



NAST

Annual Report

1990

NATIONAL ACADEMY OF SCIENCE AND TECHNOLOGY
Republic of the Philippines

NAST

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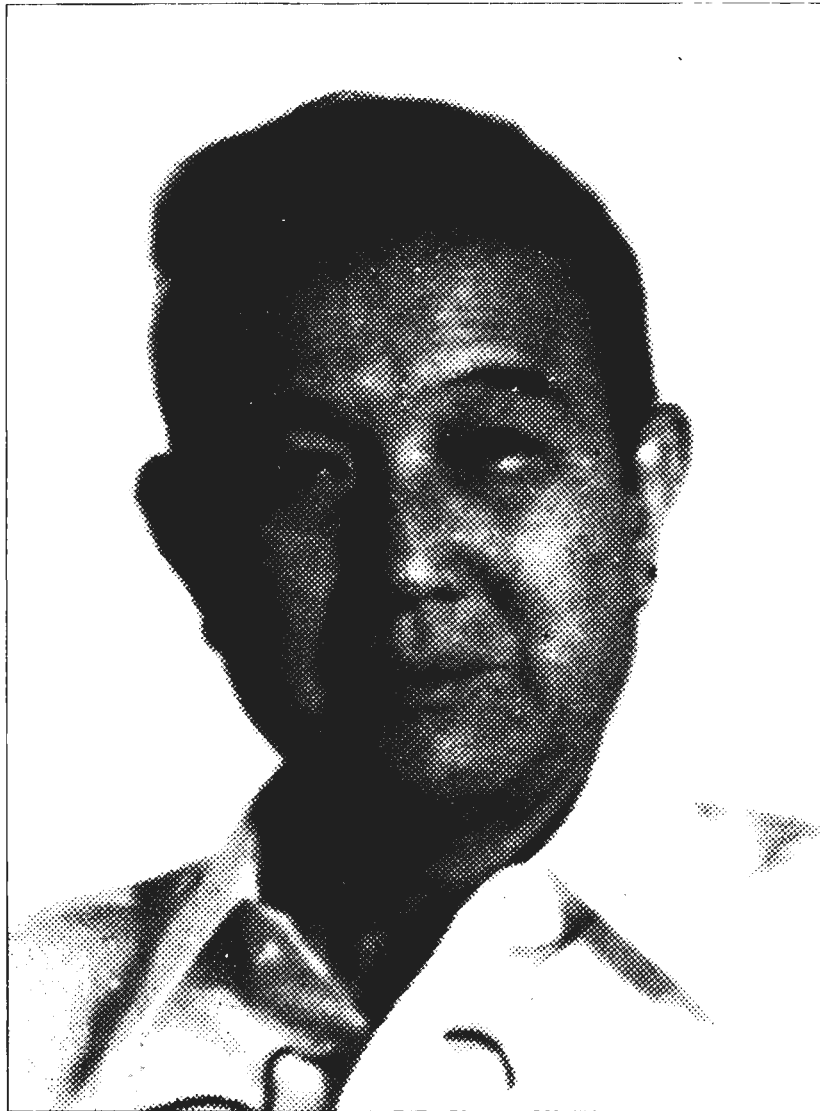
NAST

**Annual Report
1990**

**NATIONAL ACADEMY OF SCIENCE AND TECHNOLOGY
TAPI Bldg., DOST Compound
Bicutan, Taguig, Metro Manila**

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DIOSCORO L. UMALI
National Scientist and President

FOREWORD

As in the past, the National Academy of Science and Technology (NAST) has aided the country in pursuing its science and technology (S and T) goals and objectives.

The year 1990 marked another significant milestone in the Academy's unrelenting efforts in giving recognition to outstanding S and T achievements and in serving as a reservoir of competent S and T manpower in the country.

Last year, NAST invested three new Academicians, expanding its membership to 39 including eight National Scientists. In the same year, the Academy named nine Outstanding Young Scientists (OYS) and facilitated the awarding of the NAST-TWAS (Third World Academy of Sciences) Prize in Biology.

The Academy, through the assistance of the Department of Science and Technology (DOST), played the key role in expediting the signing of the Executive Order No. 430 by President Corazon C. Aquino, creating the National Committee on Biosafety of the Philippines.

In addition, NAST pushed through the enactment of the Guidelines on the Collection of Biological Specimens, a program envisioned by the Academy to safeguard and regulate the collection of biological specimens in the country.

The Academy resumed the operation of its two ongoing projects: the Rice Task Force and Speakers Bureau. Both were on their second year of existence in the year under review.

Towards the end of 1990, NAST, in coordination with the DOST, Federation of Asian Scientific Academies and Societies (FASAS), and the University of the Philippines, succeeded in holding the Regional Seminar/Workshop on Biotechnology which was attended by eight representatives from Asian countries and about 267 local participants.

In the year just past, the Academy renewed and reactivated its commitments to national S and T concern as reflected in its modest contributions to S and T development.

As it moves to another challenging year, NAST recommits itself to the country's struggle for scientific and technological advancement and envisions to revitalize its role as a recognition-and-advisory body on S and T in the country.

The succeeding pages of this Annual Report discuss in more detail the Academy's activities and accomplishments for the Calendar Year 1990. It is hoped that this publication will be useful in creating public awareness and understanding of the Academy's role in promoting science and technology as the key to national development.


DIOSCORO L. UMALI
President

NATIONAL ACADEMY OF SCIENCE AND TECHNOLOGY

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PROFILE

The National Academy of Science and Technology (NAST) was created on December 17, 1976 through Presidential Decree No. 1003-A, as amended, primarily to serve as a recognition body for outstanding achievements in science and technology (S and T) and to provide meaningful incentives to those engaged in scientific and technological research. In 1982, through Executive Order No. 818, the Academy was formally charged with the function as an advisory body to the President of the Philippines and the legislative branch of government on matters concerning S and T in the country. The Academy was also tasked to undertake other activities expected of an academy of science, that is, the (a) establishment of linkages with other academies of science and equivalent organizations abroad; (b) investiture and awarding new Academicians, National Scientists and other awardees; (c) publication of selected works of Academicians; (d) subsidizing travels of Academicians to present scientific papers or perform important functions at international conferences; (e) motivating the youth towards careers in S and T through various awards such as: the Outstanding Young Scientist (OYS) Award (given every year to not more than ten young scientists below 40 years of age) and NAST-TWAS (Third World Academy of Sciences) Award for young, talented scientists in the basic sciences. A science talent search is also undertaken annually among university level students and graduates who are under 28 years of age, and are either active in research and development (R and D) work or intending to pursue careers in the sciences.

Pursuant to its advisory role, the Academy also renders advisory services to the science community, the academe and nongovernmental organizations (NGOs) on matters concerning S and T. The Academy is tasked to promote free scientific inquiry and improve the scientific climate in the country through relevant policy recommenda-

tions. To perform this role, the Academy convenes annual scientific meetings, roundtable conferences, informal discussions and other consultative meetings on policy matters of national and international importance, and addresses them to policy makers in government.

For the current year, the Academy was able to make strides in some areas of national concern. It has succeeded through the assistance of the Department of Science and Technology (DOST) in the signing of Executive Order No. 430 by President Aquino, creating the National Committee on Biosafety in the Philippines, and the enactment of the Guidelines on the Collection of Biological Specimens, a program envisioned by the Academy to safeguard and regulate collections of biological specimens in the country. Its ongoing projects, the Rice Task Force being coordinated by NAST President Dioscoro L. Umali, which aims to come up with a "white paper" on rice self-sufficiency, and the Speakers Bureau are all new developments in pursuance of its advisory role. The Academy, together with the DOST, the Federation of Asian Scientific Academies and Societies, and the University of the Philippines successfully held the Regional Seminar/Workshop on Biotechnology. It was attended by foreign participants from developing countries such as Malaysia, India, Canada, and a Filipino representative from the UNDP/DEVNET-TIPS, Rome, Italy.

RECOGNITION FUNCTIONS

New Academicians

The Academy invested three new Academicians on July 11, 1990 at the Philippine International Convention Center, Manila during the 12th Annual Scientific Meeting of the Academy. They were: Drs. Leopoldo S. Castillo, Apolinario D. Nazarea, and Ruben L. Villareal (Appendix A).



New Academicians. Secretary Ceferino L. Follosco inducts new members of the Academy, namely, Dr. Ruben L. Villareal, Dr. Apolinario D. Nazarea, and Dr. Leopoldo S. Castillo.



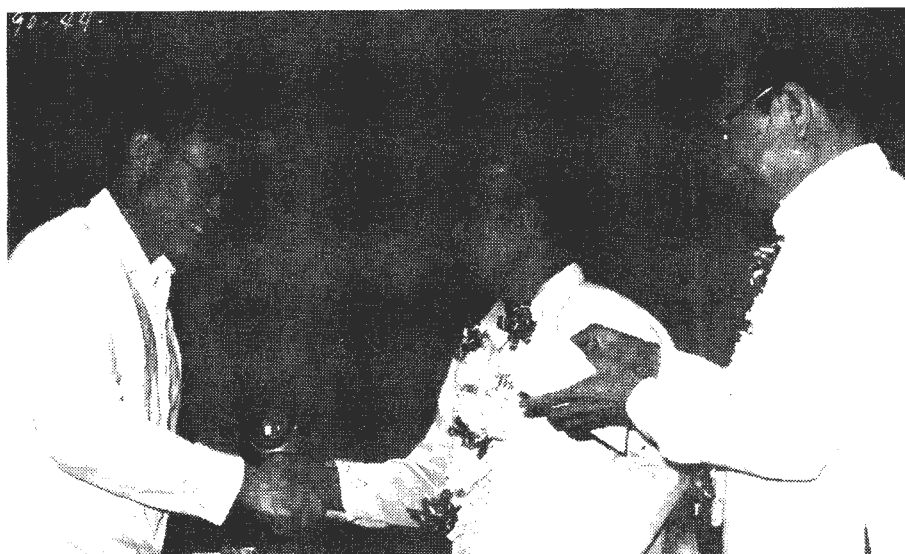
OYS Awardees. NAST President Dioscoro L. Umali poses with the recipients of the 1990 Outstanding Young Scientists (OYS) Award.

Outstanding Young Scientists Award

Nine young scientists were given the Outstanding Young Scientists (OYS) awards for exemplary contributions in their respective field of specializations. They were: Drs. Manuela Fe H. Tarroja, Roberto N. Padua, Emmanuel M. Lagare, Adelina Barrion, Manuel M. Dayrit, Wilfred U. Tiu, Messrs. Ambrosio Raul Ricardo Alfiler, Rodel Garcia Maghirang and Ms. Lilian F. Pateña (Appendix B).

NAST-TWAS Science Prize

The Academy awarded to Dr. Wilfred U. Tiu the NAST-TWAS Prize in Biology. The NAST-TWAS Prize is a joint undertaking of the Academy and the Third World Academy of Sciences. It was awarded this year to a young scientist (under 40 years of age on the day of awarding) who has made significant contributions in the biological sciences. The awardee received US\$2,000 cash prize from TWAS and a plaque from NAST. Next year, the award will be in Chemistry and will be given on July 10, 1991.



NAST-TWAS Prize. Undersecretary Ricardo T. Gloria congratulates Dr. Wilfred U. Tiu, winner of the 1990 NAST-TWAS Prize in Biology, while Dr. Umali looks on.

Benefits of Academicians

As decreed, the Academy continues to provide incentives to its members. During the year, ten Academicians were provided travel support to be able to participate in international conferences (Appendix C). Twelve Academicians received research fellowship grants to finance their respective research projects and activities (Appendix D).

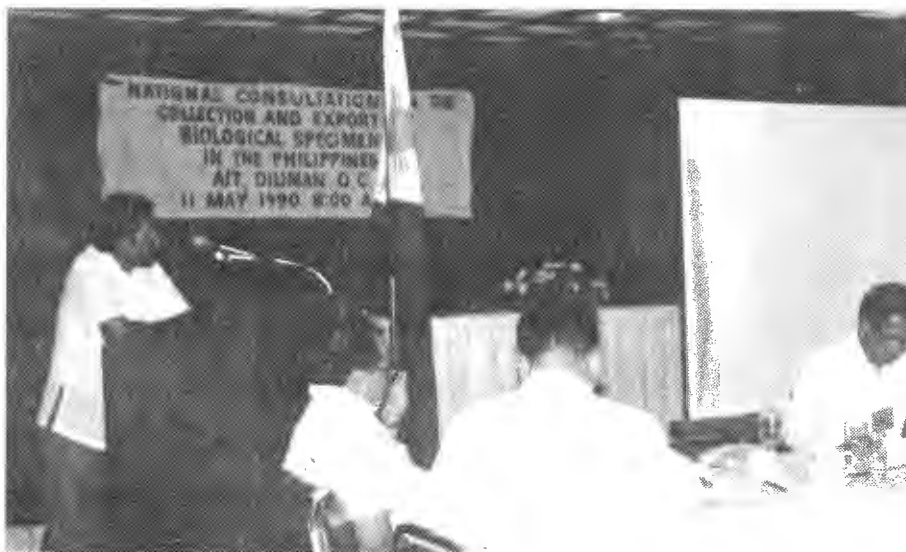
Death

National Scientist Alfredo C. Santos died on April 11, 1990. A state funeral was held for him. His remains was buried at the Libingan ng mga Bayani on April 17, 1990.

ON ADVISORY ACTIVITIES

Guidelines on the Collection of Biological Specimens

The Academy, cognizant of the sad state of biological specimens, especially endangered species in the country which oftentimes has been taken out of the country by foreign scientists and some collectors without any trace, and for lack of policy concerning this matter, has organized a committee to formulate guidelines on the



National Consultation. Dr. Domingo Madulid of the National Museum speaks before the participants of National Consultation on the Collection and Export of Biological Specimens in the Philippines.

collection of biological specimens by foreign scientists in the country. On February 26, 1990, NAST resumed holding meetings. A National Consultation was held on May 11, 1990 at the Asian Institute of Tourism, Don Mariano Marcos Avenue, Diliman, Quezon City, which led to the final establishment of the agreement between implementing agencies and enactment of the Guidelines on the Collection of Biological Specimens, which is now in force (Appendix J).

Biosafety Guidelines

On the instance of the Academy and the Department of Science and Technology (DOST), the President signed Executive Order No. 430 on October 15, 1990 creating the National Committee on Biosafety of the Philippines. It was presented before the Science and Technology Coordinating Council (STCC) at Malacañang Palace on September 21, 1989.

Policy consultations was conducted by the Academy on the implementation of biosafety guidelines in the Philippines which has led to the draft Executive Order creating the National Biosafety Committee. Before the final draft was made, a series of conferences had been held leading to the national consultation on July 7, 1989 at PIDS, NEDA (Makati Office).

Rice Task Force

The NAST Rice Task Force being coordinated by NAST President Dioscoro L. Umali conducted a series of round table conferences (Appendix E). The task force originally aimed to come up with a "white paper" on rice self-sufficiency.

However, in August 1990, upon reassessment of its plans, the Task Force decided to undertake a comprehensive review of the rice production consumption continuum at the provincial level in the priority provinces and evolve a model for the nationwide implementation. On site action projects are ongoing in the provinces of Laguna and Camarines Norte.



Rice Task Force Meeting. Members of the NAST Rice Task Force discuss their plans to undertake a comprehensive review of projects at the provincial level.

Science Literary Forum

The Academy also held a series of science literacy fora attended by science writers as part of its promotion of science literacy and awareness. Experts from different agencies were featured during the meetings (Appendix F). The sessions were attended regularly by representatives from the major dailies such as the *Manila Bulletin*, *Daily Inquirer*, *Manila Chronicle*, etc.

The Speakers Bureau

This project was conceived primarily to serve provincial centers, which have less access to S & T information, through scientific and technological lectures as requested by different regions. The Bureau, which began early this year, has served different regions of the country (Appendix G).

The 12th Annual Scientific Meeting

The Academy held its 12th Annual Scientific Meeting on July 11, 1990 at the Philippine International Convention Center (PICC), Manila. Dr. Klaus Lampe, Director-General of the International Rice Research Institute was the keynote speaker with his topic "Management of Resources in Research". Academician Gelia T. Castillo was plenary speaker and delivered a plenary paper entitled "Sustainable Development in Search of Heroes". Twenty-four scientific papers were presented in the scientific sessions: Mathematical, Physical and Engineering Sciences; Biological Sciences; Social Sciences; Agricultural Sciences; and Health Sciences (Appendix H). There were also 15 poster papers presented during the event (Appendix I).

Regional Seminar/Workshop on Biotechnology

A special occasion in this year's events was the holding of Regional Seminar Workshop on Biotechnology held on December 3-6, 1990 at the Philippine Village Hotel, Pasay City. After NAST President Dioscoro L. Umali welcomed the 267 participants, Science Secretary Ceferino Follusco gave the keynote address. Dr. Paulo C. Campos, in his brief remarks, provided the participants an overview of the seminar/workshop.



Biotechnology Workshop. A portion of the captive audience listens to NAST President Dioscoro L. Umali (inset) as he welcomes the participants to the Regional Seminar/Workshop on Biotechnology.

The event was attended by eight foreign delegates from Asian countries who presented their respective papers during the seminar/workshop. Twelve poster papers were also presented during the occasion. Jointly organized by the National Academy of Science and Technology, Department of Science and Technology, Federation of Asian Scientific Academies and Societies, and the University of the Philippines, the seminar/workshop was themed "Biotechnology for Agriculture and Its Effects on the Environment in Developing Countries."

ON PROMOTION AND DEVELOPMENT OF INTERNATIONAL LINKAGES

The Academy hosted the visit of Dr. Gunther Trost from the German Research Society, Federal Republic of Germany who was on study visit to the country from February 1-21, 1990 as part of its scientist exchange as embodied in the Academy's memorandum of agreement with the German Research Society. Another was Professor Viktor Hagedorn from the same institution who was in the country to attend the Regional Seminar/Workshop on Biotechnology on December 3-6, 1990.

Under the Academy's arrangements with its international linkages, the following Academicians attended foreign conferences: Academicians Magdalena C. Cantoria attended the International Symposium on Biology and Chemistry of Active Natural Substances in Bonn, West Germany on July 17 to August 7, 1990; Paulo C. Campos, past President of the Academy, attended the Third World Academy of Sciences (TWAS) 3rd General Conference held in Venezuela on October 15-19, 1990; and Filomena F. Campos went to New Delhi, India on February 5-9, 1990 for a study visit and to attend conference on Technological Change and women in the 21st Century. Ms. RuAngelie M. Estrada was given local accommodation at Bonn, West Germany under the NAST-DFG memorandum of agreement.

The Academy is exploring scientific linkages with the National Research Council of Thailand, National Academy of Science of the Republic of South Korea, and the National Research Council of Canada.

At present, it maintains scientific linkages with the Third World Academy of Sciences, Federation of Asian Scientific Academies and Societies, International Network of Scientific Organizations, Chinese Academy of Sciences, Deutsche Forschungsgemeinschaft (German Research Society), Royal Society of London, and the Indian National Science Academy.

ON PUBLICATIONS

The Academy, during the year under review, produced three publications and expected to release two others which were still in press. These were:

Proceedings on Multi-Sectoral Conference on Dairy Development Strategies
in the Philippines (off the press)

Psychological Research by Academician Gregorio T. Velásquez (off the press)

NAST Transactions 1989 (off the press)

Fundamental of Line Geometry by Academician Raymundo A. Favila (in press)

International Conference on Science Policy Proceedings (in press)

EXCHANGES

NAST maintains international exchanges of scientific materials. It uses the Transactions of the National Academy of Science and Technology as its scientific exchange materials with some foreign academies of sciences and other scientific institutions. The NAST Transactions is the proceedings of the Annual Scientific Meetings of the Academy where Filipino scientists present recent scientific and technological research advances.

ON ADMINISTRATIVE MATTERS

Dr. Cesar P. Madamba, NAST Executive Director on detail from the University of the Philippines Los Baños, was recalled on August 15, 1990. Ms. Luningning E. Samarita, Information Officer V, took over as Officer-in-Charge.

Promotion

Ms. Luningning E. Samarita, Information Officer III, was promoted to Information Officer V effective September 6, 1990. She succeeded Mrs. Stella Ramos who resigned in April 1990.

Additional Staff

Mrs. Marilyn Villamero was appointed Stenographer I on February 1, 1990; Mrs. Rowena Briones was appointed on May 2 on a contractual basis under the Speakers Bureau; Eufrecinia Bernardo, and Joel Rodriguez were appointed on October 17, 1990 as contractual employees for the project Seminar/Workshop on Biotechnology; and Fulgen-
cio Mojica was appointed Information Officer III on November 2, 1990.

Detailed Personnel

Mr. Redocindo L. Santillan, Supervising Information Specialist from the Science and Technology Information Institute was detailed to NAST effective May 1989.

Transfer

Mrs. Marilyn Villamero transferred to the Science and Technology Information Institute on December 17, 1990.

Resignation

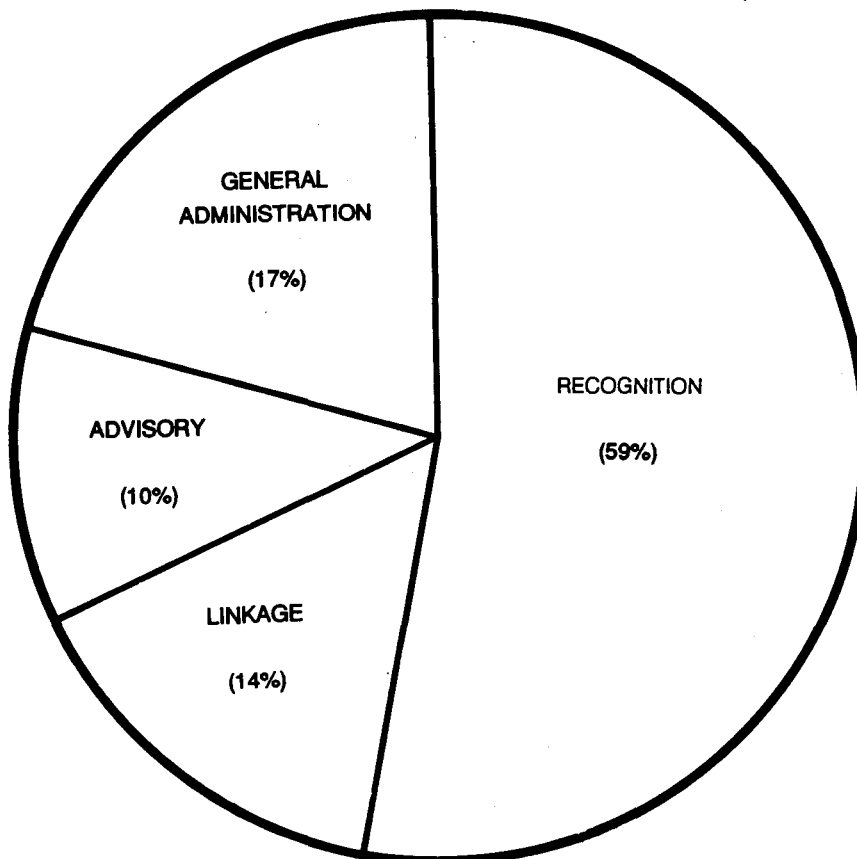
Mrs. Stella Marie Ramos who was on study visit in West Germany resigned from her position as Information Officer V upon expiration of the contract of her duration of stay in West Germany. She was recalled by the Academy but opted to vacate her post to pursue her Ph.D. course.

Staff Development

Mr. Abdulrackman E. Mama, Information Officer II, Technical Services Division, has undergone training in the following fields: Desktop Publishing conducted by the Distributed Processing, Inc. on April 2-7, 1990 held at Makati, Metro Manila; Seminar/Workshop on Newsletter Production conducted by the Public Relations Organization of the Philippines on August 28-31, 1990 at the Philippine Information Agency, Quezon City.

Miss Marissa P. Camposano, Cashier III, Administrative Division, has also attended the Seminar/Workshop on GACPA Financial Management System conducted by the Government Association of Certified Public Accountant held at the Development Academy of the Philippines on August 27-31, 1990.

ON FINANCIAL MATTERS



Budgetary allocation per function of the Academy.

APPENDICES

APPENDIX A

NEW ACADEMICIANS

LEOPOLDO S. CASTILLO, Ph.D. Animal Science, Cornell University, 1960

APOLINARIO D. NAZAREA, Ph.D. Theoretical Biology/Biophysics, University of Chicago, 1971;
Post Doctoral, Faculte de Sciences, Universite Kibre de Bruxelles, 1971-1973

RUBEN L. VILLAREAL, Ph.D. Horticulture, Rutgers State University, 1966

APPENDIX B

1990 OUTSTANDING YOUNG SCIENTIST AWARDEES

MANUELA FE H. TARROJA, Ph.D. (Bryn Mawr College, Bryn Mawr, PA, 1983-87)

Specialization : Physics

ROBERTO N. PADUA, Ph.D. (Clemson University, South Carolina, 1985)

Specialization : Theoretical Statistics

EMMANUEL M. LAGARE, Ph.D. (Ateneo de Manila University, 1982-87)

Specialization : Mathematics

ADELINA A. BARRION, Ph.D. (UPLB, 1981-85)

Specialization : Insect Genetics

AMBROSIO RAUL RICARDO ALFILER, M.S. (UPLB, 1986-88)

Specialization : Entomology

LILIAN F. PATENA, M.S. (University of California, Davis, 1989)

Specialization : Plant Tissue Culture

RODEL GARCIA MAGHIRANG, M.S. (UPLB, 1980-85)

Specialization : Vegetable Breeding

MANUEL M. DAYRIT, M.D., M.S. (London School of Hygiene and Tropical Medicine, 1981-82)

Specialization : Medicine

WILFRED U. TIU, Ph.D. (University of Melbourne, Australia)

Specialization : Parasitology

APPENDIX C

RECIPIENTS OF TRAVEL SUPPORT

Grantee	Division	Conference Attended	Purpose
PRESCILLANO M. ZAMORA	Mathematical, Physical and Engineering Sciences	International Association of Pteridologists Conference on "Progress in Pteridology" University of Michigan, Ann Arbor, Michigan June 21 to July 4, 1990	To present paper entitled "Cheilanthes in the Philippines: and to study herbarium vouchers of Philippine ferns (Collection of the late Dr. Edwin B. Copeland)
MAGDALENA C. CANTORIA	Biological Sciences	International Symposium on Biology and Chemistry of Active Natural Substance Bonn, West Germany July 17 to August 7, 1990	For exchange of ideas and visits to some laboratories involved in testing plants for biological activity
RU ANGELIE M. ESTRADA	(Dr. Cantoria's Coresearcher)	Bonn, West Germany July 17 to August 7, 1990	Study visit; training in immunological techniques
QUINTIN L. KINTANAR	Health Sciences	United States Pharmacopeia Convention (USPC) Washington D.C. March 8-10, 1990	To attend as member-at-large
PAULO C. CAMPOS	Health Sciences	Third World Academy of Sciences (TWAS) 3rd General Conference Venezuela October 15-19, 1990	To attend the TWAS meeting as NAST official representative

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Grantee	Division	Conference Attended	Purpose
CARMEN C. VELASQUEZ	Biological Sciences	Executive/Advisory Board meeting of the Committee on Science Communication and Education of the Pacific Science Association Macau, China August 1-3, 1990	
CLARA Y. LIM-SYLIANCO	Mathematical, Physical and Engineering Sciences	Advances in Environmental Mutagenesis and Carcinogenesis: Past, Present and Future Tokyo, Japan July 15-18, 1990	As in a panel of discussant Conference in connection with the 25th Anniversary of US-Japan Cooperative Medical Science Program
FILOMENA F. CAMPOS	Biological Sciences	Technological Change and Women in the 21st Century New Delhi, India February 5-9, 1990	Attend conference and study visit in different research institutions in India
ALFREDO V. LAGMAY	Social Sciences	22nd International Congress of Applied Psychology Kyoto Japan July 22-27, 1990	To participate in the international congress of applied psychology
CONRADO S. DAYRIT	Biological Sciences	FASAS Council Meeting India	To represent NAST

APPENDIX D

RESEARCH FELLOWSHIP GRANTS

Name	Division	Effectivity of Grant Project/Activity	Research
Lourdes J. Cruz	Mathematical, Physical and Engineering Sciences	February 1/89-January 31/90	Biochemical Assays for Paralytic Shellfish Poisons (PSP)
Fe del Mundo	Health Sciences	May 1/89-April 30/90	Consensus on Pediatric Health Concerns (Roundtable Conferences)
Luz-Oliveros Belardo	Mathematical, Physical, and Engineering Sciences	March 15/89-March 14/90 April 1/90-March 31/91	<ol style="list-style-type: none"> 1) Phytochemical analysis of the ethyl acetate extract of <i>Cymbopogon cetralus</i> (DC) Stpf for possible hypotency components 2) <i>Polycia guilfoyl</i> for insecticidal property 3) Gas liquid chromatography of some <i>Cymbopogon</i> and <i>Piperacia</i> plants
Clare R. Baltazar	Biological Sciences	May 1/89-April 30/90 May 1/90-April 30/90	Inventory of Philippine Insects
Clara Y. Lim-Sylianco	Mathematical, Physical, and engineering Sciences		Molecular Nutrition
Jose R. Velasco	Biological Sciences	September 1/89-August 31/90	A Socioeconomic Study of Philippine Agricultural Development
Filomena F. Campos	Biological Sciences	November 1/89-December 31/90 January 1/90-June 30/90	Technological Change and Women Towards 21st Century
Pedro B. Escuro	Agricultural Sciences	March 1/90-September 30/90	Rice Self-Sufficiency Program

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Name	Division	Effectivity of Grant	Research
Dioscoro L. Umali	Agricultural Sciences	November 1/90-June 30/90	Program of Improved Instruction in Science and Mathematics (PRISM)
Faustino T. Orillo	Agricultural Sciences	March 1/90-September 30/90 November 15/90-Dec.31/90	Rice Self Sufficiency Program A Study on the Implementation of the Rice Self-Sufficiency Program for Pilot Province of Laguna
Dolores A. Ramirez	Agricultural Sciences	Nov. 15/90-Dec. 31/91	A Study on the Implementation of the Rice Self-sufficiency Program for Pilot Province of Camarines Norte
Tito A. Mijares	Mathematical, Physical, and Engineering Sciences	August 8/90-July 31/91	1) To Test the Linear Hypothesis in Multivariate Problems, Functions of Relevant Matrices 2) To Solve Problems Fundamental in the Study of Distributions of Random Variates

APPENDIX E

ROUND TABLE CONFERENCE ON RICE PROBLEM

Date	Venue	Topic
22 January 1990	CAS, UPLB	Organizing Committee
19 February 1990	CAS, UPLB	Rice Action Program
23 April 1990	UPLB	Rice Task Force Consultation Meeting with the Department of Agriculture
28 April 1990	Asian Institute of Management	Multisectoral Conference/Workshop on Rice Self-Sufficiency
29 June 1990	CAS, UPLB	Rice Task Force Meeting on Revised Plan of Action
28 July 1990	Clubhouse, National Arts Center Cultural Center of the Philippines Los Banos, Laguna	Rice Task Force Workshop on Rice Action Program
9 August 1990	Department of Agriculture Elliptical Road, Quezon City	Rice Task Force Meeting and Coordinators on National Rice Action Plan
31 August 1990	Camarines Norte	Rice Task Force Consultative Meeting

APPENDIX F**1990 SCIENCE LITERACY FORUM**

Date	Venue	Topic	Speaker/Reactor
25 January 1990	Casino Español	Issues on Supply of Potable Water	Engr. Frank Arellano Chief, Research and Development Division MWSS
		Health Issues on Potable Water	Engr. Victor Sabandeja, Jr. Senior Sanitary Engineer Environmental Health Services, Office of the Public Health Service DOH
30 August 1990	Casino Español	Rationale/Background of the Guidelines on Collection of Biological Specimens	Dr. Domingo Madulid National Museum
		Presentation of the Guidelines on Collection of Biological Specimens	Dr. Carmen C. Velasquez Assisted by Dr. Clare R. Baltazar NAST
		Legal Aspects of the Guidelines on Collection of Biological Specimens	Dr. Amelia R. Ancog Asst. Secretary on Policy and Legislation DOST
25 October 1990	Casino Español	Views on Land Use Policies	Mr. Manuel Gerochi Land Management Bureau Cervantes Street Binondo, Manila

Date	Venue	Topic	Speaker/Reactor
		Strategies Affecting Agricultural Lands Quezon City	Mr. Rogelio Concepcion Bureau of Soils
		The Countryside Agro-Industrial Strategy and the Hierarchy of Industrial Centers	Mr. Narciso Villapando Dept. of Agrarian Reform Quezon City
			Mr. Rodrigo Fuentes Dept. of Environment and Natural Resources Quezon City

APPENDIX G

SPEAKERS SENT BY THE SPEAKERS BUREAU

NAME	AGENCY	PLACE OF ENGAGEMENT	DATE	OCCASION	TITLE OF PAPER	REQUEST RECEIVED FROM	EXPENSES	REMARKS
1. Melecio S. Magno	NAST/PNSS	San Fernando, Pampanga	January 31, 1990	Talakayan sa DOST-3	The Greenhouse Effect	Zenaida Catalan Regional Director (III)		
2. Dioscoro L. Umali	NAST	San Fernando, Pampanga	March 16, 1990	Talakayan sa DOST-3	Sustainable Agriculture	Zenaida Catalan Regional Director (III)		
3. Gelia T. Castillo	NAST	San Fernando, Pampanga	April 18, 1990	Talakayan sa DOST-3	Human Dimension of Science and Technology	Zenaida Catalan Regional Director (III)		
4. Sonia De Leon	UP Diliman	Cebu City	May 25, 1990	6th National Congress of the Federation of Chemistry Societies		Araceli G. Almase Regional Director (VII)	Plane Accom P1,064.50 1,242.46	
5. Rosendo Capul	USAID, Manila	Cebu City	June 30, 1990	DOST 7 COSPO 7 Consultative and Seminar Workshop	The Need of Consultancies and the Role of the Consultant in Technology Transfer	Araceli G. Almase Regional Director (VII)	Plane P2,134.50	With Clippings
6. Daleisy De Guzman-Fernandez	DOST-PCAMRD	Bongao, Tawi-tawi	July 3, 1990	NSTW Celebrations	Seaweeds: Postharvest and Control	Rhustum Redoble Abdurahim Regional Director (IX)	Plane Accom P4,124.75 1,318.45	
7. Angel Alcalá	DOST/PCAMRD	Sorsogon, Bicol	July 4, 1990	NSTW Celebrations	Fisheries Technology	Faustino Francia Regional Director (V)	Plane Accom P1,444.50 1,000	
8. Helen L. Valmayor	UPLB	La Paz, Iloilo	July 4, 1990	NSTW Celebrations	orchid Tissue Culture	Rosario B. Daquillana Regional Office (VI)	Plane Accom P1,864.50 600.00	
9. Elpidio Rosario	UPLB	San Fernando, Pampanga	July 5, 1990	NSTW Celebrations	Technology Transfer: "The Key to Agro-Industrialization"	Guillermina Mansalac Regional Director (III)	Gasoline	
10. Ma. Concepcion Lizada	UPLB	Davao City	July 16, 1990	NSTW Celebrations	Propagation of Some Ornamentals Cutflowers, Fruits and Vegetables	Constancio C. Canete Regional Director (X)	Plane Accom P3,470.50 1,600.00	With papers
11. Joselito Santiago	UPLB	Davao City	July 16, 1990	NSTW Celebrations	Propagation of Some Ornamentals Exotic to Region XI	Constancio C. Canete Regional Director (X)	Plane Accom P3,470.50 1,600.00	With papers
12. Petronilo Sta. Agueda	DOST/TAPI	Digos, Davao del Sur General Santos City	July 16, 1990	NSTW Celebrations Investment Forum	Technology Transfer: Providing Conducive Climate for Industrial Take-Off	Constancio C. Canete	Plane P3,470.50	With papers
13. Preciliano M. Zamora	NAST/UP Diliman	Musuan, Bukidnon (CMU)	July 18, 1990	BIOTA 6th Annual Convention & Seminar Workshop	Conservation and Management of Philippine Mangroves	Victor Amoroso President, BIOTA Reg. (X)		With papers
14. Virginia S. Carino	UP Diliman	Musuan, Bukidnon (CMU)	July 16, 1990	BIOTA 6th Annual Convention & Seminar Workshop	On Biology	Victor Amoroso President, BIOTA Reg. (X)		With papers
15. Claver R. Beten	MERALCO	Leyte, Tacloban City	July 19, 1990	Electrical Eng'g Seminar Workshop	Transmission Line Protective and Control Relaying	Santiago R. Simpas President, LIT Reg. (VIII)	Plane Accom P2,238.50 450.00	
16. Emiliano Marabutas	MERALCO	Leyte, Tacloban City	July 19, 1990	Electrical Eng'g Seminar Workshop	Power Substation Design	Santiago R. Simpas President, LIT Reg. (VIII)	Plane Accom P2,726.00 150.00	

NAME	AGENCY	PLACE OF ENGAGEMENT	DATE	OCCASION	TITLE OF PAPER	REQUEST RECEIVED FROM	EXPENSES	REMARKS
17. Reynaldo Lesaca	DOST/PNSS	Alabang Hills, Muntinlupa	July 20, 1990	Symposium on Environmental Awareness	Mainis na Kapaligiran para sa Malusog na Katawan at Kaisipan	Mrs. Torie Superio Science Coordinator Benedictine Abbey School	Gasoline	
18. Anna P.E. Amerila	DOST/SEI	Koronadal, South Cotabato	July 19, 1990	NSTW Celebrations	Updates on Trends of Science Education	Constancio C. Canete Regional Director (XI)	Plane P3,470.50	With papers
19. Anna P.E. Amerila	DOST/SEI	Zamboanga City	September 5, 1990	NSCM Celebrations	Symposium on Science and Technology Career	Solomon Lobitana Chief, Tech. Div. Reg. (IX)	Plane P3,222.50	
20. Romil Reyes	DOST/STII	Cotabato City	Sept. 4-7, 1990	NSCM Celebrations	Computer Literacy Seminar	Kadli Sinolinding Regional Director (XII)	Plane P3,342.50	
21. Gerardo Doraja	DOST/STII	Cotabato City	Sept. 4-7, 1990	NSCM Celebrations	Computer Literacy Seminar	Kadli Sinolinding Regional Director (XII)	Plane P3,342.50	
22. Rodol Maghirang	UPLB	Mandaluyong, Metro Manila	September 13, 1990	Putting up a Herbal Garden	Basic Backgrounds in Plant Identification and Mechanics of Keeping a Herbal Garden	Ms. Yolie Palma Science Club Moderator	Gasoline	
23. Rodito Buan	PAGASA	Zamboanga City	September 18, 1990	NSCM Celebrations	Global Warming	Solomon Lobitana Chief, Tech. Div. Reg. (XII)	Plane P3,222.50	
24. Josefina Pabellon	UP Diliman	Koronadal, South Cotabato	September 25, 1990	NSCM Celebrations	UP-ISMED: Its Program in Pursuing these Directors	Constancio C. Canete Regional Director (XI)	Plane P3,326.50	
25. Lydia G. Tansinon	DOST	Davao City	September 26, 1990	NSCM Celebrations	Scientific Session — Keynote Speaker	Constancio C. Canete Regional Director (XI)	Plane P3,470.50	
26. Lydia G. Tansinon	DOST	Zamboanga City	September 28, 1990	NSCM Celebrations	Closing Program — Guest Speaker	Ismail Elevazo Regional Director (IX)	Plane P3,222.50	
27. Ernesto S. Luis	DOST/ITDI	De La Salle University	October 1, 1990	Science Week	Industrialization and a Safe Environment: Everybody's Concern	Hermilia D. Torres	Gasoline	
28. Lilia Vergara	DOST/PSHS	Cotabato City	October 26, 1990	Science Symposium	Chemistry Teaching Updates	Kadli P. Sinolinding Regional Director (XII)	Plane P3,161.50 Accom P650.00	
29. Gli G. Divinagrada	UPLB	Bacolod City	November 5, 1990	Series of Symposia	Diseases of Orchids	Josefina Geronimo Regional Director (VI)	Plane P1,574.50	
30. Rafael Guerrero III	DOST/PCAMRD	Bacolod City	November 6, 1990	Series of Symposia	Tilapia Sex Reversal	Josefina Geronimo Regional Director (VI)	Plane P1,574.50	
31. Arturo Pablo	DOST/FPRDI	Bacolod City	November 7, 1990	Series of Symposia	Woodwool Board	Josefina Geronimo Regional Director (VI)	Plane P3,941.50	
32. Magdalena Giron	DOST/FPRDI	Bacolod City	November 7, 1990	Series of Symposia	Preservation Treatment of Rattan and Bamboo	Josefina Geronimo Regional Director (VI)	Plane P1,574.50	
33. Cesar Martinez	DOST/ITDI	Bacolod City	November 8, 1990	Series of Symposia	Construction Bricks	Josefina Geronimo Regional Director (VI)	Plane P3,941.50	
34. Rogelio Prospero	DOST/ITDI	Bacolod City	November 9, 1990	Series of Symposia	Dehydrated Fruits	Josefina Geronimo Regional Director (VI)	Plane P1,574.50	
35. Felix Tamolang	DOST/FPRDI	Davao City	November 10, 1990	Scientific Session	Construction Technologies	Constancio C. Canete Regional Director (XI)	Plane P3,941.50	
36. Arturo Pablo	DOST/FPRDI	Davao City	November 10, 1990	Scientific Session	Wood Wool Cement Board	Constancio C. Canete Regional Director (XI)		

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	NAME	AGENCY	PLACE OF ENGAGEMENT	DATE	OCCASION	TITLE OF PAPER	REQUEST RECEIVED FROM	EXPENSES	REMARKS
37.	Romulo Bala	DOST/FPRDI	Davao City	November 10, 1990	Scientific Session	Cocolumber Processing Technology	Constancio C. Canete Regional Director (XI)	Plane P3,640.50	
38.	Felino Siriban	DOST/FPRDI	Davao City	November 10, 1990	Scientific Session	Cocolumber Preservation Technology	Constancio C. Canete Regional Director (XI)	Plane P3,340.50	
39.	Cesar Martinez	DOST/ITDI	Davao City	November 10, 1990	Scientific Session	Ordinary and Extruded Bricks; Rooftiles	Constancio C. Canete Regional Director (XI)		
40.	Felix Tamolang	DOST/FPRDI	Bacolod City	November 5, 1990	Series of Symposia	Construction Technologies	Josefina Geronimo Regional Director VI		
41.	Filomena C. Campos	NAST	Cagayan de Oro City	December 12, 1990	23rd Annual Convention of the Federation of Institute	Development and The Ecological and Action	Lamberto B. Boloron Regional Director (X)		

APPENDIX H

PAPER PRESENTORS AT THE 12TH ANNUAL SCIENTIFIC MEETING
HELD AT THE PHILIPPINE INTERNATIONAL CONVENTION CENTER (PICC)
ON JULY 11, 1990

Scientific Session	Presentors	Title of Paper
Mathematical, Physical and Engineering Sciences	Israel G. Bentillo Department of Meteorology and Oceanography College of Science, UP Diliman	Numerical simulation of airflow over mountains
	Severino V. Gervacio MSU-Iligan Institute of Technology Iligan City	Which bipartite graphs are similar
	Felino R. Siriban Forest Products Research and Development Institute Department of Science and Technology College, Laguna	High pressure sap displacement for treating green timber poles
	Cesar Saloma National Institute of Physics College of Science, UP Diliman	Pseudoscanning in optical microscopy
	Leonora N. Panlasigui Department of Food Science and Nutrition College of Home Economics UP Los Baños	Starch digestibility and glycemic response to extruded high amylose rice noodles
	Luz Oliveros-Belardo Philippine Women's University	Some components of the absolute of the flowers <i>Jasminum sambac</i> (L.) Ait.

Scientific Session

Biological Sciences

Presentors

Ma. Concepcion C. Lizada
Postharvest Horticulture Training
and Research Center
College of Agriculture
UP Los Banos

Annabelle A. Herrera
Institute of Biology
College of Science
UP Diliman

Dolores A. Ramirez
Institute of Plant Breeding
College of Agriculture
UP Los Baños

Clara Y. Lim-Sylianco
College of Science
Institute of Chemistry
UP Diliman

Glorina N. Pocsidio
Institute of Biology
College of Science
UP Diliman

Lourdes J. Cruz
Marine Science Institute
College of Science
UP Diliman

Title of Paper

The postharvest physiology and
biochemistry of the 'carabao' mango

The pathology of cadmium poisoning

Effects of delta-9-tetrahydrocannabinol
(marijuana) and diacetyl morphine
(morphine) on human chromosomes

Environmental mutagenesis: Soil studies

The variability in the holothurin of
Philippine holothurians

Biologically active peptides from
Conus quercinus, a worm hunting

Scientific Session

Presentors

Title of Paper

Biological Sciences

Corazon L. Albansi
Cotton Research and Development Institute

Hedonic model estimation: Application to consumer demand for rice grain quality

Nina Consortia T. Castillo
Department of Social Sciences
College of Science
UP Diliman

Coping mechanisms of Filipino households in different agro-ecological settings

Violeta Lopez-Gonzaga
Social Research Center
La Salle College
Bacolod City

Social systems and food crisis: A study of its social, political and economic determinants, a case study of Negros

Anna Miren Gonzales-Intal
Department of Agricultural Education and Rural Studies
College of Agriculture
UP Los Baños

A descriptive model cropping decision making: Application to crop diversification in irrigated rice farms

Agricultural Sciences

Ruben L. Villareal
College of Agriculture
UP Los Baños

Industrializing the Philippine countryside: some prospects and possibilities

William D. Dar
Bureau of Agricultural Research
Department of Agriculture
Quezon City

Experiences and directions of farming systems research and development in the Philippines

Rodolfo A. Paningbatan
Department of Plant Protection
Visayas State College of Agriculture
Baybay, Leyte

Comparative cohort life and reproductivity tables of *Cercospora arachidicola* Hori and *Phaeoisariopsis personata* (Berk. and Curt.) von arx on peanut

Scientific Session

Presentors

Title of Paper

Pacifico C. Payawal
Institute of Biological Sciences
College of Arts and Sciences

The utilization of Azolla in the
Philippines: Biological problems
and solutions

Rolando B. Hipe
Department of Agriculture
Region 8, Tacloban City

On-farm systems study on the
performance of Pueraria phaseoloides
Benth. and Centrosema pubescens
Benth. as enriched fallow vegetation
for Imperata cylindrica Beauv. _
dominated natural fallows

Manuel L. Castillo
Department of Forestry
Visayas State College of Agriculture
Baybay, Leyte

Branch cutting propagation of
Bambusa blumeana, Bambusa
vulgaris, Dendrocalamus
merillianus, Gigantochloa levis,
and Bambusa vulgaris var. striata
using indolebutyric acid

Health Sciences

Nelia P. Salazar
Research Institute for Tropical Medicine
Department of Health
Manila

Malaria: Research and operational issues

Thelma Tupasi
Tropical Disease Foundation
Makati

Pneumonia in children: Implications
for preventions

APPENDIX I

POSTER PAPER PRESENTORS AT THE 12TH ANNUAL SCIENTIFIC MEETING
HELD AT THE PHILIPPINE INTERNATIONAL CONVENTION CENTER (PICC)
ON JULY 11, 1990

Name	Title of Paper
<p>Audimar P. Bangi Department of Forestry Visayas State College of Agriculture Baybay, Leyte</p>	<p>A technique for calculating kiln schedule modifications to reduce kiln drying time for some Philippine lumber species</p>
<p>Agnes M. Pasco Philippine Council for Advanced Science and Technology Research and Development Department of Science and Technology</p>	<p>A study of the structural behavior of coconut lumber as a truss frame</p>
<p>Antonio B. Villaflores Materials Science Group National Institute of Physics College of Science UP Diliman</p>	<p>MBE grown compound semiconductor heterostructures and the photo-luminescence spectral of a GaSb/AlSb SLS</p>
<p>Satumina C. Halos Natural Science Research Institute UP Diliman</p>	<p>Micropropagation of tropical pines I. Pinus</p>
<p>Chay B. Pham National Institutes of Biotechnology and Applied Microbiology UP Los Baños</p>	<p>Extruder as a reactor for bioconversion</p>
<p>Rafael D. Guerrero III Aquatic Biosystems Bay, Laguna</p>	<p>Use of hydrogen peroxide as source of oxygen for transport of tilapia fingerlings</p>

Name	Title of Paper
<p>Frederick O. Smith Central Luzon State University Muñoz, Nueva Ecija</p>	<p>Ovarian structure and follicular population in water buffalos (<i>Bubalus bubalis</i>)</p>
<p>Francisco M. Basuel Isabela State University Echague, Isabela</p>	<p>Different levels of jack bean (<i>Canavalia ensiformis</i>) leaf meal in broiler diets</p>
<p>Pepito M. Fernandez Institute of Aquaculture UP Visayas</p>	<p>Modular method of sugpo farming: An alternative to the traditional and/or intensive method</p>
<p>Mercedes Umali-Garcia Department of Forest Biological Science College of Forestry, UP Los Baños</p>	<p>Organic tablet formulation for improved seedling growth of reforestation species</p>
<p>Leonila M. Tolentino Cotton Research and Development Institute Polomolok, Cotabato</p>	<p>Salt tolerance in cotton</p>
<p>Rafael Cruz-Bondoc 2337 Juan Luna Street Gagalangin, Tondo, Manila</p>	<p>A locally manufactured continuous passive motion machine for the hip and knee joints</p>
<p>Manuel V. Silao Department of Anesthesiology UP-PGH</p>	<p>Use of an IBM-PC Compatible computer as an intelligent interface between the exicap 4700 monitor and anesthesiologist — A preliminary study</p>
<p>Theresita R. Lariosa UP-PGH</p>	<p>State-of-the-art: Community health volunteerism in the Philippines</p>
<p>Fe del Mundo Children's Medical Center 11 Banawe, Quezon City</p>	<p>Consensus of Priority on Pediatric Health Concerns in the Philippines</p>