

Gardenwise

THE NEWSLETTER OF THE SINGAPORE BOTANIC GARDENS VOLUME 28, JANUARY 2007 ISSN 12-1688



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Front Cover:
A night view of the Botany Centre.
Inset shows part of the Tanglin Gate

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Message from the Director

All hoardings at the Tanglin Core finally came down on 6th September 2006. Our visitors can now enjoy this end of the Gardens again. It had taken several years to complete the Botany Centre and its surrounding landscapes at this Core. The Centre houses research facilities designed to engage our visitors and include the herbarium, library and laboratories. Other visitor amenities include a substantial car park, food court and a one-stop DIY Centre at the library. Here visitors can identify plants using the collection of labelled herbarium specimens (see pages 10-11). They can browse and refer to the excellent collection of books and multimedia materials on botany, horticulture, landscape and natural history. There is also a small but interesting display of dried fruits and seeds and artifacts made from them.

The historical main entrance was rebuilt with a finely crafted, lacy gate using the popular flowering climber, *Bauhinia kockiana*, as the motif. And enticing visitors from the gate into the gardens are new and lush landscapes. A naturalistic stream winds its way down to a decorative pond complete with a mural specially commissioned for the location. This streamside trail, 'Saraca Walk,' has *Saraca cauliflora* as the feature species, alluding to the Saraca Stream vegetation common to parts of the lowland rain forests of the region.

With the excellent facilities at the Botany Centre, the Gardens has never been better positioned to play a leading role in research, conservation, education and training. Our functional spaces located amidst a growing verdant landscapes are ideal focal points for public interface, learning, and professional and intellectual exchange. In partnership with our colleagues in NParks, the industry, NGOs and our international partners, a comprehensive strategy is being adopted to ensure a high level of botanical and horticultural activity here.

We see the Gardens playing the roles of a premier international botanical institution, engaging and collaborating with like institutions around the world. We see it growing in stature as a centre of excellence for horticulture, botany and conservation. The support we have received from both our customers and stakeholders has been very encouraging. The new Centre and surrounding landscapes are proving very popular with visitors and have become a destination of choice for many.

This issue of Gardenwise highlights two important events. The first event held at our new Centre was the 4th International Ginger Symposium (see pages 2-3), when it was barely completed. This brought together ginger experts and enthusiasts from around the world for four days of intensive scholarly exchange.

Another first was the inaugural Singapore Garden Festival 2006, our international garden and flower show (see pages 12-22). This was staged with great success and delivered a quality and diversity several notches above what Singapore had ever seen before. Together with the Singapore Orchid Show, an important component, the Festival gave the some 200,000 visitors a visual and experiential treat only some could have experienced in a few established overseas shows.

With new areas managed and new themed gardens, we also sought additional capacity. And we are glad to be able to announce that several positions in botany, education and horticulture have been approved in the first phase of capacity building. However, the quest for excellence and doing even better each time demand the best from all who serve the Gardens.

Chin See Chung



Participants at the 4th International Ginger Symposium posing for a group picture

The 4th International Ginger Symposium – A Gathering of Ginger Enthusiasts

The Gardens hosted the 4th International Ginger Symposium from 3rd to 6th July 2006. It was well attended with 187 participants from 19 countries. A total of 32 posters and 49 oral papers were presented.

The symposium opened with a simple ceremony on the first day

with Professor Leo Tan, Chairman of National Parks Board (NParks), as Guest-of-Honour. It was truly a warm welcome, as there was a hitch with the air conditioning system at the Function Hall where the conference was taking place. Dr Chin See Chung, Director of the Gardens, informed the participants

that they were the first group of visitors to use the facilities of the just completed Botany Centre at the Tanglin Core of the Gardens.

Seven authorities on Zingiberaceae were invited to give special lectures at the beginning of each oral presentation sessions. They are



Professor Leo Tan, Chairman of NParks, giving his opening speech to participants



Professor Kai Larsen, one of the seven invited speakers

Professor Kai Larsen and Dr Axel Poulsen from the Aarhus University (Denmark), Professor Puangpen Sirirugsa from Prince of Songkla University (Thailand), Dr John Kress of the Smithsonian Institution (USA), Dr Mark Newman of the Royal Botanic Garden Edinburgh (UK), Professor Halijah binti Ibrahim from the University of Malaya (Malaysia) and Mr Alan Carle from Queensland (Australia). They and other speakers spoke on wide ranging topics, from molecular phylogeny, taxonomy, evolution, ecology, pollination biology, developmental morphology, horticulture, to tissue cultures and medicinal uses of ginger plants.

Throughout the symposium, the participants noted positively the

abundance of information presented as well as the delicious food provided in between the talks and workshops. Most feel that it will take months, if not years, for them to digest the enormous new information obtained from attending the symposium.

A special workshop was organized to discuss the World Checklist of the Family Zingiberaceae on the third day of the symposium. Participants, however, seem divided as to the usefulness of such a checklist of taxa based purely on publications and not founded on the revision of the taxa.

Aside from the lively thematic discussions, there were also free and easy activities included in the programme. These included guided tours to the National Orchid Garden and Ginger Garden. Alternative half-day excursions to do either the Tree-Top Trail at MacRitchie Reservoir or a visit to the Sungei Buloh Wetland Reserve was also offered as a post-symposium activity to the participants and their companions.

At the closing ceremony, the venue for the 5th International Symposium of Family Zingiberaceae was decided. A tense, but jovial, presentation of the alternative meeting venues by the two competing host institutions was made. In the end, a great majority

of the participants voted to go to the Xishuangbanna Tropical Botanical Gardens in Yunnan Province of China for the next symposium to be held in 2009.

Dr John Kress made the much-awaited announcement of three winning posters put up during the conference. The winners were Universiti Malaysia Sabah headed by Ms A. Julius, Khon Kaen University headed by Professor P. Wangsomnuk, and Herbarium of Czech National Museum, Prague, headed by Mr O. Sida. To remind everyone of the ginger symposium, each participant returned home with a certificate of attendance and a complimentary copy of the group photograph, in addition to a printed copy of programme and abstracts.

“Indeed, the moment has come when our group experience will become a historical memory,” remarked Dr Benito C. Tan, Co-Chairman of the symposium, in closing. He highlighted the growing number of participants at each of the Ginger Symposia from the first one held in 1991. Then there were only some 50 people presenting 25 papers. This 4th symposium had a record number of 187 participants presenting 49 papers.



Food galore during the symposium

Benito C. Tan

*Department of Biological Sciences
National University of Singapore,
and Research Associate,
Singapore Botanic Gardens*

Serena Lee
Herbarium

Ho Boon Chuan

*Department of Biological Sciences
National University of Singapore*

Photos from SBG Archives



Ginger Research in the Gardens

Since its establishment in 1859, the Gardens has played an important role as an agricultural experimental station and later as a botanical research centre in Southeast Asia. Its involvement in the orchid research is well known, but the historical link to ginger research is not so apparent.

Gingers are plants with huge economic, medicinal and ornamental potential and had drawn attention of several botanists working here. Historically, they were described under Scitamineae. Two former directors of the Gardens, H.N. Ridley and R.E. Holttum made substantial contribution to the study of Gingers of the Malay Peninsula and surrounding territories. Ridley and

Holttum also understood the absolute necessity to work on gingers using fresh flowering materials since their flowers fade rapidly.

H.N. Ridley

Ridley was director of the Gardens from 1888-1912. He was a prolific field botanist, who contributed more than any other to the documentation of the flora of the Malay Peninsula. He published more than 500 books and scientific papers, amounting to nearly 10,000 printed pages. His several comprehensive works in the Asian region include *The Scitamineae of the Malay Peninsula* (1899) and the treatment of the family Zingiberaceae in the *Materials for a Flora of the Malay*



Hedychium cylindricum, one of the many gingers first described by Ridley

Peninsula (1907). The latter, preceded his treatment of Zingiberaceae in *The Flora of the Malay Peninsula* (1924). Ridley also worked on gingers of Borneo and the Philippines resulting in *Scitamineae of Borneo* (1906), *Scitamineae Philippinensis* (1905) and *Scitamineae of the Philippine Islands* (1909). During his career, Ridley described over 300 new ginger species. An amazing achievement indeed.

Many plants have been named in his honour. Among them are also gingers - *Amomum ridleyi* and *Plagiostachys ridleyi*.

R.E. Holttum

Holttum spent 33 years in Malay Peninsula (1921-1954). He was director of the Gardens from 1925-1949. Ferns were his life-long passion. However, he also worked on orchids, gingers, bamboos and other monocotyledons. Holttum gathered living plants of almost all genera together with many preserved collections. His main aim was to provide as detailed descriptions of each species. He stressed (1950) "I believe that this ... is necessary in the present inadequate state of our knowledge of the family. It has been my experience that earlier descriptions frequently omitted data which appeared to me necessary for proper characterization of the species."



His work resulted in *Zingiberaceae of Malay Peninsula* (in *Gardens Bulletin Singapore* **13**, 1950). This is a detailed piece of work that is still considered a classic in the field. Holttum regretted that he had no time to study the family over a wider area. In that publication he wrote, "I hope that the present work will be a useful basis for that wider study of this interesting family in Malaysia as a whole which is so desirable."

Three gingers have been named in honour of R.E. Holttum, namely *Amomum holttumii*, *Geostachys holttumii* and *Globba holttumii*.

The Herbarium & Rare Book Collection

The Herbarium in the Gardens began in 1875. There are currently over 650,000 specimens, more than 5,000 of which are types. Types are important as they represent the ultimate reference for a scientist to confirm a plant name.

The Singapore Herbarium has close to 3,000 herbarium sheets of Zingiberaceae, with 141 types. These are fully databased, their images digitized and made available upon request or viewed through the website (<http://herbaria.plants.ox.ac.uk/bol/Singapore>).

In addition, there is a valuable historic collection of about 2,000 drawings



A botanical drawing and a live specimen (inset) of *Zingiber chrysostachys*

and colour paintings by various artists drawn between 1890 and 1950. These were drawn from living plants, giving priceless and useful information on colours, which otherwise would not be seen in preserved specimens. Some of these botanical illustrations are the types. There are over 90 paintings from the family Zingiberaceae.

Curcuma Registration Authority

Gingers have become increasingly popular as cut flowers and ornamental plants. The diversity of species and variability in wild populations as well as the ease in propagation have led to a

vast range of cultivars being produced. These are being named and sold by individual growers and nurseries. However, it is difficult to find out how particular cultivars look like, as no complete listing is available.

In 2001 the Gardens was appointed by the International Society for Horticulture Science (ISHS) as the International Registration Authority for *Curcuma* cultivars. A Standard Portfolio, serving as a permanent record for each registered cultivar will be kept in the Singapore Herbarium. We wish to encourage growers to register their cultivar names. Further information, can be found at <http://curcuma.sbg.org.sg>

Ginger Garden

The Ginger Garden, officially launched on 18th October 2003, is devoted to plants belonging to eight families of the ginger order (Zingiberales). It showcases over 500 species, varieties and horticultural cultivars of gingers and their allies in a one-hectare plot. These are planted according to their geographical origin or uses. It is now one of the favourite spots for visitors to the Gardens (see *Gardenwise* **11**(2003):8-11).

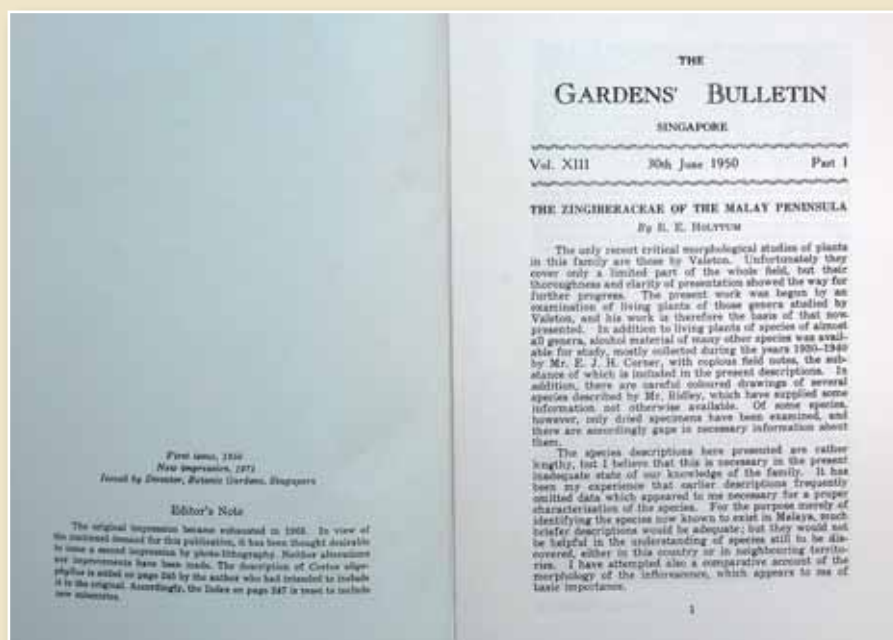
Future of Ginger Research at the Gardens

With its excellent taxonomic pedigree, nursery facilities, herbarium and library resources, the Gardens hopes to be one of the major research centres for Zingiberaceae in the Asian Region. In fact, we will be establishing an Asian Zingiberaceae Information Centre (AZIC) here. This is supported by the Botanic Gardens Conservation International (BGCI).

Another focal area is the building up of a botanical Ginger Research Collection in collaboration with other institutions and research centres overseas. This will assist in developing programmes to conserve rare, endemic and endangered species of Zingiberaceae.

Jana Leong-Skornickova
Herbarium

Photos by Jana Leong-Skornickova



A page from Holttum's monumental work on Zingiberaceae



Carl Linnaeus (1707-1778)

– *Father of Systematic Biology*

Three hundred years ago, on 23 May 1707 to be exact, Carl Linnaeus was born in southern Sweden. He is widely considered the founding father of systematic biology and his tercentenary this year is being marked around the world.

Linnaeus's legacy to science includes two important developments. The first is a rigorous system of classification. Linnaeus was a very keen naturalist and his ultimate aim was to provide a system for listing and organising all of nature. He published many works on his classification system and included animals and plants, as well as rocks and minerals that biologists no longer consider their territory.

The Linnaean system included several principles that are still at the heart of modern classification. Firstly it was universal – all living things were included and a place had to be found for them in the system. Secondly it was hierarchical – groups are lumped in to larger units at each successive level of the classification, like soldiers in an army being organised in sections, platoons, companies, battalions, regiments, divisions *etc.* Linnaeus's classification, particularly for flowering plants, was rather arbitrary, largely being based on the number of particular structures (petals, stamens, carpels *etc.*) in the flower. Modern systems of classification have refined the way organisms are assigned to groups, but the hierarchical structure remains.

The Binomial System

Linnaeus's other major innovation was the binomial – the two-part name that was applied to each species. Arguably the basic unit in the Linnaean classification was the genus, the first rank up from species. Each genus was given a one-word name, and then each species in the genus was coded by

adding a separate word to the generic name, resulting in a binomial.

Linnaeus did not really consider the binomial as the true name of the species; instead a descriptive phrase in Latin was the name. The binomial was a marginal note to help find the place of the species in the system and a quick way of cross-referencing and indexing. Linnaeus became professor of botany and medicine at Uppsala University in Sweden and a leading light in the scientific circles of 18th century Europe. He published many works, particularly books on botany and described many species. Not surprisingly, given his productivity and connections, his system was adopted widely and biologists found many elements of the system well suited to the purpose, particularly the binomials. These became recognised as the names of species and retrospectively Linnaeus's works were considered as the starting point in history for naming plant (1753) and animal (1758) species.

Common Linnaean Species

Linnaeus never left Europe yet he described numerous species from specimens sent from around the world. Remarkably, there are many plant species to be seen in the Gardens for which Linnaeus provided the binomial more than 250 years ago. Trees such as *Penaga Laut* (*Calophyllum inophyllum*, Guttiferae), Ironwood (*Mesua ferrea*, Guttiferae) and Saga (*Adenanthera pavonina*, Leguminosae), fruit trees including Mango (*Mangifera indica*, Anacardiaceae) and Mangosteen (*Garcinia mangostana*, Guttiferae) and others like Bird's Nest Fern (*Asplenium nidus*, Aspleniaceae), Betelnut Palm (*Areca catechu*, Palmae), the Singapore Rhododendron (*Melastoma malabathricum*, Melastomataceae) and Turmeric (*Curcuma longa*,

Examples of plants as described by Linnaeus



Melastoma malabathricum



Flowers and seed pods of the Saga tree

Zingiberaceae) are all Linnaean species, to name but a small proportion.

This year we remember the birth of the man who began the enormous task of naming and sorting out the tremendous diversity of life on Earth. His efforts facilitated the communication of information and ideas amongst us all, and will go on doing so for years to come.

Ian Turner

Research Associate
Winchelsea
United Kingdom

Note: In line with Linnaeus's tercentenary, the Public Reference Centre of the Library of Botany & Horticulture will display original works published by the 'Father of Systematic Biology'.



Victoria 'Adventure' – The Final Chapter

The final chapter of the Victoria Lily project has come to a close. It started with the growing of two *Victoria* species, *Victoria amazonica* and *Victoria cruziana*. Seeds of the latter were given to us in the year 2000. It was used in the Gardens' hybridization programme to produce *Victoria* 'Longwood' (pollen from *V. amazonica* fertilizing *V. cruziana*). This was reported in *Gardenwise* 17(2001):15-17.

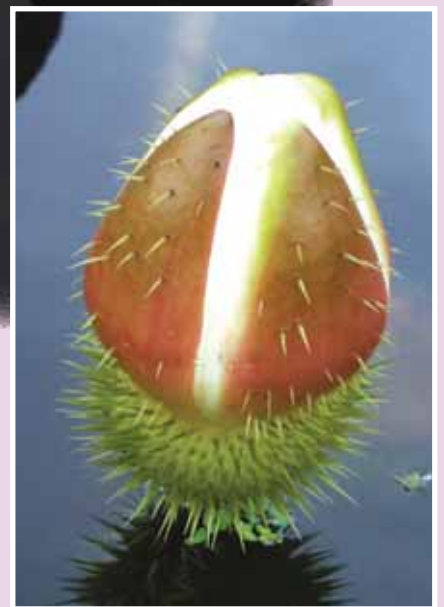
In late 2003, I learnt that some experts had successfully created the reverse cross resulting in *Victoria* 'Adventure' (pollen from *V. cruziana* fertilizing *V. amazonica*). It spurred me to take up that challenge as well.

Three attempts in 2004 to cross the two species failed. On my 4th, luck was on the side, and a seed pod was formed yielding 30 seeds. Later, ten successfully germinated and grew to maturity. With regards to cultivation, this hybrid was treated similarly as the other.

Both crosses have unique as well as a mix of features from each parent. The leaf pads of 'Adventure' have lower rims, with the upper surface of the leaf more olive-green and a deeper maroon on the outside of the rim. 'Longwood' on the other hand, has a taller rim and is bronzy green on the upper surface with the rim maroon on the outside. The floral buds of 'Adventure' are slender and pointed with many thorns while 'Longwood' buds are squat and rounded with relatively fewer thorns.

The flower of 'Adventure' is larger (approximately 22 cm in diameter) than 'Longwood' (18 cm) and on the second night of its flowering stage, it takes the color of *V. cruziana* when it turns deeper pink.

By end 2005, we successfully completed the project. The Gardens has two species and two hybrids of *Victoria*. It was a satisfying journey for me knowing that we made the reverse cross. 'Longwood' was



Flower bud of *Victoria* 'Adventure'

first hybridized in 1960 and it took almost 50 years before 'Adventure' was created. This is probably due to the difficulty for seeds of the latter to germinate.

Andrea Kee
Plant Information Unit

Photos by Andrea Kee

Footnote:

I would like to express my special thanks to Norhayati, staff from the Gardens' nursery, for her dedication in making this project a success. Without her efforts, this will not have been accomplished.

The Herbarium Moves...Yet Again!

The Singapore Herbarium's life journey was last reported in *Gardenwise* 20(2003):13-15. In there, an account of the Herbarium's 4th move in 2002 to its temporary home in a vacant gymnasium in Bukit Timah Core was recorded. We dreaded the day that the Herbarium will move yet again with the massive logistics involved.

The Herbarium's temporary quarters were far from ideal. Water leakages and electrical blackouts became common during heavy rainstorms. The collection also has increased in numbers over the last years. From 10,000 boxes of dried specimens moved in 2002, we now have over 12,000. Space to house them became a scarce commodity. We tolerated the inconveniences.

Finally, in early 2006, the new Herbarium was finally ready and we planned for the move – the Herbarium's fifth. Moving over 650,000 herbarium specimens kept in the 12,000 boxes as well as over 10,000 bottles of spirit materials was no simple matter.

The day of the exodus finally arrived. We were scheduled to move the entire collection in three days. In the last move, it took the staff and movers five days – not to mention that they had to work till midnight.

During the move four years ago, boxes containing the herbarium specimens were heaved out through a window, slid down an improvised open chute made of planks, loaded by hand onto delivery trucks and travelled onward to the gymnasium. Speed was then more of a desire than a reality. It was a good thing that the specimens were kept in herbarium boxes, similar to those designed



Hassan Ibrahim

Spirit of “*gotong royong*” or helping each other out whilst preparing the spirit collection for the move

for the National Herbarium of the Netherlands – Leiden Branch. These were durable enough to protect their invaluable historical contents.

Most of the “Leiden-style” boxes proved their worth again in this subsequent move to their new premise in Botany Centre. This time, the boxes were loaded directly onto trolleys, down wooden ramps and up onto lorries via hydraulic lifts. Without much handling by the movers, this further reduced unwanted damages through manual mishandling. What's more! It was a speedier action.

The new state-of-the-art Herbarium has rows and rows of compactus to accommodate the boxes. The herbarium specimens are arranged in plant families following Mabberley's system as suggested in his book, *The Plant Book* (1997). This takes into account evolutionary relationships and development in molecular studies. Prior to the move, we had to number the rows of compactus

according to this system. This took us over two weeks. And though the air-conditioning was not up and running, it was definitely worth the sweat to avoid the potential mess and confusion during the physical move. If not for the numbering system, it would mean massive re-shelving and re-organizing if a single family had been shelved wrongly.

To avoid chaos in numbers, we moved the smaller collections first. This meant consolidating all fungal, moss, algal, fern collection ahead of the monocotyledons. Then finally, the remaining vascular plant group – the dicotyledons (more than 80% of the 12,000 boxes are under this category) - took their turn. The type and spirit collections were less of a hassle too as they are allocated in special rooms in the new premise. Nevertheless, care and caution was of utmost importance in moving all specimens especially the volatile spirit collection and



Hassan Ibrahim

Movers in the heat of the moment, ensuring that furniture and other materials are safely transported using trolleys and ramps



Serena Lee

The new Singapore Herbarium at Botany Centre with rows and rows of compactus

the irreplaceable type collection. We were fortunate to have a dedicated pool of herbarium staff who tirelessly sweat it out during the whole process. But much appreciation also goes to other staff and volunteers of the Gardens who provided the external help. Without all their concerted efforts, it would not have been a smooth move.

Still, when the last box of specimens was finally shelved in its proper place, we had taken four days – a day longer than planned. With all the space available, there's now room for expansion to a million specimens.

Serena Lee
Herbarium

Hassan Ibrahim
Library



Serena Lee

Herbarium staff, Samsuri Ahmad, checking on a specimen in the new premise



Wall tapestry in the Public Reference Centre, depicting icons of the Gardens

Library of Botany & Horticulture – A New Beginning

After weeks of backbreaking moments packing thousands of books, we were ready for the move to Botany Centre at Tanglin Core. Here, the new Library of Botany and Horticulture is made up of two sections, the Research Library and the Public Reference Centre. The former, which is open to staff and researchers, takes up a floor space of about 420 m². Making its debut is the Public Reference Centre with about 250 m² of floor area. The Centre is open to the general public.

The Pre-Move

The Gardens' library had its humble beginnings back in 1875, together with the Herbarium. It is one of the oldest in Southeast Asia. Over the years, the library's collection grew and grew. It now has more than 30,000 books and journal, with titles on flora and fauna as well as many other related subjects. Many significant international scientific journals like *Kew Bulletin*, *Blumea* and our very own *Gardens' Bulletin*

Singapore are also shelved. Rare books published in the 18th and 19th centuries and now mostly out of print are stored in specially designated rooms. The oldest book in the collection is published in 1531, written by a German monk on herbs (see *Gardenwise* 16(2001): 24). This was a gift from the British Museum in 1895. An invaluable collection of over 2,000 botanical illustrations, many by the Gardens' artists in the mid 1900s is an important heirloom and legacy.

Just like the Singapore Herbarium, the Gardens' library was affected by a few moves over the years to contain the expansion. Each involved massive logistic planning. The latest move was from its temporary location in Bukit Timah Core to the newly erected complex - Botany Centre in Tanglin Core.

In order to prepare for the move, the library had to close its doors for weeks. Boxes and more boxes

from movers were utilised to store all the publications. It was no easy task. At most three staff packed and cleared the over 30,000 reference materials. We ended up with over 500 boxes of books, magazines and other periodicals, each about 20 to



Jana Leong-Stornickova

Cautious handling of the books by movers



25 kg. Much help were also given by the movers in ensuring that the boxes were not unduly mishandled. They ensured that the boxes were properly transported onto trolleys with little manual handling.

A few weeks after the move, and after yet another bout of unpacking and re-shelving of the books, the library was ready to open its doors and officially known as the Library of Botany and Horticulture.

The Public Reference Centre

This Centre serves as the public face for the Library. A selection of books, magazines, newspapers and audio visual materials are available for use within the premises. These are materials mainly on botany, horticulture, general gardening and landscape architecture as well as selected subjects on fauna.

To differentiate the Centre from other libraries, we have introduced botanical displays for the purpose of education and reference. One is a set of herbarium specimens of many cultivated and wild plants found in Singapore. This collection functions as a DIY reference for users to identify plants. Useful for students, budding gardeners, nature lovers or any other lay person, the collection not only gives insight towards understanding what a herbarium does, but also serves as a starting point towards the use of other reference materials. To further assist visitors, a Plant Information Counter has been set up. Administered by a senior staff of the Gardens, visitors to the Centre can enquire or seek analysis on problems with their household plants.

A comfortable leisure corner caters for casual reading of newspapers and the many magazines. A view of the landscaped garden outside the Centre gives added pleasure to quiet reading. Also on display are labelled carpological (fruit) collection and



The Public Reference Centre



One of many VIP visitors, Ms Megawati Sukarnoputri, ex-President of Indonesia, inspecting the carpological collection with Dr Chin See Chung (right), Director of the Gardens, looking on

botanical artifacts. This unique and educational display opens an avenue towards better appreciating the world of plants.

Hassan Ibrahim
Library

*Photos by Hassan Ibrahim
unless otherwise stated*

Note:

Currently, the Public Reference Centre is open to the public during the following hours:

Mon – Fri : 11 am – 4 pm

Sat – Sun : 9 am – 1 pm

The Centre is closed on public holidays.



“The Chelsea Pensioners’ Garden: A Soldier’s Dream of Blighty” by Julian Dowle (UK)



The Singapore Garden Festival 2006

The incessant rain pelted down, giving Singapore its wettest December in 137 years of recorded history. Inside the Suntec Convention Centre in downtown Singapore, in dry air-conditioned comfort, throngs of visitors enjoyed a surreal floral paradise oblivious to the wild, wet weather outside.

The inaugural Singapore Garden Festival (SGF), staged from the 16th to the 25th December 2006, was on a scale and quality never before seen in Singapore. The 2.3-hectare show featured over 150,000 temperate and tropical plants, as well as over 60,000 stalks of cut-flowers. Besides being Singapore’s first international garden and flower show, the Festival also had the ultimate aim of being the tropical equivalent of the Chelsea Flower Show - arguably the top horticultural event in the world.

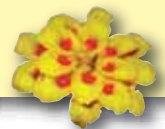
To do so, the Festival invited some of the world’s best award-winning garden and floral designers to present their creations under one roof. These crème de la crème hailed from renowned shows all over the world such as the Chelsea Flower Show, the Philadelphia Flower Show and the Melbourne International Flower & Garden Show, amongst others.



Visitors outside the Exhibition Halls

What ensued was an amazing outburst of creativity showcasing a diverse range of garden and floral designs!

From the quaint English country pub and garden complete with beer-guzzling (Tiger beer, no less!) WWII veteran soldiers, to a Chinese Imperial Palace garden, to “Eco-message” gardens warning against environmental destruction, visitors were treated to a visual feast. And with the SGF overlapping the Christmas season, no less than three gardens portrayed how the festive season is



celebrated in the United States and the Philippines. What better way to spend the holidays than at the Singapore Garden Festival!

Award-winning Gardens

Landscape Gardens

Ten award-winning designers from six countries competed in the Landscape Garden category, which emphasized design principle, planting concepts and horticultural excellence. Amidst the intense competition, the international panel of judges awarded local designer Henry Steed the Best of Show award and gold medal for his lush tropical garden “The Philosopher’s Seat”, which depicted a garden retreat for quiet contemplation away from the maddening crowd.

Australian designers Jamie Durie and Jim Fogarty both picked up gold medals for their respective Australian-themed Landscape Gardens. Jim also clinched a special Royal Horticultural Society (UK) Horticultural Award of Excellence for his use of plants, which featured “extinct” trees: three beautiful *Wollemia nobilis* specially flown in from Australia.

The garden that not only stole the show but also the people’s hearts was none other than UK designer Julian Dowle’s “Chelsea Pensioners’ Garden – A Soldier’s Dream of Blighty”. The picturesque garden won the coveted People’s

Choice Award, conferred by the visitors who loved and voted for it. Much credit goes to Charles and Bernie, the two Chelsea Pensioners who charmed the crowd with their quintessential English ways. These two war veterans actually served in Singapore during World War II!

Fantasy Gardens

The Fantasy Gardens segment by nine designers from six countries was set to “wow” the crowds with a riot of colours, special lighting, props and out-of-this-world themes.

Far East Flora’s “Blowin’ in the Wind” – affectionately nicknamed the “Christmas pudding” for its black giant dome – depicted a mutated earth seen through the eyes of girl named Anne. The walk-through display not only attracted the longest queue, but also emerged the winner for the Fantasy Garden category with a gold medal and Best of Show award.

Another crowd-pleaser and gold-medal winner was Australian couple Carolyn and Joby Blackman’s “A Convict’s Fantasy”. Their garden cleverly represented the utopian dream of an inhabitant of the Port Arthur penal colony 150 years ago. Visitors were turned into “convicts” as they peered through cell windows to marvel at the native Australian flora such as *Anigozanthos flavidus* (Kangaroo Paw), *Swainsona formosa* (Stuart’s Desert Pea), *Xerochrysum bracteatum* (Australian Everlasting) and *Macropidia fuliginosa* (Black Kangaroo Paw).



“The Philosopher’s Seat” by Henry Steed (Singapore)



“Blowin’ in the Wind” by Far East Flora (Singapore)



“One Country” by Jim Fogarty (Australia)



“A Convict’s Fantasy” by Carolyn and Joby Blackman (Australia)



"The Paradise" by Tropical Environment (Singapore)

Floral Windows to the World

Flower power was at full force in the Floral Windows to the World segment, which showcased creative floral masterpieces executed with flair by 14 international and local designers.

German master florist Gregor Lersch's "Images of Orchids Large and Small" emerged the overall champion with a gold medal and the Best of Show award with his 'U'niquely-shaped display decked with orchids in vivid hues of red, orange and gold.

South Korean Jin Young Park clinched the other gold medal for her simple yet refreshing "Beauty of Emptiness", which coincidentally also featured orchids.



"Images of Orchids Large and Small" by Gregor Lersch (Germany)



"Beauty of Emptiness" by Jin Young Park (South Korea)

Awards Gala

All winners were honoured at the SGF Awards Gala held on 15 Dec 2006 and graced by His Excellency S R Nathan, the President of the Republic of Singapore. Guests were treated to a special preview of the gardens and a delectable spread of floral-themed cuisine, specially prepared by Master Chef Christophe Megel, CEO of at-sunrice. Profits from the Awards Gala, jointly organized with the vivacious ladies from the Chinese Women's Association, benefited the Henderson Senior Citizens' Home.



(left to right): Mrs Nathan, President Nathan and Mr Mah Bow Tan gracing the occasion during the Awards Gala

Singapore Orchid Show

A flower show in Singapore is never complete without orchids. Visitors were in for a treat when they entered the colourful and vibrant Singapore Orchid Show, which showcased some 4,000 cut orchids and 8,000 orchid plants. Blooms of all hues, shapes and sizes brought in by some 121 exhibitors from more than 10 countries filled up the display areas.

The much-coveted Orchid Society of South East Asia Championship Cup went to Woon Leng Nursery for having the most number of first places in various classes.

An interesting and uniquely Singapore event was the celebrity orchid naming for local songbird Stefanie Sun and the world's best female golfer Annika Sorenstam. For the young fans of Stefanie Sun, the *Dendrobium* Stefanie Sun not only brought them closer to their idol, but also to the world of orchids. Many who visited the show for a photo with their idol's orchid were intrigued by the fascinating orchids they saw. Fans can continue to admire the *Dendrobium* Stefanie Sun and *Yusofara* Annika Sorenstam at the National Orchid Garden, alongside other celebrity orchids named after Jackie Chan, Kwong Sang Woo and Amitabh Bachchan.

The Singapore Orchid Show must have impressed the visiting World Orchid Conference (WOC) Trustees. Mr Peter Furniss, President of the WOC Trust, confirmed during the opening of the show that Singapore has won the bid to host the 20th WOC in 2011. Touted as the "Olympics of Orchids", the World Orchid Conference is



Dendrobium Stefanie Sun, named after the celebrity, with Prof Leo Tan, Chairman of NParks



The popular marketplace during the festival

expected to attract more than 300,000 international experts and enthusiasts to attend.

Garden Fiesta & MarketPlace

Talks, floral demonstrations and a good dose of shopping also kept the garden enthusiasts happy during the Festival. The Festival Marketplace, which sold gardening-related products and services, literally saw the hot favourites – orchids, bromeliads and pitcher plants - fly off the shelves. Another must-have for both seasoned and aspiring gardeners was the new “1001 Garden Plants in Singapore (2nd edition)” book published by the National Parks Board (NParks). The 2nd edition featured more than 700 new species of plants in addition to 1,200 species founding the 1st edition.

SGF 2008

All in all, things came up roses for the Singapore Garden Festival despite the pelting rain and flash floods at some of the local nurseries. Close to 200,000 visitors came and gave the show the thumbs up. The next show is being planned for July 2008, so make a date with us in Singapore at the Suntec Convention Centre!

For more information, visit:
www.singaporegardenfestival.com

Kho Soo Pei
Special Projects

Photos from SBG Archives

“Your Garden Festival has exceeded all expectations, and Singapore should be very proud!”

Dr Henry Oakeley
*Royal Horticultural Society
UK
Chairman
Orchid Society of Great Britain*

“I thought it was truly remarkable how you all managed to put on such a good show first time round..... I am all too well aware of the difficulties surrounding good shows. You have every reason to be very pleased with yourselves.”

Mr Michael Balston
*Trustee, Royal Horticultural Society
UK
Chairman
RHS Show Design Committee*

“With so many years of trial and error behind us, I am in awe of a group that can arrange such a beautiful, well thought-out show in such a short space of time.”

Ms Jane Pepper
*President
Pennsylvania Horticultural Society
Chairperson
Philadelphia Flower Show*

“The Orchid Show and Garden Festival were fantastic and it was a privilege to be a part of it all. We were thrilled to be able to confirm the 20th WOC in Singapore 2011. There is no doubt that that will be a wonderful event too. I am looking forward to it very much.”

Mrs Joyce Stewart
*Trustee
World Orchid Conference Trust*

“The Show was an enormous success....that the show is now part of the international calendar.

The hospitality shown by NParks made our visit a pleasure and I feel now that Singapore is like my second home.

You have every reason to be very proud of what you have achieved. I can honestly say that all the international designers were very impressed.”

Mr Jim Fogarty
*Participating Designer, Australia
Gold Medal winner, SGF
Winner of RHS Award for
Horticultural Excellence, SGF*

Stage Programmes at the Singapore Garden Festival

As part of the inaugural Singapore Garden Festival 2006, organized by National Parks Board (NParks) and its partners, the “Talks in the Garden” stage programmes saw ten days of impressively captivating, inspiring talks and performances.

In the ten days of the event, the 66 programmes scheduled at the stage attracted an audience close to 6,000. Crowd size was greatly influenced by the time of day. For example, numbers were lower in the early mornings, with the crowd picking up by noon, and getting even better in the afternoons and evenings. After a slow start with 265 and 226 attending on 16th and 18th Dec respectively, interest gradually built up with numbers hitting its peak on 22nd Dec with more than 800 in the audience that day. We did not notice any significant variation in attendance at the stage between weekdays, weekends and public holidays.

The first two days of the Festival were filled with inspiring talks and demonstrations by International Garden and Floral Designers. Coincidentally, all the invited international speakers also ended up as SGF 2006 award winners! To talk on landscape concepts and designs, we had Jim Fogarty, Jamie Durie and Carolyn Blackman from Australia, Nico Wissing from the Netherlands, Julian Dowle and Christopher Bradley-Hole from the United Kingdom.

Floral designers Richard Go from Australia, Chris Jones from the United Kingdom and Gregor Lersch from Germany gave lively, exciting and crowd-pulling floral demonstrations. Not losing out, Singapore showcased her very own award-winning and impressively bilingual floral designers - Damien Koh from the Floral Designer Society



“Minimalism with Flowers” as illustrated by Mr Damien Koh, on a simple floral arrangement

of Singapore (FDSS) and Irene Hee from the Floriculture Association Singapore (FAS).

To motivate young minds and inspire more mature ones, very talented 7- to 11-year-old students of Nanyang Primary School gave impressive floral demonstrations on stage over six days of the Festival. Live narration was given by floral designer Christopher Lim.

During the ‘Garden Tales’ sessions, storytellers from the National Library Board (NLB) and freelance storyteller, Kimberly Tan, effortlessly captivated the attention of young audience who visited the Festival with their parents. Two Christmas Dish Garden talks and demonstrations for children were also put together to whet the gardening appetite of our young visitors.



Mr Julian Dowle said, “Wherever you are in the world, the influence and atmosphere of an English Garden can be achieved with a little help of imagination”



Captivated young audience during a storytelling session by the National Library Board



The twelve 'Gardening Guru' sessions drew a crowd of more than 1,250 people in total. Conducted by staff and freelance trainers of NParks, these talks and demonstrations covered a wide range of gardening topics – from the general plant care and maintenance, to very specific thematic ones like terrariums, bonsai and gingers. The 'Time with an Orchid Expert' sessions with speakers from Orchid Society of South East Asia, Nanyang Orchid Association and NParks was another big hit (286 people).



Mr Tee Swee Ping of NParks, demonstrating how to make a simple, yet sophisticated-looking terrarium

It is hoped that these lively interactive talks would have motivated, inspired interest and contributed towards more skyrise greening of Singapore. Many members of the audience approached the speakers for additional gardening tips after each talk.

'Culinary Art with Plants' had chefs Freddy Ng, Jason Foong, and Ruqxana Vasanwala giving on-the-spot, mouth-watering cooking demonstrations incorporating flowers, unusual plants and 'jungle' herbs, complete with tasting opportunities.

The fourteen Retailers' Specials caught a more modest crowd of 829 people, with lifestyle topics, e.g. tips for garden swimming pools and ponds, lighting and lining for garden landscapes; to the more technical pest control and the safe use of chemicals; and the more showy, creative topics such as shawls as fashion statements, floral wrappings and wires.



Culinary expert from Cookery Magic, Ms Ruqxana Vasanwala, sharing her secrets in making 'Nasi Kerabu'



Siti Nurhaliza look-alike from the Johore Heritage Foundation singing the Tourism Malaysia theme song 'Malaysia, Truly Asia'

Something more out-of-the-ordinary were the talks on 'Aromatherapy: the Plant Connection' by certified aromatherapist Aida Hafiz and 'Floral Wines Appreciation' by wine-lover and connoisseur Albert Peh. Wine-tasting opportunities were given, for the latter.

The two Christmas Carolling sessions by international award-winning Raffles Singers did wonders for ushering in the yuletide spirit with their rendition of songs. The largest crowd-puller was the cultural performance by the Johore Heritage Foundation on 24th and 25th Dec, captivating more than 400 people in the audience. This visual treat showcased colourfully eye-catching, lively and captivating dances depicted traditional folkdances of multi-racial Malaysia. The troupe pulled off each 30-minute performance with a total of 9 costume changes!

The success of the 'Talks in the Garden' stage programmes was a result of seamless teamwork by the 17-member Stage Programme Team, consisting of NParks staff from Conservation, Parks Business, Legal, Gardens-by-the-Bay and the Singapore Botanic Gardens, and several external helpers. This was a special opportunity to bond and get to know one another better. The team was responsible for logistical set-up and clean-up; introducing, facilitating and thanking of speakers, pre- and post-talks; and ensuring the smooth-running of all events at the stage. A big thank you also goes out to the audio-visual / sound guys from PICO!

Throughout the Festival, audience response and interaction was heartening. Many of the speakers fed back that they enjoyed giving the talks and demonstrations. We are proud to be part of this event – the first of such a large scale in Singapore.

The "Talks in the Garden" stage programmes were made possible by Clarins, which has been nurturing beauty with plants for more than 50 years.

Janice Yau
Winnie Wong
Seri Hayuni Hadi
Education Outreach

Photos from Education Outreach

Paphiopedilums at the Singapore Orchid Show

The Singapore Orchid Show was held in conjunction with the Singapore Garden Festival in December 2006. Between them they occupied two floors of the gigantic Suntec Exhibition Centre in the city. Upstairs there were gardens from international designers like Julian Dowle with his Chelsea Cottage, and downstairs were huge island sites with palms and ferns, full of orchids from these tropical regions.

The Show was organised principally by Dr Wong Wei Har, Deputy Director of the Singapore Botanic Gardens who was the master coordinator, and Dr John Elliott the President of the Orchid Society of South East Asia, who was in charge of the orchidaceous areas.

Aranda, *Mokara*, *Vanda*, *Dendrobium* and such like exotics dominated the displays, and the competitive ribbon-judging classes. However, the Eric Young Orchid Foundation came from Jersey, and filled an exhibit with plants more commonly grown in heated greenhouses in Europe and northern temperate climates – *Odontoglossum*, *Lycaste*, and *Paphiopedilum*.

A whole box of *Phragmipedium* cut inflorescences had to be thrown away as they had developed botrytis spots in the cold damp of the aircraft hold (maybe one should include a desiccant in the packing), but the exhibit was quite different from anything else there and was surrounded by admiring visitors. It was runner-up for the Straits Times Press Challenge Cup. In particular they were the only exhibits with any significant amount of *Paphiopedilum*.

Growing *Paphiopedilum* in Singapore cannot be easy. The night temperature never seems to go much below 25°C, and the days rise to 35°C, the humidity being near 100% most of the time. So wet was Singapore this December, the monsoon season, that they had 75 centimetres of rain in the first four weeks of that month – the greatest levels since records began 140 years ago. This is not the cool atmosphere of the foothills of the Himalayas or the gorges of Szechuan. Nobody can grow *Paphiopedilum* (Paphs) in a waterfall at close to

body temperature. Well almost nobody, for runner-up Champion plant of the Show was a very well flowered *Paphiopedilum* Angel Hair grown in Singapore. It also won, for its Singaporean owner Puah Gik Song, the John Lam Challenge Cup for the best hybrid originating from overseas. The judges were so impressed with the floriferousness that the malformations – was it true that one of the lips was inside out? – were overlooked. Even the better flowers had grooved lips.

The Eric Young Orchid Foundation garnered First Prizes in the *Paphiopedilum* sections for *P. Labachauderie*, and *P. Les Mielles*, which, with its dark *Maudiae* colouration, attracted most attention. They swept the board in the hybrids between *Paphiopedilum* subgenera, with *P. Les Laveurs*, *P. Du Vieux Menage* (second) and *P. Karamé* (third). They did not enter any of their *Odontoglossum* hybrids else they would have cleaned up there as well.

The Orchid Society of Great Britain had a lovely photo exhibit, but the ease with which John Valin and Chris Purver brought cut flower Paphs by air, as checked-in luggage, suggests to me that the British *Paphiopedilum* Society (and other overseas orchid societies) should consider an exhibit at this very successful show (200,000 visitors) in 2008 when it will be held again. The World Orchid Conference will be held here in 2011 (it is definite) and you will not have your fingerprints taken and your retina photographed and stored on the US criminal database when you pass through Customs, as you will when you go to the USA.

Henry Oakeley

President

*The Orchid Society of Great Britain
and Research Associate
Singapore Botanic Gardens*

Photos by Henry Oakeley

*Article adapted (with amendments) from
British Paphiopedilum Society Journal 1(2007):12-15.*



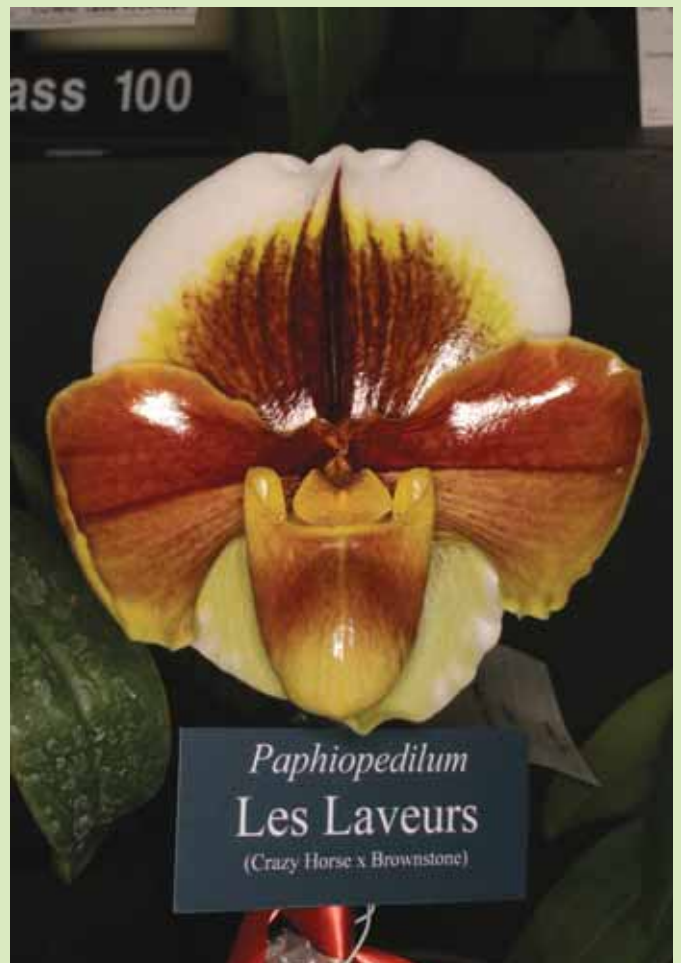
Paphiopedilum Angel Hair



Paphiopedilum Les Mielles



Paphiopedilum Labachauderie



Paphiopedilum Les Laveurs



The Singapore Orchid Show

Visitors to Singapore, like myself, were very impressed that a very small country, not much bigger than the Isle of Wight on the English south coast, with a population less than half that of London, could put on such an attractive orchid show. This was held in conjunction to the first Singapore Garden Festival held from 16th to 25th December 2006. The layout was familiar, with landscaped islands of orchid exhibits intermingled with others containing the displays of individual plants for competition, and a central grand podium for the champion plants. The exhibits were mostly plants and cut flowers, but with some bromeliads; sales booths being located in a separate part of the Hall.

In the competitive classes there were 112 exhibitors, half from overseas, showing over 750 plants. Santi Peeters from Indonesia won the Best Plant in Show with a stunningly elegant and colourful *Dendrobium* (Masoka Taki x *lasianthera*). The flower stems rose up symmetrically, the flowers were evenly spaced without being overcrowded, and the colours, dark purple and lilac, formed a pleasant contrast.

Runner-up, despite some serious malformations, was a very well-flowered *Paphiopedilum* Angel Hair exhibited by Puah Gik Song of Singapore. The Best Small Exhibit (9 m²) was won by the Nagoya Orchid Show Organising Committee, staged by Hirohiko Nagata and his wife. The Eric Young Orchid Foundation (EYOF) exhibit, staged by Chris Purver and John Valin, was runner up. The crowds round the latter exhibit with its *Paphiopedilum*,



The Grand Champion, *Dendrobium* (Masoka Taki x *lasianthera*)

Odontoglossum and *Lycaste* were all snapping away. Sadly their *Phragmipedium* flowers were damaged by cold in the hold of the aircraft on the flight from England, so had to be thrown away.

In all there were 27 competitive exhibits, the prize for the Best Large Exhibit (14 m²) going to Orchidville Pte Ltd from Singapore. Their exhibit had some truly enormous



Best Small Exhibit by the Nagoya Orchid Show Organising Committee



Best Large Exhibit – a *Dendrobium* from Orchidville Pte Ltd



Runner up for Best Small Exhibit by EYOF

Dendrobium, which we would love to see in England, but could never grow – just not enough light in the winter.

Europeans who went to the World Orchid Conference (WOC) in Shah Alam in 2002 will remember that the majority of the orchids seen in Southeast Asian shows are different from those seen in the temperate regions of the world. *Vanda*, *Aranda*, *Mokara* and *Dendrobium* hybrids being predominant.

These are the orchids of the cut-flower trade, and while Singapore grows fewer of these nowadays than it did a decade ago (the nurseries have moved to nearby Malaysia, Indonesia and Thailand), there were 175 exhibits of bunches of cut flowers in the competitive classes. My favourite was *Dendrobium* Liberty White, a green and white splash-petal hybrid. There were Orchid Societies and Commercial growers from all over the region, but of particular interest



Dendrobium Liberty White from Joseph Phua, Singapore

were the exhibits from local schools – Singapore has wisely deduced that the future of horticulture lies in getting people interested when they are still young, and other countries in the region may also wish to get children involved in orchid growing at an early age. The list of all the winners, with photos, can be found on <http://orchidshow.ossea.org.sg/> (and click on 'Show Results').

The Orchid Show was held in the Suntec Exhibition

Centre – but with excellent daylight-type flood-lights, which made photography much easier than at the Dijon WOC. The National Parks Board (NParks) had set out the vast area with landscaped islands of palm trees, other tropical vegetation and spotlights, among which the orchids were displayed. The effect was spectacular. It came as no surprise that Peter Furniss, President of the World Orchid Conference Trust, announced at the prize giving ceremony that Singapore was confirmed as the venue for the WOC in 2011. Dr John Elliott, the President of the Orchid Society of Southeast Asia, and Chairman of the Show was delighted that all his leadership and the hard work of the OSSEA team had been so rewarded.

The Orchid Society of Great Britain (OSGB) put on a non-competitive group of 15 photos of orchids from around the world, to illustrate the success of different pollination processes and of convergent evolution among orchids. Among the photos shown, many from their journal, were the slipper orchids; these can be found in Latin America (*Phragmipedium*), Asia (*Paphiopedilum*) and Northern temperate regions (*Cypripedium*). There were also orchids found in Ecuador (*Poroglossum*) and Australia (*Pterostylis*) with sensitive lips that flip up when a pollinator lands on them. Dr Wong Wei Har, Deputy Director of the Singapore Botanic Gardens arranged the printing of the photos and the leaflets, as well as providing staff to set it all up. Walter Yeo, from the OSGB, also came to assist.

Singapore Garden Festival, December 2006

The Orchid Show was held in association with the Singapore Garden Festival, staged in association with NParks, with designers from all over the world. Australian designers won two Gold medals but best in Show went to Henry Steed, an Englishman resident in Singapore. Julian Dowle, also from England, was set to become the ‘people’s choice’ with his trademark, thatched cottage pub, “The Chelsea Pensioners’ Garden”, that came with a cottage garden and two red-coated Chelsea Pensioners. The roof was built by an English thatcher who came out for the occasion. The gardens rivalled those at the Chelsea Flower Show with imagination and drama. They were set out on the top floor of the Suntec building, with plenty of space, air conditioning, forest trees, and all the expertise of international designers. Over 200,000 people attended. The Show will be every two years, so plan your holiday to visit it.

There is more information about the Festival on http://www.singaporegardenfestival.com/the_festival.htm where, curiously, the first page has a picture of one of my *Anguloa hohenlohii* on the OSGB exhibit at Chelsea!

National Orchid Garden

The orchids at the Singapore Botanic Gardens grow, naturally, out of doors. In the case of the hybrids, many of them are used as bedding plants, and long swathes of *Dendrobium* fill the flowerbeds along the paths.

Old hybrids such as *Vanda* Miss Joaquim, the national flower of Singapore are grown in abundance, ensuring the survival of this century-old garden hybrid. The tetraploid clone ‘Douglas’ may have come from Hawaii; it is bigger and darker than even *Vanda* Miss Joaquim FCC/RHS.



Vanda Miss Joaquim ‘Douglas’ is a larger and darker tetraploid cultivar

There is a new Botany Centre, which also holds the herbarium and library. Breeding of hybrids for the commercial cut flower market also continues, with a laboratory for seed raising. The VIP Orchid Garden contains some of their hybrids, which have been named after distinguished visitors. Some are named after politicians, like *Dendrobium* Margaret Thatcher, which is almost always in flower – very robust and colourful.

The plans for a new Garden and huge designer greenhouses are still being finished, but the existing cool house, with waterfall and mist jet cooling is full of interesting highland orchids from all over the world. So, even if you do not come to the next Orchid Show, it is worth stopping over in Singapore just to see this and the Garden itself.

Henry Oakeley

President

The Orchid Society of Great Britain
and Research Associate
Singapore Botanic Gardens

Photos by Henry Oakeley

Article adapted (with amendments) from
Orchid Society of Great Britain Journal 56(1)(2007):10-19.



Our Award Winning Orchids

Most orchid societies present three different kinds of awards for flower-quality. The first is FCC (First Class Certificate). It is the highest award for flower-quality, given to flowers scoring 90 points or more on a 100-point scale. The Orchid Society of South East Asia (OSSEA) has only given this award once throughout its long history. The next highest award is AM (Award of Merit), given to a flower scoring 80 to 89 points. This is followed by HCC (High Commendation Certificate). The HCC is granted to a flower scoring 75 to 79 points. The great majority of awarded orchids receive this award. Other awards include the Cultural Commendation Certificate (CCC), which is given to a plant that is well grown. Award of Botanical Merit (ABM) is given to a species with special botanical merit. For the year 2006, our orchids won the following awards from OSSEA and the Australian Orchid Council, Orchid Society of New South Wales (AOC-NSW).

From OSSEA the following won the Award of Merit (AM):

Pecteilis Kiat Tan 'NOG'
Spathoglottis Lion of Singapore 'NOG'
Spathoglottis (Diosdado Pangan Macapagal × Lion of Singapore) 'NOG'
Dendrobium [Ruby Las × (Sok Hiong Wee × Margaret Thatcher)] 'NOG'
Dendrobium smilliae 'NOG' won an Award of Botanical Merit (ABM) as well as a Cultural Commendation Certificate (CCC)

From AOC-NSW, the following won the Award of Merit (AM):

Dendrobium Boy's Brigade 'NOG'
Dendrobium Roh Moo-hyun 'NOG'

Dendrobium [(Ruth Rollinson × Margaret Thatcher) Pan Shou] 'NOG' won the High Commendation Certificate (HCC)

At the recent Orchid Show during the Singapore Garden Festival, we won 8 Gold Medals, 11 Silver Medals, 13 Bronze Medals, 5 Runner-ups for Challenge Cups. Orchids submitted for the competition are grouped into classes. Gold (first), Silver (second) and Bronze (third) medals are given to the three winners of each class.

The Gold Medal winners are:

Spathoglottis Lion of Singapore
Cymbidium finlaysonianum
Arachnis Maggie Oei 'Red Ribbon'
Pararenanthera Dhanabalan
Dendrobium (*macrophyllum* × *lasianthera*)
Dendrobium smilliae
Encyclia (*chacaoense* × *cochleata*)
Mokara Singa Gold

The Silver Medal winners are:

Laeliocattleya Frosty Pink × *Cattleytonia* Why Not
Vanda Lion's Winter Melody
Vanda (Colourful × Prolific)
Paravanda Istana
Arachnoglottis Boun Nhang Vorachith
Doritis pulcherrima 'champonensis' × *Vanda* Thanantess
Aeridachnis Bogor
Spathoglottis Joyce Stewart
Vanda Usha
Arachnis Maggie Oei 'Yellow Ribbon'
Ionocidium Popcorn

The Bronze Medal winners are:

Dendrobium (Vedhakumari × Richard Hale)

Vanda Miss Joaquim
Dendrobium (*lineale* × *williamsianum*)
Ascocenda Kwa Geok Choo
Vanda luzonica
Dendrobium dearei
Arundina graminifolia
Dendrobium Siew May
Dendrobium Sccci 100th Anniversary
Dendrobium Sonja
Dendrobium lasianthera
Eria vanoverberghii
Dendrobium (*atroviolaceum* × Nellie Slade)

The five Runner-ups for Challenge Cups are:

Cymbidium finlaysonianum
Vanda Lion's Winter Melody
Vanda (Colourful × Prolific)
Vanda Usha
Arachnis Maggie Oei 'Yellow Ribbon'



Pecteilis Kiat Tan 'NOG'

We would like to share with you information about some of these awarded plants:

Pecteilis Kiat Tan 'NOG', AM/OSSEA (*P. susannae* × *P. sagarikii*). This primary hybrid produces six to twelve flowers on an erect inflorescence. Individual flowers measure 5 cm across. All floral parts are pure white. The interesting and showy lip is intermediate between the two species. It has a long spur. The hybrid was named after Dr Tan Wee Kiat, the former Chief Executive Officer of the National Parks Board in 2004.

Dendrobium Boys' Brigade 'NOG' AM/AOC-NSW (*D. Kiyoshi Blue* × *D. Eunice*). A striking free-flowering hybrid bearing upright sprays 40 to 50 cm long, with 15 to 25 flowers each. The individual flowers are about 6.5 cm across. The sepals and petals are slightly twisted and a bright violet-purple which gradually become white towards the base. This hybrid was named in 1999 to commemorate the 70th Anniversary of The Boys' Brigade in Singapore.



Dendrobium Boys' Brigade 'NOG'

Dendrobium Roh Moo-hyun 'NOG' AM/AOC-NSW (*D. Tomoko Takahashi* × *D. Khunying Boonruen*). This robust hybrid grows to a height of 50 cm, bearing flowering sprays of about 45 cm long. Each spray bears 15 to 25 flowers that last several weeks. The individual flowers measure 7 cm across. All floral parts are reddish-purple with bases that are paler in colour. The petals twist and curl gracefully. This orchid was named after the President of the Republic of Korea, His Excellency Roh Moo-hyun. One of the cultivars was named 'Yang-suk', to honour his wife, Kwon Yang-suk the First Lady, on the occasion of her visit to the National Orchid Garden in 2003.



Dendrobium Roh Moo-hyun 'NOG'

Spathoglottis (Diosdado Pangan Macapagal × Lion of Singapore) 'NOG', AM/OSSEA. This charming hybrid bears upright sprays with many flowers. Individual flowers are 4-5 cm across. All floral parts are bright yellow except for the base of the lip, which is light reddish-purple. It flowers throughout the year. Both of the parents are polyploids produced by the Gardens. The female parent was named after Mr Diosdado Pangan Macapagal, the former President of the Philippines, who was also the father of Mrs Gloria Macapagal-Arroyo, the current President of the Philippines.



Spathoglottis (Diosdado Pangan Macapagal × Lion of Singapore) 'NOG'

Spathoglottis Lion of Singapore 'NOG', AM/OSSEA (*S. kimballiana* × *S. vanoverberghii*). This is a vigorous primary hybrid which produces strong spikes throughout the year. The flowers open sequentially over a long period of time. Individual flowers measure 4.5 to 5 cm across. The petals and sepals are bright yellow, the protruding lip is yellow with red stripes on its throat. This is a tetraploid with four sets of chromosomes.



Spathoglottis Lion of Singapore 'NOG'

Yam Tim Wing
Aung Thame
Orchid Breeding & Micropropagation

Photos by Yam Tim Wing



AROUND THE GARDENS

National Day Observance Ceremony in the Gardens

To celebrate Singapore's 41st year of Independence and Nationhood, the Ministry of National Development (MND) family comprising of statutory boards including the National Parks Board (NParks), Agri-Food & Veterinary Authority (AVA), Building & Construction Authority (BCA), Housing & Development Board (HDB) and the Urban Redevelopment Authority (URA) gathered at the Gardens on the early morning of 8th August for the National Day Observance Ceremony. This was held at the Green Pavilion, the new entrance pavilion at Botany Centre, Tanglin Core.

The pavilion was alive with happy conversations and laughter while friends and colleagues caught up with each other, soaked in the new surroundings and waited for the arrival of Minister Mah Bow Tan, Minister of National Development. The light morning breeze also added to the delight of the guests attending this once-a-year event rarely held outdoors. The event opened with everyone singing the national anthem and reciting the Pledge. The representative from NParks' staff union gave the National Trade Union Congress Secretary General's National Day message and the Minister, his National Day address. Certificates of participations were then presented to the Deputy



Minister Mah Bow Tan cutting the floral decorated birthday cake to commemorate Singapore's 41st National Day

Secretary of MND, the CEOs of the various statutory boards as well as representatives from various unions.

The finale of the celebrations was a medley performance put together by a group of NParks' staff, who lifted everyone's spirit with the first song, "Count on Me, Singapore". The audience grooved and clapped when familiar favourites like "Chan Mali Chan" and "Munnaera Vaalibaa" came on gaily with dance moves by the performers. Festivities on stage ended with 2006 National Day theme song "My Island Home" and a birthday song for Singapore.

Official Opening of Tanglin Core and Launch of 'Gardens by the Bay' Masterplan Exhibition

The Official Opening of the redeveloped Tanglin Core was held together with the Launch of 'Gardens by the Bay' Masterplan Exhibition on the 6th of September. Tanglin Core is the southern historical part of the Gardens where it was first established in 1859. It underwent four years of redevelopment with the objective of rejuvenating the Gardens as a botanical institution as well as a recreational park and tourist destination. The focal point of the project was the building of the Botany Centre with its research facilities designed to encourage public sharing and participation. The Gardens' historic main entrance, Tanglin Gate, also went through a "face-lift" and the

new gate now fronting the Gardens at the Cluny/ Holland Road junction is a *Bauhinia*-inspired design. Signifying the official opening was the unveiling of the entrance plaque for Tanglin Gate by Guest-of-Honour, Minister Mah Bow Tan. All guests were then invited to walk through the new gate

from where they leisurely proceeded to the Green Pavilion for the launch of the 'Gardens by the Bay' Masterplan Exhibition. The winning teams of the Gardens by the Bay International Design Competition, Grant Associates and Gustafson Porter, were announced and their designs put on display.



Lifting the Bauhinia cover off the entrance plaque in front of Tanglin Gate (from left): Dr Tan Wee Kiat (Director of Gardens by the Bay), Ms Grace Fu (Minister of State, MND), Minister Mah Bow Tan, Professor Leo Tan (Chairman, NParks) and Mr Ng Lang (CEO, NParks)

Yap Siow Hong
Visitor Services

Photos from SBG Archives

Calendar Launch 2007 – *A Celebration of Gingers*

This year marks our fifth collaboration with ExxonMobil for the Gardens' calendar project. Proceeds from the sale of the calendars will be channelled towards supporting the Gardens' Public Exhibition Programme. The event took place on 30th September 2006 at the newly open Botany Centre with Professor Leo Tan, Chairman of National Parks Board as the Guest-of-Honour.

This time we pay tribute to some of the most fascinating yet relatively less known ginger plants. The Gardens has had a long history of studying and collecting gingers. During his tenure as director of the Gardens, H.N. Ridley was very much interested in gingers. He employed two talented artists, brothers James and Charles de Alwis, between 1890 and 1908. They produced life-like drawings, capturing the fine and fragile ginger flowers as they had flowered in the Gardens or in the wild. Even now, these botanical illustrations serve as priceless scientific documentation of those ginger plants. These most detailed drawings by the de Alwis brothers are part of the Gardens' historic collection of about 2,000 botanical artworks.

As the 2007 calendar features selected ginger paintings by these past artists and in association to our Ginger Garden, a mini exhibit on Gingers and its related family was placed during the launch.

An exhibition "Exploring the World of Gingers" consisted of ten pictorial posters showcasing the uses of gingers not only in culinary delights but also as ornamentals in gardens or for cut-flower arrangements. To make it more interesting, the posters were accompanied with an interactive display,

where visitors could "See, Touch, Smell, Taste and be Amazed". The Exhibition focused on the five most commonly used gingers in Singapore 'fine cuisines', namely the common Ginger, Cardamom, Turmeric, Galanga and Torch Ginger (*Bunga Kantan*). The colourful pictures on the posters surprised visitors that ginger flowers could be as lovely as the well-known and popular orchids. Some visitors could not believe their eyes and even remarked, "You mean these are really ginger flowers?"

To learn more about gingers, visitors were also encouraged to participate in a mini quiz about gingers. Answers were found on the posters and the reward - a Singapore Garden Festival badge. The quiz was originally prepared for kids, but it was nice to see, that even adults had fun searching for the answers.

One of the highlights of the event was the "Decorate your Own Gingerbread Man" corner. Children thrilled themselves decorating gingerbreadman cookies using bags of icings, silvery sugar beads, eyes of chocolate and other decorative bits. Parents and even our own Gardens' staff

had a go at decorating the cookies, painstakingly yet lovingly baked by our staff too. Some of the "gingerbread men" did not even survive the ride home – their little creators ate them straight away!

Visitors also took the opportunity to buy ginger plants as well as other ginger products from vendors, who came to make this event more enjoyable.

It was a successful and fun event and we thank all our volunteers for helping us.

Serena Lee
Jana Leong-Skornickova
Herbarium

Photos by Jana Leong-Skornickova



Do you know that Bananas are close relatives of Ginger plants?

The "See, Touch, Smell and Taste" Corner



BEYOND THE GARDENS

Education in Botanic Gardens in the United Kingdom

Education Managers, Winnie Wong and Janice Yau, attended the 6th International Congress on Education in Botanic Gardens (10 to 14 September 2006) held in the prestigious and historical University of Oxford. This Congress on Education in Botanic Gardens has been billed as “the best ever”, attended by over 300 education professionals from around the world.



Congress participants during a storytelling session at the University of Oxford Botanic Gardens (UOBG), the oldest botanic garden in Britain

Janice Yau



Teambuilding through sketching impressions of UOBG

Janice Yau



International Diploma participants in front of the RBG Kew Palm House, with volunteer guide Mr Keith Grant (fifth from right). Hayuni is third from right

Education Outreach



An interactive session at the Chelsea Physic Garden's Education Centre

Seri Hayuni Hadi

This unique gathering brings together educators involved in plant-based education to inspire, motivate, share experiences and discuss educational practices, policies and research. Both Winnie and Janice brought back many new ideas and solutions for achieving sustainability, increasing public awareness of plants and reflection on practices, through innovative and more efficient ways in running educational activities.

In the same month, Education Officer, Seri Hayuni Hadi, attended the International Diploma on Botanic Garden Education at the world-famous Royal Botanic Gardens (RBG) Kew, for 5 weeks (18 September to 20 October 2006). This international diploma emphasizes interactive learning and the application of skills to the participant's working context. From this course, participants attained an understanding of all aspects required to create an education masterplan for their workplace. As requirement of the diploma, Hayuni needs to submit a practical educational workplan. She will focus on the new Jacob Ballas Children's Garden.

Janice Yau
Seri Hayuni Hadi
Education Outreach

A Canvas of Colours After The Rains....

The exceptionally heavy monsoonal rains of December brought along some interesting flowering at the Gardens.

A few exquisite, extraordinary flowers have appeared in view on a trellis at the historical Plant House (in Lawn L). One of these is the flowering climber, *Camoensia scandens* (Leguminosae), which hails from tropical West Africa. Its sheer size, fragrance, shape and colour will catch anyone's attention. Each flower is about 20 cm across. The clusters of large delicate milk-white flowers gilded and frilled gold-yellow with a distinct patch of similar colour on the standard petals are a delight. This climber is occasionally cultivated as an ornamental plant in the tropics. A herbarium specimen collected from the Gardens by the late Mohd Noor, a staff of the Gardens, dates back to 1918. At the Plant House, this climber flowers periodically.

Another climber that also flowered profusely at the Plant House is *Porana volubilis* (Convolvulaceae). It is commonly known as Bridal Creeper or Snow Creeper and is distributed from the Indochinese region (east of India right through to south of China) to the Malay Peninsula and Singapore. From herbarium collections, the earliest presence of this species in the Gardens dates back to September 1918. This climber has massive panicles of small cream-white, sweetly scented flowers. *Porana volubilis* has medicinal uses and research has shown that it is high in anticoagulant activity. Like the *Camoensia*, the *Porana* also flowers infrequently at the Plant House.

Over at the Ginger Garden, one handsome beauty that stands out defiantly amongst the gingers is the fairly large sub-aquatic aroid, *Cyrtosperma cuspidispathum* (Araceae). The leafy spathe of the flowering shoot is more than 40 cm long, brownish-violet in colour and tubular at the base. The leaf and inflorescence stalks have lovely markings along the length. It is growing in the pond near the entrance of the waterfall cave and was planted in 1999.

If one walks around the Ginger Garden, there are a few sightings of pretty "jewels" on the ground. *Etlingera fimbriobracteata* (Zingiberaceae) is one such "jewel" hidden away amongst the lush foliage.

It is commonly growing along streams and rivers in Borneo, and is one of the huge gingers with leafy shoots reaching up to 7 m. Our plants are moderately sized, reaching only 3-4 m. They thrive well in the Ginger Garden, rather hidden on the banks of the small pond not far from Halia Restaurant and near the waterfall. Its amazing and conspicuous yellow-red flowers are easily overlooked. They grow at ground level. The head of the inflorescence is sometimes partly embedded in soil. Each inflorescence has almost a hundred flowers, but only several open together each morning, lasting only a day. The flowers attract birds known as little spiderhunters, which pollinate them.

This species is closely related to the highly ornamental Torch Ginger (*Etlingera elatior*, Zingiberaceae), locally known as *Bunga Kantan*, which is used as a spice. *E. fimbriobracteata* is not used as a spice, but tribal people in Borneo use its leaf sheaths to weave into mats.

Many other gingers flower near the ground so it pays sometimes to look down when walking in the Ginger Garden - one can find jewels!

Nura Abdul Karim
Living Collection

Jana Leong-Skornickova
Herbarium



Nura Abdul Karim

The delicate inflorescence of *Camoensia scandens*



Nura Abdul Karim

The dainty flowers of *Porana volubilis*



Nura Abdul Karim

The handsome specimen of *Cyrtosperma cuspidispalum*



Jana Leong-Skornickova

Many flowers of *Etlingera fimbriobracteata*, forming a bouquet

Ivory Trumpet

Rothmannia longiflora (Family Rubiaceae)

The genus, *Rothmannia*, is an Afro-Asiatic one with about 40 species. Around 20 are found in tropical and south Africa while the rest are from Southeast Asia with one recorded from China.

Rothmannia longiflora (Synonym: *Randia maculata*) is an ornamental plant from tropical Africa. It is a shrub or small tree reaching 5 m tall. It carries the common name, Ivory Trumpet, and is relatively easy to grow. It also flowers frequently. The highly decorative flowers are more or less erect and solitary. The corolla, reddish and hairy on the outside, has a long slender tube about 20 cm long. The inside of the corolla lobes are white with purple or red blotches.

In Africa, this is a plant with many uses. The leaves, twigs, bark and roots are considered to have analgesic (pain relieving) properties. The fruits are used to make blue-black markings on the face and body, and the seeds are also a source of dye.

Specimens of this tropical African plant can be seen at the VIP corner in the National Orchid Garden. They were propagated from a plant donated to the Gardens some years ago by Mrs Elisabeth Chan. It deserves to be cultivated in more gardens.

Andrea Kee
Plant Information Unit

Photo by Andrea Kee



FROM THE EDUCATION OUTREACH

Art in Nature: New Workshops for Children

The June 2006 school holidays saw art workshops being offered for the first time to the public at the Gardens! A joint collaboration between the Gardens and artistic facilitators from Paintworks, two half-day art workshops were offered to small, manageable groups of 10 to 15 kindergarten and primary school children.

In the “I Paint Like Monet” workshop, master instructor Angelina Christian introduced young participants to the life and works of the famous French impressionist painter Claude Monet. They studied his unique style before venturing out to create their own Monet-inspired paintings on location, at the Symphony Lake of the Gardens. After all, what is better inspiration for Monet art than the famous Gardens’ water lilies?

The other art workshop “Nature’s Footprints” exposed participants to the many artistic ways and methods of documenting, experiencing nature, and merely letting artistic juices flow! Under the guidance of art instructor Denise Lim, children made creatively inspiring art projects and had loads of fun along the way!



Creating simple yet colourful and artistic “chalk records” using leaves



Denise demonstrating how to make animal paintings using “hand & finger prints”



Studying some “hand & finger prints” of cats – clues to a treasure hunt



Hard at work, making “Shadows from Nature”

Janice Yau
Education Outreach

Photos by Janice Yau

Taxonomic Research on the Orchid Genus *Calanthe*

The genus *Calanthe* is an almost exclusively terrestrial orchid genus centred in Southeast Asia. A joint project between Dr Phillip Cribb (Royal Botanic Gardens Kew, UK), Dudley Clayton (also UK) and myself on the taxonomy of the genus will eventually provide a better insight into the relationships of the various *Calanthe* species and result in a comprehensive species-level account.

Calanthe and its Biology

The genus was established in 1821 by the British botanist Robert Brown. Currently about 185 species are accepted in this genus. Plants of the genus *Calanthe* are mostly herbs from 30 centimetres to 1 metre tall. The large ribbed ('plicate') leaves are evergreen or deciduous, and the flower stalk appears from the base of the plant in a lateral position. An important character to distinguish between the different species in the genus are the flower bracts which are either persistent or fall off very early (caducous).

The flowers of *Calanthe* are often showy. In fact the botanical name is derived from the Greek words *kalos* (= beautiful) and *anthos* (= flower). Their colours range from white and yellow to pink and purple, and their segments have often darker dots and other markings, particularly the lip. While the three sepals and two petals are generally simple and unlobed, the lip is usually rather complex and mostly two to four-lobed (rarely unlobed). Outgrowths at the lip base

in the form of ridges or papillae are often present (in the widespread *C. triplicata* they are either red or yellow and in deep contrast to the otherwise white flower). Normally, the lip has a spur, which can be a few millimetres or up to five centimetres long. Often this spur is thickened towards the end ('clavate'), or bent 180 degrees like a hook as in *C. pulchra*.

The most common habitats for calanthes are mountain forests. Only very few thrive in lowland rain forests. Almost all species grow on the ground (terrestrial), either in leaf litter or in moss on rocks on the forest floor. Occasionally, the plants grow on trees. A species, which is frequently encountered as an epiphyte, is the large-flowered *Calanthe vestita*.

Calanthe species are not very common in cultivation (see *Gardenwise* 27(2006):25). Like many other terrestrial orchids the calanthes are often not easy to grow. Plants of this genus are also not very desirable as their flowers are not long-lasting. However, because of the attractive flowers, the genus has certainly great potential in horticulture.

Taxonomic Problems

Ever since its discovery, taxonomists are keen to know the closest relatives of this genus. The latest classification of the orchid family (Pridgeon *et al.* 2005; in *Genera Orchidacearum*) placed *Calanthe* in the *Collabium* group with the genus *Phaius* being its closest relative. Both genera share

the large ribbed leaves, as well as several flower characters. There is even an artificial intergeneric hybrid between *Phaius* and *Calanthe*, namely *x Phaiocalanthe* Kryptonite, which further supports the close relationship. However, *Calanthe* species normally have smaller flowers in denser inflorescences than the typical *Phaius*. The main difference of the two is that in *Calanthe* the lip base is firmly united with the column, while in *Phaius* the two organs are free. There are a few exceptions in both genera, which shows that this lip-column fusion is taxonomically not as useful as previously believed. In our project we plan to re-evaluate the generic delimitation of the genera *Calanthe* and *Phaius* and to come up with a new concept.

Currently the species-level taxonomy of the genus is not very satisfactory. It is often difficult to identify *Calanthe* species in the wild. Many calanthes are similar to each other and form 'species complexes'. The best example of such a species complex is the group around the widespread *C. triplicata*. It remains to be shown whether these calanthes are sufficiently distinct to be recognized as separate species or should better be united and treated as one very variable species.

Hubert Kurzweil
Herbarium



Calanthe triplicata



Calanthe sylvatica



Calanthe rosea



Calanthe pulchra

Calanthe pulchra with the
hooked spur



Calanthe simplex



Calanthe cardioglossa



Calanthe engleriana



Calanthe kinabaluensis

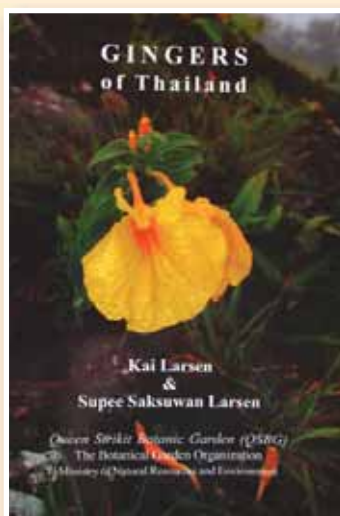


Phaius reflexipetalus

The Boom of Ginger Books!

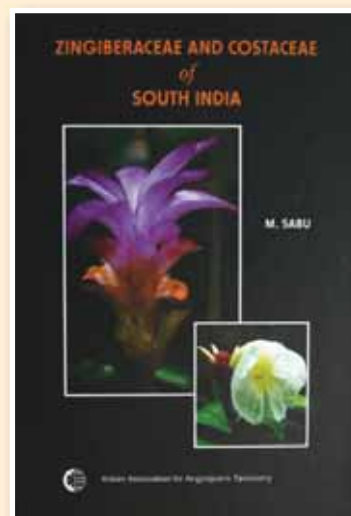
A handful of new books on Gingers have come off the press just in time for the 4th International Ginger Symposium, held in Singapore in July 2006. Armed with many colour pictures, all of these books are not only candies for the eyes of botanists, but they open up the world of unique beauty of gingers to amateur botanists and naturalists. Authors of these books hope that their works will help people to realize the need to conserve the natural habitats of gingers in order to preserve their quaint beauty for future generations.

Jana Leong-Skornickova
Herbarium



Gingers of Thailand was written by the botanist couple, Prof. Kai Larsen and his wife, Supree Saksuwan Larsen, who both devoted many years of their life to study the gingers. Thailand is one of the 'hot spots' for ginger diversity and with over 300 species so far known from there, it is hard to find any plant community in Thailand without gingers. The book features 26 genera native to Thailand with a general description of each genus and accompanied by numerous colour photographs of the various species of the genus. It also mentions two genera, which were not yet found in Thailand, but are likely to occur in some less explored parts of Thailand. A chapter on gingers in horticulture, food and medicine, and a preliminary checklist of Thai Zingiberaceae, are also included.

Published in 2006 by Queen Sirikit Botanical Garden, Thailand. 184 pages, colour photographs. Price THB 400.



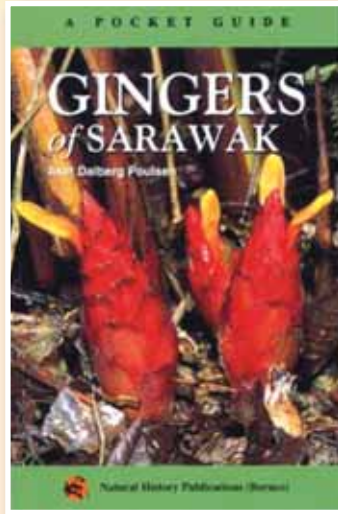
Zingiberaceae and Costaceae of South India by Mamyil Sabu is the first book on South Indian Gingers. It features all known members of the family, together with descriptions, citations of herbarium materials, notes on distribution, flowering, ecology, cytology and other aspects of the plants. Clearly, the book targets botanists rather than the laymen. However, many colour photographs of the 10 genera are included in the book, and most of the species are accompanied by line drawings and distribution maps, making the information accessible to all interested public.

Published in 2006 by Indian Association of Angiosperm Taxonomy, India. 282 pages, colour photographs. Price USD 120 (outside of India).



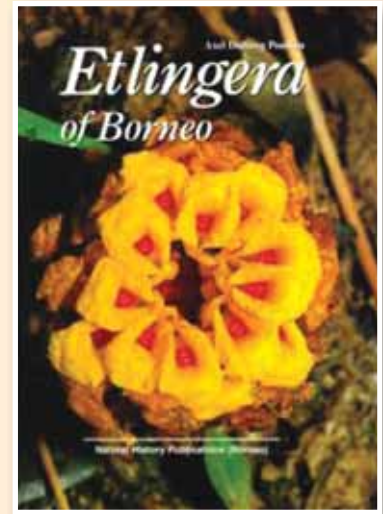
Zingiberaceae of China by Gao *et al.* depicts 19 genera of Chinese Zingiberaceae and showcases one to several species for each genus, accompanied by a short description. For many readers, the drawback of this book might be the fact that the whole book is written in Chinese, the only exceptions being the Latin names of the featured species and the list of references. Yet, the superb colour pictures can make this book be wanted by all ginger lovers, irrespective of their Chinese language proficiency.

Published in 2005 by Scientific Publisher, Beijing, China. 146 pages, colour photographs. Price CNY 120.



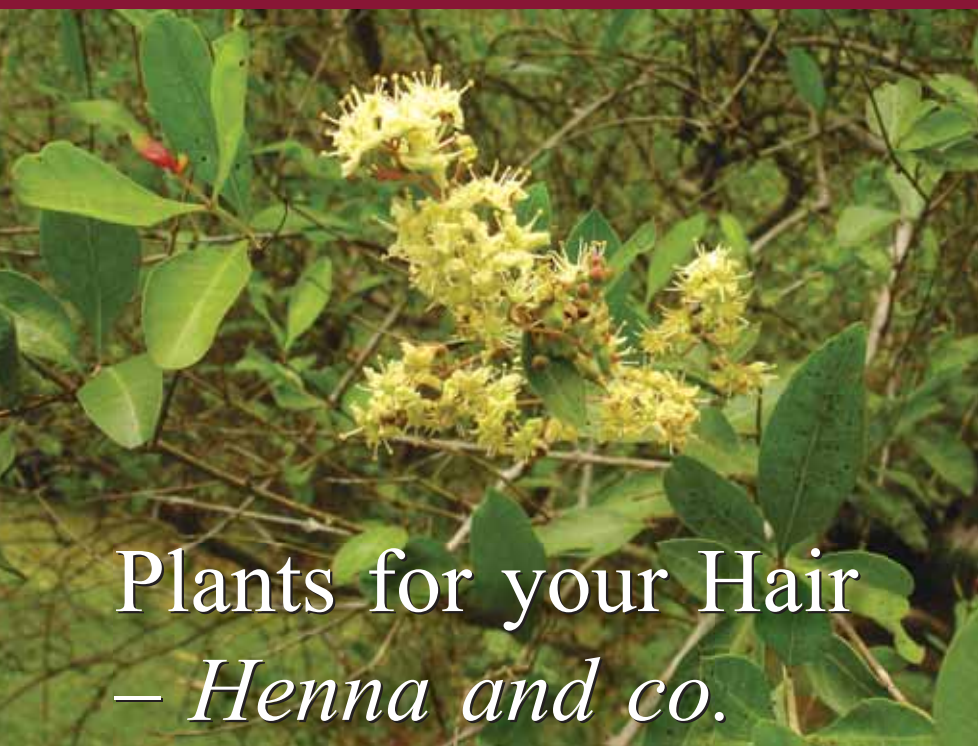
The Danish botanist, Axel Dalberg Poulsen, had a fruitful year in 2006 being the author of two books newly printed. Small, handy and packed with many colour pictures, this is the best description of his first book entitled *A Pocket Guide: Gingers of Sarawak*. All 18 genera known from Sarawak are exemplified by at least one species, and the meanings of their scientific names are explained. All the selected 64 species are shortly described with notes on their ecology, history or their native names, and uses. The book includes also a checklist of 150 ginger species so far known from Sarawak and a new key to the genera. This is followed by the suggested literature for further reading on particular genera. The guidebook, with all the information, weighs only 200 grams, and its small size easily fits into anyone's pocket during a trip to many of the Sarawak's national parks and nature reserves.

Published in 2006 by Natural History Publications (Borneo), Malaysia, in association with Royal Botanic Garden Edinburgh, UK. Over 102 pages, colour photographs. Price USD 9.



Poulsen's second book, *Etlingera of Borneo*, is a wonderful revision of this ginger genus, known especially for the magnificent Torch Ginger (*Etlingera elatior*) so commonly used in Asian cuisine and also as an ornamental. The genus *Etlingera* comprises over 100 species in Asia. A number of its species are used as spice, medicine, ornamentals and for other purposes. In Borneo this genus is richly represented by 40 species and two varieties. This book represents a modern, critical revision based on many years of the author's fieldwork. For each taxon, several photographs showing the important morphological details are accompanied by detailed descriptions, beautiful line drawings, a map of distribution, and specimen citations. An identification list of *Etlingera* herbarium materials sorted by collectors' number is a welcome bonus for botanists. The book is beautifully designed and is full of stunning colour pictures – attributes that make it, apart from having excellent scientific value, a perfect 'coffee table' book to possess.

Published in 2006 by Natural History Publications (Borneo), Malaysia, in association with Royal Botanic Garden Edinburgh, UK. Over 263 pages, colour photographs. Price USD 55.



Jana Leong-Skornickova

Plants for your Hair – *Henna and co.*

Lawsonia inermis

Currently, perhaps the commonest use of words related to botany is in advertising for hair care products. Almost any plant imaginable is touted as the magic ingredient of shampoos, conditioners or other potions guaranteed to result in beautiful hair. ‘Botanical’ has become a keyword for copywriters.

Before the advent of synthetic soaps, detergents and oils, plants provided most of the materials for hair care and undoubtedly some traditional products were effective and continue to be used.

Henna is perhaps the best-known hair-related plant in Asia. The English name comes from the Arabic *Hinna*, probably also the root of the Malay name *Inai*. Henna comes from the shrub or small tree *Lawsonia inermis* (Lythraceae). The henna plant is attractive with very fragrant white flowers. It can be grown quite easily in gardens in Singapore, either in the ground or in large containers. The henna leaves (dry or fresh) are pounded to provide a dye.

Traditionally this paste has been used, particularly through the Middle East and India, to dye hair red. Given the preponderance of naturally black hair throughout Asia, henna has frequently found use as a way of hiding grey hair rather than colouring black hair, though purportedly henna adds shine to dark hair.

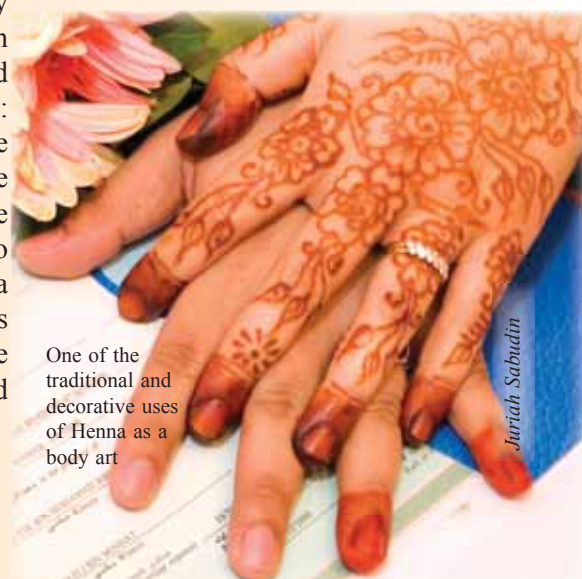
Another cosmetic use for henna is to stain hands, feet and nails. In Malay and many Indian and Arab societies, henna paste is traditionally used to decorate hands and feet of brides for wedding ceremonies. Using henna paste for body art is currently fashionable in Europe and North America, where it is often referred to by the Hindi word for henna: *Mendhi*. Other ingredients can be added to the henna to change the colour. Coffee for instance can make a darker brown. Addition of indigo makes a black dye. Indigo itself is a blue dye derived from various species of *Indigofera* (Leguminosae). It is the traditional true blue of denim and other fabrics.

Traditionally hair would have been washed with ingredients to add astringency to help clean the hair and others to provide fragrance. In Southeast Asia these might include *Limau Purut* (*Citrus hystrix*, Rutaceae), Pandan Leaf (*Pandanus amaryllifolius*, Pandanaceae) and coconut water or milk.

Oils of various types have long been used to give hair a sheen or shine. In Asia, coconut oil and sesame oil (usually called gingelly oil in this context) are often used. In Europe of the 18th and 19th centuries hair oil was often referred to as Macassar oil, after the town of Makasar in Sulawesi, Indonesia. Macassar oil had a variety of ingredients but the name has become associated with the oil made from the seeds of the Ceylon Oak (*Schleichera oleosa*, Sapindaceae). The tree is actually a relative of the rambutan not an oak. One problem with using hair oil is the tendency to stain upholstery and cushions where the head rests. The solution was small mats of cotton or linen placed over the top of the back of armchairs and sofas. These were named after their purpose at deterring the hair oil – antimacassars.

Ian Turner

Research Associate
Winchelsea
United Kingdom



One of the traditional and decorative uses of Henna as a body art

Juriah Sabudin



KEY VISITORS TO THE GARDENS (JULY TO DECEMBER 2006)

Name	From
Mr Abdellatif Jouahri	Governor of Central Bank, Morocco
Pehin Dato Hj Abdullah Bakar	Minister of Development, Brunei Darussalam
Ms Aida Shafreena	University of Malaysia, Sarawak, Malaysia
Mr Andrej Kavcic	Under Secretary, Ministry of Finance, Slovenia
Mr Billy Bieso Bau	Lae Herbarium, Papua New Guinea
HE Cemil Cicek	Minister of Justice, Turkey
Mr Charles Curwuen	Advisor to Governor of Victoria, Australia
Mr Charles Soludo	Governor of Central Bank, Nigeria
Ms Chew Ming Yee	Forest Research Institute of Malaysia, Malaysia
Prof David de Krestor AC	Governor of Victoria, Australia
Mrs David Fisher	Spouse of Mr David Fisher (USA), Advisor to Monetary Authority of Singapore
Tuan Haji Esa Bin Ahmad	Deputy Director General, National Landscape Department, Malaysia
Hon Faumiuna Liuga	Minister of Natural Resources and Environment, Samoa
HE Festus Mogae	President of Republic of Botswana
Dr George Staples	Bishop Museum, Honolulu, USA
Mr George Yeo	Minister of Foreign Affairs, Singapore
Mr & Mrs Guillermo Ortiz	Governor of Bank of Mexico, Mexico
Mr H Dada Rosada	Mayor of city of Bandung, Indonesia
HE Hayri Erol	Turkish Ambassador to Singapore
Mr He Yi	Government Department Jianbei District, People's Republic of China
Mr Hector Valdez Albizu	Governor of Central Bank, Dominican Republic
Dr Helena Duistermaat	National Herbarium of the Netherlands, the Netherlands
Dr Hidenobu Funakoshi	Shinshu University, Japan
HE Hifikepunye Pohamba and Spouse	President of Republic of Namibia
Mr Ibrahim Hirschson	Minister of Finance, Israel
Mr Jin Ren Qing	Minister of Finance, People's Republic of China
Mr Khalid Ansari	Asst Under Secretary, Ministry of Municipal & Agriculture Affairs, Kingdom of Bahrain
Mr Khoo Ming Sheng	Centre for Tropical Forest Science, Singapore
Mr Kozo Iwata	Vice Chairman, Kobe Chamber of Commerce and Industry, Japan
Mr Kropas	Director of Central Bank, Lithuania
Mr Li Lan Qing	Former Vice Premier of China
Mr Li Rong Rong	Chairman, State-owned Assets Supervision, People's Republic of China
Dr Lindy Cayzer	Australian National Herbarium, Canberra, Australia
Dr Livia Wanntorp	Stockholms University, Sweden

Name	From
Mr Luo Zhijun	CPC Jiangsu Provincial Committee, People's Republic of China
Mrs Lynn Finchum	Spouse of the Military Attache, Old House Int'l Relation Community of the US Congress, USA
Dr M. Sugumaran	University of Malaya, Malaysia
Ms Megawati Sukarnoputri	Former President of the Republic of Indonesia
Mr Michael David Clausen	2 nd Secretary of US Embassy in Singapore
HE Miles Kupa	Australian High Commissioner to Singapore
Ms Nor Ezzawanis	Forest Research Institute of Malaysia, Malaysia
Mr Otto Miettinen	University of Helsinki, Finland
HE Dr Park Hae Sang	Vice Minister for Agriculture & Forestry of Korea, South Korea
Mr Pavlo Haidutsky	Head of Directorate, Social and Economic Policy, Ukraine
The Honourable Peter Costello and Spouse	Treasurer of the Commonwealth of Australia
Ms Phoon Sook Ngoh	Forest Research Institute of Malaysia, Malaysia
Ms Rafidah Abd. Rahman	Forest Research Institute of Malaysia, Malaysia
Ms Ramune Vilija Zabuliene	Deputy Governor of Lithuania
Mr Reinoldijus Sarkinas	Governor of Central Bank, Lithuania
Mr Rodrigo De Rato	IMF Managing Director, USA
Dr Rusea Go	University Putra Malaysia, Malaysia
Dr Ruth Kiew	Forest Research Institute of Malaysia, Malaysia
Mrs Silvia Gasparovicova	First Lady of the Slovak Republic
Dr Sri S. Tjitrosoedirdjo	SEAMEO Biotrop, Bogor, Indonesia
Dr Stephen Gale	Royal Botanic Gardens, Kew, UK
Mr Sumiharu Arima	Deputy Director General Agricultural Department, Kagoshima Prefectural Government, Japan
Ms Thaya JenJittikul	Mahidol University, Thailand
Mr Tu'u'u leti Taulealo	CEO of the Ministry of Natural Resources & Environment, Samoa
HE Vaclav Klaus and Spouse	President of Czech Republic
Mr Vadym Kopylov	First Finance Minister, Ukraine
Mr & Mrs Vartan Khachatryan	Minister of Finance & Economy, Armenia
Mr & Mrs Vittorio Corbo	Governor of Central Bank, Chile
Dr Wong Khoon Meng	University of Malaya, Malaysia
Mr Zhang Junkun	Vice Mayor of Liuzhou, People's Republic of China
Mr Zhang Qing	Director of Environmental Protection Bureau, Songjiang District, People's Republic of China
Mr Zheng Xianglin	Deputy Director General, Foreign Affairs Management, MFA, People's Republic of China
Mr Zoundi	Governor of Central Bank of Burkina Faso



An orchid naming ceremony in honour of the President of the Czech Republic and spouse was held on the 4th October 2006. The new hybrid is officially known as *Mokara Vaclav Livia Klaus*



A new orchid hybrid, *Dendrobium Hifikepunye Pohamba*, is named after the President of Namibia (second from right) on the 1st November 2006. Smiling proudly is his wife, Mrs Penepupifo (far right), while Dr Chin See Chung, Director of the Gardens, presented him with the birth certificate of the orchid

Pictures of a Thousand Words

Over the years, the Gardens' landscapes have changed while retaining their heritage charms. People have moved. Buildings erected and demolished. And as the Gardens expands and metamorphoses, memories linger. However, memories fade away over time. And as the Gardens welcomes new staff and the older leaves, only pictures that remain to speak of the 'glory, glory days'.

The new Botany Centre at Tanglin Core recently became the nerve centre of the Gardens. State-of-the-art features and facilities include the Green Pavilion, a modern Singapore Herbarium, and the Library of Botany and Horticulture with its Public Reference Centre. But who remembers how the Gardens appeared in the early 20th century?

Luckily, the Library stores a collection of old photographs from the past, mostly in black and white. Despite advent of modern technology, where information and pictures can be stored in compact discs or other relevant media, nothing can replace the feel of an old photograph in your hand. It encapsulates and momentarily motions you to travel back in time, to when herds of cattle were allowed in the Gardens' grounds or rows and rows of Para Rubber trees (*Hevea brasiliensis*, Euphorbiaceae) were cultivated for experiments. Pictures CAN speak a thousand words.

Hassan Ibrahim
Library



The giant Victoria Lily in the Swan Lake (date unknown but possibly also early 1900s)



Rubber Plantation in the Gardens. Picture was also used by H.N. Ridley for his report on *Para Rubber in the Botanic Gardens Singapore*, in *Agricultural Bulletin of the Straits and Federated Malay States* 2(1903). Trees pictured right were planted in 1878, from the original 11 seedlings sent from Brazil. Trees pictured left were planted in 1884



View across to Lawn E from the Swan Lake (picture taken in 1903)