



National Academy of
Science and Technology

**11TH
ANNUAL
SCIENTIFIC
MEETING**

**HOTEL NIKKO MANILA GARDEN
Makati, Metro Manila
July 12, 1989**

NATIONAL ACADEMY OF SCIENCE AND TECHNOLOGY
11th Annual Scientific Meeting
July 12, 1989

MORNING

- 8:00 — Registration (Garden Hall Foyer)
- 9:00 — **OPENING CEREMONIES** (Garden Halls A & B)
Master of Ceremonies: Acad. Joventino D. Soriano
- National Anthem
- Welcome Address
- National Scientist Dioscoro L. Umali
President, NAST
- Recognition Awards to Acad. Paulo C. Campos and
members of past Executive Councils
- Introduction of the Guest Speaker
- National Scientist Dioscoro L. Umali
- Keynote Address
- The Honorable Ceferino L. Follosco
Secretary of Science and Technology
- 10:15 — Break (Garden Plaza)
- 10:30 — **PLENARY SESSION** (Garden Halls A & B)
- “Building for the Year 2000:
A Report on the Presidential Task Force on S & T
Development”
- Acad. Bienvenido F. Nebres
- Open Forum
- Acad. Melecio S. Magno, Moderator
- 12:00 — Lunch (Garden Plaza)

AFTERNOON

1:30 **SCIENTIFIC SESSIONS**

- Scientific Session I (Garden Hall A)
Mathematical, Physical and Engineering Sciences
- Scientific Session II (Dahlia Room)
Biological Sciences

Scientific Session III (Garden Hall B)
Health Sciences and Social Sciences
Scientific Session IV (Camelia Room)
Agricultural Sciences

3:00 Break (Garden Plaza)

3:30 CONTINUATION OF SCIENTIFIC SESSIONS

SCHEDULE OF PAPER PRESENTATIONS

TIME	SESSION I (Garden Hall A)	SESSION II (Dahlia Room)	SESSION III (Garden Hall B)	SESSION IV (Camelia Room)
1:30	E. Escultura	S. Eduardo	L. Cruz	B. Cocjin
2:00	S. Gervacio	G. Pocsidio	C. Lim-Sylianco	F. Basuel
2:30	C. Llaguno	S. Halos	M. Dayrit	C. Demayo
3:00	B r e a k	B r e a k	B r e a k	B r e a k
3:30	F. Lansigan	A. Herrera	D. Canlas	
4:00	A. Belonio	A. Guevarra	Q. Kintanar	
4:30			C. Bautista	
5:00			L. Dery	

SCIENTIFIC SESSIONS
Wednesday, July 12, 1989

SCIENTIFIC SESSION I: Mathematical, Physical and Engineering Sciences
Chairman: Acad. Tito A. Mijares

Garden Hall A

- 1:30 "Topological and Algebraic Structures of R^{n+1}
Induced by Relaxed Trajectories"
Edgar E. Escultura, Ph. D.
Department of Mathematics
University of the Philippines
Diliman, Quezon City
- 2:00 "Minimizing the Maximum Difference Between
Integer Labels of Adjacent Vertices in a Graph"
Severino M. Gervacio, Ph. D.
College of Sciences and Mathematics
Mindanao State University
Iligan Institute of Technology
Iligan City
- 2:30 "A Cubic Equation of State for Phase
Equilibrium Calculations"
Claro T. Llaguno, Ph. D.
Institute of Chemistry
University of the Philippines
Diliman, Quezon City
- 3:00 **B r e a k**
(Garden Plaza)
- 3:30 "Use of Simulation in Evaluating Potential Yield
and Weather-Related Variability in Crop Production"
Felino P. Lansigan, Ph.D
Statistical Laboratory
Institute of Mathematical Sciences
and Physics
UP Los Banos
- 4:00 "Design and Performance Evaluation of a Batch-Type Rice Hull
Gasifier Stove"
Alexis T. Belonio, Ph.D.
Department of Agricultural Engineering
Central Philippines University
Iloilo City

SCIENTIFIC SESSION II: BIOLOGICAL SCIENCES

Chairman: Acad. Magdalena C. Cantoria

Dahlia Room

- 1:30 "Scanning Electron Microscopy of the Integumental Surfaces of Adult *Gnathostoma doloresi* Tubangui, 1925, A Parasite of Pigs in the Philippines"
Salcedo L. Eduardo, Ph.D.
College of Veterinary Medicine
UP Los Banos
- 2:00 "Determinations of Toxicity on Some Coral Reef Crabs of La Union, Philippines"
Glorina N. Pocsicio, Ph.D.
Institute of Biology
College of Science
UP Diliman, Quezon City
- 2:30 "Cellulose Biodegradation Studies: Application of Recombinant DNA and Protoplast Fusion Techniques"
Saturnina C. Halos, Ph.D.
Natural Sciences Research Institute
College of Science
UP Diliman, Quezon City
- 3:00 **B r e a k**
(Garden Plaza)
- 3:30 "Sublethal Effects of Cadmium on Ovarian Morphogenesis in *Tilapia nilotica*"
Anabelle A. Herrera, Ph.D.
Institute of Biology
UP Diliman, Quezon City
- 4:00 "Antimutagens from *Momordica charantia* Linn."
Amelia P. Guevarra, Ph.D.
Institute of Chemistry
College of Science
UP Diliman, Quezon City

SCIENTIFIC SESSION III: HEALTH SCIENCES AND SOCIAL SCIENCES
Chairmen: **Acads. Edito G. Garcia and Gelia T. Castillo**

Garden Hall B

- 1:30 “ μ -Conotoxins: Specific Blockers of Muscle Sodium Channel”
 Acad. **Lourdes J. Cruz**, Ph.D.
 Marine Science Institute
 Albert Hall
 UP Diliman, Quezon City
- 2:00 “Inhibitory Effects of Amino Acids on Somatic and Germ Cell
Genotoxicity of Some Anticancer Agents”
 Acad. **Clara Y. Lim-Sylianco**, Ph.D.
 Institute of Chemistry
 College of Science
 UP Diliman, Quezon City
- 2:30 “Epidemics of Paralytic Shellfish Poisoning in the Philippines
(1988-1989)”
 Manuel M. Dayrit, M.D.
 Department of Health
 San Lazaro Compound
 Rizal Avenue, Sta. Cruz, Manila
- 3:00 B r e a k
(Garden Plaza)
- 3:30 “Aggregate Labor Supply Analysis: The Philippines”
 Dante B. Canlas, Ph.D.
 School of Economics
 UP Diliman, Quezon City
- 4:00 “Evolving, Crafting and Implementing the Philippine National
Drug Policy and the Generics Act of 1988 – A Model in Science
and Technology Policy Making”
 Acad. **Quintin L. Kintanar**, M.D., Ph.D.
 Department of Health
 San Lazaro Compound
 Rizal Avenue, Sta. Cruz, Manila

-
- 4:30 “Determinants of Success and Failure in Overseas Migration:
The Case of Returnees from the Middle East”
Ma. Cynthia Rose Banzon-Bautista, Ph.D.
Department of Sociology
UP Diliman, Quezon City
- 5:00 “The Era of the Kris: Moro Raids in Sorsogon and Kabikolan and
their Impact on Philippine History, 1571-1896”
Luis C. Dery, Ph.D.
University of the Philippines-Baguio
Baguio City

SCIENTIFIC SESSION IV: AGRICULTURAL SCIENCES

Chairman: Acad. **Faustino T. Orillo**

Camelia Room

- 1:30 “Fresh Coconut Meat in Poultry Rations”
Bernarbe B. Cocjin, Ph.D.
West Visayas State University
Iloilo City
- 2:00 “Varying Levels of Sabawil (*Mucuna pruriens* (L.) D.C.)
Leaf Meal on the Growth Performance of Broilers”
Francisco M. Basuel, Ph.D.
Isabela State University
Echague, Isabela
- 2:30 “Electrophoretic Analysis of Genetic Variation in Brown
Planthopper *Nilaparvata lugens* (Stal.) (Homoptera: Delphacidae)
and Green Leafhopper *Nephotettix virescens* (Distant) (Homoptera:
Cicadellidae) in the Philippines”
Cesar G. Demayo, M.Sc.
International Rice Research Institute
College, Laguna

NAST ACTIVITIES IN 1988

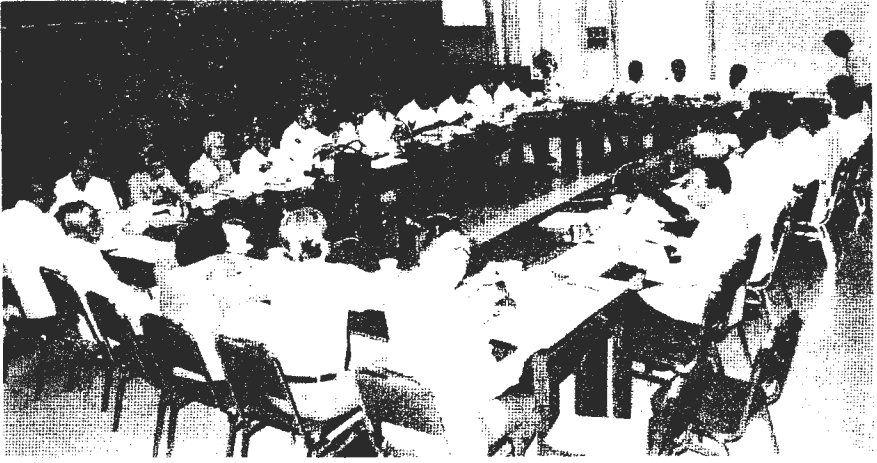
OF NEW ACADEMICIANS
Y OF SCIENCE AND TECHNOLOGY



The total membership of the Academy during the year under review comprises 38 Academicians, nine of whom are National Scientists. Dr. Ricardo M. Lantican was elected to the Academy on May 26, 1988.



Dr. Alfredo V. Lagmay was conferred the rank and title of National Scientist by the President of the Republic in simple rites at Malacanang on July 13, 1988. In the same ceremony, six young scientists were conferred the Outstanding Young Scientist Awards (OYS) for their contributions in their respective fields of specialization.



The Academy continued during the year to provide monthly gratuities, medical/hospitalization benefits, travel support for participation in international conferences in recognition of their achievements and contributions to science and technology. To encourage research and other scholarly pursuits, the Academy awarded research fellowship to many of its members in the past year.



In relation to its international linkages, the Academy hosted the visit of five Chinese astronomers who came to observe the total solar eclipse in Mindanao on March 15-24, 1988 under the NAST-Chinese Academy of Sciences memorandum of agreement.

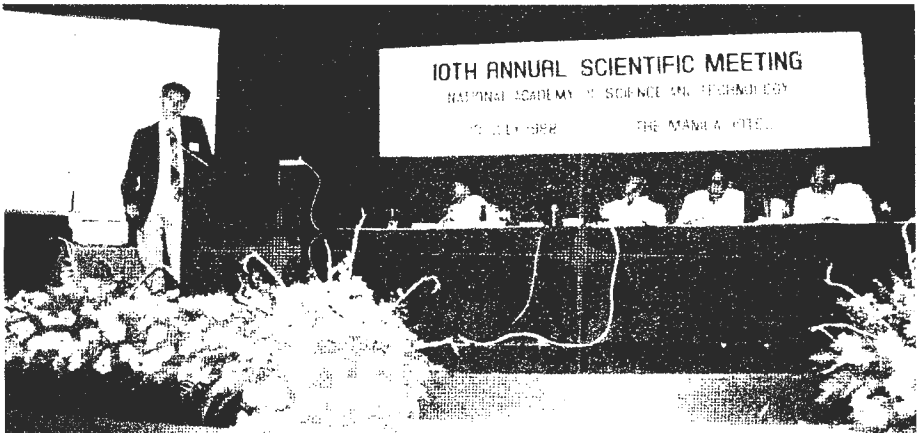
To further promote its international linkages, the Academy signed in June 1988 agreements with the Third World Academy of Sciences and the International Network of Scientific Organizations.

10TH ANNUAL SCIENTIFIC MEETING

NATIONAL ACADEMY OF SCIENCE AND TECHNOLOGY

13 JULY 1988

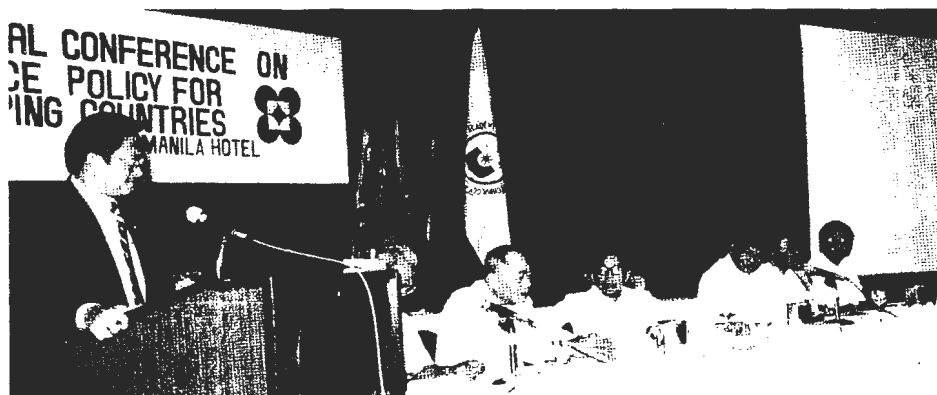
THE MANILA HOTEL



Drs. Stephen Salter and Herbert Morawetz were invited as plenary speakers in the 10th Annual Scientific Meeting in July 1988 through agreements with the Royal Society of London and Third World Academy of Sciences (TWAS), respectively. Through the Royal Society, the Academy has likewise endorsed the attendance of Ms. Jane Gerardo of the Department of Environment and Natural Resources in the International Conference on the Application of Geology in Developing Countries held in London in the past year.

In 1988, the attendance of Acad. Cantoria in the International Congress of Scientific Unions Annual Meeting (ICSU) in the People's Republic of China (PROC) was endorsed by the Academy.

On November 7-12, 1988, the Academy also received Dr. Carl Schiel, President of the International Foundation for Science and Dr. Joachim Wiercimok of the Deutsche Forschungsgemeinschaft (DFG) under the NAST-DFG memorandum of agreement.



The Academy celebrated its 10th Anniversary by hosting two international conferences, namely: the International Conference on Science Policy for Developing Countries and the Fifth Executive Council Meeting of the Federation of Asian Scientific Academies and Societies. The Academy also held its 10th Annual Scientific Meeting on 12 July 1988. These activities were held at the Manila Hotel from July 12 - 14, 1988.



The Academy conducted a series of roundtable conferences on Science Policy, regular monthly forums on Science Literacy and Joint Legislative-NAST/PNSS science policy. The science literacy forums are intended for science writers of major Manila dailies. The science policy forums which started on September 14, 1988 are intended for legislators and other policy makers.

A Biosafety Committee was created by the Academy in response to an urgent request to evaluate a set of guidelines prepared by a multi-agency group led by IRRI and UPLB scientists. The NAST Biosafety Committee has been meeting regularly and has drafted a report for public discussion in the coming year.

**NATIONAL ACADEMY OF SCIENCE AND TECHNOLOGY
(1978-1989)**

Year Elected	Academicians	Specialty
1978	Paulo C. Campos, M.D.	Medicine
1978	Alfredo V. Lagmay, Ph.D.	Experimental Psychology
1978	+Cecilio F. Lopez, Dr. phil.	Philippine Linguistics and Oriental Studies
1978	Tito A. Mijares, Ph.D.	Statistics
1978	+Juan S. Salcedo, Jr., M.D.	Nutrition and Public Health
1978	Alfredo C. Santos, Dr. phil.	Physical Chemistry
1978	Dioscoro L. Umali, Ph.D.	Genetics and Plant Breeding
1978	Carmen C. Velasquez, Ph.D.	Parasitology
1978	Gregorio T. Velasquez, Ph.D.	Phycology
1978	+Gregorio Y. Zara, D. Sc.	Engineering and Inventions
1979	Encarnacion Alzona, Ph.D.	History
1979	+Teodoro A. Agoncillo, Litt.D. (h.c.)	History
1979	Jose Encarnacion, Jr., Ph.D.	Economics
1979	Pedro B. Escuro, Ph.D.	Genetics
1979	Raymundo A. Favila, Ph.D.	Mathematics
1979	+Francisco M. Fronda, Ph.D.	Animal Husbandry
1979	Bienvenido O. Juliano, Ph.D.	Organic Chemistry
1979	Melecio S. Magno, Ph.D.	Physics
1979	Fe del Mundo, M.D., M.A.	Pediatrics
1979	+Geminiano T. de Ocampo, M.D.	Ophthalmology
1979	+Eduardo A. Quisumbing, Ph.D.	Plant Taxonomy, Systematics and Morphology
1979	+Jose N. Rodriguez, M.D.	Leprology
1979	+Casimiro del Rosario, Ph.D.	Physics
1980	Luz Oliveros-Belardo, Ph.D.	Pharmaceutical Chemistry
1980	Magdalena C. Cantoria, Ph.D.	Plant Physiology and Pharmacology
1980	+Emerita V. de Guzman, Ph.D.	Plant Physiology
1980	Conrado S. Dayrit, M.D.	Pharmacology, Cardiology
1980	+Francisco O. Santos, Ph.D.	Agricultural Chemistry
1980	Joventino D. Soriano, Ph.D.	Cytogenetics and Mutational Genetics
1980	Clara Y. Lim-Sylianco, Ph.D.	Biochemistry and Organic Chemistry
1981	Clare R. Baltazar, Ph.D.	Systematic Entomology
1981	+Julian A. Banzon, Ph.D.	Biophysical Chemistry
1981	+Amando M. Dalisay, Ph.D.	Economics
1981	Benjamin D. Cabrera, M.D., M.P.H.	Medical Parasitology and Public Health
1982	Emil Q. Javier, Ph.D.	Plant Breeding and Genetics
1983	Gelia T. Castillo, Ph.D.	Rural Sociology
1983	Jose O. Juliano, Ph.D.	Nuclear Chemistry and Physics
1983	+Hilario D.G. Lara, M.D., Dr.P.H.	Public Health
1983	Bienvenido F. Nebres, S.J., Ph.D.	Mathematics

Year Elected	Academicians	Specialty
1983	Faustino T. Orillo, Ph.D.	Mycology
1983	Jose R. Velasco, Ph.D.	Plant Physiology
1985	Quintin L. Kintanar, M.D., Ph.D.	Environmental Medicine
1985	Quirino O. Navarro, Ph.D.	Nuclear Chemistry
1985	+Gregorio F. Zaide, Ph.D.	History
1987	Solita Camara-Besa, M.D., M.S.	Biochemistry
1987	Filomena F. Campos, Ph.D.	Plant Breeding/Cytogenetics
1987	Lourdes J. Cruz, Ph.D.	Biochemistry
1987	Edito G. Garcia	Medical Parasitology
1987	Carmen Ll. Intengan, Ph.D.	Nutrition
1987	Dolores A. Ramirez, Ph.D.	Biochemical Genetics
1987	Benito S. Vergara, Ph.D.	Plant Physiology
1987	Prescillano M. Zamora, Ph.D.	Plant Morpho-Anatomy
1988	Ricardo M. Lantican, Ph.D.	Plant Breeding

+Deceased

NATIONAL SCIENTISTS

Year Conferred	Awardees	Specialty
1978	+Juan S. Salcedo, Jr., M.D.	Nutrition and Public Health
1978	Alfredo C. Santos, Dr. phil.	Physical Chemistry
1978	+Gregorio Y. Zara, D.Sc.	Engineering and Inventions
1980	Fe del Mundo	Pediatrics
1980	+Eduardo A. Quisumbing, Ph.D.	Plant Taxonomy, Systematics and Morphology
1982	+Geminiano T. de Ocampo, M.D.	Ophthalmology
1982	+Casimiro del Rosario, Ph.D.	Physics, Astronomy and Meteorology
1982	Gregorio T. Velasquez, Ph.D.	Phycology
1983	+Francisco M. Fronda, Ph.D.	Animal Husbandry
1983	+Francisco O. Santos, Ph.D.	Human Nutrition and Agricultural Chemistry
1983	Carmen C. Velasquez, Ph.D.	Parasitology
1985	+Teodoro A. Agoncillo, Litt.D. (h.c.)	Philippine History
1985	Encarnacion Alzona, Ph.D.	Philippine History
1985	+Hilario D.G. Lara, M.D., Dr. P.H.	Public Health
1986	+Julian A. Banzon, Ph.D.	Chemistry

1986	Dioscoro L. Umali, Ph.D.	Agriculture and Rural Development
1987	Luz Oliveros-Belardo, Ph.D.	Phytochemistry
1987	Jose Encarnacion, Jr., Ph.D.	Economics
1988	Alfredo V. Lagmay, Ph.D.	Psychology
—		
+Deceased		

NAST EXECUTIVE COUNCIL, 1989-1992

Acad. Dioscoro L. Umali	--	President
Acad. Conrado S. Dayrit	—	Vice-President
Acad. Joventino D. Soriano	---	Secretary
Acad. Magdalena C. Cantoria	---	Member
Acad. Jose Encarnacion, Jr.	--	Member
Acad. Bienvenido O. Juliano	--	Member
Acad. Faustino R. Orillo	---	Member

11th ASM Program Committee

Acad. Joventino D. Soriano, (Chairman)
 Acad. Tito A. Mijares, Member
 Acad. Gelia T. Castillo, Member
 Acad. Faustino T. Orillo, Member
 Acad. Conrado S. Dayrit, Member

Secretariat

Dr. Cesar P. Madamba, Executive Director
 Ms. Luningning E. Samarita, Member

