



IBEC Bulletin

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IBEC BULLETIN 2020

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Prof. Dr Wan Hashim bin Wan Ibrahim

It is satisfying for me to see the Institute of Biodiversity and Environmental Conservation, here in UNIMAS, launch a newsletter, with e-issn accreditation, to showcase the numerous fields of research it has embarked on, as well as events the staff at the Institute are pursuing.

I am pleased to be invited to offer a few words for the inaugural issue. I am certain that the newsletter will go from strength to strength, with the expanded and reinvigorated research currently being undertaken. We hope to share and showcase recent advances in research as well as teaching, on areas centred around both fundamental research on biodiversity as well as more applied aspects, such as conservation and management. Noteworthy is the Institute's energetic teams of graduate students and staff, the excellent track record in publications and for securing research grants from a variety of sources, many of which are extramural and the usage of state-of-the-art technologies in accomplishing such research projects. Most members also maintain lab pages, helping disseminate their findings to a wide audience, attracting more young scholars to the discipline in the process. These activities are expected to both expand the public outreach of the Institute as well as the university, as well as facilitate the Institute's progressive direction towards achieving the status of High Centre of Excellence.

I hope that the newsletter is distributed in the widest possible manner, reaching all possible stakeholders, which, in turn, can forge greater synergy in research in the important area of biodiversity conservation and management.



Assoc. Prof. Dr. Mohd Azlan Jayasilan
IBEC Director

It gives me great pleasure to write a few words for the inaugural issue of the IBEC Bulletin. We hope to periodically issue this newsletter, in order to showcase our events and activities, and to provide updates on our research and publications.

I hope that the momentum of our research culture can be maintained if not accelerated in the months to come. IBEC has been gifted with an energetic team of academics, organized into nine broad research clusters, with good synergy amongst them. The University itself encourages staff members to engage in research through provision of internal grants to promote principal investigators. These include numerous top-down grants, as well as research chairs. I am grateful to the senior management of our university for these efforts, which will assist us strengthen the Institute and enhance our respective research profiles.

Looking ahead, I believe that the University will continue to provide an environment conducive to conducting research, postgraduate teaching and training and associated academic activities, not least of which is public outreach and consultancy to help the state and federal governments.

I am happy to see that IBEC is making every effort to promote research and this Bulletin will serve as a tool, to share recent advancements in research and disseminate such news. I hope that in some small way, this initiative of sharing information will motivate us to be more productive. Looking forward to seeing more of academic achievements and activities by our colleagues and students in this Bulletin.

HANDOVER OF IBEC DIRECTORSHIP On 15th January 2020



The fourth IBEC Director, Prof. Dr Gabriel Tonga (fourth from left) handing over the IBEC file to the fifth IBEC Director, Assoc. Prof. Dr Mohd Azlan Jayasilan (third from left)

Madam Pasey's Farewell at IBEC

By
Cindy Peter

On 28 February 2020, a farewell luncheon was organized for Madam Pasey Lisus, IBEC's Office Secretary. It was attended by the Director, Assoc. Prof. Dr. Mohd Azlan Jayasilan, all IBEC Research Fellows, and postgraduate students. Madam Pasey had been working in UNIMAS since 2001, and was in IBEC from February 2015. Prior to that, she was at the Centre for Applied Learning and Multimedia (CALM). Beginning 1 March 2020, Madam Pasey will be reporting for duty at the UNIMAS Teaching Hospital. We would like to thank Madam Pasey for her hardwork and cooperation while in IBEC, and wish her well for the future! We will miss you Kak Pasey!



BOOTCAMP ON “WILDLIFE STUDY DESIGN AND DATA ANALYSIS”**By****Lisa Lok Choy Hong, M.Sc. candidate**

An international bootcamp on “Wildlife Study Design and Data Analysis” was conducted from the 12th to 23rd of January 2020 at TR11, Faculty of Resource Science and Technology. The bootcamp was jointly organized by Institute of Biodiversity and Environmental Conservation (IBEC), Faculty of Resource Science and Technology (FRST), and Biodiversity Conservation Society Sarawak (BCSS). Twenty-three participants were involved in the bootcamp, consisting of postgraduates, lecturers, researchers and members from NGO organizations from Sarawak, Sabah and the Philippines. The bootcamp was led by experienced trainers and wildlife statisticians, Mr. Mike Meredith, Mr. Ngumbang and fellow teaching elves. The bootcamp focused and addressed issues on study design, data management, data analysis and potential implications in today’s modern conservation landscape.



Bootcamp on Wildlife Study Design and Data Analysis held at FSTS, UNIMAS

UNIMAS SHOWCASE FOR WORLD WETLAND DAY 2020

By
Dr Jongkar Grinang

Recently, Universiti Malaysia Sarawak, through the Faculty of Resource Science and Technology, and the Institute of Biodiversity and Environmental Conservation, participated in the World Wetland Day event which was organized by the Sarawak Forestry Corporation on 8th February 2020 at Bukit Lima Nature Reserve, Sibul. The World Wetland Day is celebrated every month of February worldwide specifically to mark the adoption of the Convention on Wetlands of International Importance towards global awareness on the vital roles of wetlands and the biodiversity. In Sarawak, the event is under the directive of Sarawak Forestry Corporation and Sarawak Forest Department. This year, UNIMAS for the first time participated in the event by showcase core activities of the university on teaching and research related to wetlands and the biodiversity under the niche area of Biodiversity and Environmental Conservation.



Launching of World Wetland Day. IBEC and UNIMAS contributions include animal specimens, books and brochures. Visitors comprised school students, teachers, parents, and the general

POSTPONEMENT OF THE 9TH INTERNATIONAL BORNEAN FROG RACE 2020

By
Pang Sing Tyan, Ph.D. candidate

The Coronavirus (COVID-19) outbreak has brought in a rapidly changing situation from a public health perspective. Our priority, here in IBEC, is everyone's health and wellbeing.

The Federal Government had ordered a lockdown, starting 18 March 2020, and local and international travel as well as holding of meetings or other gatherings has been postponed or cancelled. The University authorities, as well as the International Bornean Frog Race Committee, have accordingly postponed the 9th International Bornean Frog Race 2020 till such time the health authorities in Sarawak and Malaysia deem it safe to hold the event.

We therefore look forward to welcoming the participants of the International Bornean Frog Race in 2021.



Frog Race

COASTAL AND MARINE BIODIVERSITY EXPERT GROUP CONSULTATION WORKSHOP

By
Cindy Peter

In collaboration with WWF-Malaysia and Universiti Malaya (UM), the Malaysian Society of Marine Sciences (MSMS) organized an expert group consultation workshop from 3rd to 5th of March 2020 at Universiti Malaya, Kuala Lumpur. The experts consisted of 28 lecturers and postgraduate students from various public and private universities as well as staff of WWF-Malaysia. Ms Cindy Peter (IBEC) and Dr Aazani Mujahid (FRST) were the invited representatives from UNIMAS as marine mammals and oceanography researchers.

The objectives of this workshop were: to collectively review existing literature and knowledge on Malaysia's coastal and marine biodiversity to determine the areas in need of protection and conservation for Malaysia's Maritime Waters; to identify Ecological and/or Biological Significant Marine Areas (EBSA) in Malaysia which ought to be prioritized for protection including identifying networks for Marine Protected Areas and; to develop recommendations for inclusion in the 12th Malaysia Plan and the 4th National Physical Plan on coastal and marine environment conservation and management. Nineteen proposed EBSA from Peninsular Malaysia, Sabah, and Sarawak were identified during the workshop. These proposed EBSA will be presented to the Federal Government for consideration as new Marine Protected Areas and to obtain funding for future research.



Lecturers and researchers from various Universities in Malaysia and staff members of WWF-Malaysia during the “Coastal And Marine Biodiversity Expert Group Consultation Workshop” which was held at Universiti Malaya from 3rd-5th March 2020. Dr Aazani Mujahid (FRST) and Ms Cindy Peter (IBEC) were representatives from Universiti Malaysia Sarawak

A VISIT FROM THE AGRO-ECOLOGY SOCIETY MALAYSIA

By
Prof. Dr Gabriel Tonga Noweg

Recently, I received an invitation from the Agro-Ecology Society of Malaysia to collaborate with them to organize a community workshop on "ecology and conservation of agriculture ecosystem".

On 28 February 2020, IBEC received a visit from Agro-Ecology Society Malaysia representative, Dr Annie Mitin for a proposed collaboration. Agro-Ecology Society is keen to collaborate with IBEC, and UNIMAS in general, for the proposed community workshop. Their proposed target audiences are farmers, agriculture agents (Agricultural Department and related agencies) and people involved in rice farming and deals with management of the environment.



SPATIAL BIOLOGY OF *HEOSEMYS SPINOSA* IN WESTERN SARAWAK**By****Siti Nor Baizurah, Ph.D. candidate**

Over 60% of the world's turtles and tortoises face extinction from a variety of factors, including habitat loss, exploitation and climate change. At the same time, vital information, relevant to their conservation biology, remains unavailable. Distributed in Myanmar, Thailand, Peninsular Malaysia, Singapore, southern Philippines and Borneo, the Spiny Hill Turtle (*Heosemys spinosa*) is listed as 'Endangered' by the IUCN Red List.

This is the first concerted effort to study a population of free-ranging *H. spinosa*, employing radio-telemetry and other techniques, to enhance our understanding of the spatial biology of the species.

The study was funded by a Niche Research Grant from the Ministry of Higher Education, Government of Malaysia.



Research on the Spatial Biology of Spiny Hill Turtle (*Heosemys spinosa*)

SYSTEMATIC STUDY OF THE ARACEAE IN SABAH

By
Jyloerica Joling, M.Sc. candidate

The Araceae of Borneo is represented by 670 local indigenous species but the number is estimated to reach up to 1000 species owing to large areas yet to be explored (40% undescribed novelties). So far there is no systematic study on the Araceae of Sabah. In order to understand the group better, herbarium specimen data are being compiled to produce an updated checklist of all species. Along with Sabah's effort to assess the conservation status of its flora owing to rapid deforestation and forest degradation, the conservation status of all aroid species in Sabah are also being assessed by following the guidelines provided by the International Union for Conservation of Nature (IUCN) Red List Categories and Criteria.



Research on the Araceae of Sabah

RECENT PUBLICATIONS

1. Chua K.S., Borkent, A. & Wong S.Y. (2020). Floral biology and pollination strategy of seven *Tacca* species (Taccaceae). *Nordic Journal of Botany* 38(2): 1-14. doi: 10.1111/njb.02594.
2. Das, I. (2020). Pangolins on stamps of the world. *Biophilately* 69(1): 7-14.
3. Davis, H.R., Chan, K.O., Das, I., Brennan, I.G., Karin, B.R., Jackman, T.R., Brown, R.M., Iskandar, D.T., Nashriq, I., Grismer, L.L. & Bauer, A.M. (2020). Multi-locus phylogeny of Bornean Bent-Toed Geckos (Gekkonidae: *Cyrtodactylus*) reveals hidden diversity, taxonomic disarray, and novel biogeographic patterns. *Molecular Phylogenetics and Evolution* 147: doi.org/10.1016/j.ympev.2020.106785.
4. Dehling, J.M. & I. Das. (2020). Taxonomic re-evaluation of the enigmatic *Polypedates chlorophthalmus* Das, 2005 (Anura: Rhacophoridae) from Gunung Murud, Sarawak, Malaysia (Borneo), a junior synonym of *Philautus hosii* (Boulenger, 1895). *The Raffles Bulletin of Zoology* 68:319-325.
5. Ellis, S.A., & Cobb, K.M., Moerman, J.W., Partin, J.W., Bennett, A.L., Malang, J., Gerstner, H. & Tuen, A.A. (2020). Extended cave drip water time series captures the 2015 – 2016 El Niño in Northern Borneo. *Geophysical Research Letters*. 10.1029/2019GL086363.
6. Jyloerica J., Wong S.Y., Pereira, J.T. Damit, A. & Boyce, P.C. (2020). Studies on Potheae of Borneo II: *Pedicellarum* M.Hotta subsumed into *Pothos* L., and recognition of three new species. *Webbia*. In press.
7. Kartini S., Boyce, P.C. & Wong S.Y. (2020). Studies on Schismatoglottideae (Araceae) of Borneo LXIX: *Schismatoglottis imbakensis*, a new species of the Patentinervia Complex from ultramafic rocks, Sabah. *Webbia*. In press.
8. Gee, G.V.A. & Das, I. (2020). Extreme philately. The most unusual stamps of the World. Part 3. *Journal of the Philatelic Society of Kuching, Sarawak* 12(1): In Press.
9. Jablonski, D., Lawson, M., Boyce, A.J., Molls, C. & Das, I. (2020). An assessment of vouchered records and field observations of the rare anguid, *Dopasia buettikoferi* (Lidth de Jeude, 1905). *Herpetozoa* 33: 59-65.
10. Lihan, S. (2020). Distribution and prevalence of antibiotic resistant bacteria in fish farms in East Malaysia. *Malaysian Journal of Microbiology* 16(4): In press.
11. Ooi I.H. & Wong S.Y. (2020). Floral biology of *Scaphochlamys* (Zingiberaceae) focusing on Bornean taxa. *Feddes Repertorium* 130 (1): 9-45. doi:10.1002/fedr.201900008.
12. Thonis, A., Ceballos, R.M., Tuen, A.A., Lovegrove, B.G. & Levesque, D.L. (2020). Small tropical mammals can take the heat: high upper limits of thermoneutrality in a Bornean treeshrew. *Physiological and Biochemical Zoology* 93(3): 199-209. doi: 10.1086/708467.
13. Wong S.Y. & Boyce, P.C. (2020). Studies on Homalomeneae (Araceae) of Borneo XXIII: A new rheophytic species of *Homalomena* [Punctulata Clade] from the Tau Range, Sarawak. *Nordic Journal of Botany* doi: 10.1111/njb.02764.

A BRIEF HISTORY OF IBEC

IBEC was created in 1992 as one of the pioneer institutes in UNIMAS. Let us recap on the fundamental reasons for IBEC existence.

Brief Concept

Of paramount importance to the nation's future development is the acquisition and dissemination of knowledge concerning the significance and modes of sustainable development of natural resources. Development initiatives will be self-defeating and socially destructive unless the structure, functions and diversity of the nation's natural systems are understood and judiciously protected.

Research Areas

Taxonomic studies; ecosystems and species of economic importance; conservation biology and restoration ecology, biotechnology of genetic resources; basic, baseline, impact and migratory research; coastal and river catchment environments; biotechnology of environmental control; technology and policy issues.

Past Directors

Prof. Dr John H. Beaman (July 1994 - 1997)

Datuk Prof. Dr Ghazally Ismail (Acting Director, 1997-1st October 2001)

Prof. Dr Fatimah Binti Abang (2nd October 2001 - 31st October 2003)

Prof. Dr Andrew Alek Tuen (1st November 2004 - 31st December 2014)

Prof. Dr Gabriel Tonga Noweg (1st January 2015 - 31st December 2019)