Science and Man in the Americas

Consejo Nacional de Ciencia y Tecnologia Mexico City

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American Association for the Advancement of Science Washington, D.C.

2–3 July

Earth Sciences for Development

It may be said that no progress, as we know it now, could have been attained without the assistance of the earth scientists. Perhaps the most vivid example of this is the world's energy problem.

At present more than 90 percent of the total energy consumed is derived from fossil fuels, but by the year 2000 nuclear energy will account for more than 30 percent of the energy used. Petroleum, gas, and coal are found in nature by geoscientists. Dam construction for hydroelectric power generation, another important source of energy, requires careful detailed geologic and geophysical studies of the dam site (prior to construction) to ensure stability and endurance.

The important subject of earth sciences will be dealt with in a symposium (2–3 July) arranged by Eduardo J. Guzmán (Mexican Institute for Petroleum).

At present nuclear energy accounts for less than 1 percent of the total energy generated, but will multiply increasingly from now on. It is expected that nuclear energy will displace or substitute diminishing fossil fuels so that by the year 2000 more than one-third of the energy consumed in the world will originate from fissionable minerals. Pedro Stepanicic (National Commission for Atomic Energy of Argentina) will present the South American quest for nuclear energy and the progress made, while Fernando Alba Andrade (National Institute for Nuclear Energy of Mexico) will present the case of a country which has been up until this time self-sufficient in energy generation. Mexico has been drawing from its own hydrocarbon resources and is now successfully exploring for radioactive minerals, thus striving for continuing self-sufficiency.

As the complex process of progress in the world develops, under pressure of exploding populations, the need for consumer and capital goods increases exponentially. Charles F. Park (Stanford University) will expand on this critical condition and its bearing on expected world progress. The solution to the impending problem of raw mineral materials for the industrial sector of developed economies will rest fundamentally on the discovery of new and sufficient reserves. Earl Ingerson (University of Texas) will present data on progress being made on mineralogenetics and geochemical exploring applications. A similar effort is being applied in Latin American countries. Carlos Ruíz Fuller (Chile) will present the case of South America while Enríque Levy (Geological Survey of Guatemala) will report on application of geosciences in Central America and how such application may contribute to the solution of the socioeconomic problems of these under-industrialized countries.

As man harnesses energy to transform minerals into products needed for his well-being and transforms the surface of the earth to accomplish the task of making a better life for all humanity, so must he pay heed to the environment in which he lives. Peter T. Flawn (president, University of Texas, San Antonio) will speak of the contribution that geosciences must make to human progress through the preservation and improvement of the environment.

This symposium will stress the importance of the earth sciences in engineering projects and prediction of catastrophic phenomena such as the recent Nicaraguan earthquake, or that of Chile a few years ago. Cinna Lomnitz and Federico Mosser (Institute of Geophysics of the University of Mexico) will deal with these subjects through volcanism and plate tectonics.

Humanity is greatly indebted to the geoscientist and will continue to depend on him to produce raw materials for

Ilha Solteira Dam on Paraná River, São Paulo, Brazil. Geological and geophysical studies of a dam site are important before actual construction begins. [Brazilian Embassy]

fertilizers, and pesticides to enhance food production for an ever-increasing population. Guillermo P. Sales (director general, Council for Non-Renewable Resources of Mexico) will present this and other basic problems of civilization in the introduction of the central theme on "Earth Sciences and Development."

GUILLERMO P. SALAS
Council for Non-Renewable Resources of Mexico

2–3 July

Aerobiology of Diseases, Pests, and Allergens in the Western Hemisphere

Airborne materials such as viruses, bacteria, fungus spores, algae, pollen, insects, and pollutants cause considerable damage to animal, plant, and human systems in the Americas and throughout the world. Potential disasters can be averted if an understanding is obtained of the sources, atmospheric transport, deposition, and impact of these materials. A symposium on "Aerobiology of Diseases, Pests, and Allergens in the Western Hemisphere" seeks to examine these aspects for certain problems of the Western Hemisphere.

The symposium arrangers are: Lucas Calpouzos (Department of Plant and Soil Sciences, University of Idaho) and Armando Campos (Centro Internacional de Mejoramiento de Maiz y Trigo, México, D.F.). The three ½-day sessions making up the symposium are (i) "Aerobiology of plant diseases and pests"; (ii) "Aerobiology of allergens"; and (iii) "Aerobiology of human and animal diseases." An attempt was made in the program formulation to obtain a balance of speakers from North, Central, and South America and to focus on several important problems—for example, the coffee rust, which is spreading rapidly in Brazil. It has the potential to spread in the atmosphere to other Latin American countries where it would cause grave economic problems.

Five papers will be presented in session I: "Aerobiology in the Western Hemisphere" (Robert L. Edmonds, Director, U.S. International Biological Program, University of Michigan); "Aerial transport of peanut rust spores" (Eugene P. Van Arsdel, Texas A & M University); "Aerial transport of coffee rust spores in Brazil" (Joao A. Martinez, Instituto Biologico, São Paulo); "Aerobiology of wheat rusts in the Western Hemisphere" (S. Rajaram, CIMMYT, Mexico City); and "Aerobiology of pests in the Western Hemisphere" (Robert I. Gara, University of Washington).

Four papers will be presented in session II: "Volumetric methods in the study of exposure of fungus spores (William R. Solomon, University of Michigan Medical School); "Allergenic problems associated with the coffee and castor bean industries" (Annelise Strauss, Instituto Biologico, São Paulo, Brazil); "Airborne allergens in a tropical locale" (Carlos Benaim-Pinto, Caracas, Venezuela); and "Aspects of hypersensitivity pneumonitis" (John E. Salvaggio, Louisiana State University Medical School).

The final session is planned for four papers on the following topics: "Aerobiological aspects of foot and mouth disease" (M. Fernandez, Pan American Foot and Mouth Disease Center, Rio de Janeiro, Brazil); "Airborne pathogens of humans" (M. T. Hatch, Naval Biomedical Research Laboratory, University of California); "Airborne pesticide particulates" (R. J. Heckly and M. A. Chatigny, Naval Biomedical Research Laboratory, University of California); and "Remote sensing of aerobiological phenomena in human and animal health" (C. M. Barnes, Health Application Office, National Aeronautics and Space Administration).

This interdisciplinary symposium is sponsored by the U.S. Aerobiology Program of the International Biological Program (IBP), the IBP Aerobiology Theme, and the American Phytopathological Society.

A. CALPOUZOS
University of Idaho, Moscow

29–30 June

Anthropology Applied to Health Programs

This symposium (29–30 June) directs itself to the application of anthropological knowledge to problems of medical care and preventive health among rural peoples of Latin America. In all societies of Latin America, the population is comprised of culturally diverse segments. Geographic or social isolation has contributed to these culturally distinctive segments being characterized by unique biological adaptations to their physical environs. Together, cultural and biological distinctiveness, social and geographic isolation, have brought anthropologists and health personnel together in unique endeavors to provide effective health services for rural communities of this region.

The symposium will begin with a discussion on the growth characteristics of pre-school and school-age children in rural Mexican villages (Robert Malina, University of Texas, and Johanna Faulhaber, National University of Mexico). Panelists will comment on the way in which such growth indices and research contribute to planning and implementation of ever better health programs in rural areas.

The second part of the symposium will consider the systems of logic characteristic of, on the one hand, the Western-trained physician and, on the other hand, the lay healer who resides among the villagers. Comparison of these two logical and systematic understandings of illness and the implications of these differences for health programs will be presented by Horacio Fabrega and Jose Luis Diaz. Fabrega will compare logical systems of physicians and curers and discuss the manner in which a better understanding of differences and similarities of these two systems contributes to implementation of health programs. Diaz will discuss medicinal plants available to the native Mexican healers and implications of this understanding for modern health planners.

The manner in which Mexico has attempted in the past to have its health and other forms of social assistance services respond to the special characteristics and needs of rural villagers will be discussed and evaluated by Luis Vargas, Garcia Manzanedo, and Fernando Martinez Cortes. Rolando Collado will discuss efforts to sensitize medical students in Guatemala to the logic and needs of Indian villagers by training medical students in one such village.

Co-arrangers of this symposium are Arthur J. Rubel (University of Notre Dame, South Bend, Indiana) and Luis Vargas (Mexico).

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