Contents of the Proceedings of Past Biennial Conferences of the AABE

The AABE published the proceedings of each biennial conference, from the first conference to the seventeenth one, until 1998. Since then, the association has been publishing AJBE as its bulletin which includes the conference reports and the abstracts of the papers presented at each conference. At present, it is difficult to obtain not only a copy of these proceedings, but even the information on the contents of them. Here is the table of contents and author index of the proceedings (Volume 1 – 17). As for further information on these proceedings, please inquire of the AABE Website master.

A TABLE OF CONTENTS

< I > First Conference held in Manila, Philippines (December, 1966)
First Asian Regional Conference on School Biology
Foreword: Soriano, L. B.

The Conference: Background and Arrangements
The Leading Papers
The Aims of School Biology Teaching and the Criteria for the Section of Course Content
Peterson, G. E.

Teaching Methods and Teacher Training
Poljacoff-Mayber, A. and Jungwirth, E.

Evaluation of Biology Curricula
Groberman, H.

The Relation of School Biology to Post-School Biology and Everyday Life
Basnayake, V. and Crusz, H.

The Role of Universities and Other Agencies in School Biology
Madan, D. R.

The Symposium Papers (Project Papers)
The Nuffield O-Level Biology Project
Dowdeswell, W. H. and Kelly, P. J.
The CAAS School Biology Project
Crusz, H.

Attempts in Adaptation of the BSCS Program for Use in Secondary Schools in Israel
Poljacoff-Mayber, A.

The Adaptation of the BSCS Yellow Version in Taiwan, China
Koh, T.-P.

The Progress of Biological Education in Vietnam
Ngan, P.-T.
The Philippine Adaptation Project: A Report
Hernandez, D. F. and Sangalang, L.

School Biology in the United States
Groberman, A. B.

The Survey Papers
Biology Teaching in the High Schools of Afghanistan
Fakoor, S. R.
Evaluating the Teaching of Biology in Ceylon
Gunaratne, M. M.
Biology in Indian High Schools
Johri, B. M. and Lal, M.
Biology Teaching and the Educational System in the State of Israel
Poljacoff-Mayber, A.
The Teaching of Biology in Secondary Schools in Iraq
Al-Jalili, A. R.
The Teaching of Biology in Hong Kong
Harris, H.
Survey of High School Biology Teaching in Korea
Kim, C. M.
Biology Teaching in Japan at the Secondary Level
Nakayama, K.
A Survey of Secondary School Biology in Malaysia
Yoong, C. S.
Survey of High School Biology Teaching in Taiwan
Yang, J.-H.
The Teaching of Biology for High School Teachers in Taiwan
Koh, T.-P.
High School Biology in Vietnam
Duong, D.-N.

Summary of Discussions

Asian Journal of Biology Education Vol. 10
Report of Discussion Group I – The Aims of School Biology Teaching in Asia 304
Report of Discussion Group II – Teaching Methods and Teacher Training 306
Report of Discussion Group IV – On the Relation of School Biology to Post School Biology and Everyday Life 310
Report of Discussion Group V – The Role of the Universities and Other Agencies in School Biology 313

Recommendations and Resolutions

The Conference Program
The Conference Program 327
Welcome Address: Soriano, L. B. 333
Introduction of Dr. Carlos P. Romulo: Morales, A. T. 335
Address: Romulo, C. P. 337
Better Biology Education in Asia: Salcedo, J. Jr. 340

Appendix
Participants and Observes 345

< II > Second Conference held in Tokyo, Japan (August, 1968)

Second Asian Regional Conference on School Biology

The Leading Papers
Role of Basic Researches in School Biology and New Trends in Biology Teaching Johri, B. M. and Tandon, S. L. 1
Terrestrial Ecology of Tropical Asia – Implications for Biological Education Mayer, W. V. and Larsen, V. C. 15
Ecology in Asia – Its Marine Resources Takasugi, S. 24
Mass Media Techniques in the Teaching of School Biology Nishimoto, M. 33
Conservation of Natural Resources Sakai, T. 40

The Activity Reports (Project Papers)
BSCS – International Cooperation Peterson, G. E. 42
The Role Played by an Association of Biology Teachers in the General Movement to Improve Secondary School Biology in the Philippines Alfonso, P. J. 47
Ehime Prefectural Education Center in Science Training Programs Yoshida, T. 50
Science Education and the Explosion of Scientific Knowledge Glass, B. 56

The Nuffield Biology Project Dowdeswell, W. H. 64
Elements for Presentation of the Biology Teaching Pilot Project in Africa Hunwald, A. 69
Recent Development in Biological Education in the United States Mayer, W. V. 75
Continuing Education for Biology Teachers Morikawa, H. 87
Science Education Centers in Japan Morikawa, H. 99

The Assessment Papers
Afghanistan Biology Project Fakoor, S. R. 111
Improvement Achieved in Biology Teaching by the Republic of China Yang, J.-H. 117
Hong Kong’s Biology Project Harris, H. and Madan, D. R. 121
Some Reflections on the Instruction of Biology in Schools in Indonesia Prawirosudirdja, G. 122
Progress in Biology Teaching in Israel Poljacoff-Mayber, A. 129
Assessment of Development in Biology Education in Japan 1966 - 1968 Nakajima, Y. 132
Recent Progress and Achievement on High School Biology in the Republic of Korea Oh, K. C. 135
An Experimental Study in Four High Schools in Korea on the Effectiveness of Teaching English and Biology by Television Mitchell, J. L., S. J. 137
Progress Report on the Sogang College’s CCTV Experiment Conducted in Four High Schools of Seoul Mitchell, J. L., S. J. 149
Biological Education in Malaysia Vohra, F. C. 155
An Assessment of Development in Biology Education in the Philippines 1966 - 1968 Zamora, R. I. 181
Biology Education in Thailand Pavanarit, S. 199

School Systems
The School System of Ceylon 214
The Educational System of China 218
The Educational System of Hong Kong 223
Education Pattern in India 242
Israel System of Education. 262
The Educational System in Korea 266
Malaysian System of Education 273
The Educational System in the Philippines 280
School System in the Republic of Singapore 297
The School System of Thailand 301
The System of Education in the United States 305

Group Reports, Recommendations and Resolutions
Group I The Role of Basic Research in School Biology 308
Group II Ecology in Asia – Land Resources 311
Group III Ecology in Asia – Marine Resources 313
Group IV Mass Media Technique in the Teaching of School Biology 315
Group V On the Teaching of Conservation of Natural Resources 319
Resolutions 321

The Conference Program 322

Addresses
Welcome Address: Hisatake 333
Words of Welcome: Miyake, A. 335
Message: Itoh, R. 337
Opening Remarks: Soriano, L. B. 337
Greetings: Glass, B. 335
Closing Remarks: Nakayama, K. 340

Participants
Officers of the Conference 337
Japanese Participants 335
International Participants 340

< III > Third Conference held in Manila, Philippines (December, 1970)

Third Asian Regional Conference on School Biology

Research Project Papers
“Green” Bean and “Butter” Bean – Varieties of Species?
Marandawala, P. 1

Supporting Function of Collenchyma as Seen in the Petiole of Typhonium roxburghii
Eriyagama, I. 9

“Lipase” Activity in Seeds
Eriyagama, I. 13

The Amount of Water Given out from Leaves of Different Ages
Weerasinghe, A. 20

Colour Change in the Petals of Hibiscus mutabilis
Hoole, G. J. 25

Some Observations on the Breeding Habits of the Ceylon House Sparrow
Daniel, C. J. S. 32

Age of Menarche in School Girls in Kandy, Ceylon
Dissanayake, P. 37

Rejuvenation of Mandarin
Lee Liu, H. C. 42

Metabolism of Silkworm Population
Kawasaki, T. 46

Study of Pollution as a Student Research Project
Kim, C. M. 53

Life History of the Jute Hairy Caterpillar, Diacrisia oblique Walker
Kahn, S. M. H. 59

Response of the Rice Plant to Added Nutrients
Vergara, B. S., Asis, C. V., Hernandez, D. F. and Ramirez, L. B. 64

Projects on Talahib, Saccharum spontaneum L. and Cogon, Imperata cylindrica (L.) Beauv.
Ecological and Physiological Approach
Vergara, B. S. 82

The Incidence of Myopia among the School Population in the Republic of Singapore
Paran, T. P. 90

Propagation of Plants from Leaves
Natarajan, S. 98

Dormancy of Rice Grains
Mai- Tran- Ngoc- Tieng 107

Investigation on Earthworm and Seed Germination
Goyal, K. C. and Swami, P. 111

Papers on General Topics
The Social Responsibilities of Biological Educators
Grobman, A. 115

Quantitative Biology: Statistical Evaluation and Analysis of Data
Goldwin, A., Lev, H. and Strauss, G. 122

Making a Model of Tracheal Gills with Yumicron
Nakajima, Y. 165

Simple Investigational Work in the Practical Classroom in Human Physiology
Basnayake, V. 167

Biology Education in Malaysia with Particular Reference to Biology Projects in the School Curriculum
Rajendram, K. H. 186

Biology Teaching through an Integrated Approach
Prawirosudirdja, G. 189

Biology Education in Secondary Schools in Japan
Nakajima, Y. 207

Concluding Report 210

The Conference Program 214

Addresses
Welcome Address: Manuel, J. L. 218
Keynote Address: Medina, G. F. 220
Orientation and Overview: Soriano, L. B. 224

The Participants and Officers of the Conference
< IV >

Fourth Conference held in Jerusalem, Israel (August, 1972)

Fourth Asian Regional Conference on School Biology

Evaluation in Science Education

Evaluation of Curriculum

Content Analysis in Formative and Summative Evaluation of Curriculum

Grobman, H. 1

Curriculum Evaluation with Some Reference to Nuffield Advanced Level Biological Science

Lister, R. E. 25

Evaluation Strategy of the Nuffield A-Level Biological Science Project

Kelly, P. J. 35

The Practice of Curriculum Evaluation

Lewy, A. 51

Evaluation of Achievement of Objectives

Evaluation of the Achievement of Objectives

Harlen, W. 73

Evaluation of the Achievement of Objectives in Nuffield Advanced Level Biological Science

Lister, R. E. 81

Feasibility – Means What for Whom?

Jungwirth, E. 90

Evaluation of Teachers and Teaching

Evaluation of Teachers and Instruction

Jungwirth, E. 99

Evaluation of Teachers and Learning Environments with Respect to Elementary School Science

Harlen, W. 107

The Evaluation of Teachers and Teaching

Mayer, W. V. 118

Teachers’ Cognitive Style in Evaluation Studies

Eggleston, J. F., Galton, G. and Jones, M. 122

An Approach to “Formative” Evaluation of a Concept Oriented Science Program at the Elementary Level

Nusbaurn, J. 135

Evaluation of Student Performance in the Classroom

Evaluation of Children’s Progress by Teachers in the Classroom

W. Harlen 147

Domains of Evaluation in the Inquiry Role Approach

Bingman, R. M., Koutnik, P. G., Seymour, L. A., Padberg, L. F., Chan, J. Y. and Bingman, K. J. 155

Laboratory and Practical Examinations

The Development and Standardization of Inquiry-oriented Laboratory Examination

Tarmir, P. and Glassman, B.-G. 178

English Translation of Practical Examination in Biology 1971 (Bagrut Ha Ma’asit) for Classes Using BSCS Curriculum

The Amos de Shalit Science teaching Center, The Hebrew University 187

Attitudes of Students and Teachers towards the Practical Matriculation in Biology

Tarmir, P. 205

Evaluation of Attitudes and Interests

Students’ Attitudes towards a School Subject as Affected by Curriculum Reform

Blum, A. 215

Assessing “Understanding of the nature of Science”

Jungwirth, E. 220

Problems in Evaluation

Evaluation of Student’s Attitudes towards Drawings in a Student’s Text

Blum, A. 234

Attitudes of Junior High School Students towards the Study of Plants and Animals

Mayer, M. and Tamir, P. 240

Assessment of Children’s Ability to Observe

Zuzovsky, R. 253

The Uses of Educational Technology in Science Education

General Considerations in the Uses of Technologies in Education

The New Bio-Technology – Potential Applications to the Educational Environment

Beal, J. B. 263

Educational Consideration in the Use of Technology in Education

Salomon, G. 277

Closed Circuit Television in the Teaching and Learning Concept in Higher Education

Elton, L. R. 285

Uses of Technological Means in Teacher Training

The Use of Technological Means in Teacher Training and Retraining

Allen, D. 291

The Uses of Technological Means in Teacher Training and Retraining

Lee, A. and Lewis, M. 295

The Use of Microteaching Techniques to Train Student-Teachers in Stimulating Learners’ Questions

Perlberg, A. and Kremer, L. 314

The Facet Approach in Developing a Theory of Instruction and Teacher Training

Bar-on, E. and Perlberg, A. 323

The Use of the Technion Diagnostic System (T.D.S) and Microteaching Techniques in Modifi-
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focusing Teaching Behavior</td>
<td>326</td>
</tr>
<tr>
<td>Modifying Instructional Strategies of Teachers in Service through the Use of Microteaching Techniques and Video Recordings</td>
<td>329</td>
</tr>
<tr>
<td>Perlberg, A., Shimron, D., Rot, S. and Libae, Y.</td>
<td></td>
</tr>
<tr>
<td>Patterns and Styles in the Supervision of Teachers in Individual Conferences Following Classroom Observations</td>
<td>332</td>
</tr>
<tr>
<td>Theodor, E. and Perlberg, A.</td>
<td></td>
</tr>
<tr>
<td>A Different Approach to the Use of Microteaching in Teacher Training</td>
<td>335</td>
</tr>
<tr>
<td>Tamir, P.</td>
<td></td>
</tr>
<tr>
<td>Uses of Technological Means in Classroom Instruction</td>
<td>341</td>
</tr>
<tr>
<td>The Use of Film and Television in Science Education</td>
<td></td>
</tr>
<tr>
<td>Smith, J.</td>
<td></td>
</tr>
<tr>
<td>Uses of Educational Technology: Computer Literacy Course</td>
<td>347</td>
</tr>
<tr>
<td>Peless, Y.</td>
<td></td>
</tr>
<tr>
<td>The Use of Film to Modify Mental Skills</td>
<td>353</td>
</tr>
<tr>
<td>Salomon, G.</td>
<td></td>
</tr>
<tr>
<td>Report of Members: Outcomes of the Third AABE Conference</td>
<td>376</td>
</tr>
<tr>
<td>An Integrated Program for Teaching Biology and Agriculture</td>
<td></td>
</tr>
<tr>
<td>Lev, C. and Adler, J. H.</td>
<td></td>
</tr>
<tr>
<td>Performance in a Biology Examination of School before and during Participation in a Curriculum Revision Project in Sri Lanka (Ceylon)</td>
<td>380</td>
</tr>
<tr>
<td>Eriagama, L.</td>
<td></td>
</tr>
<tr>
<td>Consistency of Performance in In-Course Tests and in a Public Examination of Classrooms in a Biology Curriculum Trial</td>
<td>388</td>
</tr>
<tr>
<td>James, S. L.</td>
<td></td>
</tr>
<tr>
<td>Open University – An Educational Tool</td>
<td>399</td>
</tr>
<tr>
<td>The Organization of the Open University</td>
<td></td>
</tr>
<tr>
<td>Haynes, L. J.</td>
<td></td>
</tr>
<tr>
<td>Integrated Science and Integrated Teaching Methods</td>
<td>401</td>
</tr>
<tr>
<td>Stannard, F.</td>
<td></td>
</tr>
<tr>
<td>Practical Work and Home Experimental Kits</td>
<td>409</td>
</tr>
<tr>
<td>Haynes, L. J.</td>
<td></td>
</tr>
<tr>
<td>Evaluation of Science Courses at the Open University</td>
<td>412</td>
</tr>
<tr>
<td>Moss, G. D.</td>
<td></td>
</tr>
<tr>
<td>Individualized Instruction</td>
<td>415</td>
</tr>
<tr>
<td>Considerations Regarding Individualized Instructions</td>
<td></td>
</tr>
<tr>
<td>Mayer, W.</td>
<td></td>
</tr>
<tr>
<td>Individualized Instruction – Theory and Practice</td>
<td>420</td>
</tr>
<tr>
<td>Novak, J.</td>
<td></td>
</tr>
<tr>
<td>Towards Independent Study</td>
<td>430</td>
</tr>
<tr>
<td>Elton, L. R.</td>
<td></td>
</tr>
<tr>
<td>A Modular Approach to Biology Curricula</td>
<td>434</td>
</tr>
<tr>
<td>Dowdeswell, W.</td>
<td></td>
</tr>
<tr>
<td>Individualized Instruction: A Proper Context for It</td>
<td>434</td>
</tr>
<tr>
<td>Edling, J. V.</td>
<td></td>
</tr>
<tr>
<td>Use of Technological Means in General Classroom Work and Individualized Instruction</td>
<td>448</td>
</tr>
<tr>
<td>Can Students of Mixed Abilities Successfully Study Biology in the Same Classroom?</td>
<td></td>
</tr>
<tr>
<td>Sabar, N.</td>
<td></td>
</tr>
<tr>
<td>Instructional Television Centre: Facts and Figures</td>
<td>455</td>
</tr>
<tr>
<td>Ben-Shaul and Prener, J.</td>
<td></td>
</tr>
<tr>
<td>Teaching Abstract Concepts in High School Physics Especially to Disadvantaged Students</td>
<td>459</td>
</tr>
<tr>
<td>Weiss, M.</td>
<td></td>
</tr>
<tr>
<td>Science Teaching Kits as the Material Base for Improvement of Science Education in Indian Schools</td>
<td>463</td>
</tr>
<tr>
<td>Care, R. A. and Galakhov, V. J.</td>
<td></td>
</tr>
<tr>
<td>Diffusion and Implementation of Use of Educational Technologies</td>
<td>470</td>
</tr>
<tr>
<td>Technology and Evaluation in Biology Education</td>
<td></td>
</tr>
<tr>
<td>Johri, B. M. and Sinha, U. K.</td>
<td></td>
</tr>
<tr>
<td>Recent State of Uses of Educational Technology in the Senior High School Biology Education in Japan</td>
<td>478</td>
</tr>
<tr>
<td>Niszizawa, K.</td>
<td></td>
</tr>
<tr>
<td>Utilization of Technological Means in Teaching Science in General and Biology in Particular</td>
<td>483</td>
</tr>
<tr>
<td>Ben-Chanan, M. and Sharomi, S.</td>
<td></td>
</tr>
<tr>
<td>Using Animals of Economic Importance in Schools</td>
<td>492</td>
</tr>
<tr>
<td>Blum, A.</td>
<td></td>
</tr>
<tr>
<td>Country Reports</td>
<td>497</td>
</tr>
<tr>
<td>A Review of “Scientific Research Projects in Schools in Singapore”</td>
<td></td>
</tr>
<tr>
<td>Paran, T. P.</td>
<td></td>
</tr>
<tr>
<td>A Follow-Up of the Two Philippine Papers Presented during the Third AABE Conference</td>
<td>506</td>
</tr>
<tr>
<td>Garcia, F. C.</td>
<td></td>
</tr>
<tr>
<td>School Biology Research in Sri Lanka</td>
<td>509</td>
</tr>
<tr>
<td>Crusz, H. and Weerasinghe, A.</td>
<td></td>
</tr>
<tr>
<td>The Role of Marine Microbes in the Nutrification Process</td>
<td>522</td>
</tr>
<tr>
<td>Zamora, R.</td>
<td></td>
</tr>
<tr>
<td>Biology Education in Japan 1970 - 1972</td>
<td>531</td>
</tr>
<tr>
<td>Nakajima, Y.</td>
<td></td>
</tr>
<tr>
<td>Biology Education in Singapore</td>
<td>533</td>
</tr>
<tr>
<td>Paran, T. P. and Natarajan, S.</td>
<td></td>
</tr>
<tr>
<td>Education in Israel and Science Teaching</td>
<td>552</td>
</tr>
<tr>
<td>Gollieb, S.</td>
<td></td>
</tr>
<tr>
<td>Diffusion and Dissemination of New Curricula</td>
<td></td>
</tr>
</tbody>
</table>
and Improved Teaching through the Science Education Project

Hernandez, D. F. 563

School Biology Education in India – A Survey Report

Doraiswami, S. and Guru, G. 573

The Conference

Conference Programme 579

Addresses, Lecture & Remarks

Soriano, L. B. 589
Harman, A. 592
Allon, Y. 593
Elkana, Y. 595
Care, R. A. 606

List of Invited Lecturers 607

List of Participants 608

< V > Fifth Conference held in Singapore (June, 1974)

Fifth Asian Regional Conference on School Biology

Biology Teaching

Aims and New Directions

Man and Society: Redirection in Biological Education

Chye, Y. O. 1

The Role of Social Biology and Its Implications for Secondary School Science Teaching


Curriculum

Applied Biology Teaching in Singapore

Johnson, A. 31

Some Problems in Teaching Biology

Rao, A. N. 35

Some Problems in Biological Education in Urban Singapore

Elliot, A. B. 43

A Proposed Syllabus for Teaching Environmental Pollution at Secondary III and IV in Singapore Schools

Hong, L. C. 51

Teaching of Ecology in Singapore Schools: A Sample Study

Tan, J. 57

Some Problems of Biology and Nature Conservation in Thailand

Sirijaraya, P. 61

Ecology of Naturalized Plants: An Analytical Method for the Study of Vegetation Dynamics as Influenced by Human Impact

Odaki, K. and Iwase, T. 64

Current Changes in Microbiology: A Personal Point of View

Leong, T. Y. 74

The Teaching of Plant Physiology – Problems

and Solutions

Avadhani, P. N. 83

Methods and Materials

Towards Independence in Learning – an Appraisal of Different Learning Modes to Ideas and Concepts in Biology

Tribe, A. A. 90

A Study in Teaching of Environmental Education

Nakajima, Y. 104

Biology and Biological Materials

Rajendram, K. A. 110

Inquiry and Integrated Approaches in Physiology Classes in Secondary Schools

Prawirodirdja, G. 114

Training Teachers to Teach Science as Inquiry

Tamir, P. 119

Population Education

Growth of Population in the Philippines and the Need for Functional Population Education

Kapili, P. H. 133

The Teaching of Population Biology

Dwidjoseputro, D. 146

Integration of Population Education in a College Biology Course

Garcia, F. C. 153

The Age of Menarche in Girls in Singapore

Nalliah, C. 161

Rural Education

Biology Education for Rural Areas

Yoong, C. S. 164

The Biology Curriculum for the Rural School: A Case for Integration

Jungwirth, E. 172

A Study of the Biotic Relationship between Root Nodule Bacteria and *Mimosa pudica*: A Suggested Project in for Rural-Urban Schools in Tropical Asia

Kwan, L. P. and Nah, C. K. 195

Biology Education in Rural and Urban India: Problems and Prospects

Johri, B. M. and Sinha, U. 207

Evaluation

Evaluating Curriculum Development in Asia

Wong, R. H. K. 210

Evaluation of the Investigatory Project Work Done by a School Biology Group in Sri Lanka

Weerasinghe, A. 217

Country Reports

RECSAM’s Contribution in Upgrading Biology Education in SEAMEO

Ponniah, W. D. 223

New Approaches to Biology Teaching in Thailand

Hornchong, T. 237

The Science Education Project of the
Philippines: 1969 - 1974

Rimas, G.
Development and Direction of Elementary Science Education in the Philippines
Bennett, L. M.
Some Patterns of the Attendance of Pupils at the Meetings of a School Biological Investigational Group at Sri Lanka
Weerasinghe, A.
A Survey of the Teaching of Biology in Singapore Secondary Schools
Kwan, L. P. and Singham, J. K.

The Conference
Opening Address
Conference Programme
Summary of Discussions
Summary of Recommendations

Participants and Committees
Foreign delegates
Local delegates
AABE Executive Committee, 1974
Organizing Committees
Coordinators and Rapporteurs
Workshop Sessions

< VI > Sixth Conference held in Bangkok, Thailand (July - August, 1976)

Sixth Asian Regional Conference on School Biology

Leading Papers
Preparation of Teachers for Biology Teaching
Vohra, F. C.

Education as Teachers as Researchers and Curriculum Developers
Kelly, P. J.

How Are the Teacher Curriculum and Training Strategies Made Relevant for Biology Teaching?
Yoong, C. S.

The Concept of Competency in Teacher Training Courses
Hernandez, D. F.

Participants' Papers

Curriculum and Instruction
Restructuring School Biology - Relevance and Consequences of New Approaches for Biology Teaching and Teacher Training
Kattmann, U. and Schaefer, G.

IPN Unit Bank Biology - A New Type of Teacher Training
Schaefer, G. and Kattmann, U.

Cell Biology in Secondary Schools in Relation to the New Trends in Indian Education
Mishra, A. K.

The Development and Implementation of the Modern Biology Course in Malaysia
Ghani, Z.

Teaching Biology in the Context of Culture and Socioeconomic Values of the Country
Zamora, R. I.

Development of a Textbook in Biology for Secondary Schools in the Philippines
Villavicencio, R. R.

The Philippine Science High School Curriculum and its Relevance to the Needs of the Country
Reyes, V. F.

The Increasing importance of the Biological Sciences in Today’s Society
Lee, A. E.

Science Education and the Ecology of Thailand
Carter, J.

Teacher Education
Associations and Regional Training Centres - How They Make Biology Training More Effective and Relevant
Ramsey, G. A.

Training of Biology Teachers of Indian Schools
Jain, S. C.

Preparation of Teachers for Biology Teaching in Israel
Tamir, P.

The Prospective Biology Teacher and the Philosophy of Science
Jungwirth, E.

Teacher Retraining and Curriculum Evaluation: Function of the Science Education Center
Nakajima, Y.

The Influence of a National Association of Biology Teachers in the Philippines
Garcia, F. C.

Quality versus Quantity in Preservice and Inservice Teacher Education Programmes with Special Emphasis on Biology: A Point of View
Singham, J. K.

Learning Materials
Using More Living Organisms in Biology Education
Imahori, K.

Supply and Preservation of Living Materials for Pupil Exercises
Koshida, Y.

Inexpensive Equipment for High School Biology
Pavanarit, S.

Evaluation
The Development of Instruments to Determine the Teacher’s and Student’s Classroom Activities and Attitudes toward the IPST Biology Program
Soydhurum, P.

Evaluation of IPST Biology Curriculum
Padungratana, J.
The Conference
Welcome Address: Krishnamra, T. 207
Opening Address: Vangsayanha, C. 209
Conference Director’s Report: Hormchong, T. 211
The Conference Programme 214
Summary of Discussions 220
Summary of the Conference 242
Organizing Committee 244
Participants 246

< VII > Seventh Conference held in Kuala Lumpur, Malaysia (December, 1978)
Multidisciplinary Biology Education Relevant to Community Development

Preface vii
Opening Ceremony xi
Welcoming Address: Hamiddon, F. xi
Opening Address: Jafaruddin, T. H. S. xiii
Message: Vohra, F. C. xvii
Address: Yoong, C. S. xxiii

Conference Papers
Developments in Multidisciplinary Biology Education
Biology in Community Education: Philippine Scenario for Lifelong Education
Hernandez, D. F. 5
Problems on Biological Curricula Relevant to Inter-, Uni-, and Multi-Disciplines
Imahori, K. 27
Moral Education: Implications for Biology Teachings
Kanagasabai, S. 33
Interdisciplinary Science: Pros and Cons, Trends and Examples
Lee, A. E. 41
Population Education and Birth Planning Studies: A Project Design for Hong Kong and the Southeast Asian Regions
Marsh, A. R. 57
Curricular Innovations and Priorities in Biology Education: A case for the Developing Countries
Sood, J. K. 71
Biology in Environmental Education
Stokes, D. M. 79
Concepts in Social Biology
Ghani, Z. 87
Multidisciplinary Biology Education for Schools and Tertiary Institutions
A Preliminary Study of Fouling Organisms of Johore Straits and the Extent of Pollution in the Region
Charles, S. 97
Curricular Aspects in Multidisciplinary Biology Education in Malaysia Relevant to Community Development
Prabhakar, M. P. 105
A Nature Study Centre in Taman Negara (West Malaysia) for Use by Student Groups
Rubeli, K. 121
A Child-Centred Approach to Biology Education in Indonesia
Wayan Seregeg, G. 137
Recognising the Need for a Multidisciplinary Biology Education
Chou, L. M. 153
Biology in Adult Education
Cocude, M. 157
Integrated Science Education for College Students in Japan
Koshida, Y. 163
Multidisciplinary Biology at the Tertiary Level with Special Reference to the University of Malaya
Kathubatheen, A. J. 171
Biology Education in the Open University of Thailand
Phettongkam, M. 187
A Proposed Biology Syllabus and Scheme of Work for Integrating Diverse Disciplines of Pure, Applied and Philosophical Biology at First Year Level in Post Secondary Educational Streams
Santiago, A. 191
The Role of the Teacher in Multidisciplinary Biology Education with Special Reference to Environmental Approach
Perrott, E. 207
Community Based Resource Materials for Improving Competence of Biology Teachers
Savellano, J. M. 223

Environmental Issues and Education
Environmental Education: A Strategy in Development
Chelliah, T. 233
Ecological Education for Community Development
Furtado, J. I. 243
Aspects of Food, Health and Nutrition Problems and their Relevance to Biology Education
Gnamamuthu, E. 255
Education and Environmental Needs in Malaysia
Singh, G. 271
Education against Race Prejudices as a Topic of Biology Education
Kattmann, U. 277
Natural Environmental Educational through Japanese Monkeys
Kawasaki, T. 295
Conversation Education in Malaysia
Heang, K. B. 313
# The Environmental Crisis and the Potential Role of Biology Education in Combating It

*Peng, K. K.* 317

## The Conference

Asian Association for Biology Education

<table>
<thead>
<tr>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>325</td>
</tr>
<tr>
<td>326</td>
</tr>
<tr>
<td>329</td>
</tr>
<tr>
<td>333</td>
</tr>
<tr>
<td>343</td>
</tr>
</tbody>
</table>

### Linking Biology to Social Studies

- **Linking Biology to Social Studies**
- **Biological Education for the Next Decade**

<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology Education in a Changing World</td>
<td>Kelly, P. J.</td>
<td>1</td>
</tr>
<tr>
<td>Coordination between Biological Tents and Sociobiology</td>
<td>Rao, A. N.</td>
<td>7</td>
</tr>
<tr>
<td>Some Aspects of the Socialization of Teachers and Students of Biology</td>
<td>Jungwirth, E.</td>
<td>17</td>
</tr>
<tr>
<td>Integrating Some Topics in Biology to Social Studies</td>
<td>Villavicencio, R. R.</td>
<td>26</td>
</tr>
<tr>
<td>Thought of an Educational Module on Biology and Human Values in Sri Lanka</td>
<td>Basnayake, V.</td>
<td>41</td>
</tr>
<tr>
<td>Some Thoughts on Biological Education for Community Development</td>
<td>Atchia, M.</td>
<td>47</td>
</tr>
<tr>
<td>Utilization of Zoological Museum and Marine Aquarium for Instructional Purposes and for Laboratory Works</td>
<td>Hormchong, T.</td>
<td>53</td>
</tr>
<tr>
<td>Adaptation of the Individual and the Species to the Environment: A Principle Common Both to Biology and Social Sciences</td>
<td>Morimasa, S.</td>
<td>55</td>
</tr>
<tr>
<td>The Study of Environmental Education in Seventies</td>
<td>Satofuka, F.</td>
<td>61</td>
</tr>
</tbody>
</table>

## Using Living Organisms for Field Study and Laboratory Work

- **Using Living Organisms for Field Study and Laboratory Work**

<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Living Organisms in Biology Education</td>
<td>Vohra, F. C.</td>
<td>63</td>
</tr>
<tr>
<td>Introduction of the “living Materials Study Group (LMSG)” and Its Activities</td>
<td>Yamagiwa, T.</td>
<td>75</td>
</tr>
<tr>
<td>Attitudes of Secondary School Students in Israel towards the Use of Living Organisms in the Study of Biology</td>
<td>Tamir, P.</td>
<td>81</td>
</tr>
<tr>
<td>Use of Living Organisms for Laboratory Work</td>
<td>Kanagasabai, S.</td>
<td>95</td>
</tr>
<tr>
<td>A Survey Project to Search for Potentially Teachable Biological Materials from the Regions of Thailand</td>
<td>Chantharasakul, V.</td>
<td>105</td>
</tr>
<tr>
<td>The House Gecko as a Useful Specimen for Field and Laboratory Work</td>
<td>Chou, L. M.</td>
<td>113</td>
</tr>
<tr>
<td>Use of <em>Gibasis Geniculata</em> as Live Teaching Material</td>
<td>Shigenobu, Y.</td>
<td>117</td>
</tr>
<tr>
<td>A Simple Analysis of Laboratory Microecosystems by BCP Agar Method</td>
<td>Ueda, H.</td>
<td>125</td>
</tr>
<tr>
<td>Green- and Yellow- Euglena as an Educational Biomaterial</td>
<td>Shihiha-Ishikawa, I.</td>
<td>131</td>
</tr>
<tr>
<td>Bring Nature into Your Classroom – Simple Way to Culture Organisms</td>
<td>Yamada, T. and Yamagiwa, T.</td>
<td>135</td>
</tr>
<tr>
<td>Ecological Adaptation of <em>Rhodeus ocellatus</em> and Their Use as a Teaching Material</td>
<td>Kawasaki, T.</td>
<td>145</td>
</tr>
<tr>
<td>Observation of Mitotic Division and DNA in Root Tip Cells</td>
<td>Choudhry, A. S., Tanaka, R. and Yonezawa, Y.</td>
<td>155</td>
</tr>
<tr>
<td>Simplification of Gasmetry for Measuring Respiration and Photosynthesis</td>
<td>Yokohama, Y., Katayama, N. and Furuya, K.</td>
<td>159</td>
</tr>
</tbody>
</table>

## Environmental Education

- **Environmental Education**

<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Education in Japanese Schools</td>
<td>Numata, M.</td>
<td>167</td>
</tr>
<tr>
<td>On the Way Wild and Domesticated Plants and Animals are Treated in an Elementary Science Textbook Authorized in Japan - An Issue from the Standpoint or Environmental Education</td>
<td>Hiroki, M.</td>
<td>173</td>
</tr>
<tr>
<td>A Field Study on Biological Education in Elementary School</td>
<td>Taniguchi, H., Shimizu, J. and Sato, K.</td>
<td>179</td>
</tr>
<tr>
<td>Environmental Problems and Orientations – A Malaysian Case Study</td>
<td>Yoong, C. S.</td>
<td>189</td>
</tr>
<tr>
<td>A General Comparative Method for the Development of Field Project in Contrasted Habitats</td>
<td>Meyer, R. G.</td>
<td>199</td>
</tr>
</tbody>
</table>

---

Asian Journal of Biology Education Vol. 10
Biology Education in the 1980s
Kennedy, M. H. 215

Biological Education towards the Year 2000
Tamir, P., Adler, J. H., and Poljakoff-Mayber, A. 229

Trends in Biological Science Education in Japan and the U. K.
Kille, R. A. 239

Biological Education As It Ought to Be in Future
Tate, T. 251

New Trends in Biological Education in Kuwait
Subbarini, M. S. 255

The Concepts of “Health” and “Environment” in Future Biology Teaching
Schafer, G. 259

The Education of Biology Teachers: Retrospect and Prospect
Sood, J. K. 277

The Biology Teacher, A Moral Force
Dwidjoseputro, D. 285

Study on Three Kinds of Instructive Media
Nakajima, Y. 289

The Curriculum of Biological Education in the National Teacher’s Colleges and Educational Departments of Universities in Japan
Tara, M. 295

Towards Achieving the Central Objectives of School Science Practical Work
Leong, T. Y. 323

Biological Subjects taken up in the Interdisciplinary Courses at Chiba University
Tamanoi, I., Yoshida, O., Fukuda, Y. and Kobayashi, K. 337

Illustrated Stamps As a Teaching Aid for Field and Laboratory Studies
Katayama, N., Kitano, H. and Kobayasi, H. 345

Marine Biology Courses of College Education in Japan
Koshida, Y. 363

Educational Technology and Biological Technology
Introducing Educational Technology into the Classroom –Towards Biology Education in 1980s
Nakayama, K. 373

Role and Problems of Educational Technology in an Open University in Thailand
Puriveth, S. 391

VTR Student Practice for Nerve Impulse Conduction with an Electronic Neuron Model
Homma, S. and Mizota, M. 397

Biological Technology
Vohra, F. C. 405

Biological Technology
Rao, A. N. 419

Study on Recognition System for Handwritten Letters
Fujii, K. and Morita, T. 425

Conference
Opening Address: Imahori, K. 433
Welcoming Address: Kelly, P. J. 435
Greetings: Yoshiki, M. 437
Greetings: Ootsuka, H. 439
Closing Address: Nakayama, K. 441
Proposed Recommendations of the Conference 442
List of Participants 444
Acknowledgements 451

< IX > Ninth Conference held in Melbourne, Australia (December, 1982)
The Role of Biology Education in Enhancing the Quality of Life

Information Provided for Conference Participants 1

Presented Papers

Biological Conservation
Sirijaraya, P. 8

Fieldwork on Invertebrate Zoology in the Gulf of Thailand
Chullasorn, S. 14

The Biology Program at a Japanese Women’s University
Kimura, I. 24

Genetics and Life in Thailand
Saksoong, P. 26

Biology Courses at National Universities in Japan
Koshida, Y. 27

Biology Education and Quality of Life: A Malaysian Case Study in Teacher Preparation
Chelliah, T. 34

Teaching Health through Biology Education
Hernandez D. F. 49

Biology Education in a Developing Country
Dwidjaseputro, D. 69

Health Education in Biology and the Quality of Life
Imahori, K. 77

Ecological Training on Secondary Succession at the School Campus
Odaki, K. 92

Biological Investigations and Field Work on Boso Peninsula in an Interdisciplinary Course
Yoshida, O. Tamanoi, I., Fukuda, Y. Kobayashi, K., Nishino, E., Nogawa, H. and Asai, N. 106

Teachers’ Group Activities for Promotion of Teaching Genetics at the Senior High School
Asian Journal of Biology Education Vol. 10

Hatakeyama, T. 118
How to Cultivate Efficient Ways of Laboratory Exercises in Biology
Tamanoi, I., Yoshida, O., Fukuda, Y.
Kobayashi, K., Nishino, E., Nagowa, H.
and Asai, N. 119
Educational Uses of Wild Flowers with Special Reference to Out-door Biology at Elementary School Level in Japan
Katayama, N. 130
New Systematic Structure of Biology Education
Tate, T. 164
The Educational Uses of a Braconid Wasp, Aponteles glomeratus L. with Special Reference to Ethology Teaching
Kitano, H. and Kawahara, H. 169
List of Participants 183

< X > Tenth Conference held in Chang Mai, Thailand (December, 1984)

AABE Executive Committee 1982-1984

Acknowledgements

Opening Ceremony
Report on the AABE: Chiowanich, P. 3
Opening Address: Patanathabutr, P. 5
Welcome Address: Thitasut, P. 7

Conference Papers

Soydhurm, P. 11
Biology Education and Technology
Soydhurm, P. 11
Biology Education at Pre-medical and Pre-dental School in Japan
Koshida, Y. and Horiuchi, S. 24
Teaching and Laboratory Exercises of Biology in Pre-medical and Pre-dental Courses in Colleges and University of Japan
Tamanoi, I. and Koshida, Y. 34
Biology for Upper Secondary School in Thailand Chantharasakul, Y. and Soydhurm, P. 47
Strategies for Improving Biology Education: A Philippine Experience
Gregorio, L. C. 58
Integration of Different Teaching Strategies in a Biology Course
Poljakoff-Mayber, A. 70
Duckweeds as Biomaterial for Teaching Population Ecology
Prakobvitayakit Beaver, O. 75
The Educational Uses of the Domesticated Silk-worm Adult, Bombyx mori, with Special Reference to Ethology Teaching
Kitano, H. and Yamazaki, S. 90
Natural Dyes for Animal Tissue Staining
Patinawin, S. 103
Culture of Setae and Induction of Polyploid Mutant – A Simple But Useful Tissue Culture of Plant for High School Students
Yonezawa, Y. 117
Vorticella sp., an Example of Cell Motility
Phanichyakarn, V. and Cherdshewasart, W. 128
Study on Inhabitable Place of Mammals in Gifu Prefecture (Central Part of Japan) and Mammal’s Life
Kawasaki, T. 137
Thinking Logically – A Prerequisite for Pupils’ Research Project
Jungwirth, E. 148
The Importance of Biological Research on Traditional Culture
Tate, T. 161
Research on Australian Mammals – A Low Technology Approach
Wallis, R. L. and Brunner, H. 166
Biology Research Project for High School Students
Prakobvitayakit Beaver, O. 183
Cultivation of Seaweed and Measurement of Its Photosynthetic Activity Using the Improved Productmeter, As a Laboratory Exercise for Upper Secondary School Biology
Katayama, N., Tokunaga, Y., Furuya, K.
and Yokohama, Y. 187
A Project for Study on Bird Biology through Nature Observation
Wilasdachanont, W., Isarankura, K.
and Sirijaraya, P. 207
The Biology in a Women’s University
Kimura, I. 219
Biology in the Future – Some Trends in Biology Research and Their Implications for Biology Educator
Wallis, R. L. 225
Final Report on the 10th AABE Conference
Chiowanich, P. 233
Organizing Committees 237
Conference Programmes 241
List of Participants 251

< XI >Eleventh Conference held in Quezon City, Philippines (December, 1986)

Research and Evaluation in Biology Education and Its Implication for the Teachers

Foreword ix

Biology Research and Implications to Teaching
Free Radical Biology and Xenobiotic Biotansformation: A Possible Mechanism of Pesticide Toxicity
Andaya, A. A. 3
Experiments of “Functional Response” of Some Fish Species for Practical Application Population Ecology

Prakobvitayakit Beaver, O.

Research Developments in Cell Biology – Implications to Applied Fields and to Biology Education

Grimme, H. L.

Mammalian Field Studies Using Indirect Methods

Wallis, R. L.

Application of Biotechnology and Genetic Engineering in the Control of Tropical Diseases

Scaife, J. G.

Taxonomy of the Phytoplankton Flora in Northwestern Luzon, Philippines with Notes on Their Ecology

Relon, M. L.

Studies on the Cellular Defense Reaction of Insects for a General Understanding of “Homeostasis” with Special Reference to Secondary School Biology Education

Kitano, H. and Furuhatu, T.

The Implications of Genetics Theme in the Korean Upper Secondary School Biology Curriculum

Chung, Y. J.

General Research in College

Kimura, I.

Introducing the Pineal Gland – A Possible Integrator of the Biological Clock

Tang, P. L. and Pang, S. F.

Studies on the Teaching of Biology and Science

The Teaching of Modern Biology

Dearing, S. J.

Can the Average Secondary School Students Benefit from Sophisticated Biology Research Findings?

Jungwirth, E. and Dreyfus, A.

Survey of the Knowledge of Common Plans among Students in the Teacher Training Course

Katayama, N.


Mohra, R. K.

A Study in the Inclusion of Traditional Culture in the Teaching Material “Science of Plants” with Emphasis on Charcoal Making

Tate, T.

Biology Terms in the Textbooks for Elementary and Secondary Schools

Umeno, K.

Science Education and Biology Teaching

Vohra, F. C.

New Programs, Courses and Materials

Postgraduate Programs in Biology for Teachers in Thailand

Chiowanich, P.

The Research Program of the PSHS Curriculum

Cruz, J. M.

Trends in Biology for Teacher Training Courses in India

Jain, S. C.

Educational Aspects of Japan and a Proposed Undergraduate Biology Curriculum in the College of General Education

Koshida, Y.

Teaching and Laboratory Exercises in Biology for the First Year Course in Khon Kaen University

Na Nagara, S.

Biology Enrichment Program for Science Talented Students in Thailand

Nimsamer, M.

Biology Curriculum in Chiang Mai University

Sukchothiratana, M.

An Approach to Biology Education (Tertiary) for Non-Science Majors

Suzuki, M.

Acknowledgements

Working Committees for the Eleventh AABE Biennial Conference

Participants

< XII > Twelfth Conference held in New Delhi, India (December, 1988)

Explosion of Biological Knowledge and the Challenges for Secondary Education and Teacher Preparation

Biology Education in Asian Countries

Trends in Australian Biology Education

Status of Biology Education in India

Science Education in the Republic of Korea

Papers Submitted

Sex Education in Korean Middle Schools

Chung, Y. J.

Recent Trends in Research into Biology Education by Japanese School Teachers

Hirata, A.

Development of a Laboratory Exercise Using Gasmtery in Upper Secondary School Biology

Katayama, N. and Yokokama, Y.

An Exercise in Practical Observation of Insects, with 4th Year Undergraduate Students

Kitano, H.

A database of Threatened Species in Australia – An Aid in Teaching

Wallis, R. L.
Simple Sulfur-Dioxide Fumigation Methods as Aids for Teaching about Air Pollution

Takaoki, T. 85

Conference Report 94

Delegates at the Conference 97

< XIII > Thirteenth Conference held in Seoul, Korea
(August - September, 1990)

Environmental Education in the Curriculum of Biological Education

Opening Address i

Welcoming Address ii

Provisional Program 6

Itinerary 7

Social Program 12

Environmental Education in the Curriculum of Biological Education: in Elementary, Middle, and High School

Environmental Education in Thailand

Sukchotiratana, M. 13

Environmental Education in Biology Education

Yoon, I. B. 22

Biology Education in Australia

Wallis, R. L. 30

Quality of Life and Human Biology Education in Secondary School in Hong Kong

Tang, P. L. 38

Environmental Issues in the Revised National Curriculum in Japan

Umeno, K. 56

Implication of Environmental Issues in Korean School Curricula

Chung, Y. J. and Yun, M. Y. 72

Environmental Education in Some Universities in Thailand

Sukchotiratana, M. 100

Case Studies of Environmental Education

A Case Study in Environmental Education in Australia

Wallis, R. L. 112


Umaly, R. C. 135

Field Experience on Natural History Education for Science and Non-science Students in Teachers Training College with Special Reference to Environmental Education in Japan

Kitano, H. 153

Detection of Photosynthetic Oxygen Production Using Animal Blood, an Experiment Suitable for Environmental Education at the Secondary Level

Katayama, N. 166

On Primates (Japanese Monkey) As the Materials of Nature Education and Environmental Education

Kawasaki, T. 182

Children’s Thinking about Their Surrounding Nature and Today’s Environmental Problem

Hirata, A. 209

Implication of Environmental Education for Social Life and Culture

The Socioeconomic and Cultural Implications of Environmental Education for the Preservation and Conservation of Natural Environment

Han, S. B. 226

A Study of Taking Traditional Culture of the Nation into the Teaching Material

Tate, T. 244

Science Clubbing for Environmental Education - Its Implication in Social Life and Culture

de la Torre, R. U. 259

Fishpondification, a Major Controversial Environmental Issue in Mangrove Ecosystem Conservation

Zamora, P. M. 263

Pollution and Environmental Destruction

Arcilla, J. G. 286

Rice Field for Observing Microorganisms

Mikami, K. 296

The Effect of Gamma Radiation on Some Algae of Economic Importance Pictures on Scenedesmus, Chlorella, and Nostoc

Aranez, A. T., Antonio, B. and Tagliano, T. 304

Conservation of Fimbristylis globulosa (Retz.) Kunth: Effects of Nitrogen and Gibberellic Acid on the Growth and Development

Escarlos, J. A. and Mino, S. 310

Analysis of Mercury Content of Selected Species of Macrobenthic Algae

Relon, M. L. 320

Mycoflora of the Rhizosphere and Rhizoplane of Selected Crop Plants

Saniel, L. S. 337

A Simple Gas-Volumeter for Measuring Photosynthesis and Respiration Rates Available As Teaching Aid

Takaoki, T. 345

Scheme of Environmental Orientation to School Education

Mohta, R. K. 353

Environmental Education in Elementary and Secondary Schools of Korea

Chung, W. H. 361

Environmental Education in Elementary Schools of Korea

Yu, W. I. 375
Internalization of the Awareness in Preservation of Nature through Efficient Environmental Education
Kim, Y. S. 398

Environmental Education in High School of Korea
Park, H. S. 424

The Contents of Environmental Education in the High School Curriculum in Korea
Surh, K. H. 433

Environment around King Sejong Station
Kim, Y. S. 450

Author Index 466

Participants 467

< XIV > Fourteenth Conference held in Melbourne, Australia (December, 1992)
Environmental Management in Asia – Training, Education and Research

List of Conference Delegates iii
Introduction: Wallis, R. L. 1

Conference Theme Papers
UNESCO-SEAMEO Biotrop Training Courses on Environmental Management
Umaly, R. C. 4

Environmental Education in Hong Kong: Past, Present and Future
Tang, P. L. 22

The Present Aspects of Environmental Education in Japan
Koshida, Y. 44

Pre-service Teacher Training Program on Environmental Education, a Research Based and Community-service Oriented Approach
Hafalla, J. R. 47

Seminar-workshops on Environmental Protection
Joaquin, J. C. 54

Survey of Mangrove Ecosystem for Environmental Education
Attachoo, C. et al. 57

Dry-lab Showing the Procedure for Evaluation of River Water Quality Using Diatoms
Kabayasi, H. and Ueyama, S. 63

Algae Appearing in Japanese Science Textbooks at the Compulsory Level for the Last 40 Years
Katayama, N. 75

Eco-watch and Eco-act: A Bridge Over the Walls
Kanapi, C. G. and Amansi, W. B. 86

Correlates of Household Greenhouse Emissions
Lindsay A., Marinopoulos, J., Treloar, A., Stokes, D. and Wescott, G. 91

Hong Kong Airport 1997: An Environmental Issue
Tang, P. L. 103

Turnip Sawfly, Athalia rosae (insecta) As an Indicator of Pesticide Contamination
Kitano, H. and Kaji, A. 135

General Papers
Permian Marine Provincality, a Theoretical Model and an Empirical Comparison
Shi, G. R. and Archbold, N. W. 155

The Garden Lizard of Singapore, Calotes veriscolor: A Model Organism for Field and Laboratory Study
Diong, C. H. 183

Acid and Its Environment in Education
Tate, T. 189

Distribution of Meiofauna Inside and Outside Seagrass Patches, Khung Kraben Bay, Eastern Coast of Thailand
Chullasorn, S. 197

Dileptus: A Microorganism As a Live Teaching Material
Mikami, K. 215

The Air-borne Pollen Grains Investigated by the Senior High School Students
Oka, K. 222

Effects of Methyl Parathion-containing Pesticide on Chromosomes Based on the Allium Test
Aranez, A. T. and Rubio, R. O. 228

Effects of Applied Nitrogen and Phosphorus on Nodulation of Winged Bean
Escarlos, J. A. 237

On the teaching of “Reproduction” and “Heredity” in Japanese Junior High School Science for the Past 40 Years
Kanaizuka, Y. 243

“Appreciation Lesson”, An Innovation in Science Teaching
de la Torré, R. U. 251

In-contest Support Programs for Non-traditional Students of Biology
Goodall, M. H., Dixon, J. and Chambers, P. J. 253

New Methods for the Teaching of Bioscience
Wallis, A. M. and Gargett, C. 263

< XV > Fifteenth Conference held in Tokyo, Japan (August, 1994)
Biology Education for Non-Biology Majors

Opening Address: Koshida, Y. 1
Welcome Address: Imahori, K. 2
Welcome Address: Hasumi, O. 4

Plenary Lectures
Crisis in Biological Science: Biology for All - Hormchong, T. 5

Teaching Life Science to Non-science Majors
Takahashi, K. 11
Country Reports
Biology Education Report - Australia: A Case Study in the Use of Biology in a Multidisciplinary Tertiary Education Course
Wallis, R. L. and Baskaran, K.

Biology Education at the Secondary and Pre-university Level in Hong Kong - A Brief Report -
Tang, P. L.

The Current Status of Biology Education in Korea

Biology Education in the Philippines: An Update
Joaquin, C. C.

Biology Teaching to Non-biology Majors in Japan: Before and after the Recent Curricular Innovation of Colleges and Universities
Koshida, Y.

Contribution Papers
A Long Term Experiment in Ecology: The Effects of Logging and Fire on Mammals in an Australian Forest
Wallis, R. L.

The Population Changes of the Japanese Black Bear in Gifu Prefecture and the Opinions of Area Residents concerning Them
Kawasaki, T.

Schwettmann, K. D.

Practice of Biology Education in the Experimental Plantation
Tara, M.

Interpreting Our Natural Heritage in the Malaysian Tropical Rainforest and Coral Reef through Slide Program: A Case Study for 6th Grade Pupils in a Japanese Elementary School
Kitano, H.

The Concept and the Method of Environmental Education and the Way of Their Application: “The Kushiro Marsh Plan”
Ubukata, H.

A Historical Study on the Genetics Education in Japanese Secondary School Biology Subject Matters
Ikeda, H.

New Science Curricula for Non-Science Course in Upper Secondary Schools
Umeno, K.

Revolutionary Change in Biological Education at Nihon Daigaku College of Law by Adapting to New Curriculum
Sudzuki, M.

The Environment and Reproductive Rhythms in Mammals
Tang, P. L. and Chan, S. T.

A Study on the Effect of a Molecular Movement Based Instruction on Understanding of Diffusion and Osmosis and on Scientific Attitude
Cho, J.-I.

Poster Presentations
How Much Knowledge the University Students Have of the Trees on Campus
Takeuchi, K., Umeki, S. and Matsuka, M.

Comparison of Biology Curriculum for Upper Secondary Schools between Myanmar and Japan
Hiroki, M. and Ciin, N. K.

A Study on the Cognition of Natural Environment of High School Students in Japan and Korea
Fujshima, H. and Ka, H.

Cognitive Functions of Two Hemispheres and Biological Education
Kang, H.-K. and Rim, Y.-D.

The Analysis of Environment-relating Texts and the Personalization of Environment in the Environment Education
Chang, N.-K., Lee, J. E. and Park, M.

Time-lapse-video Display for the Intuitive Understanding of Plant Motility
Shihira-Ishikawa, I., Furukawa, T., Ohsu, T., Hosokawa, S., Makita, N. and Sugiyama, Y.

A Video Program Showing the Procedure for Collection and Observation of Diatoms Used for Evaluation of River Water Quality
Mayama, S., Ueyama, S., Mayama, N. and Kobayasi, H.

Semi-individualized Instruction for Students’ Activities
Fukuda, H., Shimizu, K., Sato, Y. and Murasugi, S.

A CAI (Computer Aided Instruction) Program and a Video Program, Terms of Biology and Its Use for Teaching Biology in High School
Kaga, T.

How to Obtain Protista Available for Biology and Environmental Education at School: Cultivation of Volvox and Paramecium
Mikami, K., Igari, T. and Oka, K.

An Examination of a Freshwater Filamentous Green Alga Rhizoclonium riparium for the Development of Experimental Materials for Teaching Photosynthesis
Imai, M. and Katayama, N.

3-Dimensional Algal Specimen Is an Useful Teaching Material in Biology Education
Misonou, T. and Rinno, M.
Leaf Skeletonizing – A Practical Way to Livelihood Education through Science and Technology
  de la Torré, R. U. 222
Laboratory Exercises Using a Japanese Ladybird, Propylea japonica, for Teaching “Reproduction” and “Hereditry” in Junior High School Science
  Kanaizuka, Y. and Katayama, N. 225
A Simple Volumetric Method for Measuring Photosynthesis and Respiration Rates even at Home
  Takaoki, T. 231
Improvement of Indigo Carmine Method at the Experiment of the Photosynthesis in Science Education
  Jinno, N. and Fujita, T. 239
On the Use of the Greenbelts at School Grounds
  Park, I.-K. 245
UST Mangrove Tree Planting: A Model for an Outdoor Class Activity in Environmental Biology
  Duque, S. M. and Madulid, R. 253
Education for the General Public on Marine Biology with the South-Izu Marine Ecology Society (S.M.E.S.): Observation Activities of Marine Organisms by Snorkel Diving
  Hirata, T., Aoki, M., Kurashima, A., Dasai, A. and Yokohama, Y. 258

Abstracts
Biology Teaching to Non-biology Majors through Out-of-school Education – The Role of Youth Environmental Non-governmental Organizations
  Hili, C. 264
Biology Course for Non-biology Majors at Chiang Mai University
  Sukchoitratanat. 264
Biology Teaching to Undergraduate and Post-graduate Engineering Students - A Personal Experience -
  Tang, P. L. 265
An Educational Use of a Braconid Wasp, Cotesia (= Apanteles) glomerata (L.) in High School Biology
  Kawahara, H. 265
The Winning Works of the 10th Annual Nature Trail Contest in Japan
  Saitoh, M. 266

Workshop
A Student Activity for Nature Conservation in Tokyo Gakugei University
  Katayama, N. 267

List of Participants 268
Executive Committee Members 275
Acknowledgements 276

<XVI> Sixteenth Conference held in Chang Mai, Thailand (December, 1996)
Excellence in Biology Teaching: Research, Practice and Experience

Welcome Address: Sukchoitratanat, M. 1
Opening Address: Teetranont, C. 2
30th Anniversary of AABE Speech:
  Koshida, Y. 4

Plenary Lectures
Experience in Practice and Research Lead to Excellence in Biology Teaching
  Hormchong, T. 6
Teaching Ecology through Environmental Issues: A Workshop Example in Thailand
  Tilling, S. M. 10
The Use of Lichens as Indicators of Environmental Change in Seasonal Tropical Forests of Northern Thailand: A Workshop Using Simple Techniques for Sampling Lichen Communities
  Wolseley, P. 31

Country Reports
Teaching and Learning Environmental Science in Schools of Thailand
  Boonklurb, N. 44
Biology Education in the Philippines: Prospect and Retrospect
  Angtuaco, S. P. 48
Current Status of Biology Education at the Primary and Secondary Levels in Japan
  Katayama, N. 53
Quality in Teaching and Learning – The Australian Universities’ Experience
  Wallis, R. L. and Boyd, B. 69

Contribution Papers
Enhancing the Development of Thinking Skills and Critical Thinking among Students of Natural Sciences
  Hafalla, J. R. 76
Biology Education by VTR and Field Works
  Tara, M. 81
Integrating HIV/AIDS Concepts in a Basic Biology Curriculum
  Gregorio, L. C. 87
Laboratory Exercises Using a Red Alga, Gigartina mamillosa, for Teaching Photosynthesis of Seaweeds in Junior High School Science
  Kanaizuka, Y. and Katayama, N. 92
Management of Dalbergia sisso Roxb, in Farm Conditions Using Different Pruning Intensities
  Kafle, S. K. and Dixit, P. M. 102
Australia’s Largest Owl. Diet and Conservation of Powerful Owls in the Yarra Valley
  Wallis, R. L. 112
Seventh Grade Students’ Informal Theories of Horn-Beetles  
Hirata, A.  

Frog Culture for Biology Study and Biological Research  
Na Nagara, S.  

Where and How to Collect the Small Benthic Marine Invertebrates  
Chullasorn, S.  

Inquiry into the Cell  
Nakamichi, T.  

Analysis or the Discriminatory Capacity of Questions in University Entrance Examinations in Japan  
Koshida, Y., Maekawa, S. and Shimizu, T.  

Repellency Effects of Neem and Synthetic Pesticides to Honeybees  
Thapa, R., Wongwiri, S. and Prakobvitayakit, O.  

Comparative Study on the Learning Achievement in Biology Course 045: Genetic Materials and Protein Synthesis of Mathayomsuksa 6 Students Focusing on the Use of Teaching Protein Synthesis* Magnetic Board during Teaching Process  
Piriyakul, K.  

Some Biological Investigation of Larval Trematodes from Chiang Mai Moat  
Wongsawad, C., Wongsawad, P., Suvattanacoupt, S. and Sukhotiratanap, M.  

Helminthological Survey of Rats from Urban Area of Chiang Mai  
Namue, C. and Wongsawad, C.  

Mt. Kwangdok as a Nature Trail  
Park, I.-K. and Rim, Y.-D.  

Pteridophyte Comparison in Different Forest Types at Doi Lohn, San Kampaeng District, Chiang Mai Province  
Bañoc, L. M., Maxwell, J. F., Elliott, S. D. and Anusarnsunthorn, V.  

Change of Nature Environment and Biological Education  
Fujishima, H.  

The Effect of Benzocaine in the Transpiration of Oreochromis niloticus Linn. and Chanos chanos Forskal  
Sommari, A., Kerdkriengkai, S. and Srisangngam, S.  

A Proposition to the International Solidary of Environmental Education in Asia-Pacific Area  
Saitoh, M.  

Study of Marine Actinomycetes and Their Roles in Marine Microcosm  
Srivibool, R.  

Executive Committee Members  
The Asian Association for Biology Education (AABE): Constitution and Rules  

< XVII >Seventeenth Conference held in Manila, Philippines (December, 1998)  

Biology Education in the Third Millennium  
Message: Editors  
Message: Kanapi, C. G.  

Keynote Address  
Biology Education in the Third Millennium: Focus on Information Technology and Environmental Education  
Padolina, W. G.  

Inspirational Talk  
Foundation and Development of the Asian Association for Biology Education  
Imahori, K.  

Plenary Papers  
Biology Education in the Third Millennium: Focus on Information Technology and Environmental Education  
Madrazo, G.  

Biology Education at Risk  
Imahori, K.  

IT-Aided Adult Environmental Education  
Suselo, T.  

Biology of Dicyemid Mesozoans with Notes of Their Educational Use  
Koshida, Y., Furuya, H. and Tsuneki, K. A.  

Toward a New Direction for Biology Educators: From Self Censorship to Mentoring  
Fortino, C. A.  

Country Reports  
Biology Education and Environmental Education in the Third Millennium in Japanese Primary and Secondary Schools  
Katayama, N.  

Environmental Education in the Philippines  
Rabago, K. M.  

Biotechnology Education in Tertiary Institutions in Hong Kong  
Tang, P. L.  

Biology in Australian Schools  
Wallis, R. L.  

List of Seminar and Workshop Papers  
Biology Interactive: “Experience Life”  
Acena, A. and XBI Team Xavier  

Clastogenicity of X-rays, Cobalt Chloride and Methyl Methane Sulfonate as Assayed in Allium cepa Seedlings  
Alcaide, B., Ikeda, H. and Fujikawa, K.  

Interfacing Experiments with the Computer  
Galvez, E. R., Catalan, M. H. C., Orbita, P. S.  

List of Participants  

Asian Journal of Biology Education Vol. 10
Integrating Sustainable Development into Tertiary Level Courses

David, M. A. B. and Esguerra, J. P. H.

Environmental Case Study: Ecological Succession in a Hay Infusion

Joaquin, C. C.

Laboratory Exercise Suitable for Teaching Relationship between Vertical Distribution of Seaweed and Their Photosynthetic Characteristics in Advanced Science Classes in Japanese Junior High Schools

Kanaizuka, Y. and Katayama, N.

Trials and Further Improvement of the “Simple Procedures for the Extraction and Separation of Photosynthetic Pigments”

Katayama, N., Sato, H., Kanaizuka, Y. and Yokohama, Y.

Observation Material of Plant Chromosome for High School Students in Biology – with Special Reference to Morus nigra (Mulberry)

Kawashima, N. and Oshigane, K.

Pesticide Education in Upper Secondary School Biology Education in Japan: Based on a Survey of Biology Textbooks 1994-1995

Kitano, H.

The Use of Electronic Media, Both CDROM and Internet, in the Delivery of a Second Year University Course in Fish Biology

Laurenson, L. J. B. and Wallis, R. L.

The Use of the Internet System in Biology Education: Making Homepages about Experimental and Visual Information on Selected Topics in Biology

Ohshika, K., Treyes, R., Alcaide, B. and Ikeda, H.

Constructivism, Information Technology and Mediated Learning

Perez, T. R.

Microalgae: Potential Organism for Pollution Monitoring

Perez, T. R. and Tabbada, R. A.

A Rapid and Simple Experiment Utilizing Luminous Bacteria for the Classroom Demonstration of Biological Concepts of Cellular Toxicity, the Oxygen Effect on Bioluminescence and Catabolite Repression

Quinto, E.

My Experience in Biology Education – Observation of Plankton

Tara, M.

Differentiation of the Isolated Protoplasts from Gametophyte of the Tree Fern Cyathea contaminans (Hook) Copel. to Gibberelic Acid (GA3, GA4 and GA7) Treatment

Treyes, R., Watanabe, S., Ohshika, K. and Ikeda, H.

Native Mammal Reintroductions to Predator-Controlled Habitat in Western Australia

Wallis, R. L.

List of Poster Presentation

Galls and Mine Growths on Philippine Plants

Alejandro, G. D., Madulid, R. and Schwettaman, K. D.

Enhancing the Learning Process of Biology Students via Community Study: A Centro Escolar University Experience

Austria, Z.

The Survival Plants of the Batak and Tagbanua Tribes in Palawan, Philippines

Bunquin, M. D. A.

Cyanobacterial Growth Response and Plasmid Copy Number in Salt-stressed Environment

Cao, E. P., Loveria, M. V., Rivero, G. C. and Roderos, R. R.

Phytoremediation of Heavy Metal Contamination in Soil and Water

Follosco, M. P. and Tel-Or, E.

Reproductive Biology of Some Ichthyofauna of the Agos River, Central Sierra Madre

Herrera, A. A.

Expression of Receptors to Biotinylated Probes in Transformed Breast Tissues

Herrera, A. A., Jacinto, S., Sioson, C., Gamboa, E., Amparado, E. and Casauay, A.

Effects of Acid Stress on Plasma Calcium Level and Histochemistry of Gonads of Oreochromis niloticus

Herrera, A. A. and Pador, G.

An Effective Method for Teaching Biology through the Internet in High School

Kaga, T. and Arai, M.

The Framework of Environmental Education from the Viewpoint of Biology

Kobayashi, T.

Environmental Studies in Senior High School

Nakamichi, T.

The Isolation and Characterization of Bacteria Isolated from the Seawater Samples Collected along the Breakwater Area beside the Folk Arts Theater of Manila Bay

Quinto, E.

Biosensor for Water Toxicity Based on a luminous Bacterium: Photobacterium leiognathi USTCMS2116

Quinto, E. and Sevilla, F.

Scanning Electron Microscopic Studies of the Phytoplankton Flora in Talin Bay, Lian, Batangas
Relon, M. L. 180  
Bioremediation Potential of Two Philippine Microalgal Isolates Bat-09 (Chroococcus) and CAV-25 (Desmococcus) Exposed to Copper and Cadmium  
Rivero, G. C., Lintongan, P. B., Cao E. P. and Roderos, R. R. 181  
Isolation and Cultivation of Microalgae from Philippine Waters  
Roderos, R. R., Calugay, R. J., Cao E. P. and Rivero, G. C. 197  
Distribution of Mosquitoes and Incidence of Mosquito-borne Diseases in Metro Cebu  
Ruelo, J. 201  
An Invitation to the Annual Nature Trail Contest in Japan  
Saitoh, M. 207

AUTHOR INDEX

A
Acena, A. XVII-64  
Adler, J. H. IV-376, VIII-229  
Alcaide, B. XVII-65, XVII-92  
Alejandro, G. D. XVII-113  
Alfonso, P. J. II-47  
Al-Jalili, A. R. I-192  
Allen, D. IV-291  
Allon, Y. IV-593  
Amansu, W. B. XIV-86  
Amos de Shalit Science teaching Center, Hebrew University IV-187  
Amparado, E. XVII-133  
Andaya, A. A. XI-3  
Angtuaco, S. P. XVI-48  
Antonio, B. XIII-304  
Anusarnsunthorn, V. XVI-190  
Aoki, M. XV-258  
Arai, M. XVII-158  
Aranze, A. T. XIII-304, XIV-228  
Archbold, N. W. XIV-155  
Arcilla, J. G. XIII-286  
Asai, N IX-106, IX-119  
Asis, C. V. III-64  
Atchua, M. VIII-47  
Attachoo, C., et al XIV-57  
Avadhani, P. N. V-83  
Austria, Z. XVII-114

B
Bañoc, L. M. XVI-190  
Ben-Chanan, M. IV-483

S
Simeon, E. 209  
Characterization and In Vitro Culture of Terminalia microcarpa Decne (Kapumpit) and Broussonetia luconica Blanco (Himbabao)  
Ungson, L. B. 213  
Making Plant Specimen Cards as Teaching Material Using a Portable Laminating Machine  
Watanabe, S. 214  
AABE Executive Committee 217  
17th Biennial AABE Conference Organizing Committee 218  
17th Biennial AABE Conference Working Committee 219  
List of Participants, 17th Biennial AABE Conference 220

C
Calugay, R. J. XVII-197  
Cao, E. P. XVII-117, XVII-181, XVII-197  
Care, R. A. IV-465, IV-606  
Carter J. VI-113  
Casauay, A. XVII-133  
Catalan, M. H. C. XVII-69  
Chambers, P. J. XIV-253  
Chan, J. Y. IV-155  
Chan, S. T. XV-120  
Chang, N.-K. XV-35, XV-170  
Chantharasakul, V. VIII-105, X-47  
Charles, S. VII-97  
Cheah, C. K. V-13  
Chelliah, T. VII-233, IX-34  
Cherdshewasart, W. X-128  
Chiowanich, X-3, X-233, XI-207  
Chou, L. M. VII-153, VIII-113  
Chouhdry, A. S. VIII-155  
Chullasorn, S. IX-14, XIV-197, XVI-127  
Chung, W. H. XIII-361  
Chung, Y. J. XI-73, XII-20, XIII-72  
Chye, Y. O. V-1  
Cin, N. K. XV-149  
Cocude, M. VII-157

Asian Journal of Biology Education Vol. 10 35
<table>
<thead>
<tr>
<th>Names</th>
<th>Page Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cruz, H.</td>
<td>I-48, I-76, IV-509</td>
</tr>
<tr>
<td>Cruz, J. M.</td>
<td>XI-215</td>
</tr>
<tr>
<td>Daniel, C. J. S.</td>
<td>III-32</td>
</tr>
<tr>
<td>Dasai, A.</td>
<td>XV-258</td>
</tr>
<tr>
<td>David, M. A. B.</td>
<td>XVII-70</td>
</tr>
<tr>
<td>Dearing, S. J.</td>
<td>XI-131</td>
</tr>
<tr>
<td>de la Torre, R. U.</td>
<td>XIII-259, XIV-251, XV-222</td>
</tr>
<tr>
<td>Diong, C. H.</td>
<td>XIV-183</td>
</tr>
<tr>
<td>Dissanayake, P.</td>
<td>III-37</td>
</tr>
<tr>
<td>Dixit, P. M.</td>
<td>XVI-102</td>
</tr>
<tr>
<td>Dixon, J.</td>
<td>XIV-253</td>
</tr>
<tr>
<td>Doraiswami, S.</td>
<td>IV-573</td>
</tr>
<tr>
<td>Dowdeswell, W. H.</td>
<td>I-65, II-64, IV-434</td>
</tr>
<tr>
<td>Dreyfus, A.</td>
<td>XI-138</td>
</tr>
<tr>
<td>Duong, D. N.</td>
<td>I-293</td>
</tr>
<tr>
<td>Duque, S. M.</td>
<td>XV-253</td>
</tr>
<tr>
<td>Dwijoseputro, D.</td>
<td>V-146, VIII-285, IX-69</td>
</tr>
<tr>
<td>Edling, J. V.</td>
<td>IV-434</td>
</tr>
<tr>
<td>Eggleston, J. F.</td>
<td>IV-122</td>
</tr>
<tr>
<td>Elkana, Y.</td>
<td>IV-595</td>
</tr>
<tr>
<td>Elliott, A. B.</td>
<td>V-43</td>
</tr>
<tr>
<td>Elliott, S. D.</td>
<td>XVI-190</td>
</tr>
<tr>
<td>Elton, L. R.</td>
<td>IV-285, IV-430</td>
</tr>
<tr>
<td>Erriyagama, I.</td>
<td>III-9, III-13, IV-380</td>
</tr>
<tr>
<td>Escarlos, J. A.</td>
<td>XIII-310, XIV-237</td>
</tr>
<tr>
<td>Esquerra J. P. H.</td>
<td>XVII-70</td>
</tr>
<tr>
<td>Etrog, A.</td>
<td>IV-326</td>
</tr>
<tr>
<td>Fakoor, S. R.</td>
<td>I-145, II-111</td>
</tr>
<tr>
<td>Follosco, M. P.</td>
<td>XVII-123</td>
</tr>
<tr>
<td>Fortino, C. A.</td>
<td>XVII-29</td>
</tr>
<tr>
<td>Fujii, K.</td>
<td>VIII-425</td>
</tr>
<tr>
<td>Fujikawa K.</td>
<td>XVII-65</td>
</tr>
<tr>
<td>Fujishima, H.</td>
<td>XV-157, XVI-197</td>
</tr>
<tr>
<td>Fujita, T.</td>
<td>XV-239</td>
</tr>
<tr>
<td>Fukuda, H.</td>
<td>XV-190</td>
</tr>
<tr>
<td>Fukuda, Y.</td>
<td>VIII-337, IX-106, IX-119</td>
</tr>
<tr>
<td>Furtado, J. I.</td>
<td>VII-243</td>
</tr>
<tr>
<td>Furuwata, T.</td>
<td>XI-62</td>
</tr>
<tr>
<td>Furukawa, T.</td>
<td>XV-179</td>
</tr>
<tr>
<td>Furuya, H.</td>
<td>XVII-25</td>
</tr>
<tr>
<td>Furuya, K.</td>
<td>VIII-159, X-187</td>
</tr>
<tr>
<td>Gaklov, V. J.</td>
<td>IV-465</td>
</tr>
<tr>
<td>Galton, G.</td>
<td>IV-122</td>
</tr>
<tr>
<td>Galvez, E. R.</td>
<td>XVII-69</td>
</tr>
<tr>
<td>Gamboa, E.</td>
<td>XVII-133</td>
</tr>
<tr>
<td>Garcia, F. C.</td>
<td>IV-506, V-153, VI-164</td>
</tr>
<tr>
<td>Gargett, C.</td>
<td>XIV-263</td>
</tr>
<tr>
<td>Ghani, Z.</td>
<td>VI-78, VII-87</td>
</tr>
<tr>
<td>Glass, B.</td>
<td>II-56, II-335</td>
</tr>
<tr>
<td>Glassman, B.-G.</td>
<td>IV-178</td>
</tr>
<tr>
<td>Goldwin, A.</td>
<td>III-122</td>
</tr>
<tr>
<td>Goodall, M. H.</td>
<td>XIV-253</td>
</tr>
<tr>
<td>Gotlieb, S.</td>
<td>IV-552</td>
</tr>
<tr>
<td>Goyal, K. C.</td>
<td>III-111</td>
</tr>
<tr>
<td>Gregorio, L. C.</td>
<td>X-58, XVI-87</td>
</tr>
<tr>
<td>Grimmie, H. L.</td>
<td>XI-15</td>
</tr>
<tr>
<td>Grobman, A. B.</td>
<td>XI-136</td>
</tr>
<tr>
<td>Grobman, H.</td>
<td>I-24, IV-1</td>
</tr>
<tr>
<td>Gnanamuthu, E.</td>
<td>VII-255</td>
</tr>
<tr>
<td>Gunaratne, M. M.</td>
<td>I-155</td>
</tr>
<tr>
<td>Guru, G.</td>
<td>IV-573</td>
</tr>
<tr>
<td>Hafalla, J. R.</td>
<td>XIV-47, XVI-76</td>
</tr>
<tr>
<td>Hamiddon, F.</td>
<td>VII-xi</td>
</tr>
<tr>
<td>Han, S. B.</td>
<td>XIII-226</td>
</tr>
<tr>
<td>Harlen, W.</td>
<td>IV-73, IV-107, IV-147</td>
</tr>
<tr>
<td>Harman, A.</td>
<td>IV-592</td>
</tr>
<tr>
<td>Harris, H.</td>
<td>I-199, II-121</td>
</tr>
<tr>
<td>Hasumi, O.</td>
<td>XV-4</td>
</tr>
<tr>
<td>Hatakeyama, T.</td>
<td>IX-118</td>
</tr>
<tr>
<td>Haynes, L. J.</td>
<td>IV-399, IV-409</td>
</tr>
<tr>
<td>Heang, K. B.</td>
<td>VII-313</td>
</tr>
<tr>
<td>Hernandez, D. F.</td>
<td>I-117, III-64, IV-563</td>
</tr>
<tr>
<td>Herrera, A. A.</td>
<td>XVII-124, XVII-133, XVII-147</td>
</tr>
<tr>
<td>Hirata, A.</td>
<td>XII-37, XIII-209, XVI-118</td>
</tr>
<tr>
<td>Hirata, T.</td>
<td>XV-258</td>
</tr>
<tr>
<td>Hili, C.</td>
<td>XV-264</td>
</tr>
<tr>
<td>Hiroki, M.</td>
<td>V-III-173, XV-149</td>
</tr>
<tr>
<td>Hisatake</td>
<td>II-333</td>
</tr>
<tr>
<td>Homma, S.</td>
<td>VIII-397</td>
</tr>
<tr>
<td>Hong, L. C.</td>
<td>V-51</td>
</tr>
<tr>
<td>Hoole, G. J.</td>
<td>III-25</td>
</tr>
<tr>
<td>Horiuichi, S.</td>
<td>X-24</td>
</tr>
<tr>
<td>Hormchong, T.</td>
<td>V-237, VI-211, VIII-53, XV-5, XVI-6</td>
</tr>
<tr>
<td>Hosokawa, S.</td>
<td>XV-179</td>
</tr>
<tr>
<td>Hunwald, A.</td>
<td>II-69</td>
</tr>
<tr>
<td>Igari, T.</td>
<td>XV-203</td>
</tr>
<tr>
<td>Ikeda, H.</td>
<td>XV-98, XVII-65, XVII-92, XVII-107</td>
</tr>
<tr>
<td>Imahori, K.</td>
<td>VI-183, II-27, VIII-433, IX-77, XV-2, XVII-5, XVII-12</td>
</tr>
<tr>
<td>Imai, M.</td>
<td>XV-211</td>
</tr>
<tr>
<td>Inbar, S.</td>
<td>IV-326</td>
</tr>
<tr>
<td>Isarankura, K.</td>
<td>X-207</td>
</tr>
<tr>
<td>Itoh, R.</td>
<td>II-337</td>
</tr>
<tr>
<td>Iwase, T.</td>
<td>V-64</td>
</tr>
<tr>
<td>Jacinta, S.</td>
<td>XVII-133</td>
</tr>
<tr>
<td>Jafarruddin, T. H. S.</td>
<td>VII-xiii</td>
</tr>
<tr>
<td>Jain, S. C.</td>
<td>VI-124, XI-219</td>
</tr>
<tr>
<td>James, S. L.</td>
<td>IV-388</td>
</tr>
<tr>
<td>Jinno, N.</td>
<td>XV-239</td>
</tr>
<tr>
<td>Joaquín, C. C.</td>
<td>XV-44, XVII-71</td>
</tr>
<tr>
<td>Joaquín, J. C.</td>
<td>XIV-54</td>
</tr>
<tr>
<td>Johnson, A.</td>
<td>V-31</td>
</tr>
<tr>
<td>Johri, B. M.</td>
<td>I-164, II-1, IV-470, V-207</td>
</tr>
<tr>
<td>Jones, M.</td>
<td>IV-122</td>
</tr>
</tbody>
</table>
V-172, VI-141, VIII-17  Lee, J. E.  XV-170
K  Ka, H.  XV-157  Lee Liu, H. C.  III-42
Kaffe, S. K.  XVI-102  Leong, T. Y.  V-74, VIII-323
Kaga, T.  XV-197, XVII-158  Lev, C.  IV-376
Kahn, S. M. H.  III-59  Lev, H.  III-122
Kai, Y. C.  II-186  Levey, A.  IV-326
Kaji, A.  XIV-135  Levin, R.  IV-326
Kanagasabai, S.  VII-33, VIII-95  Lewis, M.  IV-295
Kanaizuka, Y.  XIV-243, XV-225, XVI-1,  Lintongan, P. B.  XVII-181
XVII-72, XVII-73  Lister, R. E.  IV-25, IV-81
Kanapi, C. G.  XIV-86, XVII-ii  Loveria, M. V.  XVII-117
Kapili, P. H.  V-133  Kawahara, H.  IX-169, XV-265
Katayama, N.  VIII-159, VIII-345, IX-130,  Kawasaki, T.  III-46, VII-295, VIII-145,
X-187, XI-151, XII-52, XV-225, XV-267, XVI-53,
XVI-92, XVII-43, XVII-72, XVII-73  XIII-182, XV-67
Kawashima, N.  XVII-79  Matsukawa, M.  XV-143
VIII-1, VIII-435  Maxwell, J. F.  XVI-190
Kennedy, M. H.  VIII-215  Mayama, N.  XV-184
Kerdriengkai, S.  XVI-202  Mayama, S.  XV-184
Kille, R. A.  VIII-239  Mayer, M.  IV-240
Kim, C. M.  I-202, III-53  Mayer, W. V.  II-15, II-75, IV-118,
Kim, Y. S.  XII-389, XIII-450  Medina, G. F.  III-220
Kitano, H.  VIII-345, IX-169, X-90,  Miakami, T.  XIII-296, XIV-215, XV-203
XI-62, XII-71, XIII-153,  Mino, S.  XIII-310
XIV-135, XV-88, XVII-83  Mishra, A. K.  VI-72
Kobayashi, K.  VIII-337, IX-106, IX-119  Misonou, T.  XV-216
Kobayashi, T.  XVII-163  Mitchell, J. L. S. J.  II-137, II-149
Kobayasi, H.  VIII-345, XIV-63, XV-84  Miyake, A.  II-335
XIV-44, XV-1, XV-54, XVI-4,  Morikawa, H.  II-87, II-99
XVI-141, XVII-25  Morimasa, S.  VIII-55
Koutnik, P. G.  IV-155  Morita, T.  VIII-425
Kremer, L.  IV-314  Moss, G. D.  IV-412
Krishnamra, T.  VI-207  Murasugi, S.  XV-190
Kurashima, A.  XV-258  Nahlia C.  V-195
Kuthebutheen, A. J.  VII-171  Nakajima, Y.  II-132, III-165, III-207,
Kwan, L. P.  V-195, V-288  Nakamichi, T.  XVI-134, XVII-168
L  Lal, M.  I-164  Nakayama, K.  I-206, II-340, VIII-373,
Larsen, V. C.  II-15  VIII-441
Laurensen, L. J. B.  XVII-87  Nalliah C.  V-161
Lebig, L. D.  XVII-69  Namue, C.  XVI-172
Lee, A. E.  IV-295, VI-107, VII-41
Na Nagara, S. XI-230, XVI-124
Natarajan, S. III-98, IV-533
Ngan, P. T. I-113
Nimsamer, M. XI-237
Nishimoto, M. II-33
Nishino, E. IX-106, IX-119
Nisizawa, K. IV-478
Noam, J. IV-326
Nogawa, H. IX-106, IX-119
Novak, J. IV-420
Numata, M. VIII-167
Nussbaum, J. I-135
Odaki, K. V-64, IX-92
Oh, K. C. II-135
Ohshika, K. XVII-92, XVII-107
Ohsu, T. XV-179
Oka, K. XIV-222, XV-203
Ootsuka, H. VIII-439
Orbita, P. S. XVII-69
Oshigane, K. XVII-79
Paran, T. P. II-186, III-90, IV-497, IV-533
Park, H. S. XIII-424
Park, I.-K. XV-35, XV-245, XVI-184
Park, M. XV-170
Patanathabutr, P. X-5
Patinawin, S. X-193
Pavanarit, S. II-199, VI-191
Peless, Y. IV-347
Peng, K. K. VII-317
Perez, T. R. XVII-96, XVII-97
Perlberg, A. IV-314, IV-323, IV-326, IV-329, IV-332
Perrott, E. VII-207
Peterson, G. E. I-5, II-42
Phanichyakarn, V. X-128
Phetthongkam, M. VII-187
Pinkas, D. IV-326
Piriyaikut, K. XVI-153
Poljacoff-Mayber, A. I-17, 1-100, 1-180, II-129, VIII-229, X-70
Ponniah, W. D. V-223
Prabhakar, M. P. VII-105
Prakobvitayakit Beaver, O. X-75, X-183, XI-11, XVI-147
Prawirosudirdja, G. II-122, III-189, V-114
Prener, J. IV-455
Puriveth, S. VIII-391
Quinto, E. XVII-98, XVII-173, XVII-176
Rabago, K. M. XVII-50
Rajendram, K. A. V-110
Rajendram, K. H. III-186
Ramirez, L. B. III-64
Ramsey, G. A. VI-116
Rao, A. N. V-35, VIII-7, VIII-419
Relon, M. L. XI-41, XIII-320, XVII-180
Reyes, V. F. VI-102
Rim, Y.-D. XV-35, XV-162, XVI-184
Rimas, G. V-245
Rimno, M. XV-216
Rivero, G. C. XVII-117, XVII-181, XVII-197
Roderos, R. R. XVII-117, XVII-181, XVII-197
Sabar, N. IV-448
Saitoh, M. XV-266, XVI-208, XVII-207
Sakai, T. II-40
Saksoong, P. IX-26
Salcedo, J. Jr I-340
Salomon, G. IV-277, IV-353
Santiago, A. VII-191
Sangalang, L. I-117
Saniel, L. S. XIII-337
Sato, H. XVII-73
Sato, K. VIII-179
Sato, Y. XV-190
Sato, Y. XV-190
Satofuka, F. VIII-61
Savellano, J. M. VII-223
Scaife, J. G. XI-29
Schaefer, G. VI-47, VI-60, VIII-259
Schwetmann, K. D. XV-75, XVII-113
Sevilla, F. XVII-176
Seymour, L. A. IV-155
Sharoni, S. IV-483
Shi, G. R. XIV-155
Shigenobu, Y. VIII-117
Shihira-Ishikawa, I. VIII-131, XV-179
Shimizu, J. VIII-179
Shimizu, K. XV-190
Shimizu, T. XVI-141
Shimizu, K. XV-190
Shimron, D. IV-329
Sigamoney, L. II-186
Simeon, E. XVII-209
Singh, G. VII-271
Singham, J. K. V-288, VI-173
Sinha, U. K. IV-470, V-207
Sison, C. XVII-133
Sirijaraya, P. V-61, IX-8, X-207
Smith, J. IV-341
Sommari, A. XVI-202
<table>
<thead>
<tr>
<th>Last Name</th>
<th>Volume(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sood, J. K.</td>
<td>VII-71, VIII-277</td>
</tr>
<tr>
<td>Soriano, L. B.</td>
<td>I-v, I-333, II-337, III-224, IV-589</td>
</tr>
<tr>
<td>Soydhurum, P.</td>
<td>VI-196, X-11, X-47</td>
</tr>
<tr>
<td>Srirangnam, S.</td>
<td>XVI-202</td>
</tr>
<tr>
<td>Srivibool, R.</td>
<td>XVI-216</td>
</tr>
<tr>
<td>Stannard, F.</td>
<td>IV-401</td>
</tr>
<tr>
<td>Strauss, G.</td>
<td>III-122</td>
</tr>
<tr>
<td>Starobinetz C.</td>
<td>IV-326</td>
</tr>
<tr>
<td>Stokes, D. M.</td>
<td>VII-79, XIV-91</td>
</tr>
<tr>
<td>Subbarini, M. S.</td>
<td>VIII-255</td>
</tr>
<tr>
<td>Sudzuki, M.</td>
<td>XI-251, XV-111</td>
</tr>
<tr>
<td>Sugiyama, Y.</td>
<td>XV-179</td>
</tr>
<tr>
<td>Sukchotiratana, M.</td>
<td>XI-243, XIII-13, XIII-100, XV-264, XVI-1, XVI-157</td>
</tr>
<tr>
<td>Suri, K. H.</td>
<td>XIII-433</td>
</tr>
<tr>
<td>Suselo, T.</td>
<td>XVII-16</td>
</tr>
<tr>
<td>Suvattanacoupt, S.</td>
<td>XVI-157</td>
</tr>
<tr>
<td>Swami, P.</td>
<td>III-111</td>
</tr>
<tr>
<td>Tabbada, R. A.</td>
<td>XVII-97</td>
</tr>
<tr>
<td>Tagliano, T.</td>
<td>XIII-304</td>
</tr>
<tr>
<td>Takahashi, K.</td>
<td>XV-11</td>
</tr>
<tr>
<td>Takaoki, T.</td>
<td>XII-85, XIII-345, XV-231</td>
</tr>
<tr>
<td>Takasugi, S.</td>
<td>II-24</td>
</tr>
<tr>
<td>Takeuchi, K.</td>
<td>XV-143</td>
</tr>
<tr>
<td>Tamanori, I.</td>
<td>VIII-337, IX-106, IX-119, X-34</td>
</tr>
<tr>
<td>Tan, J.</td>
<td>V-57</td>
</tr>
<tr>
<td>Tanaka, R.</td>
<td>VIII-155</td>
</tr>
<tr>
<td>Tandon, S. L.</td>
<td>II-1</td>
</tr>
<tr>
<td>Taniguchi, H.</td>
<td>VIII-179</td>
</tr>
<tr>
<td>Tara, M.</td>
<td>VIII-295, XV-80, XVII-81, XVII-102</td>
</tr>
<tr>
<td>Tarmir, P.</td>
<td>IV-178, IV-205, IV-240, IV-335, V-119, VI-131, VIII-81, VIII-229</td>
</tr>
<tr>
<td>Tate, T.</td>
<td>VII-251, XI-164, X-161, XI-178, XIII-244, XIV-189</td>
</tr>
<tr>
<td>Teetermont, C.</td>
<td>XVI-2</td>
</tr>
<tr>
<td>Tel-Or, E.</td>
<td>XVII-123</td>
</tr>
<tr>
<td>Thapa, R.</td>
<td>XVI-147</td>
</tr>
<tr>
<td>Theodor, E.</td>
<td>IV-332</td>
</tr>
<tr>
<td>Thitasut, P.</td>
<td>P-7</td>
</tr>
<tr>
<td>Tieng, M. T. N.</td>
<td>III-107</td>
</tr>
<tr>
<td>Tilling, S. M.</td>
<td>XVI-10</td>
</tr>
<tr>
<td>Tokunaga, Y.</td>
<td>X-187</td>
</tr>
<tr>
<td>Tremor, A.</td>
<td>XIV-91</td>
</tr>
<tr>
<td>Treveys, R.</td>
<td>XVII-92, XVII-107</td>
</tr>
<tr>
<td>Tribe, A. A.</td>
<td>V-90</td>
</tr>
<tr>
<td>Tsuneki, K. A.</td>
<td>XVII-25</td>
</tr>
<tr>
<td>U</td>
<td>Ubukata, H.</td>
</tr>
<tr>
<td>Ueda, H.</td>
<td>VIII-125</td>
</tr>
<tr>
<td>Ueyama, S.</td>
<td>XIV-63, XV-184</td>
</tr>
<tr>
<td>Umalis, R. C.</td>
<td>XIII-135, XIV-4</td>
</tr>
<tr>
<td>Umeki, S.</td>
<td>XV-143</td>
</tr>
<tr>
<td>Umeno, K.</td>
<td>XI-185, XIII-56, XV-103</td>
</tr>
<tr>
<td>Ungson, L. B.</td>
<td>XVII-213</td>
</tr>
<tr>
<td>V</td>
<td>Vangayankanha, C.</td>
</tr>
<tr>
<td>Vergara, B. S.</td>
<td>III-64, III-82</td>
</tr>
<tr>
<td>Villavicencio, R. R.</td>
<td>VI-89, VIII-26</td>
</tr>
<tr>
<td>Vohra, F. C.</td>
<td>II-155, VI-1, VII-xvii, VIII-63, VIII-405, XI-192</td>
</tr>
<tr>
<td>W</td>
<td>Wallis, A. M.</td>
</tr>
<tr>
<td>Watanabe, S.</td>
<td>XVII-107, XVII-214</td>
</tr>
<tr>
<td>Wayan Sereget, G.</td>
<td>VII-137</td>
</tr>
<tr>
<td>Weerasinghe, A.</td>
<td>III-20, IV-509, V-217, V-285</td>
</tr>
<tr>
<td>Weiss, M.</td>
<td>IV-459</td>
</tr>
<tr>
<td>Wescott, G.</td>
<td>XIV-91</td>
</tr>
<tr>
<td>Wilasdashanont, W.</td>
<td>X-207</td>
</tr>
<tr>
<td>Wolseley, P.</td>
<td>XVI-31</td>
</tr>
<tr>
<td>Wong, R. H. K.</td>
<td>V-210</td>
</tr>
<tr>
<td>Wongsawad, C.</td>
<td>XVI-157, XVI-172</td>
</tr>
<tr>
<td>Wongsawad, P.</td>
<td>XVI-157</td>
</tr>
<tr>
<td>Wongsiri, S.</td>
<td>XVI-147</td>
</tr>
<tr>
<td>X</td>
<td>XBI Team Xavier</td>
</tr>
<tr>
<td>Y</td>
<td>Yamada, T.</td>
</tr>
<tr>
<td>Yamagoshi, T.</td>
<td>VIII-75, VIII-135</td>
</tr>
<tr>
<td>Yamazaki, S.</td>
<td>X-90</td>
</tr>
<tr>
<td>Yang, J. H.</td>
<td>I-285, II-117</td>
</tr>
<tr>
<td>Yokohama, Y.</td>
<td>VIII-159, X-187, XII-52</td>
</tr>
<tr>
<td>XV-258, XVII-73</td>
<td></td>
</tr>
<tr>
<td>Yonezawa, Y.</td>
<td>VIII-155, X-117</td>
</tr>
<tr>
<td>Yoon, I. B.</td>
<td>XIII-22</td>
</tr>
<tr>
<td>Yoong, C. S.</td>
<td>I-254, V-164, VI-26, VII-xiii, VIII-189</td>
</tr>
<tr>
<td>Yoshida, O.</td>
<td>VIII-337, IX-106, IX-119</td>
</tr>
<tr>
<td>Yoshida, T.</td>
<td>II-50</td>
</tr>
<tr>
<td>Yosiking, M.</td>
<td>VIII-437</td>
</tr>
<tr>
<td>Young, Y. M.</td>
<td>XII-72</td>
</tr>
<tr>
<td>Yu, W. I.</td>
<td>XIII-375</td>
</tr>
<tr>
<td>Z</td>
<td>Zamora, P. M.</td>
</tr>
<tr>
<td>Zamora, R. I.</td>
<td>II-181, IV-522, VI-84</td>
</tr>
<tr>
<td>Zuzovsky, R.</td>
<td>IV-253</td>
</tr>
</tbody>
</table>