



NAST

1998

Annual Report

RECOGNITION • ADVISORY • SCIENTIFIC LINKAGES

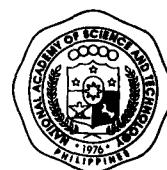


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NAST

Annual Report

TABLE OF CONTENTS



Message of Acd. Conrado S. Dayrit, NAST President	iii
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NAST MANDATES

1. Recognition Function	1
1.1. National Scientist	1
1.2. Centennial Awards for Science and Technology	1
1.3. Presidential Citation Award	4
1.4. ASEAN Awards	4
1.4.1. ASEAN Outstanding Scientist and Technologist Award	4
1.4.2. ASEAN Young Scientist and Technologist Award	4
1.5. Benefits of Academicians	4
1.5.1. Research Fellowships	4
1.5.2. Publication Assistance	4
1.5.3. State Funeral for National Scientist	4
1.6. Other Awards	6
1.6.1. Outstanding Young Scientist Awards	6
1.6.2. NAST-TWAS Science Prize Award (1998 in Biology)	6
1.6.3. Philippine Talent Search for Young Scientists	6
1.6.4. Outstanding Scientific Paper, Outstanding Book or Monograph and Outstanding Journal	6
1.6.5. OYS on the Go Program	9
1.7. NAST Exhibits	10
1.8. Philippine Science Heritage Center (PSHC)	10
1.9. Speakers Bureau	13
1.10. Radio and/or Personal Interviews	14
2. Advisory Function	15
2.1. The 20th Annual Scientific Meeting	15
2.2. The 21st Annual Scientific Meeting	16
2.3. Science Information Fora/Science Legislative Forum	16
2.4. Roundtable Discussions (RTDs) on S&T Assessment	17
An Assessment of the State of Science in the Philippines	17
I. Environmental Degradation: Preservation and Conservation of Endangered Species through the Establishment of Botanical Gardens in the Philippines	17
II. Mathematical Sciences in the Philippines and Their Application in Industry	19
III. Molecular Bioscience and Biotechnology in the Philippines	20
2.5. National Congress on Science and Mathematics Education	20
2.6. S&T Centennial Activities	22
2.7. Animal Testing	22
2.8. Senate and Congress Bills on S&T Referred to NAST	22
I. Senate Bill Nos. 1053 & 1169	22
II. Senate Bill No. 1198	22
III. House Bill No. 496	22
IV. House Bill No. 5644	22

TABLE OF CONTENTS

3. Scientific Linkages	34
3.1. International	34
3.1.1. International Meetings/Conferences	34
3.1.2. New Memoranda of Agreement	34
3.1.2.1. NAST - PAASE	34
3.1.2.1. NAST - AAS	34
3.1.3. Collaborative Research	34
3.1.3.1. RSL - NAST	34
3.1.3.2. DFG - PHIVOLCS - NAST	35
3.2. Local	35
3.2.1. Scientific Organizations/Association	35
NAST-OYSI	36

ACTIVITIES OF ACADEMICIANS

I. NAST - A revisit of its Functions	37
II. 1998 Accomplishments and Activities of Academicians	41
A. Significant S&T Positions	41
B. Publications	44
C. Research (completed or in-progress)	47
D. S&T Policy and Program Implementation Conferences/Seminars, etc.	49
E. Honors and Awards	56
F. Other NAST Activities	58

FINANCIAL MATTERS FY 1998

I. FY 1998 NAST Expenditures	60
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ADMINISTRATIVE MATTERS

I. Members of the Executive Council	61
II. NAST Secretariat	61

TABLES

Table 1: Research Fellows and Their Projects	5
Table 2: Outstanding Scientific Papers	7
Table 3: Outstanding Books and/or Monographs	8
Table 4: Outstanding Journals	8
Table 5: DOST "OYS on the go Program"	9
Table 6: Speakers Bureau Report	13
Table 7: Radio and/or Personal Interviews	14
Table 8: 20th Annual Scientific Meeting, Plenary Session	23
Table 9: 20th Annual Scientific Meeting, Technical/Oral Papers	25
Table 10: 20th Annual Scientific Meeting, Poster Papers	27



The National Academy of Science and Technology (NAST) Philippines, the recognition and advisory body on science and technology, presents this annual report for Calendar Year 1998.

CONRADO S. DAYRIT, M.D.

President



1.1. NATIONAL SCIENTIST

On the recommendation of two thirds vote of the whole Academy, two scientists: Dolores A. Ramirez, Ph.D. (Biochemical Genetics and Cytogenetics) and Jose R. Velasco, Ph.D. (Plant Physiology) were conferred the rank and title of NATIONAL SCIENTIST by President Fidel V. Ramos last March 24, 1998 at the Food and Nutrition Research Institute (FNRI) Quadrangle, DOST Compound, Bicutan.



This brings the number of scientists conferred this rank and title to twenty four (24) since 1978, fifteen (15) of whom have passed away. Those still alive include: Fe del Mundo, M.D., M.A. (Pediatrics - 1980), Encarnacion Alzona, Ph.D. (Philippine History - 1985), Luz Oliveros-Belardo, Ph.D. (Pharmaceutical Chemistry - 1987), Alfredo V. Lagmay, Ph.D. (Psychology - 1988), Paulo C. Campos, M.D. (Medicine - 1989), Pedro B. Escuro, Ph.D. (Genetics and Plant Breeding - 1994), and Clara Y. Lim-Sylianco, Ph.D. (Biochemistry and Organic Chemistry - 1994).

1.2



**CENTENNIAL AWARDS
FOR SCIENCE AND TECHNOLOGY**

As part of the centennial activities of the Philippine independence, the Centennial Awards for Science and Technology were given to National Scientists Fe del Mundo and Dioscoro L. Umali (Posthumous). The citations read:

FE DEL MUNDO, M.D.
(Pediatrics)

Date of Birth : Nov. 27, 1911.
Conferred the Rank and Title of
National Scientist (1980)

A leading pediatrician and distinguished scholar, humanitarian and exemplary citizen, noted for her contributions to medical education as a pioneer in community pediatrics and community medicine, and as a teacher who by lecture and example inspires medical students and young physicians to serve the underprivileged among us; for being a role model of physicians as she cares for and heals children and mothers even when, as during the Japanese occupation; and for being the moving spirit behind the establishment of various pediatric institutions in the Philippines.



From left to right: *Acad. R.L. Villareal, Secretary W.G. Padolina, National Scientist Fe del Mundo, Acad. P.D. Santos Ocampo and Acad. C.S. Dayrit*

DIOSCORO L. UMALI, Ph.D.
(Genetics and Plant Breeding) - POSTHUMOUS



Mrs. Zenaida Umali receives the award. With her are Secretary W.G. Padolina and Acad. C.S. Dayrit

Date of Birth : Nov. 29, 1917
Date of Death : July 1, 1992

Conferred the Rank and Title of
National Scientist (1986)

Filipino geneticist and plant breeder, development administrator and science statesman, noted for his works in the breeding of improved varieties of foodgrains, legumes, fruits, and ornamental plants, his research output and writings paved the way for launching

programs of rainfed and upland agriculture, social forestry, environmental conservation, and rural poverty alleviation; and for being a strong advocate of people's participation in planning and decision making and of the adoption of technology and development models consistent with a country's geography, traditions and social history.



The NAST - TWAS Science Prize awardee, Dr. Rhodora R. Aldemita (middle).



Ms. Rosario Tanda receives the award from Pres. Fidel V. Ramos. Looking from left are Secretary W.G. Padolina, Acd. C.S. Dayrit and Dr. R.S. Punongbayan.

Acd. B.O. Juliano receives the ASEAN Outstanding Scientist and Technologist Award.



The Philippine Talent Search for Young Scientists winners.



The Outstanding Young Scientist Awardees.



The Science Information Forum on "The Important Role of Coconut Oil Derivatives as Nutraceuticals".



The Science and Technology Congress sponsored by NAST and PAASE.

1.3 PRESIDENTIAL CITATION AWARD

President Fidel V. Ramos awarded a Presidential Citation to Dr. Frank Co Tui (Posthumous), pioneer advocate of Philippine science and technology last March 24, 1998 at FNRI. Ms. Rosario Tanda, his nearest kin accepted the award.

1.4 ASEAN AWARDS

1.4.1 ASEAN Outstanding Scientist and Technologist Award

Academician Bienvenido O. Juliano won the 1998 ASEAN Outstanding Scientist and Technologist Award. He is the first Filipino scientist to receive this award. The awarding was held on 13 October 1998 in Hanoi, Vietnam.

1.4.2 ASEAN Young Scientist and Technologist Award

Dr. Orville L. Bondoc, 1997 Outstanding Young Scientist awardee received a plaque of recognition as one of the finalists for the 1998 ASEAN Young Scientist and Technologist Award.

1.5 BENEFITS OF ACADEMICIANS

1.5.1. Research Fellowships

Fourteen (14) Academicians were given research fellowships grants (Table 1).

1.5.2. Publication Assistance

National Scientist Jose R. Velasco was given assistance to publish his "Selected Papers".

1.5.3. State Funeral for National Scientist

National Scientist José Encarnación, Jr., economist and theorist, the first Filipino to publish an article in an international economic journal, and Dean of UP School of Economics for over twenty years died last July 5 at the age of 69. He was accorded a state funeral on July 11 at the Libingan ng mga Bayani, Fort Bonifacio, Makati City.

**TABLE I
RESEARCH FELLOWS AND THEIR PROJECTS**



Academician	Title of the Research	Duration
Ramon F. Abarquez, Jr.	Hypertension Practice Guidelines	Aug. 1, 1997- July 31, 1998
Clare R. Baltazar	Annotated Bibliography on Philippine Biodiversity: Philippine Insects (Butterflies)	Jan. 1, 1998 - Dec. 31, 1998
Solita F. Camara-Besa	Bioethical and Environmental Concerns of Animal Testing	Oct. 1, 1997 - Nov. 30, 1998
Leopoldo S. Castillo	Annotated Bibliography on Philippine Biodiversity: Philippine Livestock and Poultry (Agrobiodiversity)	Oct. 1, 1997 - Sept. 30, 1998
Ledivina V. Cariño	The Contributions and Interrelationships of Social Sciences to Other Branches of Knowledge	Oct. 15, 1997 - July 15, 1998
Mercedes B. Concepcion	Alternative Population Scenarios: Review and Appraisal	Nov. 15, 1997 - July 15, 1998
Salcedo L. Eduardo	Annotated Bibliography on Philippine Biodiversity: Philippine Parasitic Invertebrate	Apr. 1, 1997 - Mar. 31, 1998
José Encarnación, Jr.	Papers in Economic Theory IV: On the Labor Supply Function	June 1, 1997 - May 31, 1998
Rafael D. Guerrero III	An Annotated Bibliography of Philippine Freshwater Fishes	Apr. 1, 1997 - Mar. 31, 1998
	Philippine Fisheries Research and Development: An Assessment	Apr. 1, 1998 - Mar. 31, 1999
Raul V. Fabella	The Dragon Effect: Mainland China and Asean Slowdown	Nov. 1, 1997 - Oct. 31, 1998
Melecio S. Magno	Assessment on the State of the Physical and Geological Sciences and Environmental Concerns in the Philippines	Nov. 1, 1997 - Oct. 31, 1998
Faustino T. Orillo	Phase II-B Bookwriting - Philippine Science Heritage Center (PSHC)	Apr. 1, 1998 - Mar. 31, 1998
	Development and Production of Student Guidebook for the Philippine Science Heritage Center (PSHC)	Nov. 1, 1998 - Oct. 31, 1999
Teodulo M. Topacio, Jr.	Annotated Bibliography on Philippine Biodiversity: Animal Diseases: Prevention and Control (Agrobiodiversity)	Jan. 1, 1998 - Dec. 31, 1998
Benito S. Vergara	Phase I-C "Literature Research"-PSHC	May 1, 1997 - Apr. 30, 1998
	Phase I-D "Literature Research" - PSHC	July 1, 1998 - June 30, 1999

1.6 OTHER AWARDS

1.6.1. Outstanding Young Scientist Awards

The Academy gave Outstanding Young Scientist Awards to: (1) Mark J. Encarnación, Dr.techn. (Technical Mathematics); (2) Felix P. Muga II, Ph.D. (Mathematics); (3) Ma. Jamela R. Revilleza, Ph.D. (Biochemistry); (4) Philbert S. Bonilla, Ph.D. (Plant Physiology); (5) Ronald R. Matias, Ph.D. (Zoology); (6) Ma. Emma Concepcion D. Liwag, Ph.D. (Psychology); (7) Vermando M. Aquino, Ph.D. (Plant Pathology); (8) Edilberto D. Redoña, Ph.D. (Genetics); (9) Mario R. Festin, M.D. (Obstetrics and Gynecology); and (10) Jaime C. Montoya, M.D. (Microbiology).

1.6.2. NAST-TWAS Science Prize Award (1998 in Biology)

Rhodora R. Aldemita, Ph.D. of the Philippine Rice Research Institute (PhilRice) was the 1998 NAST-TWAS Science Prize awardee. She was recognized for her significant contributions to rice science and biotechnology. Her work on rice genetic engineering using *Agrobacterium tumefaciens* as a vector for transformation was recognized as a significant breakthrough.

1.6.3. Philippine Talent Search for Young Scientists

The Philippine Talent Search for Young Scientists Awards were given to the following: Girlie Naomi N. Sison, Ph.D. (First Prize); Rina B. Opulencia, M.S. (Second Prize); Jean O. Loyola, Ph.D. (Third Prize); Alexes C. Daquinag, M.S., Lourdes D. Taylo, M.S. and Michael P. Atrigenio, M.S. (Special Citations).

1.6.4. Outstanding Scientific Paper, Outstanding Book or Monograph and Outstanding Journal

The winners of the Outstanding Scientific Paper Award, the Outstanding Book or Monograph Award, and the Outstanding Journal Award were: (Tables 2, 3 and 4)

**TABLE 2
OUTSTANDING SCIENTIFIC PAPERS**



Title of Paper	Author/s	Journal	Significance
Exchange Rate Policy: Recent Failures and Future Tasks	Emmanuel S. de Dios Benjamin E. Diokno Raul V. Fabella Felipe M. Medalla Solita C. Monsod	<i>Public Policy</i> 1(1): 15 - 41 (Oct. - Dec. 1997)	1. The paper is an important application of economic science to the policy field; it is obviously also very topical.
Effects of Bacterial Inoculation on Selected Characteristics of Carabeef Chunks at Different Storage Temperatures	Amparo B. Lacandula Perlito I. Ibarra	<i>Philippine Journal of Veterinary and Animal Sciences</i> 23(3 & 4): 30-40 (1997)	2. Meat processors have to fight a race against spoilage microorganisms to preserve and prolong the shelf-life and quality of meat and meat products. To extend the shelf-life of meat and meat products, the growth of microorganisms must be controlled or inhibited through proper methods. The findings presented in the scientific paper offer a cheaper and more efficient alternative to meat processors. The non-spoilage microorganisms inhibit the growth of microorganisms that reduces the shelf-life and quality of meat, while others produce certain compounds that improve the flavor and aroma in meat. The scientific results are very important for the meat processing industry.
Pedigree-Based Genetic Diversity Analysis of Improved Rice (<i>Oryza sativa</i> L.) Varieties in the Philippines	John C. de Leon Azucena L. Carpena	<i>The Philippine Journal of Crop Science</i> 20(1): 1-12 (1995)	3. Affinity of improved varieties were established. This information may serve a guide to the rice breeders in their choices of parent varieties so that the danger of narrow genetic base of improved varieties can be avoided.
SLE-Related Symptoms and ANA Postivity; Clinical Presentation of SLE; Cardiovascular SLE; Pulmonary SLE; Neurologic Manifestations of SLE; Psychiatric Manifestations of SLE; Male SLE at the UST Hospital; Childhood-Onset SLE; Infections among Filipinos with SLE; Pregnancy in SLE; Methylprednisolone Pulse Therapy; and Psychological Aspects of SLE	Tito P. Torralba Anand M. Malaviya Irene G. Sia Sandra T. Victorio-Navarra Emmanuel Edwin R. Dy Miriam B. Buenviaje Ma. Carmencita B. Gonzalez Jesus F. Poblete Dante H. Abcede G.F. Mukta Prawata Denis C. Ngo Caroline G. Arroyo Elizabeth Angelica R. Roasa Ma. Angela T. Cumagun	<i>Philippine Journal of Internal Medicine</i> 32(5): 1-71 (Sept. - Oct. 1994)	This is the most comprehensive presentation of a fatal medical condition with varied manifestation and organ system involvement. The series of reports highlight the epidemiologic and clinical presentation of the disease that is influenced by geographic and racial factors.

**TABLE 3
OUTSTANDING BOOKS and/or MONOGRAPHS**

Title of Monograph/Journal	Author/s Editors	Publisher	Significance
An Economic History of the Philippines	Onofre D. Corpuz	University of the Philippines Press ISBN 971-542-094-X	O.D. Corpuz's <i>An Economic History of the Philippines</i> magisterially fills a long-felt need for a history of the archipelago with a sympathetic economic perspective. The book's handling of the land question is excellent. Its treatment of what was then the "foreign grown rice" problem, shows how deep-rooted is the rice problem today. The book relates that between 1898 and 1902, the Philippine currency (then Mexican silver peso) dropped in value from 1.98 to 2.47 U.S. dollar. Currency fluctuations are not new.
Technoguides for Agricultural Production and Livelihood Projects	Teotimo M. Aganon Fe L. Porciuncula Nenita dR. Carbonel Marilyn G. Patricio Clarita P. Aganon Quirino D. dela Cruz Charlito R. Juico Emilio M. Cruz Mario B. Agustin	Central Luzon State University, Nueva Ecija ISBN 971-705-001-5	The book contains an updated technical information as guide on crops and livestock production and farm resources management.
Perspectives in Physical Therapy	Ramona Luisa Pablo-Santos	De La Salle University Press, Dasmariñas, Cavite (1996)	The author gives insights on the relevance and responsibilities of a physical therapist/occupational therapist and the profession through a series of case presentations.

**TABLE 4
OUTSTANDING JOURNALS**

Title of Monograph/Journal	Author/s Editor/s	Publisher	Significance
The Philippine Journal of Biotechnology	Reynaldo E. dela Cruz Reynaldo V. Eborá Mariechel J. Navarro Imelda V. Garcia	National Institute of Molecular Biology and Biotechnology (BIOTECH), UP Los Baños ISSN 0117-0903 1992-1996 issues	The journal serves as a forum by which scientists can share original research information. Aside from enhancing transmission of knowledge generated through research, it also strengthens scientific literacy by upgrading technical writing skills among researchers through a high level of substantive and grammatic editing.



Continuation...Table 4

Title of Monograph/Journal	Author/s Editor/s	Publisher	Significance
The Philippine Agriculturist	Teresita L. Rosario Hosanna H. Espanto	College of Agriculture, UP Los Baños ISSN 0031-7454 1992-1996 issues	<i>The Philippine Agriculturist</i> has served as the main repository of researches by students, faculty, and research and extension personnel at the College of Agriculture through the publication of original research papers and reviews on plant, animal, soil and food sciences, agricultural processing and technology, agricultural biotechnology, agricultural education, and rural sociology, development communication, agribusiness, agricultural economics, and management.

1.6.5 OYS on the Go Program

The Academy with financial assistance from the Department of Science and Technology strengthened the "OYS on the Go" projects (Table 5).

Approved proposals were granted P200,000.00 financial assistance by DOST.

**TABLE 5
DOST-NAST "OYS ON THE GO PROGRAM"**

PROJECT TITLE	PROPONENT	MONITORING AGENCY
1993 Outstanding Young Scientist		
Production of Export Quality Organic Fertilizer and/or Soil Conditioner by a Super "Tipid" Livestock Waste Briquetting System	Dr. Severino S. Capitan	PCARRD
1994 Outstanding Young Scientist		
Destructiveness and Potential to transmit Microbial Diseases by <i>Scirtothrips dorsalis</i> Hood	Dr. Cecilia P. Reyes	PCARRD
1995 Outstanding Young Scientists		
A Comparison of the Clinical Scoring System and the Rapid Shallow Breathing Index in Predicting Success in Weaning Patients on Mechanical Ventilation	Dr. Abundio A. Balgos	PCHRD

1.7 NAST EXHIBITS

The major programs and activities of NAST were featured during the 20th Annual Scientific Meeting held at the Westin Philippine Plaza Hotel, Manila, on July 8 & 9, 1998. NAST participated in the DOST Annual Science and Technology Fair last July 13-17 at the Philippine Trade Training Center, Pasay City.

The Academy also exhibited the achievements and researches of National Scientists Julian A. Banzon, Gregorio Y. Zara, and Dioscoro L. Umali during the Natural Science Week Celebration of the Institute of Integrated Development Education, Pamantasan ng Makati in November 1998. The Academy has lent the memorabilia exhibit of all national scientists for a year-round exhibition at DOST Region IV.

1.8 PHILIPPINE SCIENCE HERITAGE CENTER (PSHC)

The Philippine Science Heritage Center (PSHC) or *SALINLAHI* was inaugurated on December 4, 1998 by the Honorable William G. Padolina, Secretary of the Department of Science and Technology.

The PSHC was built to honor Filipino scientists and their scientific contributions to the world of science. It is envisioned to be a lasting and fitting tribute to the numerous Filipino scientists and technologists who have endured and devoted their studies and live unselfishly for the betterment of the country.

Initial displays in the PSHC are: Mango Flower Inductions, Prosthetics, Quink, Ilosone, Macapuno Tissue Culture, Sex Reversal in Tilapia, Nata de Coco, Most Translated Agricultural Book, Conotoxin, Cytoplasmic Inheritance in Corn, Karaoke, Liquid Crystals, The Yoyo, Tiki-Tiki - Cure for Beri-beri, Multipurpose Drier and Information Technology Winners.

The Center is open to the public every Tuesdays and Thursdays (by appointment).



Some exhibits displayed at the PSHC.



Continuation...Table 5

PROJECT TITLE	PROPONENT	MONITORING AGENCY
Language Factors in Cognitive Arithmetic	Dr. Allan Benedict I. Bernardo	NRCP
Problems in the Invariant Theory of Finite Groups (with applications to coding theory and the theory of spin model)"	Dr. Jose Maria P. Balmaceda	NRCP
Morpho-physiological Effects of Elevated CO ₂ concentration on Mungbean and Corn	Dr. Maribel L. Dionisio-Sese	PCARRD
Recurrent Selection for Horizontal Resistance to Late Blight (Phytophthora infestans) in Potato	Dr. Zenaida N. Ganga	PCARRD
The Genetics of Resistance Factors to Bacterial Wilt in Tomato (Lycopersicon esculentum) and Pepper (Capsicum sp.)	Dr. Merlyn S. Mendioro	PCARRD
1996 Outstanding Young Scientists		
Optimization of Physical Treatments to improve Quality and Shelf Life of Banana and Mango Fruits	Dr. Antonio L. Acedo, Jr.	PCARRD
Application of Acupuncture Analgesia and Therapy in Water Buffaloes	Dr. Jezie A. Acorda	PCARRD
Break Junction Tunneling Measurement of the Superconducting Energy Gap of Bulk Bi2212 and Y 123 Superconductors	Dr. Roland V. Sarmago	NAST
Comprehensive Search for Bioactive Compounds from Marine Sponges and Its Associated Microorganisms in the Southern Philippines	Dr. Jose M. Oclarit	PCAMRD
1997 Outstanding Young Scientists		
Analysis of Sea Surface Temperature Variability in Philippine Seas	Dr. Cesar L. Villanoy	PCAMRD

Continuation...Table 5

PROJECT TITLE	PROPONENT	MONITORING AGENCY
A study of Lyotropic Liquid Crystals in Biological Systems	Dr. Leonorina G. Cada	PCASTRD
Evaluation of Transgenic IR72 containing Xa 21 Gene for Bacterial Blight Resistance	Dr. Rhodora R. Aldemita	PCARRD
Response of Gliciridia-Maize	Dr. Damasa M. Macandog	PCARRD
Hedgerow Intercropping System to Global Change: An Ecophysiological Modelling Approach		
CO ₂ Sequestration Potential of a Secondary Forest Ecosystem in the Makiling Forest Reserve	Dr. Rodel D. Lasco	PCARRD
1997 Outstanding Young Scientists		
Performance Standards and Economic Weights of Traits Contributing to Breeding Efficiency in Livestock Crossbreeding Systems	Dr. Orville L. Bondoc	PCARRD
1998 Outstanding Young Scientists		
Diagnosis of Tuberculous Meningitis Using Polymerase Chain Reaction with Nested Amplification	Dr. Jaime C. Montoya	PCHRD
Effect of Low NaCl Pretreatment Before Transplanting on Rice Seedling Survival and Vigor in Salt-affected Areas	Dr. Philbert S. Bonilla	PCARRD
Application of DNA Marker Technology in the Development of Two-Line Rice Hybrids	Dr. Edilberto D. Redoña	PCARRD
The Measurement of Serum Magnesium Levels among Preeclamptic Patients at the Department of Obstetrics and Gynecology, Philippine General Hospital, University of the Philippines Manila	Dr. Mario R. Festin	PCHRD

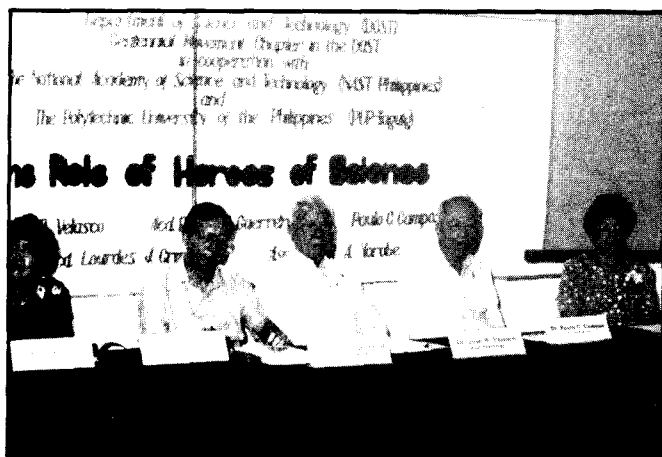


1.9 SPEAKERS BUREAU

The Academy offered the services of Academicians and awardees for consultancy or advice to requesting institutions. (Table 6)

**TABLE 6
SPEAKERS BUREAU REPORT**

Speaker	Occasion	Date and Venue
Dr. Pedro B. Escuro Dr. Jose Ma. P. Balmaceda Dr. Ernesto S. Luis	The Role of Heroes of Science	March 6, 1998 PUP Tagig Branch
Dr. Edgardo D. Gomez Dr. Irene M. Villaseñor Dr. Danilo M. Yanga	The Role of Heroes of Science	July 31, 1998 PUP Tagig Branch
Dr. Paulo C. Campos Dr. Jose R. Velasco Dr. Rafael D. Guerrero III Dr. Lourdes J. Cruz	The Role of Heroes of Science	August 28, 1998 PUP Tagig Branch



The Speakers on "The Role of Heroes of Science" held on August 28 and March 6, respectively.

1.10 RADIO and/or PERSONAL INTERVIEWS

To disseminate information regarding their researches and help promote science culture, Academicians and NAST awardees were featured in radio and personal interviews (Table 7).

**TABLE 7
RADIO and/or PERSONAL INTERVIEWS**

INTERVIEWEE	INTERVIEWER/HOST AND STATION	DATE
Ms. Luningning E. Samarita Executive Director, NAST	Ms. Susan Layos, DZRM 11:30 a.m.	January 23, 1998
Dr. Ponciano S. Halos President, OYS, Inc.	Mr. Mon Agustin, DZCA 11:00 a.m.	February 24, 1998
Dr. Ricardo T. Jose 1997 OYS, UP Diliman	Ms. Susan Layos, DZRM 11:00 a.m.	March 6, 1998
Dr. Edward H. M. Wang 1997 OYS, UP Manila	Mr. Angelo B. Palmones, DZMM 3:30 p.m.	April 5, 1998
Dr. Eduardo C. Lim 1996 OYS, UP Manila	Ms. Melly Tenorio, DZRB 10:00 a.m.	May 20, 1998
Ms. Luningning E. Samarita Executive Director, NAST	Mr. Angelo B. Palmones, DZMM 3:00 p.m.	June 7, 1998
Dr. Orville L. Bondoc 1997 OYS, UP Los Baños	Ms. Venus Valdemor, DZCA 11:00 a.m.	June 17, 1998
Dr. Jose E. Hernandez 1996 OYS, UP Los Baños	Ms. Susan Layos, DZRM 11:00 a.m.	July 3, 1998
Ms. Luningning E. Samarita Executive Director, NAST	Ms. Laila Tumanan, DZEM 11:00 a.m.	August 27, 1998
Dr. Fe Del Mundo National Scientist and S&T Centennial Awardee	Mr. Angelo B. Palmones, DZMM 3:00 p.m.	December 8, 1998
Dr. Gelia T. Castillo Academician, NAST	3rd Year High School Students Bicutan Parochial School, Bicutan	December 4, 1998
Dr. Leopoldo S. Castillo Academician, NAST		
Dr. Benito S. Vergara Academician, NAST		
Dr. Pedro B. Escuro National Scientist, NAST		

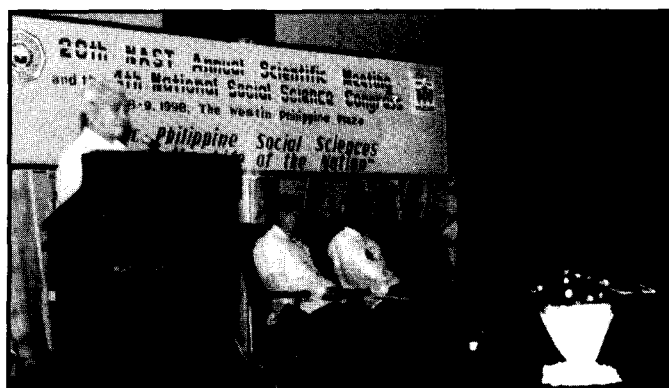


2.1 THE 20th ANNUAL SCIENTIFIC MEETING

NAST celebrated its 20th Anniversary with the holding of the 20th Annual Scientific Meeting (ASM) and the 4th National Social Science Congress on July 8 and 9, 1998 at the Westin Philippine Plaza, CCP Complex, Pasay City. The theme was "The Philippine Social Sciences in the Life of the Nation".

The members of the ASM Program Committee were Acads. Jose O. Juliano (Chairperson), Gelia T. Castillo (Co-Chair), Ledivina V. Cariño, Veronica F. Chan, Mercedes B. Concepcion, Ernesto O. Domingo, Salcedo L. Eduardo, Raul V. Fabella, Edgardo D. Gomez, Evelyn Mae T. Mendoza, Perla D. Santos Ocampo, Teodulo M. Topacio, Jr., National Scientist Dolores A. Ramirez, Dr. Amelia C. Ancog, Dr. Ma. Cynthia Rose B. Bautista, and Dr. Amaryllis T. Torres.

The eight (8) plenary sessions held were the result of a series of roundtable conferences and pre-congresses. These were: (a) 100 Years of Philippine Social Sciences; (b) The Social Sciences and Other Branches of Knowledge; (c) Population, Resources, and Environmental Policy in the Social Sciences; (d) Economic Policy and the Social Sciences, (e) Governance, Civil Society and Social Justice; (f) The Social Sciences and Education, Language, and Communication Development, (g) The Social Sciences, Human Development, and Public Welfare; and (h) The Social Sciences and Science and Technology Policies (Table 8).



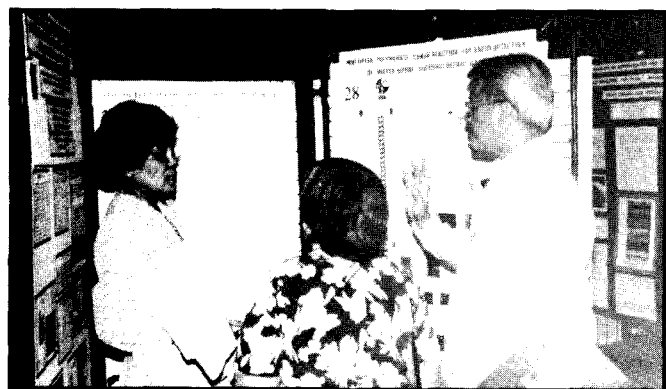
Academician Conrado S. Dayrit, NAST President gives the opening remarks. On the stage are: Academician J.O. Juliano, Academician B.F. Nebres, Academician G. T. Castillo and Dr. Elizabeth R. Ventura

Twenty five (25) scientific papers were presented in the simultaneous divisional sessions (Table 9).

Out of the one hundred forty nine (149) papers for poster presentation received, ninety five (95) were accepted but only eighty (80) posters were presented during the two-day affair (Table 10).

The Board of Judges for the Best Poster Award chaired by Acd. Quintin L. Kintanar with Acads. Ramon F. Abarquez, Jr., Benjamin D. Cabrera, Magdalena C. Cantoria, Leopoldo S. Castillo, Lourdes J. Cruz, Salcedo L. Eduardo, Bienvenido O. Juliano, Alfredo V. Lagmay, Ricardo M. Lantican, Melecio S. Magno, Faustino T. Orillo, and Joventino D. Soriano selected the best paper posters according to Division:

(a) Genetic Mapping Using Random Amplified Polymorphic DNA (RAPD) Markers in a *Vigna radiata* x *V. mungo* Interspecific Cross by Amy Emiliana N. Bernardo (Agricultural Sciences Division);



Best Poster Award Board of Judges Members Academicians S.L. Eduardo and M.C. Cantoria discuss with the author of one of the posters during the judging.

- (b) Enzyme Variability in Domesticated and Feral Populations of the Asian Honeybee *Apis cerana* F. (Hymenoptera: Apidae) from Laguna and Benguet by Ma. Carmina Colle-Manuel and Rita P. Laude (Biological Sciences Division);
- (c) The Characterization of Finite Pseudogroups of Small Order by Aurea Z. Rosal (Mathematical, Physical and Engineering Sciences Division);
- (d) IGM-Capture Elisa of Serum Samples from Filipino Dengue Patients by Corazon C. Buerano (Health Sciences Division); and
- (e) The IPM Program and Atok's Barefoot Scientists by Wilfredo I. Estolas (Social Sciences Division).

2.2 THE 21st ANNUAL SCIENTIFIC MEETING

Preparations for the 21st Annual Scientific Meeting on July 7 & 8, 1999 are underway. The theme is "Food, Population and Environment". The ASM Program Committee is chaired by Acd. Jose O. Juliano and co-chaired by Acd. Ruben L. Villareal.

Our partners in the activity are: The Federation of Crop Science Societies of the Philippines (FCSSP), the Philippine Society of Animal Science (PSAS), the Pest Management Council of the Philippines (PMPC) and University of the Philippines Los Baños.

2.3 SCIENCE INFORMATION FORA/SCIENCE LEGISLATIVE FORUM

Only two science information fora and one science legislative forum were organized by the Academy this year. The fora involved concerned sectors of the society, as well as the Academicians, National Scientists and OYS awardees.

- (1) Science Information Forum on "*The Important Role of Coconut Oil Derivatives as Nutraceuticals*" held on January 27, 1998 at the Heritage Hotel, EDSA Extension cor. Roxas Blvd., Pasay City was co-sponsored by the Philippine Coconut Research and Development Foundation, Inc. (PCRDF).

Secretary William G. Padolina introduced the resource person, Dr. Jon J. Kabara, Emeritus Professor of the Michigan State University, East Lansing.

- 2) Science Information Forum on "*The Global Challenge of Emerging and Re-emerging Infections*" was held on April 17, 1998 at the Casino Español, T.M. Kalaw Street, Ermita, Manila.



Science Information Forum on "*The Global Challenge of Emerging & Re-emerging Infections*."

The speakers were Dr. Mary Ann D. Lansang and Dr. Jaime C. Montoya, both from the College of Medicine, UP Manila and Dr. Lilibeth C. David, discussant from the Communicable Diseases Control, Department of Health.



The *Science Legislative Forum in Science Education* was held on November 5, 1998 at the Casino Español. The situationer of science education was presented by Dr. Milagros D. Ibe, UP Diliman and Dr. Ester B. Ogena, Science Education Institute. Participants were members of the Science and Technology Committee in Senate and House of Representatives and officials of the Department of Education, Culture and Sports (DECS) as well as private school officials. The closing and recommendations were given by Secretary Andrew Gonzalez of DECS.



DECS Secretary Andrew Gonzalez delivers the closing and recommendations

2.4 ROUNDTABLE DISCUSSIONS (RTDs) on S&T ASSESSMENT

The Academy, through the Outstanding Young Scientists, Inc. (OYSI) organized roundtable discussions (RTDs) on science and technology assessment.

RTDs were held on the papers entitled: (a) "Assessment of the State of the Environmental Degradation - Preservation and Conservation of Endangered Species through the Establishment of Botanical Gardens in the Philippines"; (b) "Assessment on the State of Mathematical Sciences in the Philippines and their Applications in Industry"; and (c) "Assessment on the Molecular Bioscience and Biotechnology in the Philippines".

These three (3) reports are now being used by the Planning and Evaluation Services (PES) of the Department of Science and Technology. These had been submitted for use of NEDA.

AN ASSESSMENT OF THE STATE OF SCIENCE IN THE PHILIPPINES

I. ENVIRONMENTAL DEGRADATION: PRESERVATION AND CONSERVATION OF ENDANGERED SPECIES THROUGH THE ESTABLISHMENT OF BOTANICAL GARDENS IN THE PHILIPPINES

Recommendations of Research Fellows

1. Field assessment of Existing Botanic Gardens - It has been noted that the dearth of secondary information and published documentation hinders a careful assessment of performance and potentials of botanic garden as a conservation strategy. Hence a national field assessment of the state of the art is imperative for biodiversity conservation programs.

Recommendations of RTD Group

- Social assessment of botanic gardens should be conducted.
- Economics of establishing and maintaining botanic gardens be conducted.
- Field evaluation of existing botanic gardens should be conducted.
- Specific parameters/criteria such as area, species, number of botanists, should be developed
- Capacity of MGB to produce seed should be determined

Continuation...I. Environmental Degradation: Preservation and Conservation ...

2. National Policy or Guidelines in the Identification, Establishment and Maintenance of Botanic Gardens - The national agency in-charge of the botanic garden must formulate policy or guidelines at the national level to govern the identification, establishment and maintenance of botanic garden. This must be consistent with the National Biodiversity Conservation Programs of the country. Judicious identification of Botanic Gardens vis a vis the biogeographic zone should be conducted. For example, the NIST in 1968, has designated the National Botanic Garden (NBG) as a repository of representative biological resources of the Sierra Madre Mountain Ranges, which is now identified as a distinct biogeographic zone by the National Biodiversity study.

3. Integration of Botanic Gardens in the NIPAS - The botanic gardens can be best intergrated in the protected areas system, rather than having a separate unit that takes charge of its welfare. This promotes better coordination with other protected areas such as parks, game refuge and wilderness areas; and consolidation of information available including biological resources inventory.

4. Promotion and Support for Maintenance and Development of Gardens by State Colleges and Universities - It has been noted that some state universities and colleges maintain science gardens but are under utilized and under funded. Efforts can be geared towards assisting these SCUs in order to develop fully a botanic garden that can serve the purpose by which the botanic garden derives its meaning.

Botanic gardens should be accredited.

Criteria for accreditation are:

- A reasonable degree of permanence
- An underlying scientific basis for collection
- Proper documentation of the collection including wild origin
- Adequate labeling, open to the public
- Undertaking of scientific or technical research on plants in collection
- Area should be minimum of 10 hectares
- Infrastructure, qualification of staff, species composition
- Financial sustainability

Criteria should be set in exchanging seed.

Human resource development (HRD) should be given priority in the development of master plan for botanic garden.

Passage of Wildlife Resource Act should be pushed through.

Botanic Gardens should link with ASEAN Biodiversity Center

Integration to NIPAS

Passage of Wildlife Resource Act should be pushed.

A bill on botanical garden should be drafted.

Botanic gardens should be integrated with ecotourism

Botanic gardens should be managed by local government units and provincial government with some assistance from private sector.

Public awareness on the botanical garden programs should be increased.

More botanists and physiologists should be employed.

Degree-oriented training should be conducted to personnel working in botanic gardens

DOST should assist in human resource development

There should be a body to take care specifically of botanic gardens

Existing botanic gardens should be sustained rather than establishing new ones

There should be institutional set up to coordinate various concerns of botanic gardens

Data banking on species (MGB as repository for this)



II. MATHEMATICAL SCIENCES IN THE PHILIPPINES AND THEIR APPLICATION IN INDUSTRY

Recommendations of Research Fellows

The following are some key targets for developments:

1. Undergraduate and Graduate Programs in the mathematical sciences focused on industry, including:
 - * exposure to areas such as finance, quality control in manufacturing, computers, communications and networking
 - * experience in formulating and solving open-ended problems, like the traffic problems in Manila or the water distribution problems of the new water management groups (at least for a limited area)
 - * computation and computer modeling (industrial mathematicians spend a lot of their time in computation and modeling) and in communications and teamwork
2. Particular attention should be given to the development of coursework Masters programs, which are to be considered as terminal professional programs for industrial mathematicians.
3. Undergraduate and graduate programs in Statistics, particularly industrial statistics
4. CHED should encourage double majors or joint programs such as mathematics and finance, mathematics and computing, even mathematics and engineering (as is proposed in the U.S. and Australia).
5. The best practices in terms of developing linkage between university mathematics departments and industry as pointed out in Section V should be encouraged:
 - (a) Working with the Operations Research Society of the Philippines to seek to develop a broader organizations for those in the mathematical sciences interested in industrial applications.
 - (b) Look into the possibility of activities such as that of the Australian Mathematics in Industry Study Group.
 - (c) Encourage DOST and CHED to target support for joint research projects of academe and industry and for scholarships and fellowships for programs in mathematics applied to industry
 - (d) Encourage activities of research centers focused on cooperative research between academe and industry.

Serious efforts in particular should be directed towards:

- promoting a statistical culture in scientific undertakings by continuing to organize regular biennial National Conventions in Statistics and inviting other professionals to contribute quality papers for presentation and discussions. Interaction with other groups of professionals is a learning experience and should widen the opportunity for possible applications of statistics in other disciplines;

Continuation...II. Mathematical Sciences in the Philippines ...

- establishing linkages and reaching out to other professional societies and industry associations for possible collaboration or joint undertakings in research projects, seminars, or workshops at every opportunity;
- urging all colleges and universities to offer statistical courses to meet the increasing demands of statistical personnel in our society while at the same time encouraging those already having undergraduate programs to offer and strengthen their graduate programs to meet the needs of industries for professional statisticians, and finally
- urging statistics departments in educational institutions to establish linkages with other departments and promoting joint research activities to hone in a scientific research culture among universities and colleges.

Recommendations of RTD Group

Almost all discussants and participants were in full agreement with the ideas and recommendations stated in the reports of Acd. Nebres and Acd. Mijares. Everybody agreed that mathematical science is very important in the economic development of the country and there is a need to encourage more linkages between university mathematics departments and the industry.

III. MOLECULAR BIOSCIENCE AND BIOTECHNOLOGY IN THE PHILIPPINES

Recommendations of RTD Group

- a. Full government support with adequate funding allocation from Congress.
- b. Matching support from industry.
- c. Critical mass of scientists and technicians.
- d. Favorable policies and laws.
- e. An effective horizontal and vertical coordination from research and development to commercialization.
- f. Cooperation among major players needed: researcher, extension worker, farmer, developer and financier.
- g. Close collaboration between science and industry.
- h. Significant government support in initiating biotechnology's growth as exemplified by the Singapore, Hong Kong and Taiwan models.
- i. Provision of basic infrastructure and facilitation of administrative processes.
- h. Institutionalized frameworks regulating R&D on biotechnology on one hand, and the commercialization of biotechnology products on the other hand.

2.5 NATIONAL CONGRESS ON SCIENCE AND MATHEMATICS EDUCATION

In an effort to strengthen science and mathematics education in the Philippines, the National Academy of Science and Technology (NAST), Science Education Institute (SEI) - DOST, and University of the Philippines' Center for Integrative and Development Studies (UP-CIDS) organized and conducted the National Congress on Science and Mathematics Education on November 27



& 28, 1998 at the Science Teachers' Training Center, UP Diliman, Quezon City. The activity aimed to come up with policy recommendations for proper actions and issuances of the legislative and judiciary bodies.

The Congress was the culminating activity of a series of pre-congress activities largely participated in by the education sectors, including the national and regional offices of the Department of Education, Culture and Sports; Commission on Higher Education; Department of Science and Technology; representatives from the Senate Committee on Science and Technology and those from the House of Representatives - Committee on S&T, Committee on Basic Education, and Committee on Higher Education - and a number of administrators, faculties, and students from various schools, state colleges and universities.



Secretary Andrew Gonzalez gives his reactions and final statement on different science and mathematics education issues.

Discussions in the Congress focused primarily on the five areas or concerns in science and mathematics education: (a) teacher preparation; (b) curriculum and instructional materials; (c) science culture; (d) learning process; and (e) organizational structure and governance.

Among the resolutions that had been arrived at were:

- (a) to review the BSE and BEE curricula in terms of relevance of the content; integration of science and mathematics; and coverage of the professional and specialization courses;*
- (b) the training needs of the teachers, principals, and higher school administrators should be considered. This is one way by which curriculum development could be further enhanced;*
- (c) to require all Teacher Education Institutions (TEIs) to administer entrance examinations and to adopt a reasonable cut-off score for student selection. Likewise, TEIs should be required to adopt retention policy for science and mathematics major;*
- (d) to recruit better students for science and mathematics education program, TEIs could also implement promotion of officers and career counseling;*
- (e) to have an extensive review of ELC and PSSLC, lessen the extra-curricular activities, and empower teachers to employ various strategies in teaching to compensate lost time due to other activities;*
- (f) to increase science and mathematics teachers' salaries and to consider them by the DOST as S&T personnel. Salary increase, however, will be according to merit system, and*
- (g) to provide more scholarships to science and mathematics teachers as a way to boost teachers competencies and science education as a whole.*

2.6 S&T CENTENNIAL ACTIVITIES

The Academy co-sponsored a seminar series on the "Role of Heroes of Science, " a project of DOST and the Polytechnic University of the Philippines (PUP) Taguig. This project was carried out as part of the Science and Technology Centennial Movement activities.

Likewise, the Centennial Awards for Science and Technology given to National Scientists Fe del Mundo and Dioscoro L. Umali (Posthumous) was a part of the centennial activities of the Philippine independence.

2.7 ANIMAL TESTING

The roundtable discussion on the Bioethical, Environmental and Technical Concerns in Animal Experimentation was held on July 29, 1998 at UP Manila. It was attended by research scientists, representatives of animal welfare societies, government agencies and the academe.

The goal of the RTD was to clarify issues regarding the use of laboratory animals for research and testing in the country, particularly on standard requirements and bioethical issues.

It was gathered from the RTD that the different government agencies were unable to provide funding and incentives for the development and support of resources and facilities needed for animal research. The private sector may be in a better position to take the lead.

While networking among research agencies involved in the laboratory animals may provide short-term solutions to the problem of supply, there is further obligation to look at long-term solutions. Such solutions may be in the development of the hardware needed for the setting up of standards for the regulation and policies for implementation on the use of laboratory animals. The government must also take the initiative of motivating the private sector.

2.8 SENATE AND CONGRESS BILLS ON S&T REFERRED TO NAST

Senate Bills Nos. 1053 & 1169

- *An Act Requiring Fully-Equipped Science Laboratories in Every Public Elementary And Secondary Schools, Providing Funds Therefore, And For Other Purposes* introduced by Senators Juan M. Flavier and Rodolfo G. Biazon.

Senate Bill No. 1198

- *An Act To Popularize and Enhance Public Understanding and Awareness of Science and Technology* introduced by Senator Vicente C. Sotto III.

House Bill No. 496

- *An Act Designating The Technology Management Center of the University of the Philippines, Diliman, Quezon City, As A National Center Of Excellence For Technology Assessment, Management, Forecasting, And Appropriating Funds Therefore* introduced by Congresswoman Bellaflor Angara-Castillo.

House Bill No. 5644

- *An Act Providing For A Uniform Governance Of the PSHS System, Amending For The Purpose Sections 6 & 7 Of R.A. No. 8496* by Congressman Gregorio T. Ipong.

TABLE 8
20TH ANNUAL SCIENTIFIC MEETING
PLENARY SESSIONS



Plenary Session	Speakers/Discussants/ Moderators/Rapporteurs	Designation and Institution
<p>PLENARY SESSION I: "100 Years of Philippine Social Sciences"</p>	<p>Virginia A. Miralao, Ph.D.</p> <p>Luis C. Dery, Ph.D.</p> <p>Erlinda M. Burton, Ph.D.</p> <p>Wilfrido V. Villacorta, Ph.D.</p> <p>Raymund Jose G. Quilop</p>	<p>Executive Director Philippine Social Science Council</p> <p>Professor Department of History De La Salle University</p> <p>Director, Research Institute for Mindanao Culture Xavier University</p> <p>President Yuchengco Center for East Asia</p> <p>Teaching Assistant Department of Political Science UP Diliman</p>
<p>PLENARY SESSION II: "The Social Sciences and Other Branches of Knowledge"</p>	<p>Academician Ledivina V. Carino, Ph.D.</p> <p>Academician Ernesto O. Domingo, M.D.</p> <p>Leonardo Q. Liongson, Ph.D.</p> <p>Academician Perla D. Santos Ocampo</p> <p>Joseph Anthony Y. Lim, Ph.D.</p>	<p>Dean, College of Public Administration UP Diliman</p> <p>University Professor College of Medicine, UP Manila</p> <p>Professor College of Engineering, UP Diliman</p> <p>Chancellor, UP Manila</p> <p>Professor School of Economics, UP Diliman</p>
<p>PLENARY SESSION III: "Population, Resources, and Environmental Policy in the Social Sciences"</p>	<p>Academician Mercedes B. Concepcion, Ph.D.</p> <p>Florian A. Albuero, Ph.D.</p> <p>Angelina P. Galang, Ph.D.</p> <p>Tomas P. Africa</p> <p>Academician Edgardo D. Gomez, Ph.D.</p> <p>Corazon M. Raymundo, Ph.D.</p>	<p>National Academy of Science and Technology (NAST) Philippines</p> <p>Professor School of Economics, UP Diliman</p> <p>Vice President for Academic Affairs Miriam College</p> <p>Administrator National Statistics Office</p> <p>Director Marine Science Institute, UP Diliman</p> <p>Vice Chancellor for Academic Affairs, UP Diliman</p>
<p>PLENARY SESSION IV: "Economic Policy and the Social Sciences"</p>	<p>Felipe M. Medalla, Ph.D.</p> <p>Federico M. Macaranas, Ph.D.</p> <p>Gonzalo M. Jurado, Ph.D.</p> <p>Academician Raul V. Fabella, Ph.D.</p> <p>Ma. Socorro H. Gochoco-Bautista, Ph.D.</p>	<p>Dean, School of Economics UP Diliman</p> <p>President Clemente Asia (Phils.), Inc.</p> <p>Visiting Research Fellow Phil. Institute for Development Studies</p> <p>Professor School of Economics, UP Diliman</p> <p>Professor School of Economics, UP Diliman</p>

Continuation... Table 8

Plenary Session	Speakers/Discussants/ Moderators/Rapporteurs	Designation and Institution
<p>PLENARY SESSION V: "Governance, Civil Society and Social Justice"</p>	<p>Felipe B. Miranda, Ph.D.</p> <p>Edicio G. dela Torre</p> <p>Teresita Ang See</p> <p>Olivia C. Caoili, Ph.D.</p> <p>Alex B. Brillantes, Jr., Ph.D.</p>	<p>Professor Department of Political Science UP Diliman</p> <p>President Education for Life Foundation</p> <p>Executive Director KAISA para sa Kaunlaran</p> <p>Vice President for Academic Affairs UP Diliman</p> <p>Associate Professor College of Public Administration UP Diliman</p>
<p>PLENARY SESSION VI: "The Social Sciences and Education, Language and Communication Development"</p>	<p>Academician Andrew Gonzalez, FSC</p> <p>Ester A. Garcia, Ph.D.</p> <p>Dionisia A. Rola, Ph.D.</p> <p>Milagros D. Ibe, Ph.D.</p> <p>Ma. Cecilia G. Conaco, Ph.D.</p>	<p>President De La Salle University</p> <p>Commissioner Commission on Higher Education</p> <p>Consultant, Congressional Committee on Education</p> <p>Professorial Lecturer College of Education, UP Diliman</p> <p>Professor Department of Psychology UP Diliman</p>
<p>PLENARY SESSION VII: "The Social Sciences, Human Development, and Public Welfare"</p>	<p>Leonor M. Briones</p> <p>Allan A. Tan, Ph.D.</p> <p>Celia M. Reyes, Ph.D.</p> <p>Corazon Alma G. de Leon</p> <p>Ann Inez M. Gironella, Ph.D.</p>	<p>Vice President for Finance and Administration, UP Diliman</p> <p>Department of Psychology Ateneo de Manila University</p> <p>Research Fellow Phil. Institute for Development Studies</p> <p>Chairman Civil Service Commission</p> <p>Dean, Graduate School UP Los Baños</p>
<p>PLENARY SESSION VIII: "The Social Sciences and Science and Technology Policies"</p>	<p>Academician Bienvenido F. Nebres, S.J.</p> <p>Academician Emil Q. Javier, Ph.D.</p> <p>Academician Ruben L. Villareal, Ph.D.</p> <p>Allan Benedict I. Bernardo, Ph.D.</p>	<p>President Ateneo de Manila University</p> <p>President University of the Philippines</p> <p>Chancellor UP Los Baños</p> <p>Dean, College of Education De La Salle University</p>

Table 9
20th ANNUAL SCIENTIFIC MEETING
TECHNICAL / ORAL PAPERS



TITLE OF PAPER	AUTHOR (S)	INSTITUTION/ADDRESS
A. Mathematical, Physical and Engineering Sciences		
A.1. Synthesis of Low Molar Mass and Side-Chain Polymeric Liquid Crystal	Leonorina G. Cada	Institute of Chemistry University of the Philippines, Diliman
A.2. Effects of Subdivision and Contraction of Edges on the Dimension of a Graph	Severino V. Gervacio	Department of Mathematics De La Salle University
A.3. Minimizing PAH (Polycyclic Aromatic Hydrocarbons) in Coconut Products	Ernesto P. Lozada	College of Engineering and Agro-Industrial Technology University of the Philippines, Los Banos
A.4. On Roots of Likelihood Functional Equations in Classical Univariate and Multivariate Statistical Theory	Tito A. Mijares	Academician NAST
A.5. On the Automorphism Groups of Paley 2-Designs	Blessilda P. Raposa	Department of Mathematics De La Salle University
A.6. Growth, Emission and Excitation, Spectra and the Transition Pressures of $ZnSe_xS_{1-x}$	Shirley R. Tiong-Palisoc	College of Science De La Salle University
B. Biological Sciences		
B.1. Biodegradation of Crude Oil Using Microorganisms from Pasig River and Manila Bay	Ponciano M. Halos and Ma. Etheliori A. Mariano	Institute of Biology, College of Science University of the Philippines, Diliman
B.2. Mass Culture of the Sea Urchin " <i>Tripneustes gratilla</i> "	Marie Antonette Juinio-Meñez Virginia D. Monje, Rachel G. Ravago and Eiza T. Yu	Marine Science Institute and Molecular Biology and Biotechnology Program University of the Philippines, Diliman
B.3. Patterns and Processes in Population Divergence of <i>Microlaena stipopoidea</i> (Labill.) R.Br.	Damasa B. Magcale-Macandog	Institute of Biological Sciences College of Arts and Sciences University of the Philippines, Los Banos
B.4. Volant and Non-Volant Mammals of Central Sierra Madre, Aurora and Northern Quezon: A Preliminary Report	Perry S. Ong, Mariano Roy Duya, Marisol DG. Pedregos, Melizar H. Valenzuela, Ma. Nancy P. Ibuna and Renato E. Fernandez	Institute of Biology, College of Science University of the Philippines, Diliman
C. Agricultural Sciences		
C.1. Gene Delivery Systems in Rice	Rhodora R. Aldemita	Plant Breeding and Biotechnology Division Phil. Rice Research Institute Maligaya, 3119 Muñoz, Nueva Ecija
C.2. Application of Non-Conventional Acupuncture in Sheep, Cattle and Water Buffaloes	Jezie A. Acorda	Dept. of Veterinary Clinical Sciences College of Veterinary Medicine University of the Philippines, Los Banos

Continuation...Table 9

TITLE OF PAPER	AUTHOR (S)	INSTITUTION/ADDRESS
C.3. Proposal for a New Scientific Name of the Swamp Buffalo - The Carabao	Leopoldo S. Castillo	5114 Maahas, Los Baños, Laguna
C.4. The Search for Rice Varieties Adapted to Rainfed Growing Conditions	Pedro B. Escuro	Dept. of Agronomy, College of Agriculture University of the Philippines, Los Banos
C.5. Alternative Management Strategies Against the Rice Root-Knot Nematode, <i>Meloidogyne graminicola</i> In-Rice-Onion System	Ruben M. Gapasin, Maria Victoria L. Judal, Clarenda P. Pile, Evelyn B. Gergon, Victor P. Gapud and Santiago R. Obien	Visayas State College of Agriculture (VISCA) 6521-A Baybay, Leyte
C.6. Philippine Forest Lands: Opportunities for Mitigating Climate Change	Rodel D. Lasco and Florencia B. Pulhin	Environmental Forestry Program College of Forestry University of the Philippines, Los Banos
C.7. Cloning and Characterization of Five β -Glucanase Genes in Rice	Gabriel O. Romero, Makoto Yaneshita, Mintham Doan, Bruce R. Thomas, and Raymond L. Rodriguez	Philippine Rice Research Institute Maligaya, 3119 Muñoz, Nueva Ecija
C.8. The Role of Veterinary Medicine in Public Health	Teodulo M. Topacio, Jr.	Bureau of Animal Industry Quezon Avenue, Quezon City
D. Social Sciences		
D.1. Growth and Equity in the Philippines: A Reexamination	Arsenio M. Balisacan	School of Economics University of the Philippines, Diliman
D.2. Capital Flows and the Integration of International Financial Markets	Ma. Socorro Gochoco-Bautista	School of Economics University of the Philippines, Diliman
D.3. The Adoption of Improved Mungbean Varieties in Two Rice-Based Villages in the Philippines: A Network Analysis	Serlie B. Jamias	Institute of Plant Breeding College of Agriculture University of the Philippines, Los Banos
D.4. The Problem of Food and Inflation: A Case Study from the Japanese Occupation	Ricardo T. Jose	Department of History University of the Philippines, Diliman
E. Health Sciences		
E.1. Hepatitis E Virus Infection Diagnosed by Serology: A Report of Cases at the San Lazaro Hospital, Manila	Nina Gloriana-Barzaga, Artur Cabanban, Robert Ross Graham and Ruth H. Florese	Department of Med. Microbiology College of Public Health University of the Philippines, Manila
E.2. Molecular Detection and Serotyping of Dengue Virus in a Recent (1995-1997) Outbreak in Metro Manila, Philippines	Ronald R. Matias, Filipinas F. Natividad, Ma. Giselle V. Espiritu, Dengue Research Group and Akira Igarashi	Research and Biotechnology Division St. Luke's Medical Center 279 E. Rodriguez Blvd., Quezon City
E.3. Bone Transplantation in Limb Saving Surgeries: Philippine Experience	Edward H. Wang	Department of Orthopaedics College of Medicine University of the Philippines, Manila

Table 10
20th ANNUAL SCIENTIFIC MEETING
POSTER PAPERS



TITLE OF PAPER	AUTHOR (S)	INSTITUTION/ADDRESS
A. Mathematical, Physical and Engineering Sciences		
A.1. Construction of p -Regular Singular Graphs	Leonor Aquino-Ruivivar and Severino V. Gervacio	Department of Mathematics De La Salle University 2401 Taft Ave., Manila
A.2 The Characterization of Finite Pseudogroups of Small Order	Aurea Z. Rosal	SciTech R&D Center Polytechnic University of the Philippines Sta. Mesa, Manila
A.3. Variable Selection in Factor Analysis Regression and Its Numerical Application	Zenaida F. Mateo and Yutaka Tanaka	Department of Mathematical Sciences and Physics Central Luzon State University (CLSU) Munoz, Nueva Ecija
A.4. Dibenzo-18-Crown-6 Ether in Sol-Gel Silicon Dioxide Matrix for Metal Preconcentration I-Synthesis and Characterization	Emmanuel S. Ramos, Katherine G. Plano and Estelita F. Reyes	Natural Sciences Research Institute University of the Philippines, Diliman
A.5. Synthesis of Liquid-Crystalline Silicones with Cyanobiphenyl and Cholesteryl Pendant Groups	Leonorina G. Cada, Mirasol R. Verallo and Agnes Margarita R. Algarme	Institute of Chemistry, College of Science University of the Philippines, Diliman
A.6. Arsenic Speciation By Hydride Generation-Atomic Absorption Spectrometry Coupled w/ a Cryogenic Trap	Cherrie B. Pascual	Institute of Chemistry, College of Science University of the Philippines, Diliman
A.7. Calorimetry: Enthalpies and Entropies of Some Metal-Cyanide Complexes by Thermometric Titration	Jose S. Solis, Glenn T. Hefter and Peter M. May	Institute of Chemistry, College of Science University of the Philippines, Diliman
A.8. Potentiometric pH-Sensor Based on Electropolymerized Poly (o-PHENYLENEDIAMINE)	Christina A. Binag and Bernard John V. Tongol	Department of Chemistry, College of Science University of Sto. Tomas España, Manila
A.9 Design of a Microcolorimetric Enzyme Assay for Screening of Radioprotectors Using the Oriental Fruit Fly <i>Bactrocera philippinensis</i> Model	Custer C. Deocarís, Alejandro Q. Nato, Elena T. Dacanay, Samantha C. Marcelo and Dyan M. Buenaventura	Philippine Nuclear Research Institute Commonwealth Ave., Diliman 1101
A.10. Characterization of Fiber, Pulp and Paper from Tobacco Stalk and Its Utilization for Handmade Paper Production.	Alvin D. Glova, Joel R. Garcia, Julie L. Mercado and Reynaldo C. Castro	Industrial Research Department National Tobacco Administration Batac 2906, Ilocos Norte
A.11. Antigenotoxicity Studies on Spinasterol, An Isolate from <i>Cucurbita maxima</i> Flowers	Irene M. Villaseñor, Allan Palileo and Annette P. Domingo	Institute of Chemistry, College of Science University of the Philippines, Diliman
A.12. Minimizing Emission of Carbon Dioxide in the Coconut Processing	Ernesto P. Lozada	CEAT, University of the Philippines Los Baños, Laguna
A.13. Production of Aconitic Acid from <i>Muscuvado Masecuite</i>	Jovita L. Movillon, Reynaldo I. Acda and Charles Cape	CEAT, University of the Philippines Los Baños, Laguna

Continuation...Table 10

TITLE OF PAPER	AUTHOR (S)	INSTITUTION/ADDRESS
A.14. Design, Fabrication and Preliminary Testing of a Bench-Scale Spinning Band Column for the Deodorization of Coconut Oil	Reynaldo I. Acda and Arhsee R. Lumbay	CEAT, University of the Philippines Los Baños, Laguna
A.15. Elevated Perforated Platform Solar Drier	Samuel S. Franco and Saturnino A. Lagundino	Mariano Marcos State University College of Engineering Batac, 2906, Ilocos Norte
B. Biological Sciences		
B.1. Development of the Female Gametophyte of <i>Pittosporum resiniferum</i> Hemsl. (Pittosporaceae)	Vivian P. Tolentino and Prescillano M. Zamora	Department of Biology Ateneo de Manila University Loyola Heights, Quezon City
B.2. Isolation and Characterization of <i>Anabaena</i> spp. from Philippine Marine Waters	Remedios R. Roderos, Frimm Sally M. Cagas and Ronie J. Calugay	Institute of Biology, College of Science University of the Philippines, Diliman
B.3. Metazoan Parasites from the Gills and Digestive Tract of Three Species of Philippine Carangid Fishes	Carmencita P. Recto and Nellie C. Lopez	Institute of Biology, College of Science University of the Philippines, Diliman
B.4. Studies on <i>Alitropus typus</i> Edwards, an Isopod Parasite of Fishes in Lake Taal	Nellie C. Lopez and Romulo O. Guevara	Institute of Biology, College of Science University of the Philippines, Diliman
B.5. Enzyme Variability in Domesticated and Feral Population of the Asian Honeybee <i>Apis cerana</i> F. (Hymenoptera: Apidae) from Laguna and Benguet	Ma. Carmina Colle-Manuel and Rita P. Laude	Genetics and Molecular Biology Division Institute of Biological Sciences, College of Arts and Sciences University of the Philippines, Los Baños
B.6. Rearing Techniques for Calanoid Copepod <i>Pseudodiaptomus</i> sp. Under Laboratory Condition	Teresita C. Jocson and Norma R. Fortes	Institute of Aquaculture, College of Fisheries University of the Philippines in the Visayas Miag-ao, 5023 Iloilo
B.7. Poly-β-Hydroxybutyrate Producing Bacteria as Degradar of Nitrates in Contaminated Waters	Carmela C. Alviar, Gloria D. Reyes, Susana M. Mercado, Jovelyn D. Reyes, Adelina Liwag and Victoria F. Gomez	National Institute of Molecular Biology and Biotechnology University of the Philippines, Los Baños
B.8. Biological Control of Enterics and Some Gram Negative Bacteria Using <i>Bdellovibrio</i> sp.	Marc Evans Abat and Ponciano S. Halos	Institute of Biology, College of Science University of the Philippines, Diliman
B.9. Inhibitory Effect of Some Plant Extracts on Epstein-Barr Virus Activation: A Screening Study for Antitumor Promoters	Amelia P. Guevarra, Michelle Chu, Maureen Valentin, Ruby Urmeneta, Hiromu Sakurai, Mutzuo Kozuka and Harukuni Tokuda	Institute of Chemistry, College of Science University of the Philippines, Diliman
B.10. The Detection of Ciguateric Type of Poison from Viscera of Siganid Fish from La Union, Philippines	Glorina N. Pocsidio and Olivia C. Cabrera	Institute of Biology, College of Science University of the Philippines, Diliman
B.11. The Use of Multiplex Polymerase Chain Reaction for Rapid Detection of Water-Borne Diarrhoeagenic Bacteria	Cynthia T. Hedreyda and Glenn G. Oyong	National Institute of Molecular Biology and Biotechnology University of the Philippines, Diliman



TITLE OF PAPER	AUTHOR (S)	INSTITUTION/ADDRESS
B.12. Random Amplified Polymorphic DNA Markers Used to Characterize the Giant Clam Algal Symbiont (Zooxanthellae)	Virginia D. Monje, Brett K. Baillie, Carmellita B. Baillie and Vivian A. Silvestre	Marine Science Institute University of the Philippines, Diliman
B.13. Screening of Potential RAPD Markers for the Prawn, <i>Penaeus monodon</i>	Marie Antonette Junio-Meñez, Virginia D. Monje, Eiza T. Yu, Laurence David and Rachel G. Ravago	Marine Science Institute University of the Philippines, Diliman
B.14. Frequency Distribution of the 9bp-Deletion in the mtDNA Control Region and a Malaria Resistance Gene Among Filipino Populations	Saturnina C. Halos, Michael Paul Tan, Gayvelline C. Calacal, Jasmin D. Miranda, Masako Kimura, Takefumi Ishida and Shinji Harihara	DNA Analysis Laboratory, Natural Sciences Research Institute University of the Philippines, Diliman
C. Agricultural Sciences		
C.1. Genetic Mapping Using Random Amplified Polymorphic DNA (RAPD) Markers in a <i>Vigna radiata</i> X <i>V. mungo</i> Interspecific Cross	Amy Emiliana N. Bernardo, Cleofe L. Bicar, Desiree M. Hautea and Randy A. Hautea	Institute of Plant Breeding College of Agriculture University of the Philippines, Los Baños
C.2. Genetic Linkage and Quantitative Trait Loci Analysis in Potato II. Molecular Mapping of Genes for Resistance to Thrips	Hayde F. Galvez, Nancy O. Bituin, Marilyn A. Latiza, Eduardo C. Fernandez, Consorcia E. Reano and Desiree M. Hautea	Institute of Plant Breeding College of Agriculture University of the Philippines, Los Baños
C.3. Molecular Mapping of Fiber Quality in Cotton (<i>Gossypium sp.</i>)	Jeannette M. Villareal, Evangeline C. Cabigan, Isagani G. Catedral and Desiree Menancio-Hautea	Cotton Research and Development Institute Batac, Ilocos Norte
C.4. Cloning and Characterization of A Melanin Biosynthetic THRI Reductase Gene Essential for Appressorial Penetration of <i>Colletrichum logenarium</i>	Noel S. Perpetua, Y. Kubo, N. Yasuda, Y. Takano and I. Furusawa	Cotton Research and Development Institute Mindanao Area Research Center 9504 Polomolok, South Cotabato
C.5. Genetic Linkage and Quantitative Trait Loci Analysis in Potato III. Evaluation and Mapping of Glandular Trichomes under the Philippine Lowland and Highland Conditions.	Desiree Menancio-Hautea, Hayde F. Galvez, Nancy O. Bituin, Marilyn A. Latiza, Zenaida N. Ganga, Eduardo C. Fernandez and Consorcia E. Reano	Institute of Plant Breeding College of Agriculture University of the Philippines, Los Baños
C.6. Morphological and Molecular Characterization of Tall and Dwarf Populations of Coconut <i>Cocos nucifera</i>	Vincent Andrew M. Quinto, Hayde F. Galvez, Consorcia E. Reano, Ronell Joey U. Carcallas, Reynaldo B. Quilloy, and Desiree M. Hautea	Institute of Plant Breeding College of Agriculture University of the Philippines, Los Baños
C.7. Genetic Engineering for Rice Improvement at PhilRice	Rhodora R. Aldemita, Glenn Y. Ilar and Laverne Gueco	Philippine Rice Research Institute Maligaya, 3119 Muñoz, Nueva Ecija
C.8. Molecular Marker-Aided Development of Rice Varieties for Direct-Seeding	Edilberto D. Redona, A.T.D. Ocampo, O.E. Manangkil and I.G. Pacada	Philippine Rice Research Institute Maligaya, 3119 Muñoz, Nueva Ecija
C.9. Chromosomal Segment with Major and Minor Genes for Blast Resistance Identified Using DNA Markers	Rodante E. Tabien and Shannon R.M. Pinson	Philippine Rice Research Institute Maligaya, 3119 Muñoz, Nueva Ecija

Continuation...Table 10

TITLE OF PAPER	AUTHOR (S)	INSTITUTION/ADDRESS
C.10. Inheritance of Tungro Resistance Genes from Two Tungro Resistant Donor Rice Varieties	Leocadio S. Sebastian, Gina V. Maramara, Haizel C. Martin, Marianne S. Castro and Emmanuel R. Tiongco	Philippine Rice Research Institute Maligaya, 3119 Muñoz, Nueva Ecija
C.11. Nuclear and Organellar DNA Application in <i>Oryza</i> Taxonomy and Pylogeny	Gabriel O. Romero	Philippine Rice Research Institute Maligaya, 3119 Muñoz, Nueva Ecija
C.12. Induction of Salt-Tolerance in Rice by Silica Treatment	Philbert S. Bonilla	Philippine Rice Research Institute Maligaya, 3119 Muñoz, Nueva Ecija
C.13. Potential Methods for Rapid Assay of Lipoxy Genase	Marissa V. Romero and Diane M. Barrett	Philippine Rice Research Institute Maligaya, 3119 Muñoz, Nueva Ecija
C.14. Generation of Photoperiod Insensitive Variants from Photoperiod Sensitive Rice Variety Wagwag Through Anther Culture	Celia M. Leaño, Eleanor S. Avellanoza, Noemi C. Dones, Philbert S. Bonilla and Nenita V. Desamero	Philippine Rice Research Institute Maligaya, 3119 Muñoz, Nueva Ecija
C.15. Discriminating the Quality of Philippine Rice Varieties with the New Tensipresser	James A. Patindol and Ken'ichi Ohtsubo	Philippine Rice Research Institute Maligaya, 3119 Muñoz, Nueva Ecija
C.16. Effects of Gamma Irradiation on Milled Rice Quality	Nanette V. Zulueta, James A. Patindol and Evelyn M. Herrera	Philippine Rice Research Institute Maligaya, 3119 Muñoz, Nueva Ecija
C.17. <i>In Vitro</i> Response of Immature Rice Inflorescence to Phenylacetic Acid	Eleanor S. Avellanoza, Martha V. Chico, Wilhelmina E. Villalba, Gina E. Balagot, Violeta Mananghaya, Celia M. Leaño, Myrna D. Malabayas and Nenita V. Desamero	Philippine Rice Research Institute Maligaya, 3119 Muñoz, Nueva Ecija
C.18. Enhancing Plant Regeneration from Anther Culture-Derived Callus of Indica Rice by Desiccation	Myrna D. Malabayas, Eleanor S. Avellanoza, Celia M. Leaño, Matha V. Chico, Wilhemina E. Villalba, Ma. Corazon N. Julaton, Gina E. Balagot, Julieta S. Nazar and Nenita V. Desamero	Philippine Rice Research Institute Maligaya, 3119 Muñoz, Nueva Ecija
C.19. Multiple Shoot Differentiation from Excised Shoot Tips and Nodal Sections of Corn (<i>Zea mays</i> L.)	Eden A. Perez, Julita G. Dimaculangan, Leila A. Sasuman and Olivia P. Damasco	Institute of Plant Breeding College of Agriculture University of the Philippines, Los Baños
C.20. Callus Induction in <i>Ipomoea muricata</i> J A C Q. (Convolvulaceae) Hypocotyl and Leaf Explants	Thomas Edison E. Dela Cruz and Corazon A. Menguito	Graduate School University of Sto. Tomas España, Manila
C.21. Vegetative Propagation of <i>Paraserianthes falcataria</i> thru Tissue Culture	Portia G. Lapitan	Department of Forest Biological Sciences University of the Philippines, Los Baños
C.22. Identification of Rambutan <i>Nephelium lappaceum</i> Linn. Variety Maharlika Using Peroxidase Isozyme	Roberta N. Garcia, Evelyn Mae T. Mendoza and Amy Emiliana N. Bernardo	Institute of Plant Breeding College of Agriculture University of the Philippines, Los Baños
C.23. Phenolic Compounds in Maturing Coconut <i>Cocos nucifera</i> , L. Endosperm	Perla F. Baldiviano, Evelyn Mae T. Mendoza and Antonio C. Laurena	Institute of Plant Breeding College of Agriculture University of the Philippines, Los Baños



Continuation... Table 10

TITLE OF PAPER	AUTHOR (S)	INSTITUTION/ADDRESS
C.24. Utilization of Fermented Cacao Drippings as Coagulant of Rubber Latex	Angelita F. Abrazado and Jessie A. Lumbao	Department of Agriculture-RFU XII Central Mindanao Integrated Agricultural Research Center, Amas, Kidapawan, Cotabato
C.25. Utilization of Rice (<i>Oryza sativa</i> L.) Bran as Substrate for Vinegar Production	Juma Novie B. Ayap and Prescilla C. Sanchez	Philippine Rice Research Institute Maligaya, 3119 Muñoz, Nueva Ecija
C.26. Impact of Continued Use of Profenofos Use in Cotton Soil	Amelia W. Tejada, R.G. Bayot, B.B. Quintana, L.M. Fabro, Jr., A. Esmade, S. Bobiles, E.R. Mojica and J.R. Subsuban	National Crop Protection Center University of the Philippines, Los Baños
C.27. Predicting Peak Rates of Runoff and Soil Loss from a Watershed	Marius M. Agua	Soil and Water Sciences Division International Rice Research Institute College, Laguna
C.28. Weed Management In Cotton Under Minimum Tillage	Benita U. Bilgeria	Cotton Research and Development Institute Batac, Ilocos Norte
C.29. Economic Efficiency Analysis of the Barangay Integrated Pest Management on Rice in Nueva Ecija, Philippines	Rogelio D. Cosio	Philippine Rice Research Institute Maligaya, Muñoz, Nueva Ecija
C.30. Cabbage Insect Fauna in the Mountain Province and Ilocos Sur	Bonifacio F. Cayabyab, Mario Navasero, Dante R. Santiago, Ariene G. Castillo, Boni S. Ligat and Nerio Recaido	National Crop Protection Center University of the Philippines, Los Baños
C.31. Cabbage Root Maggot, <i>Delia radica</i> Linnaeus (Anthomyiidae): A New Pest of Cabbage in the Philippines	Boni S. Ligat, Bonifacio F. Cayabyab and Mario V. Navasero	Benguet State University La Trinidad, Benguet
C.32. Life History and Damage Assessment of Bean Leaf Folder <i>Lamprosema indicata</i> Fab (Pyalide, Lepidoptera) on Mungbean	Mario V. Navasero and Melvin D. Ebuenga	National Crop Protection Center University of the Philippines, Los Baños
C.33. Comparative Toxicity of Insecticidal Crystal Protein Products of Cry Genes Cloned from Local <i>Bacillus thuringiensis</i> Berl. Isolates Against Lepidoterous and Coleopterous Pests	Barbara A. Laviña, Adelina A. Barrion, Bernardo P. Gabriel and Leodegario E. Padua	National Institute of Molecular Biology and Biotechnology University of the Philippines, Los Baños
C.34. Occurrence of Primary Biological Control Agents of Rice Black Bug, <i>Scotinophara coarctata</i> Fabr. in North Cotabato	Alejandra B. Estoy, Eliseo H. Batay-an and Pernelyn A. Soria	Philippine Rice Research Institute Maligaya, Muñoz, Nueva Ecija
C.35. Insecticidal Action of Selected Indigenous Plants Against Pink Bollworm, <i>Pectinophora gossypiella</i>	Estrelita O. Domingo, Nenita D. Cacayorin and Aida D. Solsoloy	Cotton Research and Development Institute Batac, Ilocos Norte
C.36. Microbial Control of Oriental Fruit Fly, <i>Bactrocera dorsalis sensu lato</i> (Hendel) Infesting Fruits of Papaya, Mango and Banana	Leodegario E. Padua, Ma. Anita M. Bautista and Barbara A. Laviña	BIOTECH University of the Philippines, Los Baños

Continuation... Table 10

TITLE OF PAPER	AUTHOR (S)	INSTITUTION/ADDRESS
C.37. Insecticidal and Fungicidal Effects of Selected Plants Against Cotton Pests	Aida D. Solsoloy, Nenita D. Cacayorin and Lydia C. Cano	Cotton Research and Development Institute Batac, Ilocos Norte
C.38. Selection of the Entomopathogenic Fungal Isolates for Virulence Toward the Oriental Migratory Locust, <i>Locusta migratoria manilensis</i> Meyen	Dante R. Santiago, Mario V. Navasero, Arlene G. Castillo and Bonifacio F. Cayabyab	National Crop Protection Center University of the Philippines, Los Baños
C.39. Growth and Survival of Sex-Reversal Tilapia Hybrid (<i>Oreochromis niloticus</i> x <i>Oreochromis mossambicus</i>) in Floating Net Cages in Brackishwater	Ronald P. Sombrero	College of Fisheries Mindanao State University Tambler, General Santos City
C.40. Oerton For Sex Reversal of Nile Tilapia (<i>Oreochromis niloticus</i>)	Eunice V. Alejos-Layugan	Cagayan State University Aparri Colleg of Fisheries Aparri, Cagayan
C.41. Protein-Energy Requirement of Nile-Tilapia, <i>Oreochromis niloticus</i> Fingerlings	Elizabeth M. Battad-Urmaza	Institute of Fisheries Don Mariano Marcos Memorial State University, Sto. Tomas, La Union
C.42. The Use of Phytoplankters in Improving the Hatchery Production of Commercially Important Penaeid Shrimps in Asia	Jessie D. Ronquillo	College of Fisheries University of the Philippines in the Visayas Miag-ao, Iloilo
C.43. A New Pasteurella multocida Type B Bacterin for the Prevention of Hemorrhagic Septicemia in Ruminants: The Mouse and Goat Models	Luciano T. Talens, Wilma T. Cruz, Ma. Celia Palma, Rodel Brucal and Angelita D. TalensMa	Vaccine and Animal Disease Diagnostic Laboratory University of the Philippines, Los Baños
D. Social Sciences		
D.1. Land Calamities: A Historical Survey of Natural and Man-Made Calamities and Their Impact on the Development of the Philippines, 1517 - 1910	Luis C. Dery	Department of History De La Salle University Taft Avenue, Manila
D.2. Boomtown's Integrated Solid Waste Management: Prospects for Matahum Gensan, Malinis, Maganda, Mapayapa	Esther Z. Plaga	Sociology Department College of Arts and Sciences Mindanao State University 9500 General Santos City
D.3. Atok's Barefoot Scientists Using IPM	Wilfredo R. Estolas	Department of Crop Protection Benguet State University La Trinidad, Benguet
D.4. The Impact of Foreign Loans on Mathematics Education	Achilles B. del Callar	Educational Development Projects Implementing Task Force Department of Education, Culture and Sports DECS Complex, Meralco Ave., Pasig City



TITLE OF PAPER	AUTHOR (S)	INSTITUTION/ADDRESS
E. Health Sciences		
E.1. Mutagen-Induced Chromosome Damage: Implication in Cancer Susceptibility	Luisa D. Enriquez, Gil M. Vicente, Rhodora A. Rebutoc, and Filipinas F. Natividad	Research and Biotech Division St. Luke's Medical Center 279 E. Rodriguez Sr. Blvd. Cathedral Heights, 1102 Quezon City
E.2. Breast Cancer Susceptibility Gene 1 Mutation in High Risk Filipino Females	Romulo S. de Villa, Filipinas F. Natividad, Jhoe Anthony R. Alfon, Vitus R. Talla, Conrado C. Cajucom and Samuel D. Ang	Research and Biotech Division St. Luke's Medical Center 279 E. Rodriguez Sr. Blvd. Cathedral Heights, 1102 Quezon City
E.3. Development in Transformed Tissues: Breast Carcinoma in Filipino Females	Edna A. Amparado, Arsenia A. Casauay, Sonia D. Jacinto, Annabelle A. Herrera and Deborah Ascano	Institute of Biology College of Science University of the Philippines, Diliman
E.4. Development in Transformed Tissues: Cervical Carcinoma in Filipino Patients	Arsenia A. Casauay, Edna A. Amparado, Sonia D. Jacinto, Annabelle A. Herrera and Ma. Consuelo Domingo	Institute of Biology College of Science University of the Philippines, Diliman
E.5. Factors Influencing Delay in Diagnosis Among Colon and Rectal Cancer Patients	Armando C. Crisostomo	Department of Surgery University of the Philippines - Philippine General Hospital Taft Ave., Manila
E.6. Binding Patterns of Prostate Tissues to Some Lectin and Neoglycoprotein Probes	Sonia D. Jacinto, Venus G. Calingasan, Annabelle A. Herrera, Arsenia A. Casauay, and Edna A. Amparado	Institute of Biology College of Science University of the Philippines, Diliman
E.7. Genotype Analysis of HIV-1 Isolates from Risk Group in Metro Manila	Nina Gloriana-Barzaga, Robert Ros Graham, Edna Santiago, Veronica F. Chan and Ma. Teresa Valdez	College of Public Health University of the Philippines, Manila 625 P. Gil St., Ermita, Manila
E.8. IGM-Capture Elisa of Serum Samples from Filipino Dengue Patients	Corazon C. Buerano, Ronald R. Matias, Futoshi Hasabe, Dengue Research Network, Filipinas F. Natividad and Akira Igarashi	Research and Biotech Division St. Luke's Medical Center 279 E. Rodriguez Sr. Blvd. Cathedral Heights, 1102 Quezon City
E.9. Usefulness of Sandwich Elisa in Predicting the Detection of Dengue Virus by RT-PCR from Infected Culture Fluids of C6/36 <i>Aedes albopictus</i> Cells	Filipinas F. Natividad, Corazon C. Buerano, Ronald R. Matias, Marlou Noel M. Mangada, Dengue Research Network and Akira Igarashi	Research and Biotech Division St. Luke's Medical Center 279 E. Rodriguez Sr. Blvd. Cathedral Heights, 1102 Quezon City
E.10. Comparative Nucleotide and Amino Acid Sequences of the Nonstructural (NS1) Gene of Dengue Virus Serotype 3 Isolate During a 1995 Outbreak in Metro Manila, Philippines	Ronald R. Matias, Futoshi Hasabe and Akira Igarashi	Research and Biotech Division St. Luke's Medical Center 279 E. Rodriguez Sr. Blvd. Cathedral Heights, 1102 Quezon City
E.11. Isolation, Culture and Characterization of Philippine Isolates of <i>Helicobacter pylori</i> .	Blanquita B. de Guzman, Liza P. Faustino, Ma. Corazon B. Paredes and Benjamin A. Perez	Research and Biotech Division St. Luke's Medical Center 279 E. Rodriguez Sr. Blvd. Cathedral Heights, 1102 Quezon City
E.12. The Antidotal Effect of Orally Administered 50% <i>Amranthus spinosus</i> (URAI) Leaves Extract in Paralytic Shellfish Poisoning in Mice	Corazon H. Santos, Rachel Delino and Cynthia S. Moran	College of Medicine University of the Philippines, Manila P. Faura, Ermita, Manila
E.13. Health Social Science Concepts and Methods in the Prevention of HIV/AIDS/STDS	Josefina G. Tayag	College of Arts and Sciences University of the Philippines, Manila P. Faura, Ermita, Manila

NAST MANDATE 3

SCIENTIFIC LINKAGES

3.1 INTERNATIONAL

3.1.1. International Meetings/Conferences

On June 18-19, NAST, Philippine-American Academy of Science and Engineering (PAASE), and the University of the Philippines System organized and conducted the "1998 Science and Technology Congress" with the theme Science and Technology 2000. The Congress aimed to: (1) promote the advancement of S&T through international collaborative research; (2) explore awareness to facilitate exchange of information and resources for economic and technological advancement; (3) explore opportunities for active participation in Philippine scientific and technological development; and (4) explore ways to foster appropriate technology transfer. The Congress was held at the Science Teachers' Training Center, UP Institute of Science and Mathematics Education Development, UP Diliman, Quezon City. The program generally consisted of plenary discussions, oral technical paper presentations, and poster sessions.

Acad. Conrado S. Dayrit, NAST and Federation of Asian Scientific Academies and Societies (FASAS) President attended the FASAS Council Meeting in conjunction with the Seminar on "Identification of S&T Priorities for Asian Regional Cooperation" last November 23-24, 1998 at Chennai, India.

3.1.2. New Memoranda of Agreement

3.1.2.1 NAST-PAASE

As an offshoot of the "1998 Science and Technology Congress", PAASE and NAST signed a Memorandum of Agreement on July 9.

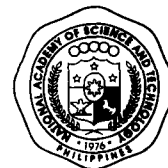
3.1.2.2 NAST-AAS

The Academy agreed in principle to sign a Memorandum of Agreement with the **Australian Academy of Science (AAS)**. The AAS will be sending the final draft of the MOA to be signed by the NAST President.

3.1.3 Collaborative Research

3.1.3.1 RSL-NAST

Under the scientists exchange visit of the MOA between the Royal Society of London (RSL) and NAST, the Royal Society accepted NAST's endorsement of two Filipino scientists to undertake short study visit in the United Kingdom.



First was the study visit of Dr. Marilyn C. Mabini of the University of Santo Tomas (UST) at the Operational Research and Applied Statistics, University of Salford, England. Dr. Mabini's study on the inventory control problem of an air transportation company in the Philippines lasted three months (May 14-August 14). Based on her research program on Multi-Indenture Repairable Inventories, which has relevance to the Philippine Airlines, a technical paper was drafted. Entitled "Controlling Multi-Indenture Repairable Inventories of Multiple Aircraft Parts", which was co-authored by Prof. Anthony H. Christer, Ph.D., (Dr. Mabini's host scientist), the paper was submitted to the *Journal of Operational Research Society* for possible publication.

The second was the study visit of Dr. Fortunato B. Sevilla III, Director of the Research Center for Natural Sciences, also of UST. From October 15 to November 30, Dr. Sevilla was accommodated at the University of Manchester Institute of Science and Technology (UMIST) to pursue a research on the development of optical fiber chemiluminescence biosensor and antioxidant activity. The device would facilitate the research for Philippine plants which can be used as novel health food materials against diseases such as arteriosclerosis, rheumatoid arthritis, and cancer.

Dr. Sevilla also plans to continue his research in the Philippines in his laboratory. Since then, he would be continually collaborating with his host scientist, Ramaier Narayanaswamy, Ph.D., of the Department of Instrumentation and Analytical Sciences, UMIST.

3.1.3.2 DFG - PHIVOLCS - NAST

On February 22 - March 4, Dr. Martin Wiesner of the Institute of Biogeochemistry and Marine Chemistry, University of Hamburg, Germany, conducted a trilateral cooperative study entitled "Quaternary Tephrochronology in the South China Sea" with the Philippine Institute of Volcanology and Seismology (PHIVOLCS) and some Taiwanese scientists. His visit, which was under the scientists exchange visit of the NAST-DFG MOA, was facilitated in by PHIVOLCS.

3.2. LOCAL

3.2.1. Scientific Organizations/Associations

The Academy continues its collaboration with the Center for BioMolecular Science Foundation, Incorporated and with the Center for Fluid Dynamics.

NAST-OYSI

The Academy and the Outstanding Young Scientists, Incorporated (OYSI) jointly co-sponsored the **"First Quarter Philippine Statistical Association Conference"**. The Conference, spearheaded by the Philippine Statistical Association was held on April 27 at the Philippine Social Science Center, UP Diliman.

On May 7-8, NAST and OYSI also co-sponsored the **"PSM-OYSI-NAST Outstanding Young Scientists Forum"**, a technical paper oral presentation held during the *27th Annual Convention of the Philippine Society for Microbiology (PSM)* at the Manila Hotel, Manila. The theme was "From the Small Comes the Mighty: The Global Impact of Microbiology and Biotechnology".

Through the joint effort of the Academy and the OYSI, the three roundtable discussions (RTDs) on science and technology assessment were conducted this year.

New Memoranda of Agreement

Two MOAs were signed by NAST this year: one with the Outstanding Young Scientists, Inc. and another with the Confederation of Scientific and Professional Organizations, Region 7, Inc., jointly with the **Department of Science and Technology Regional Office No. 7**.

Expansion of Scientific Linkages

NAST is exploring linkage with three (3) Engineering Societies namely: (1) Association of Structural Engineers of the Philippines; (2) Council of Engineering Consultants of the Philippines; and (3) Philippine Institute of Architects.



NAST - A Revisit of its Functions

The National Academy of Science and Technology is the NATION'S SYMBOL OF COMMITMENT TO SCIENCE. The Academy is a recognition body. It is not a government agency tasked with the delivery of social services to its constituents. Its contributions to society come from the cumulative achievements of its members over a lifetime under less than encouraging circumstances, given the low value accorded to science in this country. The honor bestowed on the Academicians is for work already done; for

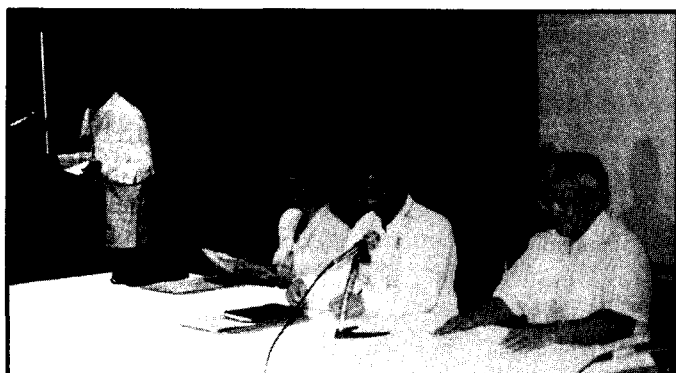
achievements already achieved; for contributions to society already made. Every nationally and his or her own right represent the best of produced in science.

Academy is to be peers, for one is not hired; one

equally accomplished colleagues. ACADEMICIANS' achievements are some of the most "untreasured" among our national treasures for the typical scientist is not a celebrity. Their lives do not suffer from "overexposure" and "overvaluation" of what they have done. They never make the headlines the way politicians and celebrities do. A SCIENCE CULTURE as a valued part of our national life is still anaemic, even if growing, and at times promising to blossom and bear fruit by the Year 2000. This landmark year is already upon us but the promise remains a tiny bud.



member is distinguished; internationally known in but collectively they what this country has **To belong to the recognized by does not apply; one is chosen among**



Academicians spend a lifetime in research, teaching public service in the pursuit of science as an intellectual activity and its applications which are meant to serve a human purpose. They set the standards, so to speak, for substance, rigor, relevance and intellectual quality which aspiring scientists can emulate.

But science by its very nature demands intellectual honesty, integrity, independence, intellectual quality and single-minded dedication to chosen fields of study. These are qualities which could serve our society well beyond scientific endeavors and into public life. In the meantime, for the young, talented, and starry-



Continuation...Activities of Academicians in 1998

eyed in science, the incentives are meager; the alternatives such as immigration, national and international consultancies, private industry and administrative positions which provide more perks are very powerful countervailing forces. individual members, serve as much-needed been tempted and All of them pursued the centerpiece of



The ACADEMY and its through their own work, role models. They have lured, but have resisted. careers in science as their lives.

Role models, if up to, must continue to day-to-day lives. A elegant cap and regal, do not suffice, for they do not meet daily needs. They only add color when draped over the "wooden box" on its final journey. One cannot help admiring the P1 million prize; the house and lot; the car and many other gifts awarded to Onyok Velasco, the boxer. Obviously, world class scientists do not bring as much glory to the country as world class boxers.

they are to be looked have dignity in their big medal and an gown, no matter how

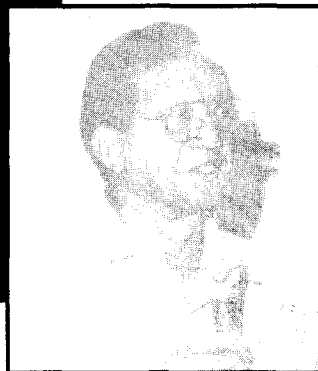
To what extent are Academicians expected to continuously affirm the validity and "DESERVEDNESS" of the honor they have received? In theory, they are not; but in practice, they are. Honors earned; honors deserved and honor conferred do not justify the annual budget. The question repeatedly asked is: "What have you done for us lately?"

The best way to carry out the advisory function of the Academy is through the individual members whose continuing participation in S & T relevant activities is DEMAND-DRIVEN. Those who invite their participation value what they contribute. Otherwise they will not be asked. It is when we offer our advise on issues we have nothing to offer that we should be concerned, for it detracts from the honor-conferring functions. However, the Academy as an Academy can choose to focus on one or two issues year round which we can convene or organize the relevant S and T expertise

In other words, a convening role just as we had possibility is to the Academy proviso, that the new members professionally research maintain the Academy. That means, when we elect members we the honor is deserved but the potential contribution our advisory function. We could look for "SUNSHINE" and not settle for 'SUNSET" if such quality could be found.



in order to meaningfully address these issues. we can also exercise the advisory function via



or a co-sponsoring role, done in the past. Another work for the increase in membership with the other things being equal, be elected from the active cohorts of the community in order to scientific vitality of the consider not just whether of the new member to

Fortunately, there is a continuing demand for the scientific expertise, experience and wisdom of our Academicians. They serve in national and international S & T advisory committees, review panels, Boards of Trustees, networks, research councils, etc. They continue to be invited as keynote speakers,



resource persons, paper presentors, eminent persons, lecturers, discussants, etc. and remain scientifically productive. In 1998, Academicians were invited to S & T related activities of the Department of Environment and Natural Resources (DENR); Department of Trade and Industry (DTI); Department of Science and Technology (DOST); Department of Health (DOH); National Research Council of the Philippines (NRCP); REPROCEN; College of Public Health (CPH), Philippine Council for Advanced Science and Technology Research and Development (PCASTRD); Philippine Rice Research Institute (PhilRice); the Department of Agriculture (DA); the National Food and Agriculture Council; the Commission of Agricultural Modernization; the Visayas College of Agriculture (VISCA); the Benguet State University (BSU); the Professional Regulatory Commission (PRC); the Bureau of Food and Drugs (BFAD); the Commission on Higher Education (CHED); the UP Open University; the Population Commission; the Philippine Institute for Development Studies (PIDS); the Foundation for the Advancement of Clinical Epidemiology; the Philippine Council for Health Research and Development (PCHRD); Philippine Council for Agriculture, Forestry and Natural Resources Research and Development (PCARRD); the Haribon Foundation; the International Institute for Rural Reconstruction; the Bureau of Agricultural Research; the Bureau of Fisheries and Aquatic Resources (BFAR); National Seed Industry Council; Rice Technical Working Group; UP Center for Integrative and Development Studies (UP-CIDS); Ethics Group of the Committee on Research Implementation and Development of the UP College of Medicine; Industrial Technology and Development Institute (ITDI); Science Teacher Training Center (STTC); the Human Development Network; Philippine Coconut Research Development Foundation; Policy Development Foundation, Inc.; Society for Veterinary Public Health; Presidential Commission on Tagaytay-Taal; Philippine Carabao Center; WHO National Influenza Center; National Biosafety Committee; National Advisory Committee for the Control of Animal Disease and Emergency, etc.

At the international level, Academicians served in different committees and/or presented papers in meetings convened by the following; the International Rice Research Institute (IRRI); the Consultative Group on International Agricultural Research (CGIAR); the International Plant Genetic Resources Institute; the Ecoregional Fund for Anethodological Initiatives; the Australian Center for International Agricultural Research; the WHO Tropical Disease Research Programme; the Third World Academy of Science (TWAS); the FAO; the Federation of Asian Scientific Academies and Societies (FASAS); the Asian Rice Biotechnology Network; the Asian Pacific Association of Agricultural Research Institutes; the ASEAN-Committee on Science and Technology Sub Committee on Marine Science; the Coastal Panel of the Global Ocean Observation System; the Scientific and Advisory Committee of the Coral Reef Monitoring Network; the Pacific Science Congress; the World Wildlife Fund (WWF); the World Aquaculture Society; the International Center for Living Aquatic Resources Management; the UPWARD Network of the International Potato Center; the International Marine Alliance; GTZ; the International Conference on Marine Biology of the South China Sea; American Association of Cereal Chemists; Niigata Food Research Center; ASEAN Science and Technology Week; the Diversities in Western Pacific and Asia Center Ecological Research; Committee on Science and Technology in Developing Countries (COSTED); etc.

In order to participate in all of these S & T advisory activities, Academicians travelled to 15 countries: Italy, Japan, Switzerland, Brazil, Australia, Vietnam, Thailand, France, Norway, USA; the Netherlands, Singapore, South Korea, Taiwan and Malaysia. They participated in the R & D programs of 43 national agencies and 28 international organizations.

The **subject matters of the advisory committees and conferences in which Academicians participated** are very vital nationally and globally. They include the following:

- Animal Health Operation Sagip Hayop
- Human Health: Influenza, hepatitis B, tropical disease, HIV-AIDS
- Biodiversity conservation in plants and livestock
- Vaccine production
- Rice research agenda
- Plant genetic resources
- Economic performance
- Population policy
- Fisheries, seaweeds, marine life including coastal zone and reef management
- Bioethics and animal experimentation
- Laguna de Bay rehabilitation
- Veterinary drugs
- Livestock development
- Biotechnology and biosafety
- Research partnerships; monitoring and evaluation
- Global and national agricultural research agenda
- Curriculum development; distance education
- Development policy
- Natural resource management

With these breadth of coverage of the activities engaged in by Academicians, they cannot be accused of not performing the advisory function of the Academy. In all of these involvements, Academicians are not passive participants; they are major actors, leaders and active contributors to the agenda on hand.





A. Significant S&T Positions

1. SOLITA F. CAMARA-BESA

- a. **Member**, Ethics Group of CRID, College of Medicine, University of the Philippines Manila
- b. **Member**, Board of Judges, Philippine Talent Search for Young Scientists, NAST

2. MAGDALENA C. CANTORIA

- a. **Member**, Board of Judges, Best Poster Award, NAST
- b. **Member**, Committee on Current Issues and Policy Advice, NRCP
- c. **Member and Corporate Secretary**, Board of Trustees, NRCP Research Foundation, Inc. (1998-1999)
- d. **Chair**, Editorial Board, NRCP
- e. **Member**, UP Manila Garden Club
- f. **Member**, Committee on the Search for Women in Health Science and Technology, UP Manila

3. FILOMENA F. CAMPOS

- a. **Member**, Executive Board, Third World Organization for Women Scientists (TWOWS), Trieste, Italy
- b. **Member**, Steering Committee, Diversitas in Western Pacific and Asia (DIWPA), Center Ecological Research, Kyoto University, Japan
- c. **Member and Academician**, Third World Academy of Science (TWAS), Trieste, Italy
- d. **Member**, Environment Impact Assessment Review Committee, DENR/DAP
- e. **Member**, Scientific Council, Pacific Science Congress
- f. **Member**, National Committee on Biosafety of the Philippines

4. GELIA T. CASTILLO

- a. **Member**, Council of Advisers, Commission on Agricultural Modernization
- b. **Chair**, Organizing Committee for the 1998 Annual Scientific Meeting (ASM), NAST
- c. **Member**, External Review Committee, Tropical Disease Research Programme, WHO
- d. **Member**, Board of Advisers, Reproductive Health, Rights, and Ethics Center for Studies and Training, UP Diliman
- e. **Member**, Board of Trustees, International Plant Genetic Resources Institute (IPGRI), Rome, Italy
- f. **Senior Research Adviser**, Users' Perspectives with Agricultural Research and Development (UPWARD)

Continuation... 1998 Accomplishments and Activities of Academicians

- g. **Member**, International Scientific Advisory Committee, Ecoregional Fund to Support Methodological Initiatives, Brasilia, Brazil
- h. **Member**, International Review Team for the Australian Center for International Agricultural Research (ACIAR)
- i. **Member**, External Review Team for the Rainfed Lowland Rice Research Program and the Consortium, IRRI

5. LEOPOLDO S. CASTILLO

- a. **Member**, Ad Hoc Committee on the Formulation of Intellectual Property Rights Policy Guidelines, UP Los Baños

6. VERONICA F. CHAN

- a. **Chair**, Task Force, Modernization and Transfer of BPS, DOH
- b. **Chair**, Technical Committee, BPS, DOH
- c. **Member**, Task Force for Vaccines and Biologicals, BFAD, DOH
- d. **Member**, Sub-Committee, National Biosafety Committee, DOST
- e. **Director**, WHO National Influenza Center, College of Public Health, UP Manila

7. CONRADO S. DAYRIT

- a. **President**, NAST and **Chairman**, NAST Executive Council
- b. **President**, Federation of Asian Scientific Academies and Societies (FASAS)
- c. **Vice President**, Medical Affairs, UNILAB
- d. **Trustees and Treasurer**, Philippine Coconut Research and Development Foundation
- e. **President**, Dr. Daniel de la Paz Foundation
- f. **Honorary Chairman**, Dr. Geminiano de Ocampo Medical Research Foundation
- g. **Member**, Board of Directors, Philippine Institute of Pure and Applied Chemistry

8. SALCEDO L. EDUARDO

- a. **Dean**, College of Veterinary Medicine, UP Los Baños
- b. **Member**, National Agriculture and Fishery Council (NAFC), Committee on Poultry, Livestock and Feed Crops
- c. **Member**, National Advisory Committee for the Control of Animal Disease and Emergency "Oplan Sagip Hayop"
- d. **Chair**, Awards Committee, Philippine Society of Animal Science 1998 Annual Convention
- e. **Member**, Editorial Board, Asian-Australasian Journal of Animal Sciences



9. RAUL V. FABELLA

- a. **Member**, Eminent Persons Group, Dept. of Trade and Industry

10. EDGARDO D. GOMEZ

- a. **Member**, Coastal Panel of the Global Ocean Observing System
- b. **Member**, Scientific and Technical Advisory Committee of the Global Coral Reef Monitoring Network

11. RAFAEL D. GUERRERO III

- a. **Executive Director**, PCAMRD-DOST
- b. **Chairman**, ASEAN-COST Sub-committee on Marine Science
- c. **Program Leader**, Integrated Action Program for the Rehabilitation of Laguna de Bay
- d. **Program Leader**, DOST-UNDP Gainex Program for Milkfish, Seaweeds and Shrimp

12. BIENVENIDO O. JULIANO

- a. **Elected Member**, Rice Technical Working Group (RTWG) Committee, National Seed Industry Council
- b. **Chairman**, Committee on Grain Quality Protocol for Cool Elevated Area, Saline Area and Upland Ecosystem, RTWG
- c. **Member**, Editorial Board, *Philippine Journal of Science*

13. TITO A. MIJARES

- a. **Life Member**, Philippine Statistical Association
- b. **Life Member**, Philippine Economic Society
- c. **Regular Member**, NRCP
- d. **Chair**, Board of Judges, Philippine Talent Search for Young Scientist, NAST
- e. **Member**, Technical Committee on Engineering and Technology, Scientific Career System, DOST
- f. **Chair**, Board of Judges, Philippine Statistics Quiz, National Finals (Annual Nationwide contest on statistics among first year college students sponsored by the National Statistics Office, DOST, CHED and PSA)

14. EVELYN MAE T. MENDOZA

- a. **Program Leader**, IPB Plant Biotechnology Program
- b. **Chair**, Adhoc Committee to establish a Molecular Biology and Biotechnology Program, Graduate School, UP Los Baños
- c. **Member**, Special Biotechnology Committee, PCARRD
- d. **Editor-in-chief**, Philippine Journal of Crop Science

Continuation...1998 Accomplishments and Activities of Academicians

- e. **Member**, DOST Special Technical Committee on Natural Sciences
- f. **Philippine Representative to the Panel of Judges**, ASEAN S&T Awards, ASEAN-Committee on Science and Technology
- g. **Member**, International Society for Horticultural Science
- h. **Member**, American Association for the Advancement of Science

15. TEODULO M. TOPACIO, JR.

- a. **Chairman**, Sub-committee on Veterinary Drugs, DOH
- b. **Chairman**, National Advisory Committee for Animal Disease Control and Emergency (NAC-ADCE), DA
- c. **President**, Philippine Society for Veterinary Public Health
- d. **Member**, Panel on Biotechnology, PCASTRD-DOST
- e. **Chairman**, Board of Veterinary Medicine Examiners, Professional Regulations Commission (PRC)
- f. **Member**, Technical Panel on Veterinary Education, CHED
- g. **Consultant**, Office of the Presidential Adviser for Cattle, Dairy and Carabao Development, Office of the President

16. JOSE R. VELASCO

- a. **Tutor in Chemistry**, UP Open University and at the Emilio Aguinaldo College, Dasmariñas, Cavite

17. BENITO S. VERGARA

- a. **Member**, Program Management Committee for R&D on ornamental plants, PCARRD-DOST
- b. **Honorary Scientist**, Rural Development Administration, Republic of Korea, 30 September

18. PRESCILLANO M. ZAMORA

- a. **Director**, UP Center for Integrative and Development Studies (CIDS) - NAST Biodiversity Program

B. Publications

1. MAGDALENA C. CANTORIA

- a. **Author**, Workbook in Pharmacognosy, Fourth Edition. NRCP. ISBN 971-91932-3-9. xiii + 165 pp.
- b. **Editor**, Transactions of the National Academy of Science and Technology, Volume XVII. 1995. ISSN 0115-8848. vi + 283 pp.
- c. **Contributor**, Philippine Science Encyclopedia, Volume IV, Section of the Pharmaceutical Sciences. NRCP. (In press)
- d. **Member**, International Society for Plant Molecular Biology



2. GELIA T. CASTILLO

- a. **Author**, "Cultural Diversity Through Genetic Diversity", Guest Essay in IRRI 1997-98 Corporate Report, BIODIVERSITY: Maintaining the Balance, IRRI 1998, p. 31
- b. **Author**, The Philippine Social Sciences in the Life of the Nation: Selective Reflections, in Philippine Social Science Information, Jan.-June 1998 Vol. 26, No. 1 pp. 5-18
- c. **Author**, Social Harvest from the Promise of Springtime: User Responsive Participatory Agricultural Research, in Facilitating Sustainable Agriculture: Participatory Learning and Adaptive Management in Times of Environmental Uncertainty, Cambridge University Press, U.K. 1998 pp 191-213

3. VERONICA F. CHAN

- a. **Author**, "Epidemiological Data on Influenza in the Philippines", in Adult Immunization in Asia; First International Symposium: in Hanoi, Vietnam, April 1998 by WHO and Rhone Poulenc

4. SALCEDO L. EDUARDO

- a. **Author**, Taeniosis and Cysticercosis: Present Situation in Some East-Asian Countries including the Philippines, UPFI Professor Chair Lecture

5. EDITO G. GARCIA

- a. **Co-author**, Textbook of Philippine Parasitology

6. EDGARDO D. GOMEZ

- a. **Author**, Coastal Zone Management and Conservation in the South China Sea, in The Marine Biology of the South China Sea pp 345-353
- b. **Author**, Reef Management in Development Countries: A Case Study in the Philippines: Coral Reefs 16:Suppl.: S3-S8
- c. **Author**, Fragile Coasts, in Our Planet 9(5):18-19

7. RAFAEL D. GUERRERO III

- a. **Author**, A Guide to Tilapia Farming. Aquatic Biosystems, Bay, Laguna. 70p.
- b. **Co-author**, Water Resources Management: A Global Priority. NAST. 382 pp.
- c. **Author**, Freshwater Cage Farming of Tilapia in the Philippines. Aquaculture Asia. Vol. III (3): 44-46

Continuation...1998 Accomplishments and Activities of Academicians

- d. **Author**, Aquaculture: Capitalization on Nature's Bounty, pp. 80-83, in The Food and Agriculture Centennial Book. University of Asia and the Pacific, Manila, Philippines

8. BIENVENIDO O. JULIANO

- a. **Author**, Varietal Impact on Rice Quality. Cereal Foods World 43: 207-211, 214-216, 218-222
- b. **Author**, Quality Rice for Filipinos. Plenary Papers 11th National Rice Research and Development Review and Planning Workshop, Vol. 2: 1-3, PhilRice, Muñoz, Nueva Ecija
- c. **Author**, Rice Quality for the Future. International Symposium on Rice Quality, Nottingham, U.K., (In press)
- d. **Co-author**, Effect of Cooking Method on Amylopectin Staling of Cooked Rice (Abstract). Cereal Foods World 43: 563
- e. **Co-author**, Chemometrics of Rice Grain Quality of Raw and Cooked Philippine Rices. Philippine Agriculturist 80(3 & 4): 211-236

9. EVELYN MAE T. MENDOZA

- a. **Co-author**, The Makapuno Mutant Coconut, NAST, 66pp
- b. **Co-author**, Changes in Oligosaccharides, Soluble Sugars and Hydrolyzable Polysaccharides In Developing Seeds of Batao (*Dolichos Lablab*) and Sabawel (*Mucuna Pruriens*), Phil. Journal of Crop Science, 22:23-29

10. TITO A. MIJARES

- a. **Author**, The Set of Elementary Symmetric Functions of the Roots Tests for Testing Independence Between Two Sets of Variates. Conference paper, 3rd Conference on Statistical Computing of the Asian Regional Section (ARS). International Association for Statistical Computing, December 2-4, Shangrila EDSA Plaza, Manila
- b. **Author**, On Roots of Likelihood Functional Equations in Classical Univariate and Multivariate Statistical Theory. Proceedings of the NAST 20th Annual Scientific Meeting, July 8-9, Westin Philippine Plaza, Manila.
- c. **Author**, Statistics in the Philippines and their Applications. Roundtable Discussion on the Assessment of the State of the Mathematical Sciences in the Philippines and their Application in Industry, NAST, September 25

11. TEODULO M. TOPACIO, JR.

- a. **Author**, The Veterinarian - Seeking Its True Identity

12. JOSE R. VELASCO

- a. **Author**, Selected Papers of Jose R. Velasco, In press
- b. **Author**, Retrospective Review of the Science Act of 1958, In press



13. BENITO S. VERGARA

- a. **Author**, Sex Reversal in Tilapia
- b. **Author**, Tiki-tiki - A Simple Cure for Beriberi
- c. **Author**, Abaca - The Strongest Natural Fiber

14. PRESCILLANO M. ZAMORA

- a. **Author**, "Forest of the Sea" Vol. 1, Chapter 7, pp. 177-191. In: Raymundo S. Punongbayan, Prescillano M. Zamora and Perry S. Ong The Philippine Archipelago. Kasaysayan, The Story of the Filipino People. Hongkong: Asia Publication Company, Limited
- b. **Author**, "A Green Archipelago" Vol. 1, Chapter 8, pp. 195-225 In: Raymundo S. Punongbayan, Prescillano M. Zamora and Perry S. Ong The Philippine Archipelago. Kasaysayan, The Story of the Filipino People. Hongkong: Asia Publication Company, Limited
- c. **Co-author**, Root Causes of Biodiversity Loss in the Philippines: Case Studies of Three Island Ecosystems. World Life Fund (KKP) Publication

C. Researches (Completed or In-progress)

1. FILOMENA F. CAMPOS

Indigenous Technology in Selected Farming Systems

2. LEOPOLDO S. CASTILLO

Annotated Bibliography on Philippine Biodiversity: Livestock and Poultry (Agrobiodiversity), 1949-1997 (completed)

3. VERONICA F. CHAN

- (1) Responding to the Health Resource Human Development Needs of the Philippines Through Distance Education
- (2) "Influenza Surveillance"

4. RAUL V. FABELLA

- (1) Asset Price Imbalance Indicators
- (2) General Macroeconomics Performance Indicators
- (3) 1997-1998 Economic Performance Review
- (4) The Tyranny of Fundamentals
- (5) Re-emergency East Asia: Sins of the Pas, Shape of the Future
- (6) Unintended Consequences: Big Push and the East Asian Stumble
- (7) A Season of Hope
- (8) The East Asian Model and the Asian Crisis: Credit Policy and the Mundell-Fleming Flows

Continuation...1998 Accomplishments and Activities of Academicians

5. SALCEDO L. EDUARDO

- (1) Some Parasites of the Mouse Deer, *Tragulus nigrricans* from Palawan, Philippines
- (2) Trematode Parasites of the Whale Shark, *Rhinocodon typus* in the Philippines
- (3) Annotated Bibliography on Philippine Biodiversity: Philippine Parasitic Invertebrate

6. EDITO G. GARCIA

Development of Vaccine to Prevent Hepato-Splenic Disease in Schistosomiasis based on Anti-Embryonic Immunity

7. EDGARDO D. GOMEZ

Culture of Giant Clams

8. RAFAEL D. GUERRERO III

- (1) An Assessment of Philippine Fisheries Research and Development (Policy Paper)
- (2) An Annotated Bibliography of Philippine Freshwater Fishes
- (3) Studies on the Breeding and Growth of the African Nightcrawler, *Eudrilus euginae*

9. BIENVENIDO O. JULIANO

- (1) Effect of Starch Properties on the Quality of Molded Brown-Rice Cakes
- (2) Comparative Protein Properties and Digestibility of Cooked Rice in Growing Rats of indica and japonica Milled Rices

10. EVELYN MAE T. MENDOZA

- (1) Physicochemical Analysis of IP Crops (Phase V)
- (2) Avocado Rootsock Resistant to Phytophthora Root Rot Disease in Cell Cultures
- (3) Control of Ripening in Papaya and Mango by Genetic Engineering
- (4) Enhancement of Crop Salt Tolerance
- (5) Development of Objective Indices (Biochemical, Physiological and Physical) for Cultivar Identification of Mango
- (6) Determination of Fatty Acid, Protein and Triacylglyceride Composition of Different Coconut (*Coccus nucifera* L.) Cultivars and Hybrids
- (7) Molecular Biology of Coconut Endosperm
- (8) Molecular Control of Ripening Sugarcane Bacterial Wilt



11. TITO A. MIJARES

- (1) On Extending Hotelling's Q-Test
- (2) Tables for the Elementary Symmetric Functions of the Roots Tests

12. JOSE R. VELASCO

Compilation of Laws (Acts, Commonwealth Acts and Republic Acts) concerning Agriculture and Allied Fields (forestry, fisheries, etc.)

13. PRESCILLANO M. ZAMORA

- (1) Urban Biodiversity in the UP Campus and Vicinity 1998-2002 (In progress)
- (2) Morphosystematic Studies of the Philippine Lycopodium (1997-1999) (In progress)
- (3) Ecological Studies of the Baguan Island Marine Turtle Sanctuary, Turtle Islands, Sulu Archipelago 1996-1998 (Completed)
- (4) Comprehensive Wetland Resource Inventory and Assessment of Vascular Plants in Casiguran and Delasag, Aurora (In progress)
- (5) Ethnobotanical Study of the Forest Plants in Aurora (In progress)

D. S & T Policy and Program Implementation Conferences/Seminars, etc.

1. FILOMENA F. CAMPOS

- a. Assisted in the TWOWS' revision of Constitution; plan and develop program activities; evaluate past activities; and plan and organize 2nd General Assembly and International Conference for February 8-11, 1999.
- b. Assisted in the DIWPA's review and revision of Charter; review of scientific programs; and plan and restructure program activities
- c. Contact person at National Level of the Committee on Science and Technology in Developing Countries (COSTED)

2. MAGDALENA C. CANTORIA

- a. Attendance at Scientific Meetings, Seminars, Lectures, Conventions, Workshops, and Symposia (other than those sponsored by NAST)
 - (1) Attended the Continuing Professional Education (CPE) Seminar entitled "Establishing Programs Relating to the Animal Welfare Act of 1998", sponsored by the Philippine Association for Laboratory Animal Science (PALAS), 22 July, UNILAB Bayanihan Hall, Mandaluyong City.
 - (2) Attended the Follow-up Roundtable Discussions on "Bioethical, Environmental, and Technical Concerns in Animal Experimentation", a project of the NIH-UPM, Chancellor's Boardroom, PGH, Manila.

Continuation... 1998 Accomplishments and Activities of Academicians

b. Participation in NAST Activities

- (1) Attended, Special Program, "NSDB to DOST: 40 Years of Science and Technology" and "Awarding of Presidential Citation and Conferment of National Scientist Rank and Title", 24 March, FNRI Quadrangle, DOST Complex, Bicutan, Taguig,, Metro Manila.
- (2) Attended, Presentation of the Finalist for the 1998 Philippine Talent Search for Young Scientists, 15 April, DOST Executive Lounge, DOST Cpd., Bicutan, Taguig, Metro Manila.
- (3) Appointed Member of the Board of Judges for the Best Poster Award during the 20th Annual Scientific Meeting and the 4th National Social Science Congress, 8-9 July, Westin Philippine Plaza, Pasay City.
- (4) Nakiramay, Pagdadalamhati para kay José Encarnación, Jr., Pambansang Sayantist, ika-11 ng Hulyo, Kagawaran ng Agham at Teknolohiya, Bicutan, Taguig, Kalakhang Maynila.

c. Participation in NRCP Activities

- (1) Organized a lecture entitled "Enantioselective Synthesis of Isoquinoline Synthons for the Practical Preparation of Natural Morphine", by Mary Ann A. Endoma, Ph.D. of the Institute of Chemistry, UP Diliman, sponsored by Division IV (Pharmaceutical Sciences), NRCP, held at the College of Pharmacy, UP Manila, 27 January.
- (2) Participated as Chairman, Division IV, 65th Annual Meeting on the theme "Science Capability Building for Sustained Development and Competitiveness", 14 March, Ang Bahay ng Alumni, UP Diliman.
- (3) Attended, 1998 NRCP's Day on the theme "Basic Research in S&T to Enhance Human Progress", 16 July, DOST Executive Lounge, Bicutan, Taguig, Metro Manila.
- (4) Participated as Reactor, Seminar on the topic "Application of Metrology in Pharmaceutical Research" by Engr. Edgardo S. Juan of the Standard and Testing Division, Industrial Technology Development Institute, 30 July, at the College of Pharmacy, UP Manila.

d. Participation in Activities of International Honor Societies

- (1) Participated as Council Representative of Phi Sigma, 16th Scholars' Recognition Convocation, sponsored by the three international honor societies in the UP: Phi Kappa Phi (for overall academic excellence), Pi Gamma Mu (for excellence in the social sciences), and Phi Sigma (for excellence in the biological sciences), held 04 February, Malcolm Hall, College of Law, UP Diliman.
- (2) Attended as past officer, Induction Ceremony, The Honor Society of Phi Kappa Phi, UP Chapter, 03 April, Film Center, UP Diliman.
- (3) Participated as Council Representative, Annual Initiation of New Members, Phi Sigma Biological Honor Society, Alpha Chi Chapter, UP, 23 April, STTC, UP Diliman.



- e. Participated in Other Scientific Activities
- (1) Attended, 4th NSRI Research Symposium (A presentation of NSRI funded projects, 1996-1997), on the theme "Building the Scientific Base for the Technologies of the 21st Century, held 11-13 March at the NSRI Bldg., UP Diliman.
 - (2) Attended, professional lectures in honor of Priscilla J. Militante-Matias, Ph.D., held 04 June at the NIGS, UP Diliman.
 - (3) Attended, lecture by Acd. Lourdes J. Cruz, Ph.D., entitled "Peptides from Deadly Marine Snails", part of the Frontiers in Science Lecture Series sponsored by the Philippine Association for the Advancement of Science, held 15 July at the Vidal Tan Hall, UP Diliman.

3. GELIA T. CASTILLO

- a. Attendance at Scientific Meetings, Seminars, Lectures, Conventions, Workshops, and Symposia (other than those sponsored by NAST)
- (1) Participant, Review Meetings of the CGIAR System-Wide Review Panel on Science and Strategy (Member of the Sub-Panel), 3-9 January, The Hague; 6-8 July, IRRI.
 - (2) Keynote Speaker, "Developing a Strategic Plan for a National Research Center: Considerations, Components and Context", Philippine Rootcrops Research and Training Center, VISCA, 17-18 March.
 - (3) Attended, Board of Trustees Meeting, Philippine Rice Research Institute, 25 March; 26 October.
 - (4) Attended, Board of Trustees Meeting, Foundation for the Advancement of Clinical Epidemiology, 31 March.
 - (5) Participant, Thai-IRRI Research collaboration dialogues and visited research site for joint rainfed lowland project with the Population Development Association, June 23 - July 1.
 - (6) Speaker, "Moving Toward a New Mainstream", International Workshops on Participatory Monitoring and Evaluation, International Institute of Rural Reconstruction, Silang, Cavite, 25-28 November.
 - (7) Resource Person, Workshop on Sweet Potato Processing, Tarlac College of Agriculture, 7 September.
 - (8) Keynote Speaker, "New Horizons in Research Partnerships", International Workshop on Research Partnerships Between NGOs and Agricultural Research Institutes, International Institute for Rural Reconstruction, Silang, Cavite, 5-9 October.
 - (9) Resource Person, Technology Innovations Workshops on Sweet Potato Processing, Northern Philippines Rootcrops Research and Training Center, Benguet State University, La Trinidad, Benguet, 4-6 November.
 - (10) Resource Person, Review of the PASAD project in Bacolod and Murcia Negros Occidental, 11-14 November.
 - (11) Resource Person, Steering Committee Meeting of the Asian Rice Biotechnology Network, IRRI, 26-27 November.

Continuation...1998 Accomplishments and Activities of Academicians

b. Participation in NAST Activities:

- (1) Participated, Roundtable discussions on Science and Mathematics Education, Bahay ng Alumni, 14 October.
- (2) Participated, National Congress on Science and Mathematics Education, UP Diliman, 28 November.

4. LEOPOLDO S. CASTILLO

Paper Presenter, "Proposal: A New Scientific Name of the Carabao: *Bubalus carabanensis* (Linn.)", NAST 20th Annual Scientific Meeting, 8-9 July, The Westin Philippine Plaza, Pasay City.

5. VERONICA F. CHAN

- a. Speaker, "Inspirational Message", Convocation, College of Medicine, UP Manila, 25 November.
- b. Speaker, "Epidemiology of H. Influenza in the Philippines", Kuala Lumpur, Malaysia: SmithKline Beecham, 15-20 March.
- c. Speaker, "Epidemiology of Influenza in the Philippines", Hanoi, Vietnam: WHO and Rhone Poulenc, 15-24 April.
- d. Speaker, "Adult Immunization in Asia", Singapore: SmithKline Beecham, 3-6 September.
- e. Speaker, "Prevention and Control of Hepatitis B", Langkawi, Malaysia: SmithKline Beecham, 19-22 November.
- f. Speaker, "Healthy Adult Influenza Vaccination in the Workplace", New World Hotel, Makati City: Pasteur-Merieux-Connaught, 14 April.

6. CONRADO S. DAYRIT

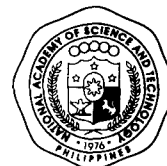
Speaker, Presidential Address; Country Report - S&T in the Philippines, FASAS-COSTED Meeting, 23-24 November.

7. SALCEDO L. EDUARDO

- a. Speaker, National Planning Workshop on the Sustainable Endoparasite Control for Small Ruminants, Oct. 5-9 at CLSU
- b. Participant, National Seminar on the Collective Management of Copyright and the WIPO Internet Treaties, Oct. 20-22, UP Diliman

8. PEDRO B. ESCURO

- a. Attended, NRCP Annual Meeting, Bahay ng Alumni, UP Diliman, 14 March.
- b. Interviewed on the radio program "Ang Huwaran ng mga Bayani", by Ms. Jean Panganiban, Radyo ng Bayan, PIA Bldg., Quezon City.



9. EDGARDO D. GOMEZ

- a. Participation in National and International Conferences
 - (1) Paper Presenter, "Coral Reef Conservation in a Developing Country: After 20 years, Has the Philippines Made Progress?", IX Pacific Science Intercongress, Taipei, Taiwan, 17-19 November.
 - (2) Paper Presenter, "The Culture of the True Giant Clam *Tridacna gigas* for Conservation in the Philippines", Fifth Asian Fisheries Forum, Chiang Mai, Thailand, 11-14 November.
 - (3) Participant, Second Session of the Coastal Panel of GOOS, Curitiba, Brazil, 29 October - 2 November.
 - (4) Attended, Eighth Meeting of the Scientific Steering Committee of Land-Ocean Interactions in the Coastal Zone (LOICZ), Adelaide, Australia, 27 April - 3 May.
 - (5) Attended, XVIIth International Seaweed Symposium (ISS), Cebu Plaza Hotel, Cebu City, 13 April.
 - (6) Attended, First Session of the Coastal Panel of GOOS, Paris, France, 30 March - 1 April.
 - (7) Participant, STAP Expert Group Workshop on Emerging Technologies in International Waters and their Application to GEF Projects, Quezon City, 24-26 February.
 - (8) Paper Presenter, "Ensuring the Sustainable Use of Marine Resources", AAAS Annual Meeting and Scientific Innovation Exhibit, Philadelphia, U.S.A., 14-20 February.
 - (9) Attended, FAO Meeting of High-Level External Experts in Fisheries, Rome, Italy, 25-28 January.

10. RAFAEL D. GUERRERO III

- a. Speaker, "Our Water Resources: Take Care of Them for Our Future", Seminar on The Role of Heroes of Science, Polytechnic University of the Philippines Taguig, 28 August, organized by NAST.
- b. Speaker, "Opening Remarks", International Forum on the Culture of Portunid Crabs", Boracay, Aklan, 1-4 December.
- c. Speaker, "Opening Remarks", First Philippine Ocean Summit, Intramuros, Manila, 2-3 December.
- d. Speaker, "Opening Remarks", National Convention of Integrated Coastal Managers, Davao City, 10 November.
- e. Speaker, "The National Science and Technology Agenda for Fisheries and Aquatic Resources", Philippine Fisheries Development Plan Workshop, Los Baños, Laguna, 19-20 November.
- f. Paper Presenter, "Commercial Production of Artificially Sex-Reversed Tilapias: Theory and Practice", World Aquaculture Society Meeting, Las Vegas, Nevada, U.S.A., 12-15 February.
- g. Paper Presenter, "Histological Effects of the Synthetic Androgen, 17 *L-Methyltestosterone* on the Gonadal Sex Differentiation of *Nile tilapia* Fry", Science and Technology Congress of the PAASE, 19 June, UP Diliman.

Continuation...1998 Accomplishments and Activities of Academicians

- h. Paper Presenter, "The Aquatic Resources R&D Program of the Philippines (1993-1998)", Asia-Pacific Association of Agricultural Research Institutes (APAARI), Planning Meeting of Fisheries Sub-group, 11-12 October, Suwon, Republic of Korea.
- i. Paper Presenter, "Freshwater Resources Management in the Philippines", International Workshop on Management of Tropical Ecosystems, VISCA, Leyte, 9 September.
- j. Paper Presenter, "Coral Reef R&D Program of PCAMRD", Regional Workshop on the Live Coral Fish Trade, Mandaluyong City, 11 August.
- k. Paper Presenter, "Studies on the Production and Utilization of Vermicompost Produced with African Nightcrawler (*Engdriulus enginae*) in the Philippines", Science and Technology Congress of the PAASE, UP Diliman, 19 June.

11. BIENVENIDO O. JULIANO

- a. Paper Presenter, "Quality Rice for Filipinos", 11th National Rice R&D Review and Planning Workshop, PhilRice, Maligaya, Muñoz, Nueva Ecija, 3-5 March.
- b. Paper Presenter, "An Adventure in Rice Chemistry and Technology - The Japan Connection", Workshop on Rice Quality and Utilization, Nigata Food Research Center, Japan, 25 March.
- c. Paper Presenter, "Effect of Cooking Method on Amylopectin Staling of Cooked Rice", 83rd Annual Meeting, American Association of Cereal Chemists, Minneapolis, Minnesota, U.S.A.
- d. Poster Presenter, "Effect of Cooking Method on Amylopectin Staling of Cooked Rice", 26th Annual Meeting, Kapisanan ng Kimika sa Pilipinas, Los Baños Chapter, UP Los Baños, 27-28 October.

12. EVELYN MAE T. MENDOZA

- a. Interviewed on topic "Biotechnology Program on Coconut and Mango", Radio Program, Bago Yan Ah!, DZMM, 2-4 p.m., 25 January
- b. Philippine Representative to the panel of judges, ASEAN S&T Awards, Hanoi, Vietnam, 28-30 October
- c. Reactor, Symposium on Biosafety of Biotech Products, DA-UPLB sponsored, September
- d. Project Leader-Coordinator for Philippine Team, study visit and research discussion - with Israeli collaborating scientists, Biostress Research Laboratory, J. Blaustein Institute for Desert Research, Ben Gurion University of the Negev, Sede Boqer, Agricultural Research Organization, Ministry of Agriculture, Rehovot, Israel, 23-31 October
- e. Resource Speaker, Biotechnology in the Philippines, Press Conference re: Biotechnology, Jade Vine Restaurant, Manila, 9 November
- f. Resource Speaker, Agriculture Forestry and Environment Status and Concerns in the Philippines, Lecture on Biotechnology, PCARRD Anniversary, 11 November



Continuation...1998 Accomplishments and Activities of Academicians

- g. Moderator, Session on Biotechnology, Philippine Society for Biochemistry and Molecular Biology Annual Convention, UP Diliman, 4-5 December
- h. Member, DOST Special Technical Committee on Natural Sciences, Evaluation of nominees to the Scientific Career System, 11 December

13. TITO A. MIJARES

Attended, Roundtable discussions on Social Sciences Issues held at the Philippine Social Science Council

14. TEODULO M. TOPACIO, JR.

- a. Attended, Monthly meetings of Veterinary Practitioners Association of the Philippines, October - November.
- b. Attended, Seminar on Emerging Zoonoses, Updates on USDA Meat Inspection System, Philippine Society of Veterinary Public Health, July.
- c. Attended, Forum on Department of Health, Public Health and Zoonoses, Philippine Society of Veterinary Public Health, March.
- d. Attended, Seminars of the Philippine Association of Board Examiners.
- e. Speaker, UP College of Veterinary Medicine Graduation/Recognition Rites, 25 April.
- f. Speaker, Monthly Seminar of the Veterinary Practitioners Association of the Philippines, October.
- g. Speaker, Inspirational Messages to the participants of the Vegetable Products and Processing Seminars, Agoncillo, Batangas, February and November.

15. PRESCILLANO M. ZAMORA

- a. Attended, Contribution to Knowledge of the Biodiversity and Biology of Philippine Ferns and Fern Allies 1970-1998, NSRI, UP Diliman, 11-13 March.
- b. Attended, Ecological Studies of the Turtle Island Protected Area: Terrestrial Component, Sulo Hotel, Diliman, Quezon City, 18 June.
- c. Attended, Joint Technical Working Group Meeting for the Turtle Islands Park Heritage Protected Area, Sandakan, State of Sabah, Malaysia, 12-14 October.
- d. Attended, Biodiversity Conservation Program and Comprehensive Development Plan for Lopez Jaena, Misamis Occidental, Misamis Occidental, 1-3 December.
- e. Attended, Samar Island Biodiversity Program Seminar, PAWB-DENR, Sulo Hotel, Diliman, Quezon City, 4 December.
- f. Attended, Biodiversity of the Family Pandanaceae of the Philippines, UP Diliman, 11 November.
- g. Presenter, 1998 Plan of the UP CIDS-NAST Biodiversity Conservation Program, UP CIDS Directors Planning Workshop, IFCTC, UP Los Baños, 6-7 March.

Continuation...1998 Accomplishments and Activities of Academicians

E. Honors and Awards

1. SOLITA F. CAMARA-BESA

Honored as one of the "Filipinas Firsts" by the Zonta Club of Manila Foundation, Inc. on November 5 at the Rigodon Hall, Manila Peninsula Hotel, Makati City.

2. FILOMENA F. CAMPOS

Member, Third World Academy of Science (TWAS)

3. MAGDALENA C. CANTORIA

- a. The 1998 Mapa Blue Falcon Award as outstanding Mapan for her achievements in and contributions to the field of Science and Technology, given by The V. Mapa (Manila East High School) Alumni Associations, 1 March, Club Filipino, Greenhills, San Juan, Metro Manila.
- b. Received a Plaque of Appreciation in recognition of her significant contributions and inspiring leadership in the formulation of policies for the direction, growth, and development of basic and mission-oriented scientific researches; and for her invaluable services and genuine commitment and dedication to the goals of the Council as Chairman of Division IV (Pharmaceutical Sciences), 1986, 1987-1992, 1993-1998; Assistant Corporate Secretary, 1987-1990, 1993-1995, 1997; and Corporate Secretary, 1990-1992, 1995-1997, 1997-1998, given by NRCP, 14 March, Ang Bahay ng Alumni, UP Diliman.
- c. Received a Recognition Award for her valuable contributions to the Academy as member of the Executive Council, 1989-1992, given by NAST, 9 July, The Westin Philippine Plaza, Pasay City.

4. VERONICA F. CHAN

Professor Emeritus, University of the Philippines Manila, 24 March.

5. PEDRO B. ESCURO

Honored in an article entitled "Dr. Pedro Bolivar Escuro: World Class Plant Breeder, a Nabueño", published by the editorial staff of the Nabua 1998 Town Fiesta Souvenir

6. EDGARDO D. GOMEZ

Gregorio Y. Zara Award (for Basic Science), 47th Annual Convention of the PHILAAS, 3-4 December.



7. RAFAEL D. GUERRERO III

Received a Plaque of Recognition for meritorious service rendered as Plenary Speaker, 33rd Annual National BIOTA Convention on "Biology Education and Agrotechnology in the Third Millennium", CLSU, Nueva Ecija, 2-4 April.

8. CARMEN LI. INTENGAN

- a. Honoree, Salute to Three Distinguished Zontians
- b. Honoree, National Centennial Commission-Women Sector 100 Awardees for the Gawad Sentenaryo "Kasaysayang Buhay" awarded under category of Science and Technology Women's Centennial Day, 4 June.
- c. Honoree, Salute to 17 "Filipinas Firsts" and Woman in Nation Building, awarded by Zonta Club of Manila Foundation, Inc., 5 November.

9. BIENVENIDO O. JULIANO

- a. ASEAN Outstanding Scientist and Technologist Award, Fifth ASEAN Science and Technology Week, Hanoi, Vietnam, 13 October.
- b. Featured International Scientist at Nigata Food Research Center Workshop, 25 March.

10. TITO A. MIJARES

- a. Lifetime Achievement Award, Philippine Statistical Association, 11 December
- b. Special Colloquium in Celebration of the Centennial of the Philippine Revolution and in Honor of Dr. Tito A. Mijares, UP Statistical Center, Diliman, Quezon City, 25 March

11. JOVENTINO D. SORIANO

- a. Elected Member, American Association for the Advancement of Science (AAAS)
- b. Member, National Geographical Society (U.S.A.), Washington, D.C.
- c. Cited in Marquis "WHO'S WHO IN THE WORLD", p. 1539, 16th Edition

12. TEODULO M. TOPACIO, JR.

Received a Certificate of Recognition as Chairman, Board of Veterinary Medicine by the Cornell Club of the Philippines, September.

13. JOSE R. VELASCO

Conferred the Rank and Title of National Scientist, FNRI Quadrangle, DOST Compound, Bicutan, 25 March

Continuation... 1998 Accomplishments and Activities of Academicians

14. BENITO S. VERGARA

Honorary Scientist, RDA, Republic of Korea, 30 September

15. PRESCILLANO M. ZAMORA

Research Fellow, University of the Philippines Center of Integrative and Development Studies, January 1 - December 31.

F. Other NAST Activities

1. SOLITA F. CAMARA-BESA

- a. Attendance in NAST meetings
- b. Member, Board of Judges for the Philippine Talent Search for Young Scientists
- c. Research Fellow, RTD on Bioethical and Environmental Concerns in Animal Testing

2. FILOMENA F. CAMPOS

- a. Assisted in national program evaluation in areas of Biodiversity and Resource Sustainability
- b. Attendance to NAST meetings and co-sponsored activities

3. MAGDALENA C. CANTORIA

- a. Editor, NAST Annual Report 1997
- b. Editor, Program of the 20th ASM and the 4th National Social Science Congress on the theme "The Philippine Social Sciences in the Life of the Nation"
- c. Writer with Salcedo L. Eduardo, 1997 Activities of Academicians: An Analysis. *NAST Annual Report 1997*

4. VERONICA F. CHAN

- a. Member, Board of Judges for the Centennial Award for Science and Technology
- b. Attendance to NAST meetings

5. PEDRO B. ESCURO

- a. Attended the RTD on Social Sciences and Agriculture Forestry and Fisheries, 18 February, PSSC, Quezon City
- b. Attendance to NAST meetings
- c. Talked on the "Role of Heroes of Science: Plant Breeding and Genetics" to senior students of PUP Taguig, 6 March, PUP Taguig



- d. Attended the Conferment of the Rank and Title of National Scientists to Dr. Jose R. Velasco and Dolores A. Ramirez, 24 March, DOST Cpd., Bicutan
- e. Attended the State Funeral ceremonies for National Scientist José Encarnación, Jr., 11 July

6. EDGARDO D. GOMEZ

- a. Talked on the "Role of Heroes of Science" 31 July, PUP Taguig
- b. Moderator, Plenary Session, 20th ASM, 8-9 July, The Westin Philippine Plaza, Pasay City

7. RAFAEL D. GUERRERO III

Attended the RTD on Botanical Garden, 22 May, IFC- UP Los Baños, Laguna

8. BIENVENIDO O. JULIANO

- a. Member, NAST Election Committee
- b. Member, Best Poster Board of Judges

9. EVELYN MAE T. MENDOZA

- a. Member, Technical and Poster Session of ASM Committee
- b. Member, Philippine Science Heritage Center Committee

10. BENITO S. VERGARA

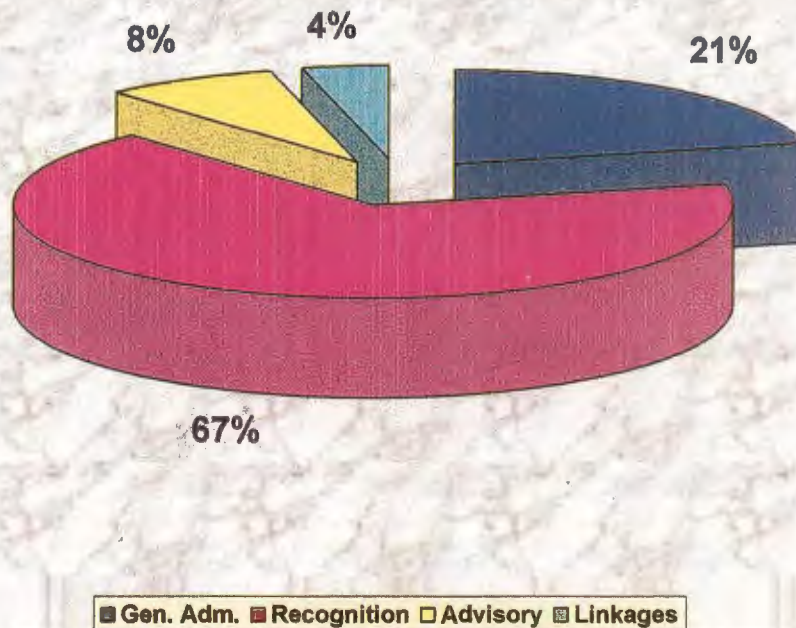
- a. Chairman, Philippine Science Heritage Center Committee
- b. Roundtable Discussion on Botanical Garden

11. PRESCILLANO M. ZAMORA

Program Director, UP CIDS - NAST Biodiversity Conservation Program

FINANCIAL MATTERS FY 1998

FY 1998 EXPENDITURES



The NAST projects approved by DOST for funding under its Grants-in-Aid (GIA) were:

	Project Title	Budget (P)	Remarks
(1)	Development and Preparation of Exhibits for the Philippine Science Heritage Center	2,000,000.00	Project duration: Nov. '97-Oct. '98
(2)	Upgrading S&T Information Resources of NAST Through Establishment and Installation of IT Infrastructures	434,500.00	Project duration: Dec. '98-Nov. '99
(3)	Bookwriting and Video Footage Production the Lives, Research Works and Contributions of Outstanding Philippine Scientists (Vol. 3)	833,568.80	Project duration: July '98-Aug. '99
(4)	Publication of the Book "Monograph on the Algae of Taal Lake" by Macrina T. Zafaralla and Rolando P. Orozco for the Philippine Science Heritage Center	46,500.00	In press
(5)	Publication of the Book "Systematics of Phil. Flora" by Dr. Juan V. Pancho for the Philippine Science Heritage Center	496,100.00	In press
(6)	Publication of the Book "The Science Act of 1958: A Retrospective Survey"	91,025.00	Approval of DOST received Dec. '98

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12/27

NATIONAL ACADEMY OF SCIENCE AND TECHNOLOGY, PHILIPPINES

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