THE SINGAPORE INSTITUTE OF BIOLOGY

SIBiol BULLETIN

Volume 32 Number 1 | May 2009 | MICA (P) 125/04/2009

BIOs

Dr Chou Loke Ming, F. SIBiol.
Professor, Department of Biological Sciences,
National University of Singapore

Public Forum

of The Singapore Institute of Biology (SIBiol)
In celebration of the 150th anniversary of the monumental scientific work of Charles Darwin,
"On the Origin of Species"

9th SINGAPORE BIOLOGY OLYMPIAD

INTERNATIONAL BIOLOGY OLYMPIAD TRAIN-THE-TRAINERS WORKSHOP

SIBIOL 35th Anniversary Celebrations

PATRONS

Mr Richard Edward Hale,
F.C.I.B.

Mr Tan Keong Choon,
B.B.M.

35th COUNCIL OF THE SINGAPORE INSTITUTE OF BIOLOGY

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Assoc. Prof Lim Tit Meng

Vice-President
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Asst. Prof Tan Lik Tong

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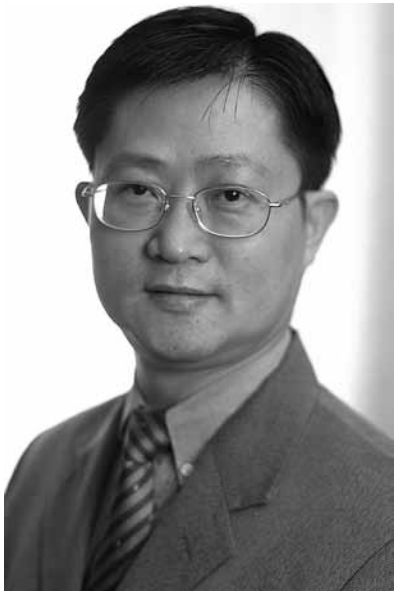
Asst. Prof Lee Yew Jin
Assoc. Prof Low Boon Chuan
Asst. Prof Peter Lee Peng Foo
Assoc. Prof Benito C. Tan
Mr Timothy Tan
Ms Yong Ann Nee

Editorial Team
Mr Timothy Tan (Editor)
Ms Yong Ann Nee (Layout)

www.sibiol.org.sg

Message from the 35th SIBiol President



Dear Members of the SIBiol,

This is my 4th term as the President. Let me once again thank all members for your continual support, in one way or another, to help the 34th Council achieve the objectives of the Institute in promoting biology as a professional career.

Last year we conducted a Public Forum at the Science Centre Singapore on the theme of Climate Change and Global Warming, but it rained heavily that morning and not many members turned up despite an encouraging participation from the general public, including some foreign audience. They actually came to the Forum and not as part of the visitors to the Science Centre because the Forum started before the centre opened to the public. The discussion and response at the forum gave us the motivation to continue organizing public events. We only hope that our own institution members could come forth to give support the institute. This year we will organize one in celebration of Darwin's publication of 'Origin of the Species' 150 years ago. Please look out for this event in June at the Science Centre Singapore.

In 2008 we also organized a teacher workshop on Biology Olympiad activities, with the intention to let more teachers gain an insight into the requirements and nature of the International Biology Olympiad (IBO). We are glad to get from MOE extra funding support to organize a more intensive Biology Olympiad Workshop for more teachers, with the objective of raising student standards in Biology practical skill competence. We could see a trend of our students losing the more basic biology know how as Singapore has been pushing biomedical and multidisciplinary life sciences that our students tend to overlook the importance of good foundation in Biology and related skill sets.

Our students continued to do well in the IBO. Thanks to several faithful members and colleagues who are not members but also believe in Biology education, for their dedication in training the students year after year. Singapore will be hosting the 2012 IBO and we will need more biologists to come forth to help organize and also train the students. We have to ensure that the team that plan the IBO will not be involved in the training team so that we do not unintentionally let our students who compete in 2012 have an unfair advantage through contacts with the team that sets the questions and tasks. We therefore appeal for volunteers to help us.

While we strive on, I continue to feel sad that a large proportion of our members seemed to have lost the zeal for being associated with the Institute. I have been talking to the Presidents of our sister biology related institutions under the Singapore National Academy of Science for possible synergy and alliances. I found that they too have to struggle with waning commitments from members. For a start we will combine our support to organize the 2011 IUBMB conference in Singapore. Hope we will then see renewed enthusiasm from members.

We will be organizing a 35th anniversary dinner celebration on the AGM day in October. We hope to see many members coming to the event. We will try to organize workshops to earn some income for the celebration so that the

dinner will be free for all members. On that note, I like to thank all the Council Members past and present for sacrificing their time and efforts in organizing revenue-generating workshops to keep the operation of SIBiol sustainable.

We thank Dr Sanjay Swarup for his service in the Council for the past few years and he has stepped out this year for his sabbatical leave. We welcome Dr Ng Ngan Kee for joining the Council and taking on the role of Honorary Treasurer.

The current Vice-President, Dr Beverly Goh, Honorary Secretary Dr Tan Lik Tong and myself have unknowingly stayed on office beyond the maximum duration of three years according to the stipulations in the constitution. We will certainly need new blood to come in to help the Council manage our society. Volunteers are most welcome!

Hope you like the new format of the revamped *Bulletin*. Special thanks to Timothy Tan the Editor, Yong Ann Nee the layout artist, and the assistance from Dr Peter Lee. We like to feature more of our local biologists especially members, as role models to the young. The new *BIOs* feature serves to profile our talent and promote collaboration.

Please share your ideas and feedback for SIBiol to better achieve its objectives of promoting Biology and the profession of Biologists. Do not hesitate to contact me or any Council member. We really need to know how to serve you better.

Thank you very much.

Yours sincerely,

Lim Tit Meng
President, 35th Council, SIBiol

9th SINGAPORE BIOLOGY OLYMPIAD

November - December 2008
National Institute of Education, Nanyang Technological University

The 9th Singapore Biology Olympiad (SBO), which is organised by SIBiol, with support from the National Institute of Education, Nanyang Technological University (NIE/NTU), Department of Biological Sciences, National University of Singapore (DBS, NUS), and the Ministry of Education, was held in November and December 2008. This annual competition sees the cream of our country's pre-university biology students competing against one another for honours and for the chance to represent Singapore at the International Biology Olympiad. All participants sat for a Theory Test (held on 6 Nov 2008). The top students from the Theory Test round moved on to the Practical Test (held on 2 Dec 2008). From the handful of candidates who have emerged with medals, six students have been selected and are currently undergoing intensive training for the International Biology Olympiad (IBO).

A final contingent of four students will represent Singapore at the 20th IBO, which will be held in Tsukuba, Japan from 12th to 19th July 2009. Find out more about the SBO and IBO at the SIBiol website at http://www.sibiol.org.sg/ibo/

INTERNATIONAL BIOLOGY OLYMPIAD TRAIN-THE-TRAINERS WORKSHOP

SIBiol will be conducting a Teachers' Workshop with the aim of "training-the-trainers" on preparing students for the Singapore Biology Olympiad and ultimately for the International Biology Olympiad. The Ministry of Education has generously allocated a grant to cover half the cost of this workshop under the Olympiad Potential Enrichment (OPE) Programme. Participants will hence be able to take part in this workshop at a subsidised rate.

This intensive workshop will train 30 teachers from junior colleges, and schools offering the Integrated Programme (IP), over three days in August 2009. Interested parties may contact Associate Professor Koh Chong Lek (chonglek.koh@nie.edu.sg) for further details

35TH ANNIVERSARY CELEBRATIONS

In conjunction with SIBiol's 35th Anniversary Celebrations, we will be organizing a workshop to be conducted on the sidelines of the International Science Education Conference 2009 (ISEC 2009) in November 2009 at the National Institute of Education. Local and international participants, primarily teachers and academics, will be invited to participate in our workshop. Details of the workshop will be announced in due course.

As a members' treat, we will also be holding a dinner banquet to coincide with our Annual General Meeting in October 2009. All members are invited. Details will be sent via email and posted on our website at a later date.

THE SINGAPORE INSTITUTE OF BIOLOGY 34th COUNCIL ANNUAL REPORT (2007/2008)

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 34th COUNCIL

The 34th Council held nine meetings during the year to carry out the business of the Institute. Members of the 34th Council of the Institute for the year 2007/2008 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
	Mr Timothy Tan
	Ms Yong Ann Nee
	Dr Adrian Elangovan

3. MEMBERSHIP

Eight new members (one Life Member, two Ordinary Members, and five Student Members) were admitted to the Institute during the year:

Life Members
Mrs. Sandy Tan

Ordinary Members
Dr. Ritu Bhalla
Mr. Lee Jong Seng, John

Student Members
Mr. Yi Youguang
Mr. Cher Zhong Shan, Samson
Ms. Lim Shiyun, Gina
Ms. Chiang Cheow Hwee, Glenda
Ms. Wong Gaik Choon

Ten 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, 2008 is as follows:

Patrons:	2
Honorary Fellows:	2
Fellows:	7
Ordinary Members:	80
Associate Members:	8
Student Members:	23
Life Members:	59
TOTAL	181

4. ACTIVITIES OF THE INSTITUTE

4.1 Teachers' Workshop (June 28, 2008 at NSSE, NIE)

SIBiol (A/P Koh Chong Lek) organized a Teachers' Workshop entitled "The Annual International Biology Olympiad: A Workshop on How to Prepare Your Students" conducted by Drs. Beverly Goh and He Jie (NSSE, NIE) on June 28, 2008. A total of 20 teachers attended the workshop held at NSSE, NIE.

In addition, MOE has agreed to fund SIBiol $18,000 in 2009 for the purpose of training teachers on SBO matters.

4.2 SIBiol Public Forum at Science Centre Singapore (August 23, 2008)

The SIBiol Public Forum entitled "Environmental/Climate Change and Biodiversity" was jointly organized by SIBiol (Drs. Low Boon Chuan and Adrian Elangovan) and the Science Centre Singapore on August 23, 2008. About 70 enthusiasts gathered for this event chaired by Dr. Adrian Elangovan.

The following speakers spoke at the Forum:

A. Prof Chou Loke Ming (DBS, NUS): The Impact of Climate Change on Biodiversity (Science Perspective)
B. Prof Ooi Giok Ling and Dr Chang Chew Hung (NIE, NTU): Cities and Climate Change – Challenges in Asia (Social Science Perspective)

4.3 The 8th and 9th Singapore Biology Olympiads (SBO 2007 and SBO 2008) & the 19th International Biology Olympiad (IBO 2008)

The 8th Singapore Biology Olympiad was held in November 2007 at NIE, NTU. Two hundred and eighty-seven students from 19 JCs sat for the Theory Test on November 14, 2007. Thirty-four students from five JCs/Through Train Schools were selected for the Practical Test held on December 5, 2007. The final medal tallies were six Golds, seven Silvers, 15 Bronzes, and six Merits (new category).

From the 8th SBO, eight students were shortlisted for training beginning in February 2008 in preparation for the 19th IBO. After a residential training camp at NIE/NTU in practical skills conducted in June 2008, and a further series of gruelling tests (theory and practical), four students were finally selected to represent Singapore in the 19th IBO held in Mumbai, India in July 2008.

The Singapore team, comprising Choy Chi Chuen, Kevin [ACS(I)], Lim Min De, Timothy [ACS(I)], Men Yi Fei (RJC), and Sng Weirong, Joshua (HCI) performed well at the 19th IBO by securing two Golds and two Silvers and Singapore was ranked 5th position overall. The team was led by Dr. Shirley Lim (SIBiol), Dr. Sanjay (SIBiol), and Mr. Tan Hong Kim (MOE).

The 9th SBO is scheduled to be held in November and December 2008. Dr. Shirley Lim is the Chairperson of the SBO Organising Committee and the Committee comprises of Dr. Lim Tit Meng, Dr. Beverly Goh, Dr. He Jie, Dr. Peter Lee, and Mr. Tan Hong Kim. The Theoretical test will be held on November 6, 2008.

4.4 8th Annual National Biology Convention (October 18, 2008)

The 8th Annual National Biology Convention (ANBC) is scheduled to be held on October 18, 2008, after the 34th AGM of SIBiol at 3.30 pm. The Chairman and organiser of the 8th ANBC is Dr. Benito Tan. The four invited speakers delivered talks on the following topics:

A. 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; 5Department of Biological Sciences, National University of Singapore.

B. 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

C. The Amazing World of Gingers
Dr. Jana Skornickova
The Herbarium, Singapore Botanic Gardens.

D. 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.

4.5 Publications and Website
One issue of the SIBiol Bulletin (Volume 31) was published this year. The editorial team comprised Mr. Timothy Tan and Ms. Yong Ann Nee. 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/ and 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 2007/2008:

Ms P Amuthavali (National Institute of Education, Nanyang Technological University)
Dr. David Bickford (Dept. Biological Sciences, NUS)
Dr Chang Chew Hung (National Institute of Education, Nanyang Technological University)
Dr Chew Fook Tim (Dept of Biological Sciences, National University of Singapore)
A/P Chew Shit Fun (National Institute of Education, Nanyang Technological University)
Mr Oliver Chia (Ministry of Education)
A/P Chia Tet Fatt (National Institute of Education, Nanyang Technological University)
Mr Chong Ping Lee (Dept of Biological Sciences, National University of Singapore)
Prof Chou Loke Ming (Dept of Biological Sciences, National University of Singapore)
Ms Chua Ling Lih (Dept of Biological Sciences, National University of Singapore)
A/P CH Diong (National Institute of Education, Nanyang Technological University)
Dr. Adrian Elangovan (Singapore Polytechnic)
Dr Beverly Goh (National Institute of Education, Nanyang Technological University)
A/P He Jie (National Institute of Education, Nanyang Technological University)
Prof Hew Choy Leong (Dept of Biological Sciences, National University of Singapore)
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)
A/P Prakash Kumar (Dept of Biological Sciences, National University of Singapore)
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)
A/P 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 (Science Centre Singapore and 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)
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 (Dept of Biological Sciences, National University of Singapore)
Dr. Ng Huck-Hui (Dept of Biological Sciences, National University of Singapore)
Ms Rosalind Ong (National Institute of Education, Nanyang Technological University)
Prof Ooi Giok Ling (National Institute of Education)
Dr. Jana Skornickova (Singapore Botanic Gardens)
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 (Dept 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 (Singapore Botanic Gardens)
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)
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)
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)
Dr. Calvin Yeo Wee Sing (National Neuroscience Institute, 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)
Ms Yong Ann Nee (Dept of Biological Sciences, National University of Singapore)
Ministry of Education, Singapore
National Institute of Education, Nanyang Technological University
National Parks Board, Singapore
Department of Biological Sciences, National University of Singapore
Nature's Niche, Singapore
Natural Sciences & Science Education, National Institute of Education, NTU
Raffles Museum of Biodiversity Research, Department of Biological Sciences, NUS
Science Centre Singapore
Singapore Botanic Gardens
Singapore National Academy of Sciences

Recorded by Dr. Tan Lik Tong, Honorary Secretary, 34th SIBiol Council
Vetted by A/P Lim Tit Meng, President, 34th SIBiol Council

SINGAPORE INSTITUTE OF BIOLOGY (SIBIOL)

STATEMENT OF GENERAL ACCOUNT FUND: INCOME AND EXPENDITURE
FOR THE YEAR ENDED 30 SEPTEMBER 2008

INCOME	$	EXPENDITURE	$
A. Membership Dues		A. SIBiol Book Prize	200.00
Existing Members	1,975.00		
New Members	480.00	B. Publications	
		Bulletin (Oct 2007)	417.30
B. Activities			
IBO Teachers' Workshop	8,000.00	C. Activities	
IBO/SBO (from MOE)	1,650.12	IBO/SBO	4,467.96
		IBO Teachers' Workshop	435.60
C. Banking		Public Forum	829.25
Interest from Fixed-Deposits	149.16		
		D. SNAS Subscription ('08/09)	500.00
		E. Stationery, Operations	1,979.28
		F. Postage	259.75
		G. Functions (AGM 2007)	1,198.40
		H. RTF Audit	350.00
		I. Bank Charges	175.00
Total Income	**$ 12,254.28**	**Total Expenditure**	**$ 10,812.54**
Surplus (S$)			**$ 1,441.74**

Prepared by:

Dr Peter Lee
Honorary Treasurer
34th Council, SIBiol.

Audited by:

(1) A/P Diong Cheong Hoong
Honorary Auditor — Date 14.10.08

(2) Mr David John Court
Honorary Auditor — Date 16/10/08

The above statement was adopted at the SIBiol 34th Annual General Meeting held on 18 October 2008 at the Guild House, NUSS.

A/P Lim Tit Meng
President, 34th Council, SIBiol.

SINGAPORE INSTITUTE OF BIOLOGY (SIBIOL)

SUMMARY OF GENERAL ACCOUNT FUND MOVEMENTS
FOR THE YEAR ENDED 30 SEPTEMBER 2008

	Current A/C OCBC $	Fixed Deposit A/C OCBC Bank $	TOTAL $
BALANCE B/F: 1 OCT 2007	16,717.03	20,000.00	36,717.03
ADD: Income	12,254.28	Nil	12,254.28
SUBTOTAL	28,971.31	20,000.00	48,971.31
LESS: Expenditure	10,812.54	Nil	10,812.54
TOTAL	**18,158.77**	**20,000.00**	**38,158.77**

Prepared by:

Dr Peter Lee
Honorary Treasurer
34th Council, SIBiol.

Audited by:

(1) A/P Diong Cheong Hoong
Honorary Auditor — Date 14.10.08

(2) Mr David John Court
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A/P Lim Tit Meng
President, 34th Council, SIBiol.

BIOs

Dr Chou Loke Ming, F. SIBiol.

Professor, Department of Biological Sciences, National University of Singapore

Professor Chou Loke Ming, a Fellow of the Singapore Institute of Biology, is a renowned authority on coral reef biology, coastal management and reef restoration. He consults for various national and international agencies and has received many awards in recognition of his contributions in marine conservation. Earning his PhD in 1975, Dr Chou has been with the National University of Singapore since 1977 – becoming a full professor in 1998 – where he has been recognised for his teaching excellence.

Professor Chou was a founding member of and longstanding contributor to SIBiol. Serving many roles in the Council almost continuously between 1974 and 1999, including President (1986-89, 1990, 1991), Vice-President, and Treasurer, he was conferred the title of Fellow in 1999. He continues to be an active supporter of SIBiol and has graciously agreed to be interviewed for this article to share his experience and opinions.

Why did you choose to become a biologist?

Come to think of it, I never chose to become a biologist. I did my high school in Sydney and biology was not offered except in the girls' schools (don't ask me why!).

Returning to Singapore to do [what was then known as] Pre-U Two, I took Biology for the first time in my school life. It was tough as I had to cram two years of JC biology into one and I vividly remember my first Botany class. It was a practical test and the teacher, not believing that I had no biology background, refused to excuse me. So I was initiated into botany by a test where we had to section stems with razor blades, stain and mount them.

It was like going into battle with a machine gun but not knowing how to operate it! However, I had to do biology in order to qualify for medicine. Eventually I was accepted into science and not medicine, but I had developed an interest in biology during Pre-U Two and decided to pursue it.

"... I was initiated into botany by a test... It was like going into battle with a machine gun but not knowing how to operate it!"

In the second year of the Science degree course, I decided to become a lecturer. The motivation came from a Physiology lecturer! The amount of knowledge she commanded, the ease and clarity by which she transferred the knowledge, the pleasant and conducive learning atmosphere she created, were all very inspirational!

What got you interested in your area of research?

I've always been interested in marine life. I grew up in a village in Siglap with the sea just next to us (today, Mandarin Gardens sits over the sea in which I swam, looking for clams and watching the fishermen bring in their catches).

For my honours thesis, I chose a marine project and worked on nudibranchs. I wanted to take colour slides of the beautiful creatures collected from the reefs and intertidal areas, which I never knew existed. But in those days, one colour slide costs 60 cents, as the roll of film had to be sent to Australia for processing and it took two weeks. So I had to make black-and-white drawings of each of the over 50 species collected. Ever since, it was marine biology for me, as I have always been very comfortable when I am out at sea.

I got detracted into working on house gekkos for my PhD because the Zoology Department of the University of Singapore needed a vertebrate zoologist and that was the only way I could get into the Department. Soon after I joined the Department, I switched over to marine biology and took up scuba diving to facilitate my research… I have never looked back since!

What is your most memorable moment or interesting experience as a biologist teaching and working in Singapore?

I can't think of a single significant experience, but a whole myriad of opportunities that gave me all kinds of valuable experience. Interacting with students and researchers from all over the globe is very satisfying. Chairing regional or international scientific committees is rewarding.

Best of all perhaps is the manner in which I get to apply what I have learnt to real situations. My research into coastal management and reef restoration has been most relevant in this regard.

What book would you give to a student to spark his or her interest in biology? Why?

I feel that any good picture book that introduces a student to the wonders of plants and animals will spark an

interest. My interest in biology wasn't triggered by any of the textbooks in Pre-U. It was a Reader's Digest book on the marvels of animal life that clinched it for me.

For environmental biology, Rachel Carson's 'Silent Spring' remains a classic – a lot of foresight for its time and written in a very engaging style. A more recent book that I enjoyed and should spark a student's interest in environmental biology is Michael Pollan's 'Omnivore's Dilemma – A Natural History of Four Meals' – His analysis of the ecology of eating really sets you thinking about our impact on the environment and how we are affecting ourselves through modern food production.

"I know of students who think nothing of wasting good tap water to wash aluminum drink cans and dry them in an air-conditioned room so that they are clean for recycling!"

In your opinion, is enough being done to inculcate awareness of conservation issues in Singapore?

I feel the need for a more holistic approach. Ask any student what conservation means to them and the typical answers are, don't use plastic bags, don't use styrofoam cups and plates, don't eat shark-fin, go plant a tree, or print on both sides of a sheet of paper. These different facets of 'conservation' are drilled in isolation into students.

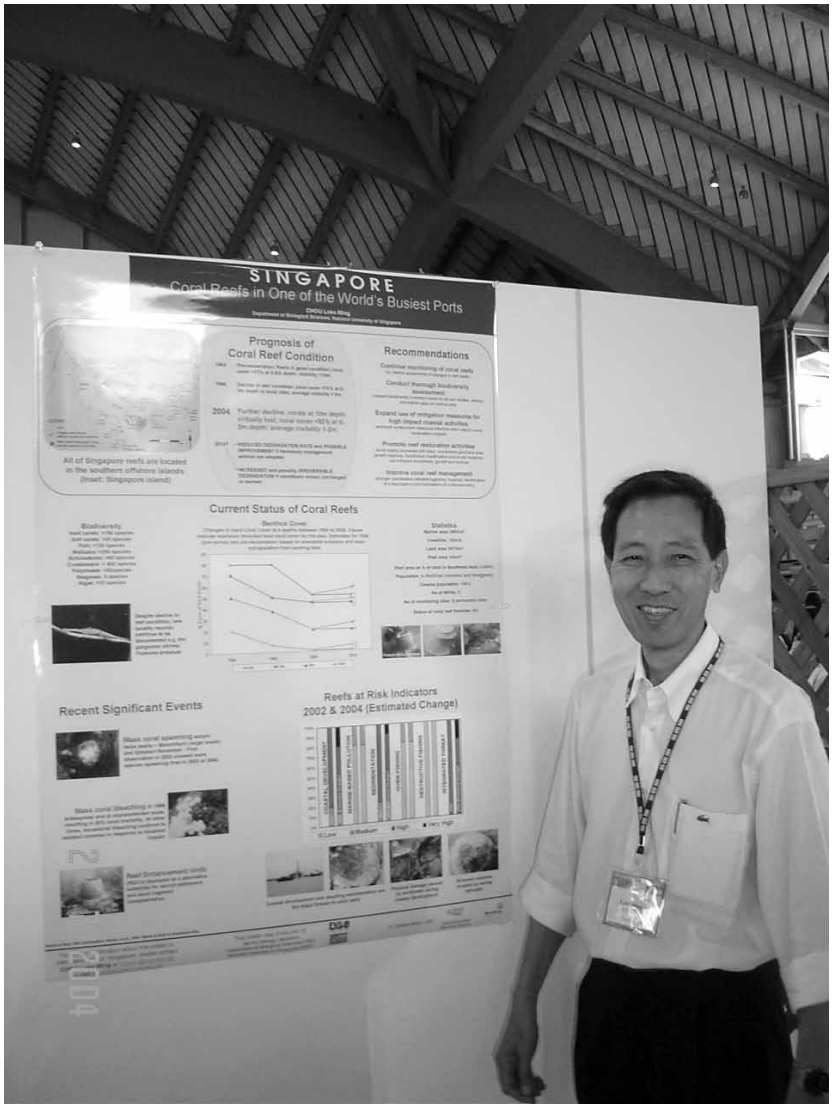
They need the opportunity to tie all these with a deeper understanding of the concept of sustainability. I know of students who think nothing of wasting good tap water to wash aluminum drink cans and dry them in an air-conditioned room so that they are clean for recycling!

Homing in on biological conservation, many students have difficulty deciding whether the shark-fin debate is a conservation issue or an animal welfare one. If it is a conservation issue, they do not realize that there are hundreds of marine species out there being fished to or near to extinction, or if they do, cannot explain why sharks are unique compared to all the other species.

If it is an animal welfare issue, they have never considered how cruel it is for a fish caught by a hook pierced through part of its mouth and skull to be pulled out of its element and left to suffocate while trashing about and injuring itself further. Or a live oyster exerting great muscular strength to hold its shell valves tight together, only to have a blade pressed in between the valves, slicing the muscle, having the valves ripped apart, and acidic lemon squeezed onto its exposed flesh.

I really think that conservation requires a full and balanced approach so that students don't get carried away by just a few emotive issues

Professor Chou in his natural environment



but are equipped to think better and deeper, and most importantly, to be able to formulate their own opinions.

In your opinion, do you think the current biological science curriculum in schools and universities adequately prepares students for the future?

I'm not familiar with the biology curriculum in schools, but I understand that it is geared heavily to cell and molecular biology. The students coming in do not have a firm understanding of ecology or environmental biology. Similarly, the current Life Sciences degree programme at NUS has a very restricted ecology or environmental biology component.

What advice would you have for young, aspiring biologists-to-be?

Biology opens the door to an appreciation of life. As a subject, it is interesting, has everyday applications and many interesting mysteries to be unravelled. As a biologist, read widely and take an interest in other subjects because solutions commonly extend beyond biology alone and a multidisciplinary understanding gives you an added advantage.

***Bios** is Greek for life, and hence an apt description for this article series which aims to profile the lives and careers of prominent biologists, as well as garner their opinions on topical matters of relevance to our members.*

Editor's Comment

Evolving

Mr Timothy Tan

This year marks SIBiol's 35th Anniversary and also the 150th anniversary of the publication of Charles Darwin's extraordinary "On the Origin of Species".

This issue highlights SIBiol's plans to celebrate both anniversaries. Chief of these is the Public Forum to be held on 27 June 2009 (see back page). Two prominent speakers, including Dr Peter Ng, recipient of SIBiol's Distinguished Biologist Award in 2004, are sure to make this a scintillating event.

It is also a fitting time then, for the Bulletin to 'evolve'. The Bulletin has developed a few minor 'variations' in form, and has acquired a new 'character', the 'BIOs' feature article (pages 9 to 11). We hope of course, that these are viewed as beneficial adaptations!

The Editorial Team also happen to be the Web Team for our sibiol.org.sg website. As such, we hope members can assist us with suggestions and expertise, as we turn our attention to improving the website. Are there any features that we can implement? Can the site serve more than just an informational role? Is there any collective contribution to biology research and education that our members can make, such as a wiki? Tell us!

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

We hope to hear from you!

The Singapore Institute of Biology Public Forum 2009

To commemorate the 150th anniversary of the publication of Charles Darwin's monumental scientific work, "On the Origin of Species", the Singapore Institute of Biology (SIBiol) is organizing a Public Forum. Two prominent speakers have kindly agreed to give talks on related topics of phylogeny and biodiversity. Admission is FREE, all are welcome. Please register online at http://www.sibiol.org.sg/register/

Date: **Saturday, 27 June 2009**
Time: **10.00 am (Registration from 9.45am)**
Venue: **Science Centre, Singapore**

First Speaker

"The Evolution of Species Concept: Back to Darwin"

Professor Brent Mishler
Director of the University and Jepson Herbaria
Professor, Department of Integrative Biology, University of California, Berkeley, USA

Abstract: Are species uniquely real biological entities? This question is one of the most controversial topics today in biology. "Species" currently play a central role in both theory and practice in biology, and have a large place in the public's perception of biological diversity as well. This talk will review the historical and current opinions on the question, but will primarily advocate one particular position that appears to fit biological reality as now understood: that species properly defined as monophyletic groups are real entities, but not uniquely real. As it happens, this "modern" view is really a return to the views of Darwin expressed in The Origin of Species 150 years ago. A brief discussion of the implication of this re-defined position on species concept for academic studies in ecology and evolution as well as for practical applications in biodiversity inventories and conservation biology will conclude the talk.

Second Speaker

"The Naming of Beasts, Counting of Dead Bodies, and What Taxonomists REALLY do!"

Professor Peter Ng Kee Lin
Director of the Raffles Museum of Biodiversity Research (RMBR), and Tropical Marine Science Institute (TMSI)
Professor, Department of Biological Sciences, National University of Singapore, Singapore

Abstract: Zoological nomenclature is about using the correct name for animals. How are animals named? How are they discovered? How are they classified? Why is the Linnaean system, pioneered in 1858, still as relevant today as it was over 150 years ago? With the growing importance of phylogenetic information and genetic datasets, and with our ever increasing use of IT, digital publication and electronic communication, should the way we name and classify animals also evolve? Connected with the so-called Biodiversity Crisis is also a growing aversion to killing animals in the name of Science. Why do animals have to die for scientists to understand Earth's biodiversity anyway? Taxonomists have had a hard time in recent decades; from rapidly thinning ranks, loss of funding and job opportunities, as well as bad publicity about what they supposedly do (or do not do). As a practicing taxonomist of almost 30 years, the various issues above will be discussed and some of these myths associated with the profession dispelled.