>12</sup> In India, there has been study made on some orchids as traditional medicine.<sup>13</sup>

### Singapore Botanic Gardens — The Powerhouse for Orchid Hybridisation Research

The Singapore Botanic Gardens played a pivotal role in spearheading orchid research and conservation, though orchids had been an object of study in Singapore even before its establishment in 1859. The Agri-horticultural Society, a private body, was already active in orchid cultivation. There was mention of a "derelict orchid house" that was inherited when the Botanic Gardens took over from the Society.<sup>14</sup>

The variety of tropical orchids has been a fascination for horticulturalists. Records of plant exchange at the Gardens from 1875 onwards showed a high frequency of species being sent to all parts of the world. The Gardens' earliest records note that the Superintendent of the Gardens, H.J. Murton, began to cultivate orchids in a newly constructed Orchid House during the mid 1870s.<sup>15</sup> However, orchid thefts and pilfering became so rampant that by 1879, Murton reported that 'the larger part of the Orchidaceae has been removed and fixed on trees beyond the reach of visitors to prevent their being stolen!'<sup>16</sup>

Henry Nicholas Ridley, who was the first Director of the Singapore Botanic Gardens from 1888 till 1912, also contributed to the identification of orchids in Malaya. When collecting plant specimens, he made conscious effort to collect orchids for the herbarium, for the purpose of study, cultivation and exchange. Published records show that he had described 13 orchid genera and about 200 new species. In 1893, he described the first orchid hybrid, *Vanda* Miss Joaquim; and in 1896, he wrote the first account of orchids in the Malay Peninsula.<sup>17</sup>

The Singapore Botanic Gardens, under its third Director, Richard Eric Holttum, was the sole organisation to be actively involved in producing orchid hybrids. Holttum was with the Singapore Botanic Gardens from 1922 to 1949. He was regarded as a pioneer for creating orchid hybrids in this region and for his work in the experimental cultivation of orchid seedlings in Malaya in 1928. The first hybrid, *Spathoglottis* Primrose, flowered in 1931,<sup>18</sup> ushering in an era of active orchid hybridising in Malaya. The second orchid hybrid to flower after the first orchid hybrid *Vanda* Miss Joaquim flowered, *Spathoglottis* Primrose was germinated on an artificial media. It was the first successfully grown hybrid in Singapore using what was known as the Knudson's method. Holttum registered 28 hybrids during his employ with the Gardens. Another major contribution from him was the book, *Orchids of Malaya*, which was published in 1953, featuring more than 750 Malayan orchid species.<sup>19</sup> It is still regarded as an important reference today.

After the Japanese Occupation, the creation of Malayan hybrids began to pick up speed in 1949, with the landmark flowering of *Vanda* Tan Chay Yan in 1952.<sup>20</sup> This particular hybrid was awarded a First Class Certificate (FCC), the highest award given by the Royal Horticultural Society of the UK, at the Chelsea Flower Show in England in 1954.<sup>21</sup>

A Tissue Culture Laboratory was established in the Gardens in the early 1970s to experiment on tissue culture of orchids. By 1978, the Laboratory started a service to assist local orchid growers and breeders.<sup>22</sup> Economically driven, the Laboratory contributed to mass propagation of selected orchid hybrids to enable local orchid industry to gain an edge over competition from Thailand and Malaysia in the cut-flower market. Free flowering and robust orchid hybrids that last long in vases were the preferred choice.

The Orchid Enclosure was first opened to the public in 1955. The hugely popular enclosure was expanded with time and the National Orchid Garden was opened at the end of 1995, exhibiting an extensive range of orchids. In order to cultivate and research the orchid species growing in higher altitudes and from temperate climates, the Cold House, also known as the Temperate House, was built in 1972. And in 2004, it was replaced by the Cool House Conservatory, which was constructed in the National Orchid Garden.<sup>23</sup> As at 2009, Tan Wee Kiat reported that there were more than 1,000 orchid species and 2,000 hybrids in the collection.<sup>24</sup> The Gardens has also registered more than 400 hybrids.<sup>25</sup>



### Saving Native Orchids

More than 90% of the 221 species of Singapore's native orchids have become endangered, vulnerable, rare or extinct.<sup>26</sup> Since 1991, a programme was started to conserve the orchid species of Singapore. These native orchids are slowly becoming extinct due to aggressive urbanisation and diminishing natural habitats. Three main strategies are proposed:

- a. Artificial propagation
- b. Reintroduction to habitats
- c. Foundation of a seed bank<sup>27</sup>

As a result, the tiger orchid, or *Grammatophyllum speciosum*, was the first species to be reintroduced in Pulau Ubin and it has since taken root and doing well. As at 2007, four native orchid species have been re-introduced in parks and roadside trees.<sup>28</sup> Research and conservation continue to be the main objective at the Singapore Botanic Gardens in order for future generations to enjoy the beauty of orchids and discover other uses for them.

*Orchids*, he credited this hybrid in pioneering the Southeast Asia orchid industry.

In 1981, it was chosen as Singapore's national flower after a year-long search picked from a selection of 30 other orchid hybrids, the justification was that it is a common, resilient species with year-round blooming capability.<sup>29</sup> How this orchid hybrid came about has not yet been resolved. It was first recorded by Henry N. Ridley, then Director of the Singapore Botanic Gardens, in *The Gardener's Chronicle* (1893) as a cross between two species of orchid, *Vanda hookeriana*, and *V. teres*. However, there was no mention of which was the male parent. To solve this mystery, the Singapore Botanic Gardens is currently conducting DNA research to ascertain the parentage of the orchid.<sup>30</sup>

Designing the national dress for Singapore has always been a challenge. Should it be a creative expression of highlights in the Chinese, Malay and Indian ethnic costumes? The results of such attempts do not always leave a favourable impression on people. President Ong Teng Cheong (in office from 1 September 1993–31 August 1999) suggested creating a national dress based on the national flower.<sup>31</sup> This started a buzz and several new lines of fashion ranging from orchid-themed cheongsams to swimwear and gowns created by international and local designers.

In 1992, the Singapore Dress Development Committee narrowed the range of orchids as design motifs to five: *Vanda* Miss Joaquim; the *Oncidium* Gower Ramsey; *Dendrobium* Tay Swee Keng, *Renanthera* Kalsom; and *Phalaenopsis* Barbara Bush. By 1994, *Vanda* Miss Joaquim was made the theme of the Singapore dress collection. As quoted in the Straits Times,

" **Dendrobiums may look more vibrant and golden showers more exotic but it's been va va Vanda that's got the voom for every designer who's worked on Singapore dress.**<sup>32</sup> "

Over the decades, orchids have been a common motif on Singapore stamps. Between 1962 and 1966, the Fishes, Orchids

and Birds Definitives series featured the *Arachnis* Maggie Oei, *Vanda* Tan Chay Yan and *Vanda* Miss Joaquim. In 1976, the Orchids of Singapore series' featured four different orchids, while another four orchids were featured in the 1979 Orchids of Singapore series. More orchid series appeared on an annual basis from 1991 to 1995, in conjunction with the Singapore World Stamp Exhibition, which was held in September 1995. The 1998 Singapore-Australia Joint Issue series had the moth orchid, bamboo orchid, tiger orchid and Cooktown orchid as motifs. *Vanda* Miss Joaquim was also featured again in 2003 Garden City series. As recent as 2009, the Pigeon orchids were featured in stamps and the first day cover commemorating the 150<sup>th</sup> anniversary of the Singapore Botanic Gardens also featured orchids. More orchid stamps can be expected in the future.

With the establishment of the Board of Commissioners of Currency in 1967, the first paper notes in Singapore also featured orchids as the main design theme. They were issued between 1967 and 1976. After that, the Orchid series of currency notes was replaced by the Bird series. During the release of the Floral series coins in 1985, *Vanda* Miss Joaquim was featured as the reverse design of the one cent coin.<sup>33</sup>

The Singapore Mint also introduced a Heritage Orchids of Singapore coin set that were produced for five years from 2006 to 2010. It produces two sets of coins per year, featuring orchids that have heritage value. These coins have enjoyed popularity among coin collectors.<sup>34</sup>

In summary, Orchids have been well represented in Singapore stamps and currency, and have even appeared as the main design motif in the national dress.

### Orchid Diplomacy

With Singapore orchids gaining fame in the world, it was adopted as an agents to promote goodwill with other nations. The Singapore Botanic Gardens started the practice of naming of new orchid hybrids after VIPs and visiting celebrities. In 1956,

*Aranthera* Anne Black became the first VIP orchid, named after Lady Black, the wife of the former Governor of Singapore, Sir Robert Brown Black.<sup>35</sup> Other orchid hybrids that are named after VIPs include: *Dendrobium* Michiko, *Mokara* Zhu Rongji, *Renanthera* Prince Norodom Sihanouk, *Dendrobium* Memoria Princess Diana and *Vandaenopsis* Nelson Mandela. Some are named after celebrities, like local singer Stephanie Sun, pop music celebrity Ricky Martin and Korean actor Bae Yong Jun.

The orchid was also endorsed by David Marshall, Singapore's first Ambassador to France, and subsequently, also to Spain, Portugal and Switzerland. He was well-known as the ambassador with an orchid, as he would wear an orchid on his lapel at every official function.<sup>36</sup>

Mention Risis orchids and most people will think of the beautiful gold plated orchid ornaments. The former Singapore Institute of Standards and Industrial Research (SISIR) developed and perfected the technique of preserving orchids in 24K gold in 1976. It all began with the search for a national souvenir for Singapore after her Independence. Lee Kum Tatt, the founding chairman of SISIR, had a brainwave in 1969.<sup>37</sup> Recalling his wife's whimsical remark, wishing that orchids would last forever during one of their strolls through the Botanic Gardens in 1955, he set about creating and perfecting the technique of gold plating an orchid to lock in its beauty. This some 20 years after she made that remark! Since then, Risis orchids have been presented as gifts to visiting foreign dignitaries like Queen Elizabeth II and Japanese Empress Michiko.<sup>38</sup> They are also popular souvenirs among tourists.

Cultural Medallion winner in 1981 for excellence in painting orchids, Lee Hock Moh has been expressing the beauty of orchids through his Chinese brush paintings. Tommy Koh once commented that Lee's paintings are "technically superb and stylistically unique".<sup>39</sup> It was Lee's art teacher who encouraged him to paint orchids instead of painting flowers that are not found here. It was not difficult for Lee to do so as he grew up with orchids at his family's house where numerous orchids were grown. Many of his artworks were presented as gifts to heads of state from all over the world. The paintings lend an hand in promoting orchids as our national flower and in establishing goodwill with these countries.

### A Pot of Gold?

For Singapore, the major economic contribution of orchids is to the of cut-flower export industry. Singapore's tropical climate enables the production of orchids all year round where

F *Mokara* Zhu Rongji 'Lao An' was created for the wife of 5<sup>th</sup> Premier of the People's Republic of China (Zhu Rongji), Lao An. Reproduced from *Orchid Hybrids of Singapore*, 1893–2003. All rights reserved, Orchid Society of South East Asia, 2005.

G left to right *Renanthera* Kalsom, *Oncidium* Gower Ramsey, *Spathoglottis* Primrose, *Dendrobium* Tay Swee Keng and *Vanda* Miss Joaquim. *Spathoglottis* Primrose reproduced from *Orchids of the Singapore Botanic Gardens*. All rights reserved, National Parks Board, Singapore Botanic Gardens, 2007. Rest reproduced from *A Guide to the Orchids of Singapore*. All rights reserved, Singapore Science Centre, 1993.

H A tiger orchid or *Grammatophyllum speciosum* may weigh over one ton at full maturity, making it the largest orchid plant in the world. Reproduced from *Orchids of the Singapore Botanic Gardens*. All rights reserved, National Parks Board, Singapore Botanic Gardens, 2007.



as countries with four seasons have to grow their orchids in greenhouses. The Monetary Authority of Singapore announced in a 2006 press release<sup>40</sup> that Singapore is one of ASEAN's top producers and exporters of top quality orchid flowers, supplying about a 15% share of the world market in orchids. In 2004, Singapore exported S\$29.08 million worth of orchid cut-flowers world-wide. During the 1970s and 1980s, the industry was worth as much as S\$16 million per annum.<sup>41</sup> It is a multimillion dollar industry. Today, Singapore is the third largest exporter of orchids in the world.<sup>42</sup>

Orchid exporting in Singapore began in the 1930s. The preferred orchids then were the *Vanda* Miss Joaquim, which was the first to be exported on a large scale, followed by the *Cattleya* family, including *Laelias* and *Brassavolas*.<sup>43</sup> Subsequently, it became more profitable to propagate orchids that flower more frequently in order to meet market demands. The ornamental value and long lasting orchid flowers made them suitable for export as cut-flowers.

A typical batch of orchids to be prepared for export in the early days was described as follows:

“ The crates of light bamboo each contained 25–30 stalks, sprayed with insecticide, wrapped in damp cotton-wool and laid on a bed of banana leaves.<sup>44</sup> ”

Amateur orchid collector and grower, John Laycock, who co-founded the Malayan Orchid Society (the present day Orchid Society of South East Asia) with Emile Galistan and Holttum, founded the Singapore Orchids Ltd (also known as Mandai Orchid Garden<sup>45</sup> in recent years) with Lee Kim Hong in 1951 to realise his vision of starting orchid cut-flower trade on a commercial basis. The company became well known and is the oldest orchid garden establishment in Singapore.

The orchid flower export industry has grown from strength to strength through the increasing ease in air transport and efforts put in by the Tourism Promotion Board. In 1966, the president of

Singapore Gardening Society, the late A.G. Alphonso, reported a happy problem of local florists and nurseries not being able to cope with the demands for cut-flowers from overseas, especially from European countries. The private gardens and amateur orchid growers began to find it a 'profitable pastime'.<sup>46</sup>

The golden age of orchid exports lasted from the late 1960s till mid 1980s. During its peak from late 1970s to early 1980s, there were approximately 230 nurseries involved in this industry. In 1970, close to 71 hectares of land were used for orchid cultivation and the acreage doubled to 138 hectares in 1972.<sup>47</sup> By 1980, it continued to increase by five-fold to 350 hectares. But it reportedly suffered decline in acreage from 1983 onwards.<sup>48</sup>

In 1986, the Agri-Food & Veterinary Authority of Singapore (AVA) developed agrotechnology parks to encourage farms to embrace advanced technologies and techniques for intensive farming systems. These farms aim to optimise land use and increase productivity. There are six such parks in Singapore<sup>49</sup> and some of these parks have orchid farms whose businesses continue to thrive.

With the financial crisis in the recent decades and the shrinking land for orchid cultivation, the future of the orchid export industry appears to be uncertain. During 2003, the Orchid Business Cluster was established by AVA to strengthen Singapore's position as a world-renowned exporter of tropical orchids through co-ordination of the whole value chain of orchid growers and exporters, and to develop strategic plans to move the industry forward.

In a highly urbanised country, competing spaces for a myriad of uses result in the rapidly disappearing natural habitat of orchids and diminishing gardens to plant these lovely flowers. While new hybrids have been developed to suit different growing conditions for the orchids, and to meet the cut-flower market demands, it is a challenge to sustain the appreciation for orchids among people and their memories of past generations of orchid hybrids that were once the pride in people's home gardens. The coming World Orchid Conference can be an impetus for re-introducing people to the fascinating world of orchids.

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