

Contents

	Page
ADDRESSES	
Welcome Address	
DIOSCORO L. UMALI , President and National Scientist, National Academy of Science and Technology	1
Opening Remarks	
CEFERINO L. FOLLOSCO , Secretary, Department of Science and Technology	5
Keynote Address	
FULGENCIO L. FACTORAN JR. , Secretary, Department of Environment and Natural Resources	9
PLENARY PAPERS	
PLENARY SESSION I	
ANGEL C. ALCALA and CIRILO B. SERNA Conservation and Management of the Philippine Marine Ecosystem	17
PLENARY SESSION II	
CARLITO R. BARRIL, MACRINA T. ZAFARALLA and JOSE R. VELASCO . The Conservation and Management of Our Freshwater Ecosystems	21
PLENARY SESSION III	
DELFIN M. GANAPIN JR. and DOMINGO M. RAMIREZ . Conservation and Management of Philippine Terrestrial Ecosystem	25
PLENARY SESSION IV	
GELIA T. CASTILLO, ORLANDO S. MERCADO and ANTONIO C. ABAYA . Conservation and Management of Urban Ecosystem	29

PLENARY PAPERS

PLENARY I

EDGARDO D. GOMEZ. Coral Reef Ecosystems and Resources of the Philippines	35
MIGUEL D. FORTES. The State of Seagrass Ecosystems and Resources in the Philippines	57
PRESCILLANO M. ZAMORA. Managing the Philippine Mangal for Long-Term Human Survival	89
ANGEL C. ALCALA. Why Conserve and Manage Coral Reefs and Seagrass Beds?	127
CIRILO B. SERNA. The Conservation and Management of the Philippine Marine Ecosystem	135
EUGENIO PADEN. Mangrove Reforestation in Bohol: a Success Story	141

PLENARY II

RAFAEL D. GUERRERO III. The Conservation and Management of Our Freshwater Ecosystems	149
CARLITO R. BARRIL. Water Quality Management: Key to the Sustainable Development of Laguna de Bay	163
MACRINA T. ZAFARALLA. Discussion Paper on: Conservation and Management of Freshwater Resources	177

PLENARY III

PERCY E. SAJISE and ENRIQUE P. PACARDO. The Philippine Terrestrial Environment: Present Status, Problems and Prospects	187
---	-----

DOMINGO M. RAMIREZ. Some Social Insights on Philippine Programs in the Forestry Sector	243
---	-----

PLENARY IV

MANUEL M. DAYRIT. Managing Our Urban Ecosystems for Survival	257
--	-----

GELIA T. CASTILLO. Discussion Paper on: Managing Our Urban Ecosystem for Survival	293
--	-----

ANTONIO C. ABAYA. Our Collapsing Urban Ecosystem	295
--	-----

MATHEMATICAL, PHYSICAL AND ENGINEERING SCIENCES

ROBERTO T. ANDRES and FORTUNATO SEVILLA III. Fiber-optic Reflectometric Investigations of Acid-base Equilibria in Immobilized Indicators: Effect of the Nature of Immobilizing Agent	301
---	-----

IBARRA E. CRUZ. Studies on the Gasification of Biomass Fuels with Oxygen-enriched Air	315
--	-----

EDGAR E. ESCULTURA. The Geometry of Uncontrolled Probabilistic Motion	345
---	-----

SEVERINO V. GERVACIO. Singularity of Graphs in Some Special Classes	367
---	-----

MARICOR SORIANO, GRACE GERELLA and CAESAR SALOMA. Calculating Two- Dimensional Fourier Transforms I. Performance II. Normalization III. Graphics	375
--	-----

FLORENTINO C. SUMERA. NAOYA OGATA. Electrochemical Synthesis of Electronic and Ionic Conductive Polymer Composite Polyaniline/PEO Network	393
---	-----

DANILO M. YANGA. A Mean Field RVB Theory For Copper Oxide-Based High T _c Superconductors in Terms of Auxiliary Bosons	423
--	-----

BIOLOGICAL SCIENCES

ROBERTO R. MATIAS, G.L. ENRIQUEZ and FILIPINAS F. NATIVIDAD. Cell Biology of the Philippine Amoeboflagellate, <i>Naegleria Philippinensis</i>	439
SATURNINA C. HALOS, BENJAMIN C. GLORIA, LUISA F. MALAMUG, MARK D. ARBOLEDA and WILFREDO I. JOSE. Multiproduct Fermentation: Production of Gluconic Acid and Glucose Oxidase by <i>Penicillium</i> <i>tuniculosum</i> Thom 4072	445
ANNABELLE A. HERRERA and ELENA S. CATAP. Histopathological Effects of Manganese Intoxication	465
CECILIE S. LONGID. Studies on the Effects of Gamma Radiation on <i>Kalanchoe Pinnata</i> (Pers.), Kataka-taka (Tag.), Life Plant (Eng.)	485
NELLIE C. LOPEZ. Metazoan Ectoparasites of Some Cultured Fishes from Laguna Lake and Vicinities	499
JUANITA C. MAMARIL, LORELE C. TRINIDAD, LILIA SP. TOLENTINO and VILMA T. CAPUNO. Heavy Toxic Metal Resistance of Selected Rhizobium Strains	517
IMELDA F. PAGULAYAN and JOEL C. CEPILLO. The Reproductive Biology and Laboratory Maintenance of <i>Vivipara Angularis</i> Muller (<i>Prosobranchia Viviparidae</i>)	535

CHAY B. PHAM and WILLIAM G. PADOLINA. Microbial Production of L- Methionine Using Carbohydrates of Agricultural and Industrial By- Products	569
GLORIA D. REYES and ASUNCION K. RAYMUNDO. Toxicity and Mutagenicity Testing of Selected Herbal Drugs	593
GILDA C. RIVERO and DAVID M. ORCUTT. Diniconazole Effects on Water Relations, Photosynthesis and Alpha-tocopheral Levels of Peanut Plants	615
CLARO M. SANTIAGO JR., R. DELA PEÑA, G.P. REYES and E. ADRIANO. Intraspecific Hybridization Between <i>Penicillium Aurantio- brunneum</i> by Fusion of Somatic Protoplast	625

AGRICULTURAL SCIENCES

DILBERTO O. FERRAREN. Control of Flowering, Seed Germination and Progeny Evaluation of Taro <i>Colocasia esculenta</i> (L.) Schott	643
R.M. GAPASIN and S.J. FERNANDEZ. Efficacy of <i>Trichoderma Aureoviride Rifai</i> as Biocontrol Agent for <i>Sclerotium Rolfsii</i> Sacc. Causing Stem Rot in Peanut (<i>Arachis Hypogea</i> L.)	667
PLUTOMELO M. NIEVES and RUSTEO V. BARRO. Evaluation of Local Ingredients (Fish, Shrimp, Snail and Leaf Meals and Ricebran) for Feeding Nile Tilapia (<i>Oreochromis niloticus</i>) Fingerlings	689
VICTOR S. SOLIMAN. Exploitation Rate, Yield- per-Recruit and Virtual Population of Sinarapan (<i>Mistichthys luzonensis Smith</i>) in Lake Manapao, Buhi, Camarines Sur	701

JOCELYN D. TAMBALO-ZARATE and REYNALDO E. DELA CRUZ. Inoculation of VA Mycorrhiza for the Improvement of Growth and Yield of Agricultural Crops, Fruit Trees and Forest Tree Species in Grassland Soil	717
LE TRONG TRUNG. Urea-Treated Straw with Limited Supplementation for Sustained Ruminant Production in the Developing Countries	737
BENITO S. VERGARA, V.P. CORONEL and Q.J. DAI. Response of Crop Plants to Enhanced UV-B Radiation and Possible Implications on the Rice Crop	761

HEALTH SCIENCES

GISELA P. CONCEPCION, ARCELI R. CAMUA and GINA B. CARAAN. Antimicrobial Activity, Antimutagenicity, Cytotoxicity and Neuro-activity of Some Phil. Marine Sponges and Tunicates	795
ALICIA M. AGUINALDO, E.I. ESPOSO, C.P. GARCIA, BEATRICE Q. GUEVARRA, MARIBEL G. NONATO and B.V. RECIO. Alkaloid Studies on Selected Philippine Plants	823
CLARA Y. LIM-SYLIANCO, J. BALBOA, R. CASARENO, R. MALLORCA and ELEANOR SERRAME. Antigenotoxic Effects on Bone Marrow Cell of Refined Coconut Oil Administered Simultaneously with Azaserine, Dimethylhydrazine, Dimethylnitrosamine, Benzo(a)pyrene, Methylmethane-sulfonate and Tetracycline	833
EVELYN MAE T. MENDOZA. Biochemical and Nutritional Qualities of Several Philippine Indigenous Food Legumes	841

POSTER PAPERS

VICENTE DEL PILAR. Development of Palay Purity Tester	861
WILFREDO I. JOSE and JACOB S. TIO. A Proposed Model for the Waste Utilization Value	862
JOSE T. DE LUNA. On the Dynamics of Resource-Consumer-Toxicant-Systems: Models of Reproductive Effort and Resulting Offspring of an Individual Organism	863
VICTOR B. AMOROSO. Morpho-Histochemical Studies of Some Medicinal Ferns	864
VIRGINIA S. CARIÑO, NOEL C. CRUZ and HENRY I. RIVERO. Localization of Zinc in the Gonadal Tissues of <i>Tilapia Nilotica</i> Linn	865
CLARO M. SANTIAGO JR. Competition of Water Hyacinth [<i>Eichlornia Crassipes</i> (Mart.) Solms] with <i>Hydrilla Verticillata</i> Royle and <i>Pistia Stratiotes</i> Linn	866
CLARO M. SANTIAGO JR., B.B. MERCADO, E.D. DE LEON, R.P. FLORES, R.P. GARCIA and M.B. BIGOL. Strain Improvement of Selected Species of Edible Fungi	867
CLARO M. SANTIAGO JR., D.B. ISAAC, P.G. ANGLO, B.M. GARCIA, C.M. SILVERIO, R.L. ESGUERRA, F.C. RODILLO and M.B. BIGOL. Chromium From Leather Tanning Effluent	868
RENATO A. AVENIDO and DESIREE MENANCIO-HAUTEA. Organogenesis from Leaf Callus of Mungbean (<i>Vigna Radiata</i> L Wilczek) and Mothbean (<i>Vigna Aconitifolia Jacq Marechal</i>)	869

R.C. BARBA and LILIAN F. PATEÑA. Endosperm Culture of Calamansi (<i>X Citro Fortunella Mitis</i>), a Progress Report	870
MANUEL L. CASTILLO. Branch Cutting Propagation of Five Bamboo Species Using IBA	871
LILIAN F. PATEÑA and RENATO A. AVENIDO. Micropropagation of Banana and Rattan for Mass Distribution	872
LILIAN F. PATEÑA, BERNARDITA A. DELA ROSA and TERESITA L. ROSARIO. Tissue Culture of Garlic and Shallot	873
MA. ABIGAIL A. PUNZALAN, E.A. SANA, R.C. BARBA, LILIAN F. PATEÑA and ABELLA C. DELA VIÑA. Somadonal Variation and Induced Mutation in Ramie	874
W.R. PELEGRINA, L.F. PATEÑA, O.P. DAMASCO and R.C. BARBA. Development of Tissue Culture Techniques for Woody Species, Durian (<i>Durio Zibethinus</i>), Mussaenda (<i>Mussaenda</i> sp CV Dona Luz) and Derris (<i>Derris elliptica</i>)	875
A.C. PIZARRO and N.G. FABELLAR. Reaction of Recovered Tungro-infected Taichum Native/ Rice Plants to Elisa	877
ALICIA M. AGUINALDO, N.M. CHUA, M.C. YSRAEL, F. ABE, T. YAMAUCHI, K.D. CROFT and W.G. PADOLINA. Chemical and Biological Studies on <i>Mikania cordata</i> (Burm. f.) B.L. Robinson	879
ERLINDA ROJAS SANTOS. A Multi Media Instructional Kit on Philippine Medicinal Plants	881