



BIOLOGY AND CONSERVATION OF TROPICAL ASIAN AMPHIBIANS

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Edited by
Indraneil Das, Alexander Haas and Andrew Alek Tuen



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BIOLOGY AND CONSERVATION OF TROPICAL ASIAN AMPHIBIANS

PROCEEDINGS OF THE CONFERENCE “BIOLOGY OF THE AMPHIBIANS IN THE SUNDA REGION, SOUTH-EAST ASIA”

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Biology and Conservation of Tropical Asian Amphibians. Proceedings of the Conference “Biology of the Amphibians in the Sunda Region, South-east Asia”

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Front cover: Amphibian metamorphosis is among the most fascinating processes in the animal kingdom that interests professional herpetologists and laypersons alike. This image captures a metamorphosing specimen of *Ansonia hanitschi* at Gunung Kinabalu Park, Sabah (East Malaysia). The limbs seem fully developed and functional, while the sucker-like mouth of this rheophilous larva is still intact. This species is known to have the largest larvae within the genus, reaching over 30 mm in total length. These results were part of a research project supported by Volkswagen Stiftung and published in this volume. The image was taken with a Nikon D100 camera, a 50 mm Sigma macro lens, at aperture setting f20, and a Nikon SB-80 flash. Photo: Alexander Haas.

Back cover: *Phrynoidis aspera* is a riparian toad, most commonly found in rocky drainages with moderate to fast-flowing water. The individual illustrated was photographed during the day at Hutan Lipur Lata Tembaka, Terengganu, Peninsular Malaysia, using a Nikon D300 with a Nikkor 18–200 mm lens at an aperture setting of f.16, and a Nikon SB-900 flash at a fill flash setting of -0.2. Photo: L. Lee Grismer.

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BIOLOGY OF THE AMPHIBIANS IN THE SUNDA REGION,
SOUTH-EAST ASIA (2009)

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MESSAGE FROM THE VICE CHANCELLOR, UNIVERSITI MALAYSIA SARAWAK

Dear distinguished guests and participants,

It gives me great pleasure to welcome all of you to this regional conference on the “Biology of the Amphibians in the Sunda Region, Southeast Asia” which is being held for the first time in UNIMAS.

The island of Borneo has provided excellent opportunities for research on tropical biodiversity and UNIMAS is privileged to be given the opportunity to continue this tradition. About 50 years ago, Dr Robert Inger, then a young herpetologist, pioneered the research on the ecology of frogs in Borneo, and it is a great honour to have him as Keynote Speaker at this conference. His work inspired many researchers to study the biology of amphibians in the Sunda region. Thus, this conference, with its objective to bring together the experts and researchers in this field to share their experiences, discuss findings and explore research opportunities, is very appropriate and timely. For us in UNIMAS, and I am sure for the other researchers as well, this conference provides an important avenue for networking and opportunity to learn from one another.

I thank the organizers for choosing UNIMAS as the venue for this conference and giving us the opportunity to share our hospitality with you. I hope that this conference will not only bring about greater understanding of the discipline you are discussing but also promote close cooperation, collaboration and networking among researchers.

Professor Dr Khairuddin Ab Hamid

MESSAGE FROM THE ORGANIZING COMMITTEE

It is our pleasure to welcome you to the first conference on The Biology of Amphibians in the Sunda Region, South-east Asia.

The results of parallel researches conducted in the Sunda region show that the diversity of Sunda amphibians has been clearly underestimated, making the region one of the richest in amphibian species in the world. Despite the intensified research interest in amphibians in the Sunda region, it has become evident that for known groups, even baseline data on life history, reproduction, larval life, and ecological needs of many species, are missing. Lack of these data are of particular concern for conservation and management of these important organisms.

The activities of the research group so far have been mostly separate from each other, thus limiting synergy and scientific progress across groups and borders. The recent advances published, however, document impressively that the Sunda region holds a wealth of research opportunities for the future, some of which can be addressed if the research group bundle their efforts and resources. The purpose of this conference therefore is to bring the various groups together to discuss findings, opportunities and obstacles to research and to explore opportunities for further collaboration.

We hope that this will be the first of a series of conferences on the biology of amphibians and that different countries in this region will take turn to organize it.

We want to thank Universiti Malaysia Sarawak and University of Hamburg, Germany for supporting this conference. We are grateful also to the Volkswagen Foundation for providing a grant to support many international participants to attend this conference. To all the committee members and participants, thank you for making this conference a success.

Andrew Alek Tuen

Indraneil Das

Alexander Haas

FOREWORD

During the last decade there has been what might be called an explosion of interest in the amphibian fauna of south-east Asia. The increase in the number of publications has been accompanied by a significant increase in the number of scientists working on the fauna. Most gratifying has been the significant increase in the number of regional scientists and students contributing to knowledge of this rich fauna.

As is common when there is a burst of research on the fauna of a region, there is an accompanying tendency to over-specialization—a small group working on one corner of the region tends to be only dimly aware of the personalities and content of work in another corner. This phenomenon is not a result of competition or lack of broader interest, but rather one of the by-products of enthusiasm for the subject at hand. Excitement over the topic at hand tends to block out subjects from a broader zone.

It was therefore gratifying to learn of the proposed conference on “Biology and Conservation of tropical Asian Amphibians.” The conference, held at one of the centers of interest in the topic—Universiti Malaysia Sarawak, had the prospect of bringing together students and senior scientists from regional and international centers with interests in all aspects of research on amphibians of the entirety of tropical Asia. And it succeeded in doing just that. Biologists from India debated with those from Malaysia. Scientists from Thailand exchanged ideas with those from Indonesia. Students challenged statements of senior scientists. Enthusiasm ruled the atmosphere.

One concludes from this conference that, although we may have barely scratched the surface of what there is learn about the biology and conservation of the amphibian fauna of tropical Asia, the diversity of interests and the quality of the scientists, both students and senior researchers, are such that we may expect significant advances in our knowledge.

Robert F. Inger