

# GARDENWISE

INTRODUCTORY ISSUE

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## DIRECTOR'S MESSAGE

Gardens are living entities. As with other living entities, gardens go through cycles of growth, evolution, dormancy, even demise and renewal. The measurement of time in a garden is pegged to its foundation plantings, primarily the tree specimens. What is planted today may not even be in its prime for another half century or more. Gardens are therefore youthful at a hundred years of age. At 130 years, the Singapore Botanic Gardens is responding with zest to the vigorous and vibrant stirrings of a youthful nation less than a fifth its age. With its wealth of accumulated resources to draw upon, the Singapore Botanic Gardens is catalysed by the drive to upgrade Singapore to the status of the first developed city on the equator by embarking upon a major redevelopment programme. The Gardens' 130th Anniversary therefore serves as a launch of its new career as a relevant and valued botanic and horticultural resource as well as an educational, recreational and cultural institution into the next millennium.

A key role of the modern botanic garden is its interaction and relationship with the community. The research and education programmes must be made accessible and communicable to the layman in the form of exhibitions, lectures, demonstrations, guided tours and publications. This inaugural issue of GARDENWISE launches a publication which will not only serve as a house organ, but also as a newsletter for the community on matters regarding the Singapore Botanic Gardens, Fort Canning Park and the Nature Reserves.

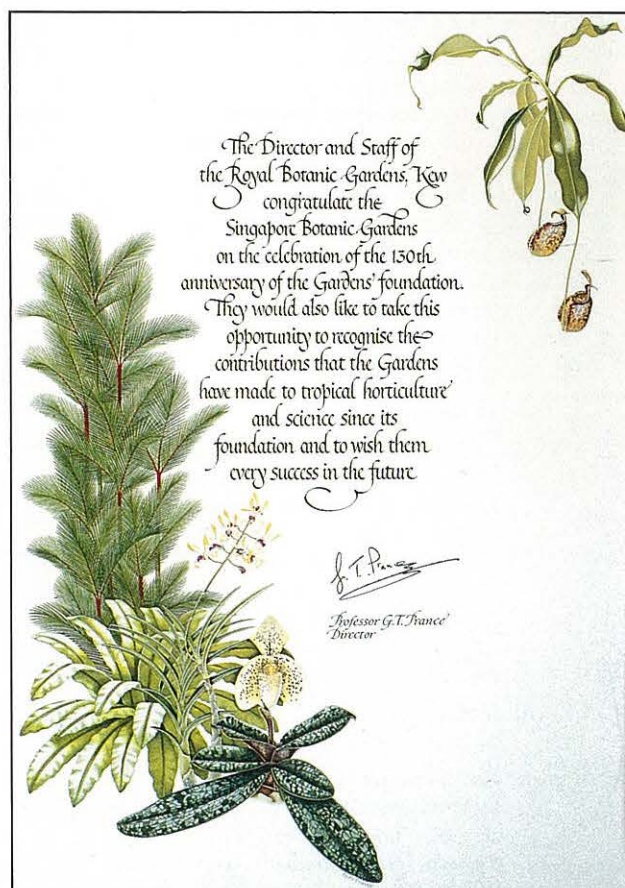
The choice of GARDENWISE as the title for our newsletter is apt. 'Wise' as an adjective is defined as 'having knowledge'. Used as a suffix, it means 'in the manner of' or 'in the matter of'. Thus, GARDENWISE will contain information and knowledge pertaining to gardens. Its appeal should be broad in the manner of the appeal of gardens, and its contents will centre on matters concerning gardening and the Gardens. The present format of GARDENWISE will undoubtedly evolve with time. As with the Gardens itself, this evolution will result in a product better able to achieve its aims. You readers will hopefully help in the process.

Kiat W. Tan

DR TAN WEE KIAT  
Director  
Singapore Botanic Gardens

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# REDEVELOPMENT

## MASTERPLAN FOR THE



**T**he Singapore Botanic Gardens covered 75ha in its prime. Extension of the Economic Garden to form part of the Raffles College campus reduced the Gardens to 32ha. With the development of the Botanic Gardens Extension which was completed in 1987, part of the former Economic Garden was again restored to the Botanic Gardens. The Gardens is currently a linear strip of 46ha stretching between Bukit Timah Road to the north and Holland Road to the South.

A Masterplan for the physical redevelopment of the Botanic Gardens has been conceived to (a) provide focus and orientation for visitors, better amenities, and improved botanic and horticultural displays; (b) provide better facilities for the valuable Herbarium and Library and for the research and education programmes.

The masterplan is based on the Core Concept. The strategy is to create central cores of activity so that visitors with limited time during their tours can have the fullest possible experience of the Gardens without having to spend a lot of time walking from one exhibit to another. Concurrently, establishment of secondary and tertiary cores spaced strategically to cover the Gardens will encourage all visitors to the Gardens to spend a longer time exploring.

### A. Primary Core

This will now constitute the main entrance to the Botanic Gardens and will introduce that vital interface between the scientific and educational activities with the recreational aspects of the Gardens. It will be located at the mid-point of the Gardens along the expunged section of Dalvey Road. Key features in this core are:

#### 1) Visitor Centre Complex

##### (i) An Interpretive Centre

The Interpretive Centre will have audio-visual displays to orientate the visitor to the various attractions in the Gardens. This will enable the visitor to plan how to spend the time available and will hopefully induce him to extend his time at the Gardens.

##### (ii) Administrative, Research and Education Centre

The building design will be such that visitors can view some of the research operations through glass-panelled corri-

dors. Tantalising glimpses of the processes of plant preservation for study and historical record, micropropagation, plant growth chambers and other research activities will leave the visitor in no doubt that the Botanic Gardens is a centre of serious scientific study, and not just another pleasure garden.

#### (iii) Function Hall

The multi-purpose Function Hall is envisioned to become the venue for a host of botanical and horticultural activities ranging from flower shows, exhibitions and competitions, to award presentations, convocation ceremonies and public lectures.

#### 2) EJH Corner House

The former residential building strategically located on top of the hillock in this core has an interesting colonial architectural identity which should be preserved. The building is excellently located, with a panoramic view of the Palm Valley and would be well suited for use as a tea house. It has an immediate captive clientele in the visitors to the adjacent Visitor Centre Complex, who will welcome the opportunity to relax and enjoy the tranquil Gardens' surroundings from this historic building.

### B. Secondary Core

This will be a major attraction of the Gardens and features an exposition of the Gardens' Orchid programme which began in 1926.

#### 1) VIP Reception Hall

The gracious two-storey colonial home built in 1866 sets the tone of development for the Gardens. It will be restored to serve as the VIP reception centre for honouring State Visitors with the naming of an orchid hybrid.

#### 2) Orchid Research

Visitors will be able to view orchid seedlings and cultures in their flasks and bottles growing in sterile media tended by research technicians.

#### 3) Orchid Garden Centre

(i) From a vantage point on a hill, a viewing patio commands a sweeping panorama of orchids growing and blooming in a terrace garden along the slopes. This will be the most comprehensive garden planned for the public display of orchids in Asia, and features the products of the historic Orchid breeding programme renowned in pioneering the development of the commercial orchid industry into a multi-million dollar enterprise.

(ii) Included in the Orchid Garden is an Orchidarium simulating the tropical environment in which the majority of our orchid species grow. Here will be found rare and endangered species grown as part of the conservation effort of the Gardens.

### C. Tertiary Cores

The two tertiary core complexes are developed to provide focal points of interest at the two ends of the Gardens.

#### 1) Tanglin Complex

The Tanglin complex to the south features two historical buildings of the Gardens which will be restored for new usage.

#### 2) Bukit Timah Complex

(i) This complex will have as its anchor attraction a Spice Garden and Restaurant.

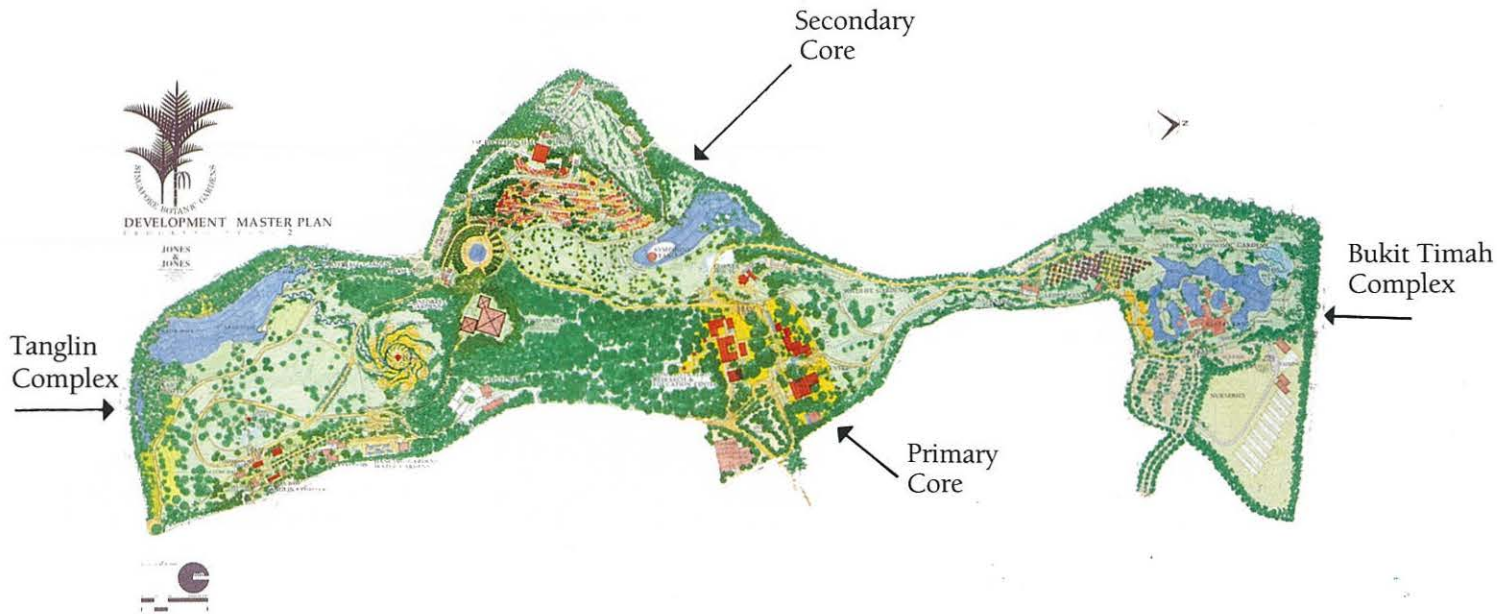
(ii) The Restaurant, which overlooks a lake, will be set amidst spice plants which have played such an important historical and economic role in this region.

(iii) Setting the tone for the development of this newest section of the Gardens, the Spice Garden and Restaurant will be complemented by a collection of trees and shrubs which are the source of economic products used for trade in the colonial days. A collection of Bamboo species is another feature in this northern complex.



# SINGAPORE BOTANIC GARDENS

by Ng Siew Yin



## D. Infrastructural Facilities

The centre of maintenance and service operations for the Gardens will be developed at the current site of the Potting Yard. Additional service facilities such as holding nurseries for the conditioning and propagating of display and replacement plants will also be developed. Public amenities and shelters will be strategically located throughout the Gardens for the comfort and convenience of visitors.

## E. Special Exhibits

Well developed special exhibits not only enhance the other programmes of a botanic garden, but also establish its reputation among the gardens of the world.

- (i) Among the special exhibit projects planned for the Botanic Gardens, the most innovative is an environmentally controlled Cloud Forest biosphere. This unique exhibit will not only allow for the study and display of selected montane flora from the high elevations of our mountains along the equator, but will also provide an intriguing cool mountain environment to contrast with the 4 hectares of hot, moist, lowland tropical forest preserved in the Gardens' Jungle.

- (ii) A Palmetum showcases one of the Gardens' most important plant family collections, while a Fernery with its lush, green and delicate specimens give prominence to a familiar component of our Asian forest.

- (iii) Pergolas provide the ideal structures for displaying the many flowering creepers and climbers that are often neglected by botanic gardens, while ornamental plants in landscaped beds will dress up the historic Bandstand Hill as a prime photo-opportunity area in the Gardens.

## F. Living Collections

The living collections of a botanic gardens give it visual appeal. They are important elements in the global germplasm conservation effort for species from our vanishing forests and other natural habitats such as mangroves and marshes. Tree, shrub and herb species from our local and regional forests as well as those introduced from tropical regions around the world provide a palette for the landscape architect and the gardener to work with. The scientist studies, documents, and possibly discovers properties and new uses in these plants to

benefit man. Each specimen grown in the Gardens is a value-added component in that its genetic origin and phenology are carefully recorded. Horticultural collections of ornamental cultivars which are the products of breeding and selection programmes are also featured in the Botanic Gardens together with the natural species.



# FORT CANNING

## SINGAPORE'S HISTORY PARK

by Foong Thai Wu

In the old days, Fort Canning was shrouded in mystery and was known as Bukit Larangan (Forbidden Hill). When Sir Stamford Raffles established his residence on the summit in the 19th century, it came to be known as Government Hill. The hill inherited its present name of Fort Canning after Lord Canning, the first Viceroy of India, trans-

formed it into a military fort for the defence of Singapore in 1859.

The 26-ha park is being redeveloped to exploit its historical significance. It is here that the history of Singapore can be traced continuously back to the 14th century as evidenced by recent archaeological findings at the hill. When the re-development is completed in the early

1990s at an expense of \$25m, Fort Canning will take on the mantle of the only history park of its kind in Singapore. With the cultural awakening of the populace, the hill is set to provide an anchorage and backdrop for the performing arts. It will relate in total to the proposed Civic and Cultural District.

The historical features on the hill will be linked into a "Walk of History". The significance of each monument will be highlighted by a plaque so that a stroll along this walk likens an easy outdoor history lesson. The exhibits of the "Walk of History" include:

### a) The Keramat Iskandar Syah

The Keramat is a sacred tomb venerated by Muslims. It is one of the more enigmatic structures on Fort Canning as the identity of the person buried under the Keramat remains unestablished. The Keramat will soon be housed in a shelter of 14th century Malay design.



The Fort Gate



The Parit Singapura at Fort Canning



One of the underground operations rooms at the Far East Command Centre

The Keramat Iskandar Syah



## SCROLL OF APPRECIATION

### b) The Archaeological Excavation Profile

An archaeological excavation profile will be preserved next to the Keramat to show the different layers of soil from different periods together with the relevant artefacts.

### c) The Parit Singapura

The Parit Singapura is a narrow ditch which formed part of the 14th century defence system.

### d) The Raffles House

A Raffles-era-type bungalow will be reconstructed at the summit of the hill where the Government House once stood. Raffles is a famous name in Singapore. Yet, the story of this important man of great vision remains to be properly told. The plan is to re-enact the life of this gentleman in period rooms in the Raffles House.

### e) The Pancur Larangan

The Pancur Larangan, the bathing place of the 14th century Malay royalty remained an important source of drinking water for passing ships until 1830. The location of the original stream once identified will be demarcated accordingly.

### f) The Underground Far East Command Centre

The 9m deep labyrinthal Underground Command Centre was constructed by the British under the command of Lt. General Percival in 1938. It has over 20 operations rooms. The intention is to restore the Underground Bunkers as an Interpretive Centre on the defence of Singapore by means of didactic audio-visual displays.

### g) The First Botanic Gardens

The first botanic gardens in Singapore was established on the northeast slope of the hill in 1822. Economic plants such as coffee, pepper, cloves, nutmeg and gambier were cultivated. A representation of this garden will be recreated.

### h) The Fort Gate

The Fort Gate is symbolic of Fort Canning and will be restored as a monumental landmark.

With the wide spectrum of attractions and activities to be launched on the hill, Fort Canning is poised to be a premium city park which offers unique recreational opportunities.

**T**he Director and Staff of the Singapore Botanic Gardens would like to thank the sponsors for their generous donations toward the 130th Anniversary Celebrations, the various embassies and consulates for participating in the "Christmas Trees from Around the World" Display, the societies affiliated to the Gardens for their exhibits, judges for the various competitions, sister gardens in Japan for their donation of plants and cut flowers, speakers for the Seminar on the Role of Botanic Gardens in the 21st Century, committee members, colleagues of Parks & Recreation and friends for helping in the 130th Anniversary Exhibition.

We also wish to thank HE David Marshall for the sculpture 'Lady on a Hammock' and the Singapore Symphony Orchestra for their outdoor concert on 2 Dec 89.

### SPONSORS

#### 130th Anniversary Celebrations

The Hongkong & Shanghai Banking Corporation  
Lady Yuen Peng McNeice  
Singapore Pools (Pte) Ltd  
Lee Foundation  
Risis Pte Ltd  
Tropical Produce Co. (Pte) Ltd  
Garden & Landscape Centre (Pte) Ltd  
Mr Tan Hoon Siang  
Mr Tan Jiew Hoe  
Nassim Mansion Pte Ltd  
Canon Marketing Services Pte Ltd  
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*Demonstrations Gardens*  
Island Landscape & Nursery Pte Ltd  
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Builders Shop  
Central Granite Industries Pte Ltd  
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Waterways Enterprises Pte Ltd  
Ideal Electric Singapore Pte Ltd  
Varimerx S.E. Asia Pte Ltd  
Kompan Playscapes  
Avant Garde Design Pte Ltd  
L & M Agencies

### DIPLOMATIC MISSIONS

*Christmas Trees From Around The World*  
1. Argentina 2. Australia 3. United Kingdom  
4. Bulgaria 5. Chile 6. Denmark 7. France  
8. Federal Republic of Germany 9. Greece  
10. Japan 11. Republic of Korea 12. Mexico  
13. Netherlands 14. New Zealand  
15. Norway 16. Philippines 17. Sri Lanka  
18. Sweden 19. Thailand 20. Turkey  
21. United States of America 22. Malta  
23. Papua New Guinea

### SOCIETIES

1. The Horticultural Guild (Singapore)
2. Malayan Nature Society
3. Orchid Society of South East Asia
4. Singapore Gardening Society

### JUDGES

#### *On-the-Spot Children's Art Competition*

Mrs Juliet Chew  
Mr Foo Chee San  
Mdm Lee Ying  
Brother Joseph McNaliy

#### *Photo Competition*

Mr Cheong Tack Wai  
Mr Morton Strange

#### *Christmas Tree Competition*

Mr Casimir Rozario  
Mr Lim Ann Hoe  
Prof Gloria Lim  
Dr Sim Wong Kooi

### SISTER GARDENS IN JAPAN

1. Miyazaki Prefectural Aoshima Botanic Garden
2. Flower Centre in Hyogo Prefecture
3. Nambo Paradise Chiba Prefecture

### SPEAKERS FOR THE SEMINAR

Mr H.M. Burkill, Director (1957-1969)  
Singapore Botanic Gardens

Professor Carrick Chambers, Director  
Royal Botanic Gardens, Sydney

Dr Phillip Cribb  
Principal Scientific Officer and  
Curator of the Monocot Herbarium  
Royal Botanic Gardens, Kew

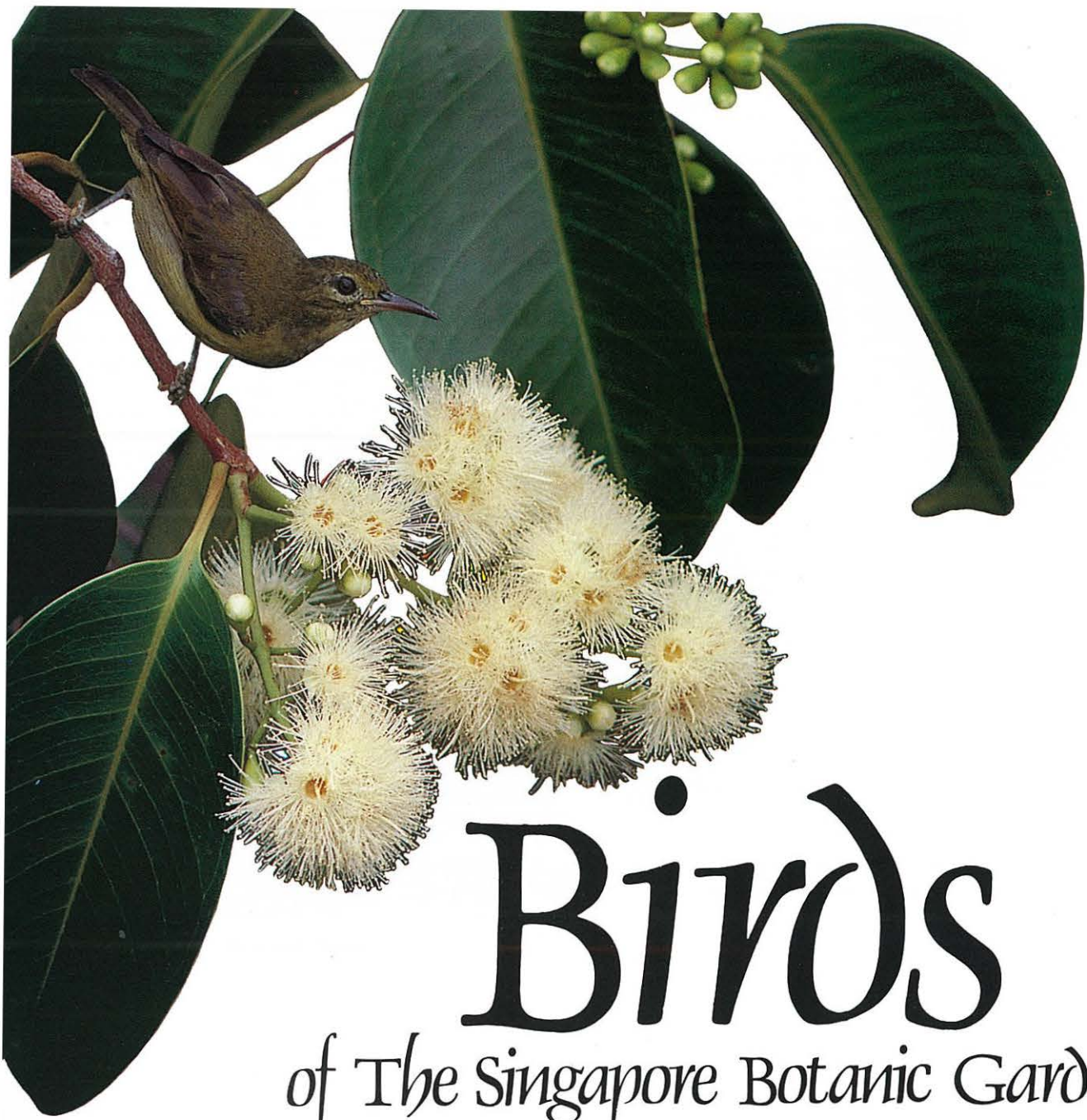
Mr Larry Pardue, Executive Director  
Marie Selby Botanical Gardens, Florida

Dr Gustav Schoser, Director  
Palmengarten, Frankfurt

### COMMITTEE MEMBERS

Botanic Gardens Staff  
Ms Bonnie Tinsley  
Mr Foo Suan Jong  
Mr Lim Heng Tow  
Mr Ou Yang Chow Lin  
Mr Tan Jiew Hoe  
Mr Victor Esbensen  
Dr Wee Yeow Chin  
Mr Yusof Alsagoff





# Birds

## of The Singapore Botanic Gardens

by C.J. Halls, Asia Programme Officer, WWF. Photographs by Morton Strange

**T**he diversity of plants and trees in the Botanic Gardens, the maturity of the vegetation and the refuge provided by the jungle core, all combine to make them a sanctuary for wild birds. They are not easily seen amidst the lush greenery however, but a few minutes patience by the casual visitor will be well rewarded.

Even the most casual of observers cannot help but notice the mynas stalking across the lawns picking up ants and beetles. Near to the city they are mostly the White-vented Myna (*Acridotheres javanicus*) which are predominantly black and grey. But look out also for the brown Common Myna (*Acridotheres tristis*) with its distinctive yellow eye-wattle. Both of these belong to the starling family and have the family characteristics of being noisy, active, intelligent birds. Closely related is the Philippine

Glossy Starling (*Aplonis panayensis*), the name deriving from the shining plumage which looks alternately green or dark blue depending on the light. However they feed mostly on fruit in the tree-tops and so look black against the bright sky. Unlike the mynas they seldom come to the ground, but will do so occasionally, especially for fallen palm fruits, but they look clumsy when hopping around. Look for them under the palms in Palm Valley or on the palm lawn by the offices.

Also on the ground look out for the black-and-white Magpie Robin (*Copsychus saularis*). This magnificent songster will dive down from the trees and bushes to collect worms and insects from the grass. Another pleasant songster is the bright yellow Black-naped Oriole (*Oriolus chinensis*) whose clear flute-like whistles ring out from the tree tops. It is possible that this "wolf in sheep's clothing" may rob the nest of smaller birds during the breeding season. The orioles are fond of fruit, as is the rather

dull Yellow-vented Bulbul (*Pycnonotus goiavier*) which is perhaps the most numerous bird in Singapore.

Not all birds eat fruit though. The sunbirds eat insects and are especially fond of nectar. There are at least four species to be found in Botanic Gardens. The two most common ones are Olive-backed Sunbird (*Nectarinia jugularis*) and Brown-throated Sunbird (*Anthreptes malacensis*), they both have yellow bel-



The White-vented Myna is the most numerous of the mynas in the Botanic Gardens and feeds both on the grass and in the trees.

Botanic Gardens August 1987.





interesting habit of stitching together the edges of large leaves with spider webs and fibre in order to construct a nest inside.

*The Philippine Glossy Starling is everywhere in the Botanic Gardens where it thrives on fruiting trees. Mount Elizabeth January 1988.*

lies, the former with a dark, steely-blue throat, the latter a dull brown one. Watch for them taking nectar from Canna, Hibiscus, Callistemon, Erythrina or Russelia. More spectacular, but less frequently seen, are the Crimson Sunbird (*Aethopyga siparaja*) and the Purple-throated Sunbird (*Nectarinia sperata*). Both tend to stay in the tree-tops near the jungle area.

Easily confused with sunbirds are the Flowerpeckers. The brilliant red, black and white Scarlet-backed Flowerpecker (*Dicaeum cuentatum*) is common in the Gardens. Active, nervous birds they are most easily detected by their mechanical "tic-tic" call in flight. Tiny birds, they do not peck flowers but take nectar and the insects attracted to flowers. They are not the horticulturists' favourite birds however, as they specialise in eating the fruit and disseminating the seeds of the parasitic mistletoes.



Flowerpeckers eat fruit and spread the seeds in their faeces, but several species specialise in eating seeds. The Tree Sparrow (*Passer montanus*) can be found in close association with man all over Asia, it is a seed specialist but also scavenges extensively. Rather similar in appearance to sparrows are munias. Common in the Gardens is the Scaly-breasted Munia (*Lonchura punctulata*); small flocks of 6-12 birds descend on patches of grass which have gone to seed.

On the fringe of the jungle look out for the small, wren-like Common Tailorbird (*Orthotomus sutorius*) and Rufous-tailed Tailorbird (*O. sericeus*). They hop about at low levels in the dense bushes catching insects. Their name comes from their

Kingfishers can be found here too. The tiny Common Kingfisher (*Alcedo atthis*) is a winter visitor which can be seen around the edges of the lakes. Not all kingfishers eat fish however, the raucous cry of the Collared Kingfisher (*Halcyon chloris*) rings out from all over the lawns, where it dives down to catch insects and lizards. The White-throated Kingfisher (*Halcyon smyrnensis*) has similar habits but is less common.

*A portrait of the handsome Yellow-vented Bulbul. Seletar Reservoir April 1989.*

Fairly close relatives of Kingfishers are the Woodpeckers. The sparrow-sized Brown-capped Woodpecker (*Picoides moluccensis*) is frequently seen. Frequently heard is the Banded Woodpecker (*Picus miniaceus*), whose ringing "Kwee" cry, and anvil-shaped yellow crest provide immediate identification.

Also related to Kingfishers are Bee-eaters. The brilliant colours of the Blue-throated Bee-eaters

*The Scaly-breasted Munia lives on grains and seeds and is always in the Botanic Gardens where it also nests. Botanic Gardens August 1987.*

(*Merops viridis*), green and electric blue, can be seen flashing over the

lakes to catch dragon-flies. They do also eat bees and wasps and will habitually return to the same perch to beat out their stings.

The habits of the bee-eaters bring us to other species which feed in the air. The Pacific Swallow (*Hirundo tahitica*) is a slightly smaller, more drab version of the Barn Swallow (*H. rustica*) which is a winter visitor. Swifts abound. The Grey-rumped Treeswift (*Hemiprocne longipennis*) is the only one to habitually perch on trees, the

*The Collared Kingfisher is one of the most conspicuous birds in the Botanic Gardens where it lives and breeds. Botanic Gardens August 1987.*

House Swift (*Apus affinis*) and Asian Palm Swift (*Cypsiurus balasiensis*) fly continuously to catch their insect food. The latter build an interesting nest which is a shallow bracket of seeds, often kapok, mixed with saliva and cemented to the underside of the leaves of fan palms. Look for them around the Livistona palms in Palm Valley.

Swifts and swallows are amongst the smallest of the birds in the gardens. Amongst the largest ones are the birds of prey, the biggest of which in Singapore is the White-bellied Sea-eagle (*Haliaeetus leucogaster*). The Brahminy Kite (*Haliastur*



*indus*), Eurasian Honey-buzzard (*Pernis ptilorhynchus*), Japanese Sparrowhawk (*Accipiter gularis*) and the occasional Black Baza (*Aviceda leucophotes*) are other raptors recorded from the Gardens.

Even night-time is not completely bird-free. The "chonk-chonk" of the large tailed Nightjar (*Caprimulgus macrurus*) can be heard during the breeding season. They sit next to the street lights and catch moths attracted to the glow. The Collared Scops Owl (*Otus bakkamoena*) is a resident of the Gardens and this is also the location of one of the few places in Singapore where the Spotted Wood-owl (*Strix seloputo*) occurs.

Clearly I can only mention a few species in an article of this nature. In nearly six years during which I was lucky enough to have an office in the Botanic Gardens I recorded nearly 100 species there. Start your list today and see where you get to.



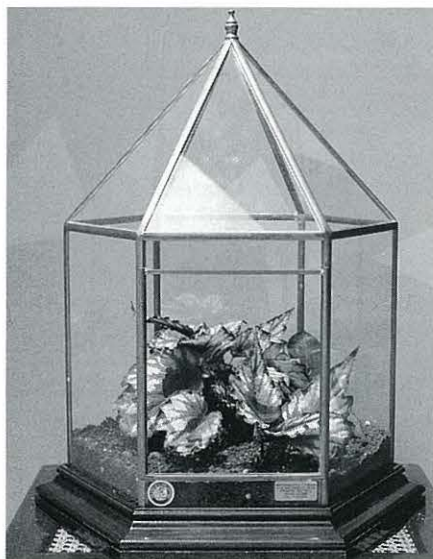


# A BLOOMING WONDERLAND

by Leong Chee Chiew

## 130th Anniversary Exhibition and Grounds Decorations

The Singapore Botanic Gardens will be transformed into a fairyland of lights for the 130th Anniversary celebrations. Some fifty schools are expected to decorate Christmas trees, the best decorations of which will be awarded prizes. Visitors will get a feel of how trees are decorated for the season in a special "Christmas Trees from Around the World" exhibit. Here, we expect as many as twenty-four foreign embassies to decorate Christmas trees to reflect the culture and flavour unique to their respective countries. These trees will grace the Bandstand area while the trees decorated by schools will line the Office Gate Road from the Cluny Road entrance to the Bandstand. The rest of the Gardens especially around the Bandstand, and the main gate and Cluny Road entrances, will be awash with other decorations like bunting, flags and fairy-lights.



*Begonia in a miniature greenhouse with sloped roofs — a terrarium.*

### Research Exhibits

Ever wondered what research is being carried out in the Gardens?

Orchid hybridization work in the Singapore Botanic Gardens was started in 1928 by Eric Holtum who was Director of the Gardens from 1926 to 1949. The programme continues today with the involvement of the Orchid and Tissue Culture Units. The procedure for orchid hybridization and methods of propagation of selected hybrids will be displayed in an exhibition consisting of some 35 booths.

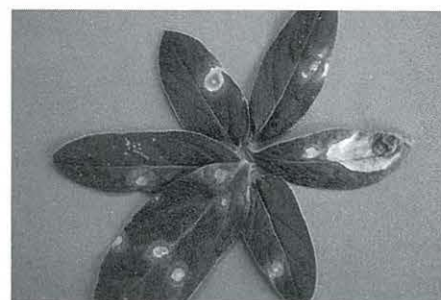


*Ferns, Orchids and other interesting new plants will be on display at the exhibition.*

Over the last twenty years, the Gardens has been a source of plants and horticultural expertise in the Garden City programme. Researchers in the Gardens have studied the nutritional requirements of plants, soil chemistry, plant pests and diseases and plant growth. Interesting new plants, selected for their hardiness and landscaping potential have been introduced from abroad. A visit to the exhibition where these will also be displayed promises to be a useful learning experience for the gardening enthusiast.

### Special Exhibits

Visitors to the exhibition can expect to be treated to displays of plants and cut flowers specially donated for the occasion by our sister gardens in Japan. Examples of these are bonsai Chrysanthemum, twenty varieties of carnations, etc. The Singapore Chapter of the Malayan Nature Society, Orchid Society of South East Asia, Singapore Gardening Society and Guild of the School of Ornamental Horticulture, societies whose formation the Gardens has been associated with, will feature special orchid displays, outdoor landscapes, photographs of



*Bad management can lead to diseased plants such as leaf spots on Bachelor's Buttons*

nature in South East Asia and sales of books and T-shirts. New parks to be developed by the Parks and Recreation Department will also be featured.

Seen the Gardens through the eyes of children? Winning entries from among the 805 received in the Gardens' recent Children's Art Competition will be put on display. Visitors will also get to view the best from among the 646 photographs of flowers and Gardens scenery entered for the photographic competition held recently in conjunction with the 130th Anniversary celebrations. Old photographs, postcards and other memorabilia of the Botanic Gardens will also be displayed.



## Bukit Timah Nature Reserve

**B**ukit Timah Hill is Singapore's highest hill at approximately 162.5m above sea level. A small hill compared to the mountains in the surrounding region, its vegetation represents the last expanse of truly primary forest remaining on the island. Rich in biological diversity, it is the key nature reserve in Singapore. Since 1820, it has been a botanical collecting ground as well as the locality for the first studies of Malayan botany.

A Visitor's Centre for Bukit Timah Nature Reserve has been planned and is scheduled to be completed in 1991. This centre will provide educational information for visitors to the nature reserves. Interpretation on the nature reserves will come in the form of exhibits, publications, audio visual programmes and conducted activities. Shelters and signages in the reserve will also be improved to meet the increasing needs of the public on nature appreciation.

The following tips are drawn up for those of you who wish to discover this treasure trove of our natural heritage.

### Tips for visitors to Bukit Timah Nature Reserve

#### 1. Location:

At the end of Hindhede Drive, off Upper Bukit Timah Road, 11 km from the city centre.

#### 2. How to get there:

By bus — Nos. 5, 75, 170, 171, 172, 173, 179, 180, 181, 182, 852, (stop at Upper Bukit Timah Road, near Courts (S) Pte Ltd).

By car — from the city, follow the direction of Upper Bukit Timah Road towards Woodlands, turn right at the pedestrian bridge near Courts (S) Pte Ltd into Hindhede Drive. (Do not take the right turn at Bukit Timah Shopping Centre). Limited parking available at the foothill of the reserve.

#### 3. Admission:

Free

#### 4. Best time to visit:

Early morning and towards twilight in the late afternoon, especially if you are keen on bird watching.

#### 5. What to wear:

Comfortable walking shoes, sensible clothing (cool, loose clothes; cotton is best), long trousers. Bring raincoat in case of rain.

#### 6. What to bring:

Water-bottle or packet drinks (but please do not litter), plasters, insect repellent, ointment for insect bites, binoculars, camera (telephoto or telemacro lenses are versatile for nature photography), note book and your lunch if you want to spend a whole day. Please do not bring transistor radios (you will scare all the animals away!) Do not bring too many things and try to keep your hands free. Some guide books on animals and plants may help to make your hike more interesting. Carry your litter with you for disposal in the litter bins provided.

#### 7. Recommended activities:

Hiking, birdwatching, nature photography, orienteering, nature studies.

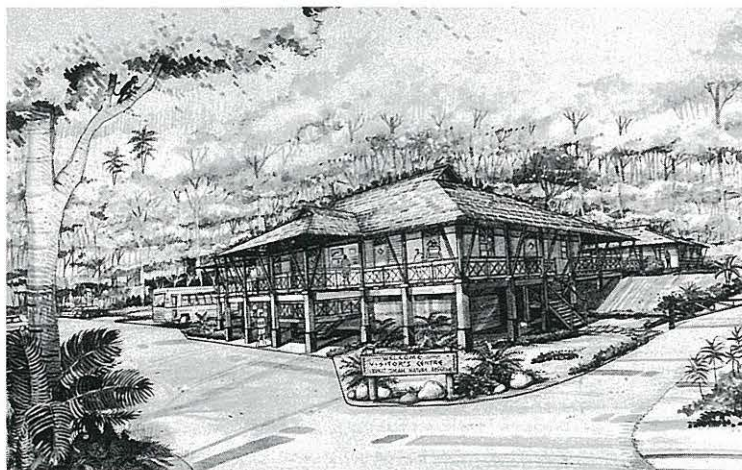
#### 8. Code of conduct:

- i) Please keep to the trails provided.
- ii) Move slowly and quietly. Be alert and observant.
- iii) Do not litter. Throw all refuse in the litter-bins provided.
- iv) This is a nature reserve. Do not remove or disturb any animal or pick or remove any plant.
- v) Do not release any animal into the reserve as this will upset the natural processes.
- vi) The animals have appropriate food in the forest. They do not require any feeding.
- vii) Signs, shelters, maps, etc are provided for your use. Do not damage them.
- viii) Do not deface or carve on any property in the reserve, including the trees and boulders.

#### 9. Available information:

- a. Bukit Timah Nature Reserve brochure — available from the ranger at the Reserve's entrance.
- b. A Guide to the Bukit Timah Nature Reserve (1985) — Singapore Science Centre.
- c. Articles on A Guide to the Bukit Timah Nature Reserve Vol 4 No. 2 and No. 3 — Singapore Scientist (1988), Singapore Science Centre.
- d. Pocket checklist of the Birds of Malaya and Singapore — Malayan Nature Society, Singapore.
- e. Pocket Guide to the Birds of Borneo, The Sabah Society (1984)

- f. A Guide to the Ferns of Singapore, Wee Yeow Chin (1983), Singapore Science Centre.
- g. Malaysian Butterflies, Yong Hoi Sen (1983) Tropical Press.
- h. A Guide to Singapore's Common Spiders, Joseph Koh (1989), Singapore Science Centre.



Proposed Visitor's Centre where visitors can obtain more information about the primary forest

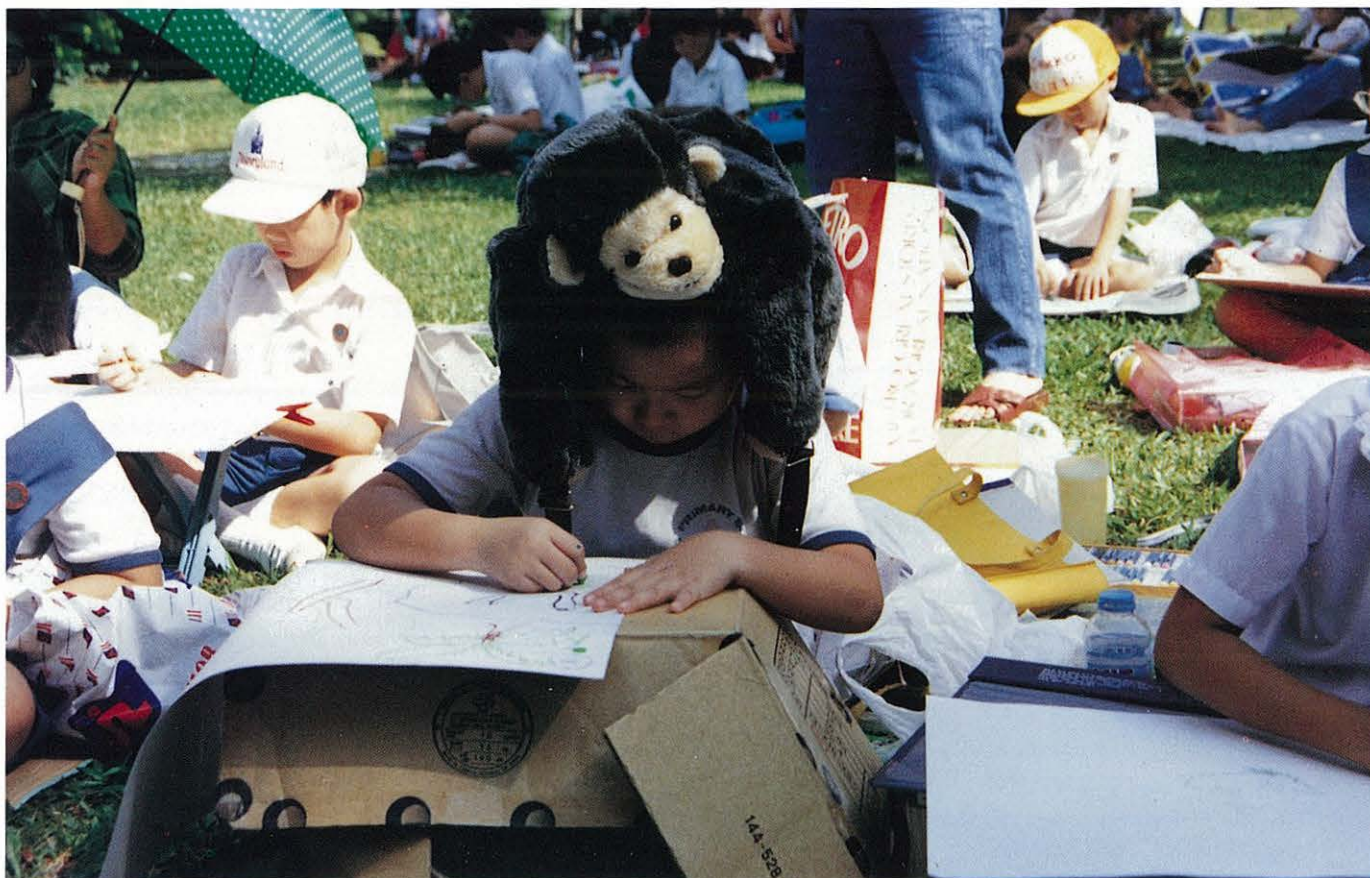
From time to time, the Singapore Branch of the

Malayan Nature Society (MNS) organises trips to Bukit Timah Nature Reserve. Birdwatching, nature photography, nature hike and fern studies are some of their activities. Those who wish to take part can look out for them in the MNS newsletters which are sent to all members. For membership, please write to: Malayan Nature Society (Singapore Branch) Dr Wee Yeow Chin, Hon. Secretary c/o Botany Department, National University of Singapore, Lower Kent Ridge Road, Singapore 0511.



# CHILDREN'S ART COMPETITION

by Camelia Marican



"My friend is a budding artist"

## Congratulations, Winners!

The Children's Art Competition was held on 16 September 1989. This was the first of a series of activities to celebrate the 130th Anniversary of the Botanic Gardens. Armed with mats, drinks and drawing materials, the children marched to the bandstand accompanied by their parents and teachers.

The favourite subject for drawing was the bandstand. Others drew the 'Girl on the Swing' sculpture, the Floral Clock, Sundial Garden, Rose Garden, orchids and even brides and joggers.

A total of 805 Certificates of Participation were given to the children for their efforts.

The winners were:-

### Section A (4-6 yrs)

**1st Prize (\$100)** Chen Shaode  
St. Matthew's Kindergarten

**2nd Prize (\$70)** Goh Hanwei Luther  
Zion Kindergarten

**3rd Prize (\$50)** Ng Wan Jing  
Boon Lay Education Kindergarten

**Merit Awards (\$10)**

1. Ang Ming Wei (Bethel Play Centre)
2. Chia Sok Wan (Radin Mas Education Centre)
3. Elizabeth Xie (Bukit Batok Education Centre)
4. Xie Zhinan (PAP Kindergarten)
5. Zheng Zhi Ying (Rosyth Primary)

### Section B (7-9 yrs)

**1st Prize (\$150)** Zhang Simin  
Teck Whye Primary

**2nd Prize (\$120)** Bai Mei Lan  
Eunos Primary

**3rd Prize (\$100)** Ng Tze Yong  
Radin Mas Primary

**Merit Awards (\$10)**

1. Cai Chuanxi (St. Gabriel Primary)
2. Chia Huanjie (Bukit View Primary)
3. Lim Jinping (Nanyang Primary)
4. Marie Joelle Tay (Kellock Convent Primary)
5. Wang Yuchan (Pei Tong Primary)

### Section C (10-12 yrs)

**1st Prize (\$200)** Lim Choon Pin  
Peixin Primary

**2nd Prize (\$170)** Weng Ziyan  
Maris Stella Primary

**3rd Prize (\$150)** Syed Nizar  
Bukit View Primary

**Merit Awards (\$10)**

1. Bay Ee Yong (Corporation Primary)
2. Enid Sim Lin (Ai Tong School)
3. Goi Choon Peng (Boon Lay Art Centre)
4. Lim Bee Teng (Boon Lay Art Centre)
5. Yao Yingjia (Chongfu Primary)

The Bonus prize of \$800 was won by Bukit View Primary School

The look of satisfaction and the smiling face of each and every child, after completing his/her work indicated the success of the event.







# DIARY OF COURSES



## School of Ornamental Horticulture: January 1990 – April 1990

- |  |   |
|--|---|
| 4 Jan – 25 Jan 90<br>Every Thursday<br>5.30 pm – 7.30 pm<br>Fee : \$40.00  | Western Floral Arrangement by Mrs Patricia Sabapathy,<br>President of the Singapore Flower Club. Hands-on experience<br>on four Basic Flower Arrangements.  |
| 7 Feb – 28 Feb 90<br>Every Wednesday<br>5.30 pm – 7.30 pm<br>Fee : \$40.00 | Basic Design of a House Garden by Mr Ong Cheng Leong,<br>Senior Curator, Parks & Recreation Dept. Participants will learn<br>the basic principles of garden design and layout, selection of<br>plant materials and garden ornaments.                  |
| 2 Mar – 30 Mar 90<br>Every Friday<br>5.30 pm – 7.30 pm<br>Fee : \$50.00    | Japanese Floral Arrangement by Mrs Lim Kiong Gek, Head of<br>the Ohara School of Ikebana (Singapore Chapter). Discover new<br>ideas and designs on the Japanese art of floral arrangement.  |
| 14 Mar & 21 Mar 90<br>Wednesday<br>5.30 pm – 7.30 pm<br>Fee : \$10.00      | Pest and Disease Management in the Home Garden by Dr Pim<br>Sanderson, Consultant, Singapore Botanic Gardens. General<br>introduction on common plant pests and diseases of Singapore.<br>Principles of identification and control will be discussed. |
| 6 Apr – 27 Apr 90<br>Every Friday<br>5.30 pm – 7.30 pm<br>Fee : \$40.00    | Plant Propagation by Mrs Jennifer Ng, Principal, School of<br>Ornamental Horticulture. Participants will learn how to<br>propagate by seed, stem, leaf, division, separation and<br>marcotting.   |
| 11 Apr & 18 Apr 90<br>Wednesday<br>5.30 pm – 7.30 pm<br>Fee : \$10.00      | Dish and Bottle Gardens by Mrs Jennifer Ng, Principal, School of<br>Ornamental Horticulture. Participants will learn how to<br>construct and care for Dish and Bottle Gardens, including<br>feeding, pruning and other cultural requirements.         |

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### SCHOOL OF ORNAMENTAL HORTICULTURE BASIC GARDENING COURSES FOR HOBBYISTS

#### REGISTRATION FORM

PRINCIPAL  
SCHOOL OF ORNAMENTAL HORTICULTURE  
BOTANIC GARDENS CLUNY ROAD SINGAPORE 1025

Please register me for the following courses (tick appropriate boxes).

#### COURSES

- |  |                          |   |                          |
|--|--------------------------|---|--------------------------|
| A. Western Floral Arrangement                | <input type="checkbox"/> | D. Pest and Disease Management in the Home Garden | <input type="checkbox"/> |
| B. Basic Design of a House Garden            | <input type="checkbox"/> | E. Plant Propagation                              | <input type="checkbox"/> |
| C. Japanese Floral Arrangement Demonstration | <input type="checkbox"/> | F. Bottle and Dish Gardens                        | <input type="checkbox"/> |

Name: Mr/Mrs/Miss \_\_\_\_\_ Address: \_\_\_\_\_

Signature: \_\_\_\_\_

Occupation: \_\_\_\_\_ Tel. No.: \_\_\_\_\_ (Off) \_\_\_\_\_ (Res)

NRIC/Passport No.: \_\_\_\_\_



# DEMONSTRATION GARDEN

by Lee Guek Choon



*Ideas for the home garden.*

**N**o occupation is so delightful to me as the culture of the earth and no culture comparable to that of the garden. I am still devoted to the garden. But though an old man, I am but a young gardener'.

by Thomas Jefferson

As we trace the roots of garden design from the ancient civilization of Babylonians through the Renaissance period to the latest landscape theories practised today, their basic ingredients for an earthly paradise are the same: 'plants that flower and fruit, shade that protects and water that cools and irrigates'.

A garden is simply a lovely place to slow down and feel the gentle rhythm of life, a green oasis where memories of the bumper-to-bumper ride from work will be erased.

A 979.6 sq.m Demonstration Garden area was set up near the bandstand with the objectives of:-

- introducing the pleasures of gardening to the public,
- giving ideas of the different styles or types of garden,
- providing guidelines on the basics of designing a garden,
- providing information on the planting design, building materials available for paving footpaths, as well as the finishing touches that beautify a garden eg. furniture, lighting, fountain, etc.

The types of garden presented are:

## Balcony Garden

This is suitable for any low to high-rise accommodation with a balcony. Even where space is limited, an intimate 'green' area can be created for the enjoyment of the family.

## Patio Garden

With imagination, a patio may be created into an inviting transition between the house and garden with pavings as a basic medium infilled with garden furniture, and pot plants to add gaiety and freshness. It is an ideal place for a relaxed viewing of the garden in fine weather.

## Fountain Garden

Water has an attraction which arrests the eye more than any other feature in the garden. In our equatorial climate, its cooling effect is always welcome. This fountain display is an idea to enliven a garden with the sound of overflowing water. Other features can be a small pond or miniature water cascade.

## Foliage Garden

In considering shape, form and colour in a garden it is important to look at other plant characteristics such as variation in colour and texture between one leaf and another. The striking feature is the grouping of foliage plants, creating a continuous evergreen covering. In addition,

a foliage garden can be a pleasant alternative if the space is too shady to grow sun-loving plants.

## Rock Garden

To provide texture to the garden, we introduce you to the natural limestone rock garden. In spite of its simplicity there is balance and drama between rocks and plants. Its 'worn' faces resemble strata exposed by the elements of nature and with some low-growing shrubs, this garden may be a source of contemplation and inspiration.

## Colour Garden

The theme is obviously one of colour. The palette is that of flowers and the canvas, the garden. A exciting picture utilizing a wide spectrum of colours can be achieved with careful planting.

We would like to thank the sponsors for their support in providing the design, materials and construction of some parts of the garden, based on Singapore Botanic Garden's conceptual plan which was designed by Landscape Architect, Mr. Junichi Inada. We are grateful to the students of the School of Ornamental Horticulture for their help during the construction of the Demonstration Garden.