THE SINGAPORE INSTITUTE OF BIOLOGY

SIBiol BULLETIN

Volume 31 Number 1 | October 2008 | MICA (P) 263/04/2008

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B.B.M.

34th COUNCIL OF THE SINGAPORE INSTITUTE OF BIOLOGY

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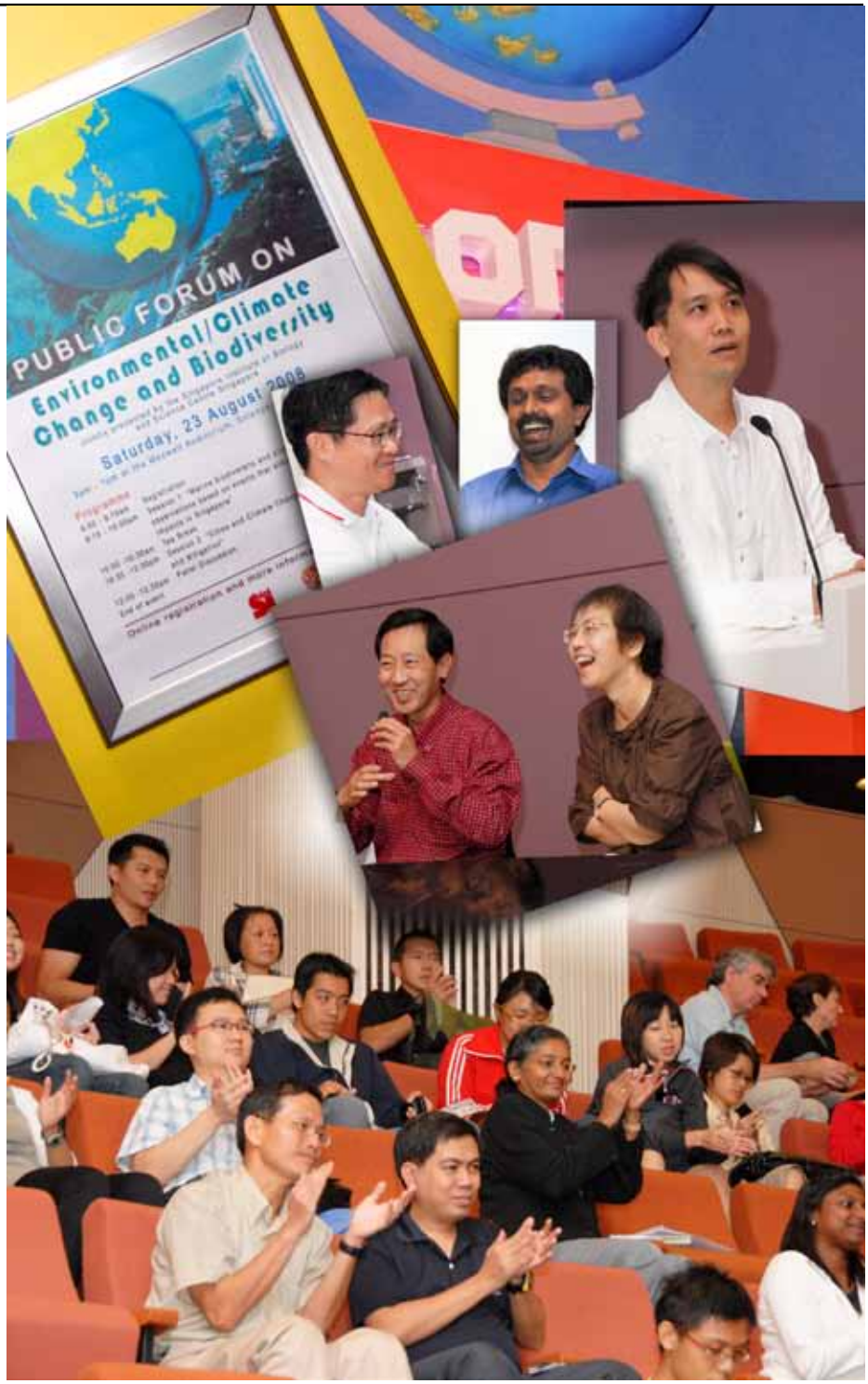
www.sibiol.org.sg



SIBiol Public Forum 2008 on Environmental / Climate Change and Biodiversity, 23 August 2008. Jointly organised by SIBiol and Science Centre Singapore

Editor's Comment

A New(s) Bulletin

Mr Timothy Tan

The SIBiol Bulletin has been a regular 'product' of the society for many years now, keeping our members informed of the activities of SIBiol. Its origins are "long before my time", and sadly, we only have an archive of somewhat scattered issues going back a little less than 10 years.

In keeping with SIBiol's need to innovate and evolve (see the President's message, right), the Bulletin will also seek to refresh itself to better meet the expectations of our members.

But what is expected of a newsletter like ours? How can it be a genuinely useful vehicle to convey the news, showcase our contributions, and generate the buzz and enthusiasm we seek among our members? How can we incorporate and leverage the use of our website at www.sibiol.org.sg?

We need your views. Help us with suggestions on what you would like to see in a revamped Bulletin and SIBiol website.

And oh, if any biologist out there has a lovingly preserved collection of ancient… Bulletin issues, we'd love to know too!

Please email your feedback to the Editorial Team at bulletin@sibiol.org.sg

We hope to hear from you!

Various circumstances have delayed publication of the Bulletin this year, resulting in the publication of just one bumper issue, instead of the usual two.

Message from the 34th SI Biol President

Dear Members of the SIBiol,

This is my third term as the President. Let me once again thank all members for your continual support, in one way or another, to help the 33rd Council achieve the objectives of the Institute.

At the last AGM I asked members present if they feel that SIBiol still has a role to fulfill especially in view of how the life sciences have now become so popular in recent years. Those present did give an endorsement to the Council that indeed we still have a role to play and we should press on.

SIBiol started 34 years ago with the objective of promoting biology as a professional career. Now, Singapore has established a very vibrant community of biologists engaged in all aspects of life sciences-related education, research and development industries.

Ironically the root for the life sciences, i.e. Biology, somehow has become less glamorous as a pure subject and biologists have been stratified to demarcate seemingly more impactful specialists such as biomedical scientists, clinician scientists, protein scientists, tissue engineers and bioengineers.

I suspect that is why SIBiol may be losing out in terms of membership renewal, recruitment and members' enthusiasm. There are now many competing providers and demands from the diverse sectors of Biology-related organizations. Members can now get access to biology-related information and activities through other means; not to mention what the internet can offer.

While we strive on, I continue to feel sad that a large proportion of our members seem to have lost the zeal for being associated with the Institute. The above may just be some excuses albeit quite valid on the surface.

How we can make members enthusiastic again about the Institute's business remains a challenge for the Council. This present Council will have quite a bit of soul-searching to do while continuing to innovate with new ideas that may be of impact whether members continue to partake in events or not.

For example, we will be increasing our efforts to train teachers for hands-on learning, including the training of students for Biology Olympiads. We will continue to help Singapore win medals in the International Biology Olympiad with members dedicating time and efforts to training our students. We will also organize public forums that are of relevance to the public, for example on climate change and conservation, especially in conjunction with the permanent exhibit on Climate Change at the Science Centre.

If you are reading this message and you have any feedback for the Institute to better achieve its objectives of promoting Biology and the profession of Biologists, please do not hesitate to send an email message to me at dbsltm@nus.edu.sg

Thank you very much.

Yours sincerely,
Lim Tit Meng
President, 34th Council, SIBiol

THE SINGAPORE INSTITUTE OF BIOLOGY 33rd COUNCIL ANNUAL REPORT (2006/2007)

1. GENERAL REVIEW

The objectives of the Institute were actively promoted during the year as reflected by the activities organized by the Council. These are summarized below:

2. THE 33rd COUNCIL

The 33rd Council held nine meetings during the year to carry out the business of the Institute. Members of the 33rd Council of the Institute for the year 2006/2007 comprised the following officers:

President:	A/P Lim Tit Meng
Vice-President:	Dr Beverly Goh
Honorary Secretary:	Dr Tan Lik Tong
Honorary Treasurer:	Dr Peter Lee Peng Foo
Council Members:	A/P Koh Chong Lek
	A/P Low Boon Chuan
	A/P Sanjay Swarup
	A/P Benito Tan
	Dr Lee Yew Jin
	Dr Darren Yeo
	Mr Timothy Tan
	Ms Yong Ann Nee

3. MEMBERSHIP

Five new members (two Ordinary Members and three Student Members) were admitted to the Institute during the year. They are:

Ordinary Members
Mrs Patricia Joseph
Mr Nah Hong Leong

Student Members
Ms Chishio Hidaka
Mr Marco Perrig
Mr Koh Teck Hui

Six members were deleted from the membership list. These members had either requested to cancel their membership or not paid their subscriptions for over three years. By-law 5(c) of the Constitution provides the clause that any member whose subscription is two years in arrears may by resolution of the Council be excluded from membership of the Institute after the Council has informed him/her of its intention to do so by letter. Some of these members were not contactable, having relocated without providing a forwarding address.
The membership profile of SIBiol as of September 30, 2007 is as follows:

Patrons:	2
Honorary Fellows:	2
Fellows:	7
Ordinary Members:	88
Associate Members:	7
Student Members:	19
Life Members:	58
TOTAL	183

4. ACTIVITIES OF THE INSTITUTE

4.1 Teachers' Workshop (May 23 and 24, 2007)

SIBiol (A/P Koh Chong Lek) organized two Teachers' Workshops entitled "Get to Know Your Wayside Trees in Three Easy Steps" conducted by Dr. Shawn Lum (NSSE, NIE) on May 23, 2007, and "SIBiol Primary School Teachers' Workshop: How to Organize a Science Camp for School Children" conducted by A/P Lim Tit Meng on May 24, 2007. A total of 32 teachers attended these workshops held at NSSE, NIE, NTU. Photographs taken during these workshops were uploaded on the SIBiol website.

4.2 SIBiol Digital Photographic Essay Competition (July, 2007)

A total of 79 entries were submitted to the first SIBiol Digital Photographic Essay Competition held in July, 2007. The themes were: Life and Death; Patterns in Nature; Poetry in Motion. These entries were from tertiary institutions, JC, and secondary schools. The following is a list of winners within the different categories:

Tertiary Institutions

1st Prize: Lim Junyang (NUS)
2nd Prize: Tan Guoxiang Dex (NIE)
3rd Prize: Poon Ru Xin Alicia (NTU)
Hon. Mentions: Choo Ying (NUS) and Teo Shu Yun Serena (NAFA)

Schools

1st Prize: Lam Hui Ching (SAJC)
2nd Prize: Deborah Hadassah Wong Wan Teng (NUS High School)
3rd Prize: Low Wei An (Swiss Cottage)
Hon. Mentions: Lim Qi Liang William (North Vista), Lim Dah Wei (HCI), Cheryl Lau Zhuang Hua (AMKS), and Chew Tian Wei (VJC)

The competition was organized by Dr. Lee Yew Jin and Mr. Timothy Tan of SIBiol and sponsored by BIG Communications Pte Ltd and FotoHub.com Pte Ltd. The winning entries were on exhibition display at the NLB from September 22 to October 7, 2007.

4.3 SIBiol Public Forum at the National Library (September 22, 2007)

The SIBiol Public Forum entitled "Symmetry, Shapes, and Colour in Biology" was jointly organized by SIBiol (A/P Sanjay Swarup and A/P Low Boon Chuan) and the National Library Board at the National Library Building on September 22, 2007. More than 40 enthusiasts gathered for this event chaired by A/P Lim Tit Meng.

The following speakers spoke at the Forum:

A. "Building Beauty: What Underlies Floral Patterning?" by Dr. Yu Hao
(Assistant Professor, Department of Biological Sciences, National University of Singapore)

B. "Colours and Pollination Biology of Orchids" by Dr. Yam Tim Wing
(Senior Researcher, Orchid Breeding Div., Singapore Botanic Gardens, National Parks Board, Singapore)

C. "Colour for camouflage and communication in rocky shore and mangrove crabs" by Dr. Peter Allan Todd
(Instructor, Department of Biological Sciences, National University of Singapore)

4.4 The 7th and 8th Singapore Biology Olympiads (SBO 2006 and SBO 2007) & the 18th International Biology Olympiad (IBO 2007)

The 7th Singapore Biology Olympiad (SBO) was held in November 2006 at NIE, NTU. Two hundred and eighty-seven students from 15 JCs sat for the first Theory Test on November 16, 2006. Twenty-two students from seven JCs were selected for the Practical Test held on December 5, 2006. The final medal tallies were 4 golds, 6 silvers, and 11 bronzes.

From the 7th SBO, eight students were shortlisted for training beginning in February 2007 in preparation for the 18th IBO. After a residential training camp at NIE/NTU in practical skills conducted in June 2007, and a further series of gruelling tests (theory and practical), four students were finally selected to represent Singapore in the 18th IBO held in Saskatoon, Canada.

The Singapore team, comprising Soh Hui Ming Gary (ACJC), Mayank Soni (RJC), Tan Yong Zi (HCI), and Wee Lian En Ian (HCI), performed well at the 18th IBO by securing four silvers and Singapore was ranked 9th position overall. The team was led by A/P Shirley Lim (SIBiol), Dr. Peter Lee (SIBiol), and Mr. Tan Hong Kim (MOE).

The 8th SBO is scheduled to be held in November and December 2007. A/P Shirley Lim is the Chairperson of the SBO Organising Committee and the Committee comprises A/P Lim Tit Meng, Dr. Beverly Goh, and A/P He Jie. The theoretical and practical tests will be held on November 14 and December 5, 2007, respectively.

The SIBiol was also successful in bidding to host the 23rd IBO (2012) in Singapore. In addition, MOE has indicated its

support of this endeavour and has committed funds for the organization of the 23rd IBO.

4.5 7th Annual National Biology Convention (October 27, 2007)

The 7th Annual National Biology Convention (ANBC) is scheduled to be held on October 27, 2007, after the 33rd AGM of SIBiol at 3pm. The Chairman and organiser of the ANBC is A/P Benito Tan. Four invited speakers will deliver talks on the following topics:

A. Control Measures for HPAI Virus and Bird Flu Problem in Singapore
Dr. Chang Siow Foong, Head of Epidemiology & Surveillance Branch, Agri-Food and Veterinary Authority, Singapore

B. Ecological Correlates of Herpetofaunal Communities in Fragmented Lowland Rainforest in the Philippines
Arvin C. Diesmos (Navjot S. Sodhi and Peter K.L. Ng)
Herpetology Section, Zoology Division, National Museum of the Philippines,
Manila, Philippines, and Department of Biological Sciences, National University of Singapore

C. The Ecology and Evolution of Carnivorous Butterfly Caterpillars
Dr. David Lohman, Department of Organismic & Evolutionary Biology, Harvard University, Cambridge, MA, USA, and Department of Biological Sciences, National University of Singapore

D. Systematics of the Crabs of the Family Varunidae (Brachyura, Decapoda) with Description of a New Family, Xenograpsidae
Dr. Ng Ngan Kee, Department of Biological Sciences, National University of Singapore

4.6 Research Trust Fund

A call for grant proposals for the SIBiol Research Trust Fund was made in October 2006. Two grant applications were received and they were reviewed by two external reviewers as well as an internal review sub-committee. The reviewers recommended that the following two projects be awarded grants from the SIBiol RTF:

A. "Population Estimation and Dynamics of Rabbit Fishes (Siganidae) Around the Southern Islands of Singapore by Mark-Recapture" submitted by Mr. Marco Perrig and Dr. Beverly Goh (NIE).

B. "Ecology and Community Succession of Submerged Aquatic Vegetation and Related Impacts on Water Quality of Lower Seletar Reservoir" submitted by A/P Shirley Lim and A/P He Jie (NIE).

4.7 Publications and Website

Two issues of the SIBiol Bulletin (Volume 30) were published this year. The editorial team comprised Darren Yeo, Yong Ann Nee, and Timothy Tan. The Institute still maintains its own website address with an outsourced website-hosting to a commercial service provider. The URL is http://www.sibiol.org.sg/. The website was maintained by Mr Timothy Tan and Ms Yong Ann Nee.

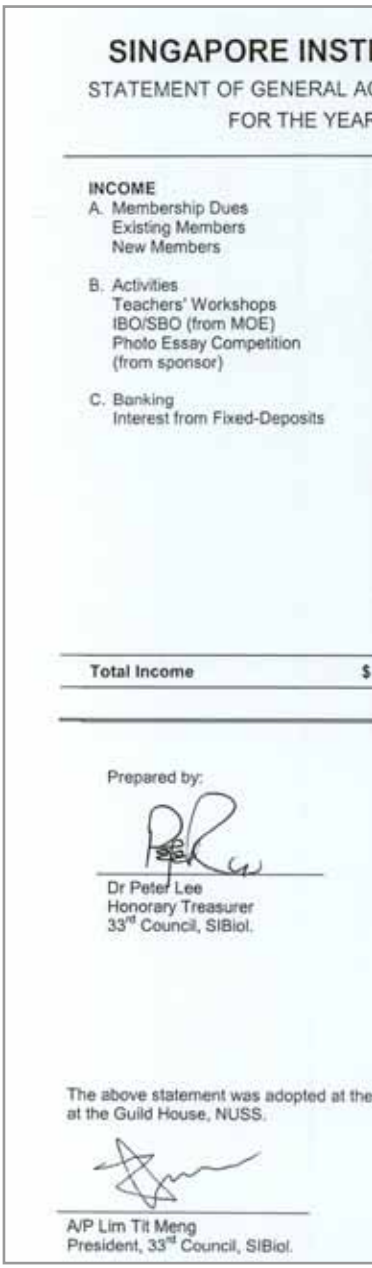
5. ACKNOWLEDGEMENTS

The Institute gratefully acknowledges the support and contributions of the following persons and organizations (in alphabetical order) for its various activities during the year 2006/2007:

Mr Ho Wah Chai (National Institute of Education, Nanyang Technological University)
Prof Alex Ip (Dept of Biological Sciences, National University of Singapore)
A/P Koh Chong Lek (DNA Centre@NIE, National Institute of Education, NTU)
Dr Peter Lee (National Institute of Education, Nanyang Technological University)
Miss Michelle Lee Swee Ling ((National Institute of Education, Nanyang Technological University)
Dr Lee Yew Jin (National Institute of Education, Nanyang Technological University)
Mr Mobius Leng (National Institute of Education, Nanyang Technological University)
A/P Leung Ka Yin (Dept of Biological Sciences, National University of Singapore)
Dr Li Daiqin (Dept of Biological Sciences, National University of Singapore)
A/P Shirley Lim (National Institute of Education, Nanyang Technological University)
A/P Lim Tit Meng (Dept of Biological Sciences, National University of Singapore)
Dr Liou Yih-Cherng (Department of Biological Sciences, National University of Singapore)
A/P Loh Chiang Shiong (Dept of Biological Sciences, National University of Singapore
Dr David Lohman (Department of Organismic & Evolutionary Biology, Harvard University)
A/P Low Boon Chuan (Dept of Biological Sciences, National University of Singapore)
Mdm Low Khah Gek (Ministry of Education)
Dr Shawn Lum (National Institute of Education, Nanyang Technological University)
A/P Rudolf Meier (Dept of Biological Sciences, National University of Singapore)

Dr Henry Mok (Dept of Biological Sciences, National University of Singapore)
Prof Peter Ng (National University of Singapore, Singapore)
Dr Ng Ngan Kee (Dept of Biological Sciences, National University of Singapore)
Ms Rosalind Ong (National Institute of Education, Nanyang Technological University)
Ms P Amuthavali (National Institute of Education, Nanyang Technological University)
Miss Sara Leng Leng Pek (National Library Board)
A/P Prakash Kumar (Dept of Biological Sciences, National University of Singapore)
Mr Anthony Seow (National Library Board)
A/P Sanjay Swarup (Dept of Biological Sciences, National University of Singapore)
Ms Siti Alimah Bte Aliyas (National Institute of Education, NTU)
Ms Kathy Su Feng-Yi (Depr of Biological Sciences, NUS)
Dr Myron Shekelle (Dept of Biological Sciences, National University of Singapore)
Ms Subha N (Dept of Biological Sciences, National University of Singapore)
Mr Allan Tan (Dept of Biological Sciences, National University of Singapore)
A/P Benito C Tan (Dept of Biological Sciences, National University of Singapore)
Dr Tan Heok Hui (Dept of Biological Sciences, National University of Singapore)
Mr Tan Hong Kim (Ministry of Education)
Ms Joanne Tan Sze Wei (National Institute of Education, Nanyang Technological University)
Prof Leo Tan (National Institute of Education, Nanyang Technological University)
Dr Tan Lik Tong (National Institute of Education, Nanyang Technological University)
Ms Tan Lu Wee (Dept of Biological Sciences, National University of Singapore)
Dr Tan Swee Hee (Dept of Biological Sciences, National University of Singapore)
A/P Hugh Tan Tiang Wah (Dept of Biological Sciences, National University of Singapore)
Mr Timothy Tan (National Institute of Education, Nanyang Technological University)
Mr Tay Hai Hwee (National Institute of Education, Nanyang Technological University)
Miss Tay Pei Lin (National Library Board)
Prof Paul Teng (National Institute of Education, Nanyang Technological University)
Mr Teo Lu Hee, Stratford (National Institute of Education, Nanyang Technological University)
Mr Andrew Tham (Dept of Biological Sciences, National University of Singapore)
A/P Tham Foong Yee (National Institute of Education, Nanyang Technological University)
Mr Toh Nguk Hwee, David (National Institute of Education, Nanyang Technological University)
Mr Tong Shaw Wei (National Institute of Education, Nanyang Technological University)
Dr Peter Allan Todd (Dept of Biological Sciences, National University of Singapore)
Mr Damien Wang Khang Cheh (National Library Board)
A/P Wong Sek Man (Dept of Biological Sciences, National University of Singapore)
Dr Yam Tim Wing (Singapore Botanic Gardens, National Parks Board)
Mr Yan Tie (Dept of Biological Sciences, National University of Singapore)
Dr Yap Him Hoo (Import and Export Division, Agri-Food and Veterinary Authority)
Dr Darren Yeo (Dept of Biological Sciences, National University of Singapore)
A/P Yeoh Hock Hin (Dept of Biological Sciences, National University of Singapore)
Ms Yeu Mei Juan, Emily (National Institute of Education, Nanyang Technological University)
Dr. Yu Hao (Dept of Biological Sciences, National University of Singapore)
Dr Yam Tim Wing (Singapore Botanic Garden, Orchid Breeding Center)
Ms Yong Ann Nee (Dept of Biological Sciences, National University of Singapore)
BIG Communications Pte Ltd
Department of Biological Sciences, Science Faculty, National University of Singapore
FotoHub.com Pte Ltd
Ministry of Education, Singapore
National Institute of Education, Nanyang Technological University
National Library Board
National Parks Board, Singapore
Nature's Niche, Singapore
Natural Sciences & Science Education, National Institute of Education, NTU
Raffles Museum of Biodiversity Research, Department of Biological Sciences, NUS
Singapore Botanic Gardens
Singapore National Academy of Science

Recorded by Dr Tan Lik Tong, Hon Secretary, 33rd Council
Vetted by A/P Lim Tit Meng, President, 33rd Council



SINGAPORE INST
STATEMENT OF GENERAL A
FOR THE YEAR

INCOME
A. Membership Dues
Existing Members
New Members

B. Activities
Teachers' Workshops
IBO/SBO (from MOE)
Photo Essay Competition
(from sponsor)

C. Banking
Interest from Fixed-Deposits

Total Income $

Prepared by:

Dr Peter Lee
Honorary Treasurer
33rd Council, SIBiol.

The above statement was adopted at the
at the Guild House, NUSS.

A/P Lim Tit Meng
President, 33rd Council, SIBiol.

Congratulations!

2008 National Day Awards Recipients

Associate Professor Shirley Lim
Public Administration Medal (Bronze)
a.k.a. Pingat Pentadbiran Awam (Gangsa)

Professor Chou Loke Ming
Long Service Award

ITUTE OF BIOLOGY (SIBIOL)
CCOUNT FUND: INCOME AND EXPENDITURE
R ENDED 30 SEPTEMBER 2007

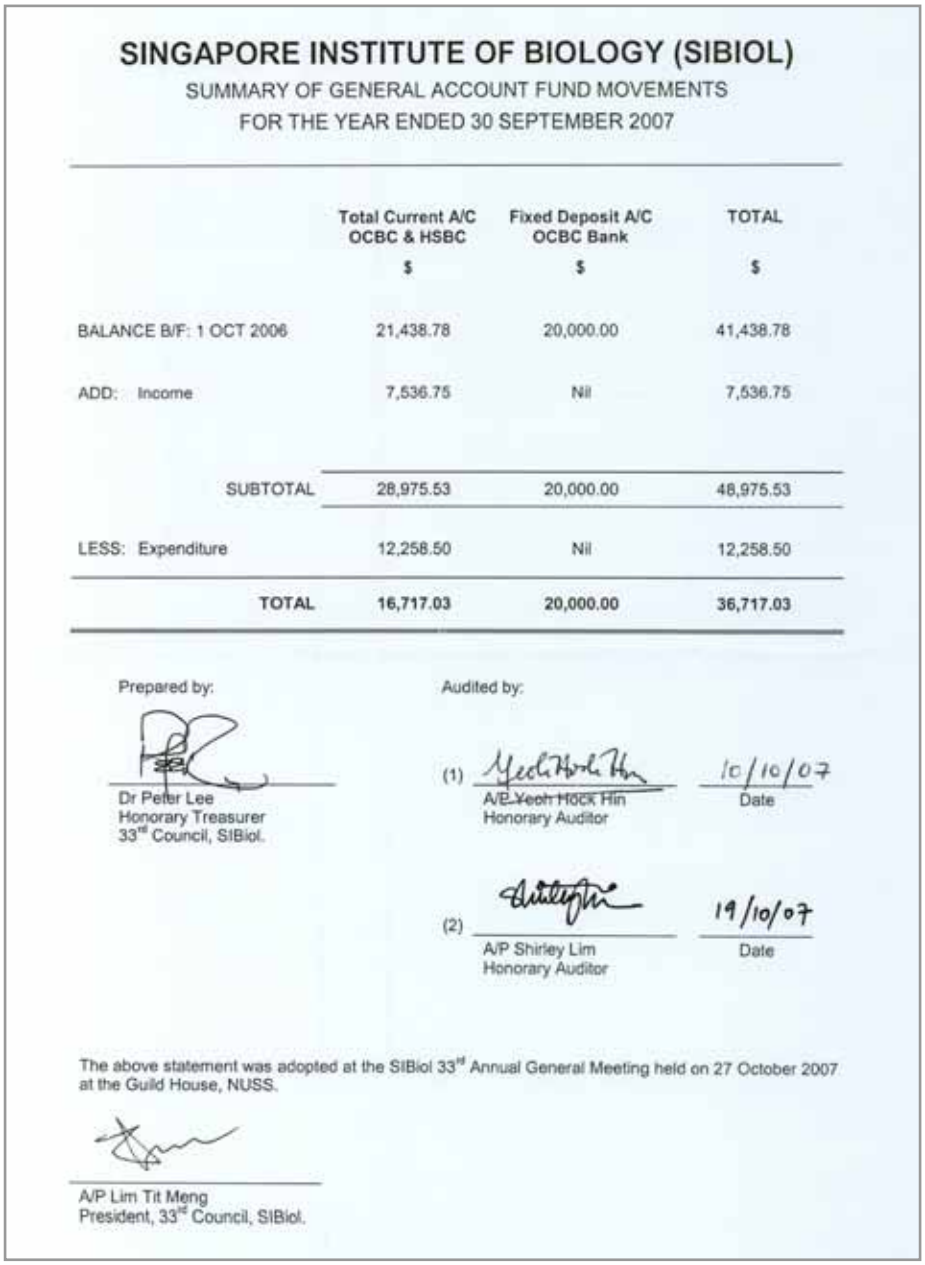
$	EXPENDITURE	$
	A. SIBiol Book Prize	200.00
1,760.00		
80.00	B. Publications	
	Bulletin (Oct 2006)	456.75
	Bulletin (Apr 2007)	493.50
3,840.00		
908.00	C. Activities	
800.00	IBO/SBO	2,611.69
	Teachers' Workshop	395.90
	Public Forum	545.59
	Photo Essay Competition	2,165.85
148.75		
	D. Sponsorship	
	Observer Fee IBO 2007	1,530.00
	E. SNAS Subscription ('06/07)	500.00
	F. Stationery, Operations	1,129.72
	G. Postage	420.50
	H. Functions (AGM)	1,239.00
	I. RTF Audit	390.00
	J. Bank Charges	180.00
7,536.75	**Total Expenditure**	**$ 12,258.50**
	Deficit (S$)	**$ 4,721.75**

Audited by:

(1) A/P Yeoh Hock Hin — Honorary Auditor — 10/10/07 Date

(2) A/P Shirley Lim — Honorary Auditor — 19/10/07 Date

SIBiol 33rd Annual General Meeting held on 27 October 2007



SINGAPORE INSTITUTE OF BIOLOGY (SIBIOL)
SUMMARY OF GENERAL ACCOUNT FUND MOVEMENTS
FOR THE YEAR ENDED 30 SEPTEMBER 2007

	Total Current A/C OCBC & HSBC	Fixed Deposit A/C OCBC Bank	TOTAL
	$	$	$
BALANCE B/F: 1 OCT 2006	21,438.78	20,000.00	41,438.78
ADD: Income	7,536.75	Nil	7,536.75
SUBTOTAL	28,975.53	20,000.00	48,975.53
LESS: Expenditure	12,258.50	Nil	12,258.50
TOTAL	**16,717.03**	**20,000.00**	**36,717.03**

Prepared by:

Dr Peter Lee
Honorary Treasurer
33rd Council, SIBiol.

Audited by:

(1) A/P Yeoh Hock Hin — Honorary Auditor — 10/10/07 Date

(2) A/P Shirley Lim — Honorary Auditor — 19/10/07 Date

The above statement was adopted at the SIBiol 33rd Annual General Meeting held on 27 October 2007 at the Guild House, NUSS.

A/P Lim Tit Meng
President, 33rd Council, SIBiol.

COVER STORY

SIBiol Public Forum 2008 on Environmental / Climate Change and Biodiversity 23 August 2008, Science Centre Singapore

This event was jointly organised by the Singapore Institute of Biology & Science Centre Singapore, and it continues a series of well-attended and well-received Public Fora over the past few years. This year, an even bigger audience of over 80 people attended, and they formed a diverse but lively group with a deep passion for the environment.

Two topics were discussed: 1. Marine biodiversity and climate change: observations based on events that simulate climate change impacts in Singapore by Professor Chou Loke Ming (Professor, Department of Biological Sciences, National University of Singapore). 2. Cities and Climate Change: the issue of policy response and mitigation by Professor Ooi Giok Ling (Professor, NIE,NTU) and Dr Chang Chew Hung (Ast/P NIE, NTU)

The very enthusiatic audience could not even wait for the Panel Discussion period at the end before actively engaging the speakers with enthusiastic questions and voicing their views.

The Eighth Annual National Biological Convention (ANBC) of Singapore Institute of Biology (SIBiol) on Oct 18 (Saturday), 2008 at the NUSS Guild House

This 8th ANBC of the Singapore Institute of Biology (SIBiol) features a line-up of four interesting talks, and, as before, will be held on the same day with the AGM, on Oct 18 (Saturday), 2008.

For your information, the ANBC programme is organized to impart the newest research outputs and the latest discoveries in biological sciences by members and invited outsiders. The yearly gathering has turned out to be not just an educational experience for everyone, but also a rare opportunity for members to renew friendship and camaraderie.

Considering the current trend in biology education and research, we have lined up two talks on relevant topics in molecular biology, and two talks on plant (ginger group) and animal (lungless frog) diversity at organismal level.

We urge all members to find time to attend this year ANBC talks, as well as to participate in the AGM of SIBiol on Oct 18 (Saturday) from 12 noon to 5 pm. Also please be informed that there is a great lunch buffet provided to all members who will attend the combined half-day AGM and ANBC sessions.

The programme of the AGM 2008 and the 8th ANBC are as follows -

11:45-12:00 noon	Registration of participants
12:00-1:30 pm	Lunch
1:30-3:00 pm	AGM business meeting
3:00-3:15 pm	Coffee break
3:15-5:00 pm	ANBC talk presentations
5:00 pm	Closing of 8th ANBC

All are welcome.

3:15-3:40 pm

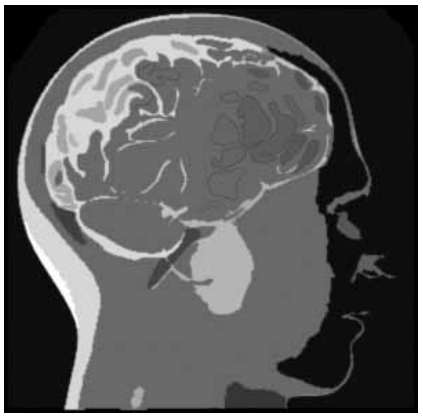
PARKIN GENE, A NOVEL SUPPRESSOR OF BRAIN TUMORS

Calvin Wee Sing Yeo 1,5, Carol Soo Leng Tang 2, Beng Ti Ang 3, Kah Leong Lim 1,4,5

1 Neurodegeneration Research Lab, National Neuroscience Institute, Singapore; 2 Neuro-Oncology Research Lab, National Neuroscience Institute, Singapore; 3 Department of Neurosurgery, National Neuroscience Institute, Singapore; 4 Duke-NUS Graduate Medical School, Singapore; 5 Department of Biological Sciences, National University of Singapore

Abstract

Mutations in the Parkin gene, which encodes an ubiquitin ligase, were originally associated with the familial parkinsonism. Interestingly, the recent characterization of the common fragile site (CFS) FRA6E on chromosome 6q has determined that the Parkin gene localizes within the FRA6E region of instability. Notably, genes residing within CFSs are frequently involved in cancers. Following this discovery, Parkin gene alterations and expression variability were identified in a variety of tumor biopsies and cell lines representing a wide range of cancers including ovarian, breast, lung and liver cancers. Frequently, diminished or absent Parkin expression is observed in these cancers, suggesting that Parkin may have tumor suppression properties. Consistent with these findings, we found that the expression levels of Parkin mRNA and protein are dramatically down-regulated in glial tumor cell lines compared to control cell lines. Importantly, overexpression of Parkin in U87MG cells, a representative glial tumor cell line, significantly mitigates the rate of U87MG cell proliferation in vitro as well as reduces its ability to generate solid tumors *in vivo*. Moreover, overexpression of Parkin gene in both synchronized and unsynchronized U8MG cell line reduces the levels of phosporylated Akt, a pro-survival factor. Taken together, our findings support a negative role for Parkin in gliomagenesis.



3:40-4:05 pm

DECIPHERING AND RECONSTRUCTION OF EMBRYONIC STEM CELL TRANSCRIPTIONAL REGULATORY NETWORK

Dr. Huck-Hui Ng
Genome Institute of Singapore, Singapore, and Department of Biological Sciences, NUS

Abstract
Transcription factors and their specific interactions with targets are crucial in specifying gene expression programmes. To gain insights into the transcriptional regulatory networks in embryonic stem cells, we use chromatin immunoprecipitation coupled to ultra-high-throughput DNA sequencing (ChIP-seq) to map the locations of multiple sequence specific transcription factors. These factors are known to play different roles in ES cell biology as components of signaling pathways, self-renewal regulators and key reprogramming factors. Our study provides new insights into the integration of the signaling pathways to the ES cell-specific transcription circuitries. Intriguingly, we find specific genomic regions extensively targeted by different transcription factors and these multiple transcription factors generally exhibit two major mode of targeting in ES cells. Collectively, the comprehensive mapping of transcription factor binding sites identifies new features of the transcriptional regulatory networks that define ES cell identity. Using this knowledge, we investigate nodes in the network which when activated, will jump-start the ES cell-specific expression program in somatic cells.

4:05-4:25 pm

THE AMAZING WORLD OF GINGERS

Dr. Jana Skornickova
The Herbarium, Singapore Botanic Gardens

Abstract
Gingers (family Zingiberaceae) are perennial herbs, which play an important role in tropical rain forests and other various tropical vegetation types. Some of them are tiny, while the others reach up to 8 meters. Many are sources of spices, medicinal plants and ornamental plants. More than 50 genera with over 1,500 species are known worldwide with centre of their diversity in Asia. However the total number of genera and species is still uncertain and there are more than 3700 names of Zingiberaceae published, creating great chaos and hindering various research as well as conservation efforts. This pictorial talk will feature the amazing varieties and colours of this fascinating plant family in Asia and the world.

4:25-4:50 pm

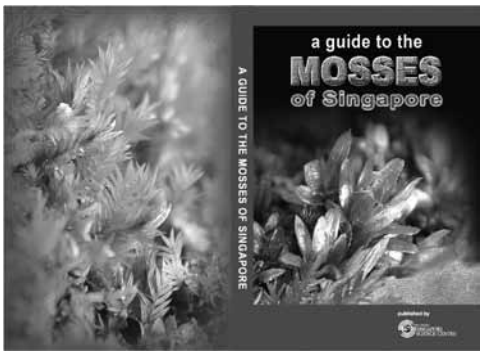
THE FIRST LUNGLESS FROG DISCOVERED ON BORNEO

Dr. David Bickford 1, Djoko Iskandar 2 and Anggraini Barlian 2

1 Department of Biological Sciences, Faculty of Science National University of Singapore; 2 Institut Teknologi Bandung,10 Jalan Ganesa, Bandung, 40132 Java, Indonesia

Abstract
Lungs helped animals conquer terrestrial habitats and are one of the few defining characteristics for tetrapods (amphibians, reptiles, birds, and mammals). Here we report the first case of complete lunglessness in a frog, Barbourula kalimantanensis, from the Indonesian portion of Borneo. The loss of an evolutionary break-through occurs very rarely and only under extreme evolutionary and ecological conditions in nature. Lunglessness in tetrapods (amphibians, reptiles, birds, and mammals) is exceedingly rare, previously known only from one family of salamanders, one genus of salamanders, and a single species of caecilian. A recent expedition to central Kalimantan rediscovered two new populations of this enigmatic aquatic species of frog, previously only known from two specimens, enabling a more comprehensive assessment of the species' ecology, anatomy, and physiology that led to the discovery of lunglessness. Loss of lungs in tetrapods has only been found in Amphibia, most likely due to their history at the interface between aquatic and terrestrial habitats and their ancient ability to respire through the skin. I will comment on the physiological requirements, habitat specificity, and extremely urgency of conserving remaining habitat that can support this species.

A new publication on moss biodiversity in Singapore



A new publication on the guide to common Singapore mosses has been published very recently by the Science Centre Singapore. The new guide book, which includes many beautiful and colourful photos of mosses and also close up pictures of their leaf structures and capsules, forms part of the series of guide books to Singapore nature and biodiversity.

The new guide book is co-authored by Dr. Benito C. Tan at the Herbarium of the Singapore Botanic Gardens and Mr. Ho Boon-Chuan at the Rheinische Friedrich-Wilhelms-University of Bonn in Germany. The guide book contains a chapter on the life history of mosses, a key to the common species of mosses found in Singapore, portraits of selected moss species, and, more importantly, an updated checkilst of mosses of Singapore, in addition to the regular features of a guide book such as Index to scientific names, glossary and references. The guide book is useful to nature lovers and teachers, as well as students in botany, who like to know more about mosses found on this small island country and the neighbouring areas. The cost of this new guide book is $5.50 and can be purchased at the book stores in Singapore. Earlier, the first author had produced a guide book to the common liverworts and hornworts of Singapore in 2002.

SMP Outstanding Mentor Award 2008

Recipients who are members of SIBiol

Assoc Prof Chia Tet Fatt
National Institute of Education, NTU

"Professor Chia was always ready to give us a word of encouragement and advice. He was always ready to help us with new ideas when we found that we were at a loss of what to do next. However, he always explained clearly to us why the step was being carried out before he gave us his ideas." "He never allowed us to handle the NMU, which was a dangerous mutagen."

Ang Yen Yin Madeline, MGS

Assoc Prof Sanjay Swarup
Faculty of Science, NUS

"His thorough explanation on the various science concepts related to our project was so inspirational that it got us amazed and interested in these concepts." "He once told us about how sometimes people took competitions too seriously and ended up being unable to perform their best. He taught us that we should enjoy the process and ultimately what we learnt from the process was more important." "He never lost his temper with us and rarely seemed impatient, even if he was clearly busy and had other matters to attend to."

Deborah Loh Yu Chin, NYGH

Dr Tan Lay Pheng
Republic Polytechnic

"Dr Tan never offers answers directly to us but instead, encourages or prompt us to find out the answer to our questions ourselves. In this way, we are somehow more willing to expose ourselves to the content beyond our school syllabus." "Dr Tan chats with us when we have extra time, sharing with us her experiences with projects and school life. From her, we have gotten to know how to set goals for ourselves and that whatever that is there has its own learning purpose."

Lau Min Ying, NYGH

SMP Projects Mentored by SIBIol Members

Distinction & SMP 3M Young Scientist Award

FORWARD OSMOSIS PROCESS FOR CLEAN WATER PRODUCTION USING MAGNESIUM SULPHATE
New Shi Lin Serene, Wee Lay Kit, Zhan Bailu, Ng How Yong and Tan Chien Hsiang, Nanyang Girls' High School

NOVEL FERROELECTRIC CAPACITOR FOR NON-VOLATILE MEMORY STORAGE AND BIOMEDICAL TACTILE SENSOR APPLICATIONS
Liu Shi Yang, Chua Lynn and S.E. Valavan
NUS High School of Mathematics and Science

A STUDY ON THE ANTICANCER EFFECTS OF PORPHYRIN ON BRAIN TUMOUR CELLS
Anjana Ramkumar, Swaminathan Sethu and M. Prakash Hande
Raffles Girls' School (Secondary)

Distinction

MUTAGENESIS OF THE MAGNETOTACTIC BACTERIA MAGNETOSPIRILLUM MAGNETOTACTICUM
Katherine Nay Yaung, Soh Hui Ling Sharon, Loh Yu Chin Deborah and Sanjay Swarup
Nanyang Girls' High School

Merit

BACTERIAL PLASTICS
Alexander Lim Geng Wang, Sim Meng Ying, Nicholas Kee Jia Hao, Lim Tit Meng and Yip Cheng Wai
Hwa Chong Institution (High School)

HOT WATER CARBON EXTRACT EXPEDITED THE GERMINATION AND GROWTH OF BRASSICA CHINENSIS
Chia Kah Yi Cheryl, Leow Zhi Ting and Chia Tet Fatt
Nanyang Girls' High School

EFFECT OF TRANSPIRATION RATE ON ZINC TOLERANCE OF HYMENOCALLIS LITTORALIS
Lau Min Ying,Pang Si Ling, Tan Hui Min and Tan Lay Pheng
Nanyang Girls' High School

GENETIC ENGINEERING OF DENDROBIUM CHAO PRAYA GEM
Joline Tay Hui Luan, Lee Wei Xin, Michelle Fung Shue Min, Zhang Lei and Yu Hao
Raffles Girls' School (Secondary)

PHYTOREMEDIATION OF NITRATE IN WATER
Wong Miswardi, Gillian, Goh Si Ying, Jovina Summer and Ong Bee Lian
Raffles Girls' School (Secondary)

SCREENING OF TWO TROPICAL PLANTS FOR PHYTOREMEDIATIVE PROPERTIES IN CADMIUM AND ZINC CONTAMINATED SOILS
Mak Xiao Wei, Teo Yong Ai Roxanne, Tan Joo Gian and Tan Lay Pheng
Raffles Girls' School (Secondary)

"Teachers' Workshop: The Annual International Biology Olympiad: A Workshop on How to Prepare Your Students"

28 June 2008, Saturday, 9.30 am to 5 pm, at the DNA Centre @ NIE, NIE.

SIBiol wishes to record its special thanks to Ast/Professor Beverly Goh and Assoc/Professor He Jie for conducting the Workshop, and technical executives from NSSE, NIE, for their assistance.

The Singapore Institute of Biology, together with the Natural Sciences and Science Education (NSSE) Academic Group, National Institute of Education (NIE), NTU, conducted a "Teachers' Workshop: The Annual International Biology Olympiad: A Workshop on How to Prepare Your Students" on 28 June 2008, Saturday, 9.30 am to 5 pm, at the DNA Centre @ NIE, NIE.

Twenty teachers participated in the Workshop. They were from ACS (International), Dunman High School, Hwa Chong Institution, Innova Junior College, Meridian Junior College, National Junior College, NUS High School of Math & Science, Raffles Junior College, St Andrew's Junior College, and Victoria Junior College.

The Workshop was conducted by Assistant Professor Beverly Goh and Associate Professor He Jie. They spoke about the International Biology Olympiad (IBO) to the participants and shared with them the requirements of students participating in the IBO. The participants then went through two laboratory sessions (plant and ecology) that simulated laboratory tests in a typical IBO competition.

The Workshop was well received by the participants. It is hoped that similar workshops will be conducted in future to equip more JC and through-train school biology teachers with the necessary information to prepare their students for the IBO challenge and competition.

Singapore students excel at the 19th International Biology Olympiad (IBO) held in Mumbai, India 13-20 July, 2008.

Congratulations to the four students, who represented Singapore at the 19th International Biology Olympiad! The Singapore team performance was excellent, with a 5th position among 55 countries that participated. This year saw a record number of 220 students. Men Yifei of Raffles Junior College and Sng Weirong Joshua of Hwa Chong Institution won Gold medals with 5th and 15th ranks among the 23 Gold medallists, respectively. Lim Min De Timothy and Choy Chi Chuen Kevin of Anglo-Chinese School (Independent) won Silver medals with very respectable 5th and 9th positions among the 47 Silver medalists.

The program was very efficiently run and the academic level was of the highest quality among all the IBOs held till date, as commented by Dr. Hans Morelis in his closing remarks. As an indicator, not a single question or practical task was dropped or exchanged from the proposed list by the host country. This was a first in the history of the IBO. Social events were equally impressive with exposure to Indian classical dances, music and folk arts and crafts and the participants loved every bit of it!

The Singapore delegation consisted of SIBiol Past President, Associate Professor Shirley Lim, Head of Natural Sciences and Science Education, National Institute of Education, Nanyang Technological University, SIBiol Council Member, Associate Professor Sanjay Swarup, Department of Biological Sciences, National University of Singapore and Mr. Tan Hong Kim, Curriculum Specialist, Curriculum Planning and Development Division, Ministry of Education. Congratulations also go out to Associate Professor Shirley Lim for being elected as one of the three Vice-Chairpersons of the IBO Coordinating Centre's Advisory Board.