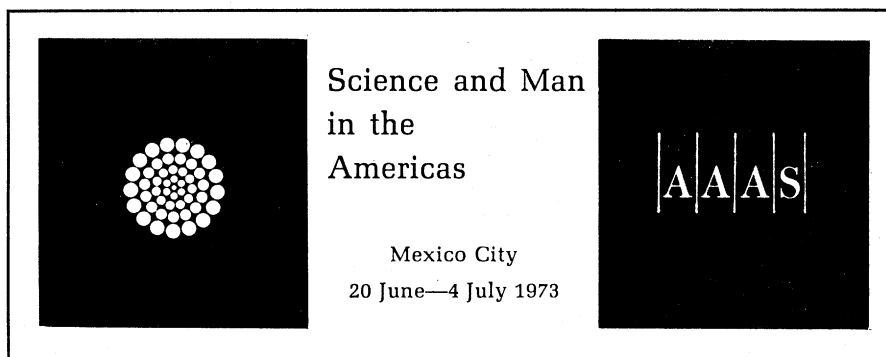




An inter-American meeting jointly planned by the Consejo Nacional de Ciencia Tecnología and the American Association for the Advancement of Science.

**25-27 June**

## Deserts and Arid Lands

Aridity is the dominant climatic factor over about one-third of the land surface of the world. Approximately 55 percent of Mexico and 35 percent of the 48 contiguous states of the United States lie within the arid zones. Two-thirds of Argentina and one-half of Chile are arid, as are the altiplano of Bolivia, the populous coastal plain of Peru, northeastern Brazil, and smaller sections of Venezuela, Colombia, and Paraguay. Too important areally to be ignored, development of the arid regions has been a notable success in some places and a failure in others.

The presence of prosperous oases such as Phoenix, Juárez-El Paso, and Monterrey tends to focus the attention of the casual observer on the attractiveness of the dry, sunny, and warm climate and to obscure the problems of existing in a water-deficient, ecologically unstable, and frequently harsh environment. Effective development must consider the limitations as well as the advantages of a region, evaluate them, and then choose development procedures that will produce the desired end results while maintaining or improving the resource base. The objective of the symposium "Deserts and Arid Lands" is to improve our understanding of how science can contribute to the successes and help avoid failures in development as the arid regions assume increasing importance in the decades ahead.

Throughout the symposium, an exchange of views on the potential of science for meaningful contributions to the rational utilization of arid lands will be sought. The format of the 2½-day meeting (25-27 June) calls for several invited papers to be presented. Three of them will be given in full, the others in 15-minute summaries, with copies of

the complete papers available to conference participants. Abstracts of volunteer papers will be published in an abstract volume which will be distributed at the conference. Volunteer papers will not be presented orally. Both they and the invited papers will form the basis for the discussions which will follow the formal presentation of invited papers.

Discussions are to be a key part of the symposium. Invited papers and abstracts are intended to provide information on who is doing what and where it is being done. The goal of the discussions is to obtain an informed evaluation of (i) the state of knowledge in subject matter areas; (ii) the relative need for research in specific areas and the likelihood of obtaining meaningful results; and (iii) the means by which continuing international cooperation can be achieved. Hopefully, this will provide guidance for the future development of the arid regions of the Americas.

Mistaken notions about the productivity of the arid lands, the indestructibility of resources, and the results of irrigation development have been, and continue to be, responsible for difficulties in avoiding the boom-or-bust economy that has characterized much of the American West. Enrique Beltrán (Instituto Mexicano de Recursos Naturales Renovables) and Thomas Maddock, Jr. (U.S. Geological Survey) will discuss the political, social, and scientific misconceptions associated with development of the arid regions and their avoidance in planning future programs. Marion Clawson (Resources for the Future) will bring his extensive experience to bear upon the question of alternate uses of land in developed and developing countries.

The role of solar energy, desalting, and remote sensing in resource development will be evaluated by Héctor Ruíz Elías (Comisión Federal de Electricidad), Gustavo del Castillo (Universidad Autónoma de San Luis Potosí), Juan de la Roca (Universidad Autónoma de San Luis Potosí), Aden B. and Marjorie P. Meinel (University of Arizona), Ronald F. Probst (Massachusetts Institute of Technology), and Marion F. Baumgardner (Purdue University). The possibility of making economic use of native shrubs, which sometimes are considered to be a valuable natural resource and other times are looked upon as useless weeds, will be explored by E. F. Haase (University of Arizona), Jerzy Rzedowski (Instituto Politécnico Nacional), and C. M. McKell (Utah State University).

Making some efficient use of the scarce water resources inevitably commands attention at any arid land conference. In Mexico City, the formal introduction, to this subject will be handled by Manuel Anaya G. (Colegio de Postgraduados, Chapingo), L. E. Myers (U.S. Department of Agriculture), Hasan Qashu (University of Arizona), and Oscar Benassini (Secretaría de Recursos Hidráulicos). Carl N. Hodges (University of Arizona) will describe the closed environment system that makes maximum use of limited or saline water supplies and which has been utilized successfully for vegetable crop production at Puerto Penasco, Mexico, and in the Arabian sheikdom of Abu Dhabi.

How the arid environment affects the social and cultural needs of people residing in it is, at last, becoming a subject of research. Only cursory attention has been paid in the past to the human resource, despite its obvious importance. Blanca Jiménez Lozano (Unesco Junto del Centro Regional de Alfabetización Funcional para las Zonas Rurales) will present the opening paper at a session that promises to be of major interest. She will be followed by Theodore Downing (University of Arizona) and Everett D. Edington (New Mexico State University).

The age of computers offers an unequaled opportunity for collection, storage, and retrieval of data on all aspects of arid land science. Methods by which computers and other library resources can be put to work effectively on an international scale are to be discussed by Patricia Paylore (University of Arizona) and Guadalupe Carrión (Consejo Nacional de Ciencia y Tecnología).

Problems associated with international cooperation in scientific research—and ways to minimize them—will be described by Rodolfo del Arenal (Universidad Nacional Autónoma de México).

The concluding talk of the symposium, on the effect of man on the expansion of deserts, will be given by M. Kassas (University of Cairo). Kassas will illustrate his thesis of desert expansion with the 2000-year history of the Mareotis area west of Alexandria.

Latin Americans who have been invited to be discussants for symposium sessions include Virgilio G. Roig (Argentina), Antonio J. Prego (Argentina), Mario Pérez (Bolivia), Patricio Dreckman (Chile), Mario Castro G. (Mexico),

Arturo Cornejo T. (Peru), José Lizárraga Reyes (Peru), and Carlos Zamora Jimeno (Peru).

For the four technical sessions U.S. cochairmen will be Stahrl Edmunds (University of California, Riverside), Dean F. Peterson (Utah State University), Terah L. Smiley (University of Arizona), Richard B. Woodbury (University of Massachusetts), and Gabriel Murillo Peralta (Centro Nacional de Investigaciones para Desarrollo de las Zonas Áridas).

The "Deserts and Arid Lands" central theme is cosponsored by several research institutes and professional societies. These include the Instituto de Investigación de las Zonas Desérticas (San Luis Potosí), Centro Nacional de In-

vestigaciones para Desarrollo de las Zonas Áridas (Coahuila), Dry Lands Research Institute (California), Desert Research Institute (Nevada), Office of Arid Lands Studies (Arizona), International Center for Arid and Semi-Arid Lands Studies (Texas Tech), American Society of Agronomy, Soil Science Society of America, Crop Science Society of America, and the Society of Range Management.

The coarrangers are Fernando Medellín Leal, (Instituto de Investigación de las Zonas Desérticas, Universidad Autónoma de San Luis Potosí) and H. E. Dregne (Texas Tech University).

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## 29-30 June

### Tropical Ecosystems

The symposium on "Tropical Ecosystems" (29-30 June) will cover research topics on organisms. The tropical zone of the world is one of the most important and fascinating areas in biological research today because of the diversity of tropical ecosystems, the basic unsolved problems, and the destruction rate of these areas. The speakers at this symposium will cover basic and applied topics bearing in mind that no progress can be made without factual knowledge of the organisms living in the natural environment.

The complexity of biotic relations of tropical organisms will be covered from different viewpoints by Drs. Colwell and Frankie. Dr. Bawa will discuss variability in reproduction of tropical trees, a neglected subject of great importance for future applied tropical forestry. Dr. Gómez-Pompa and Mr. Vázquez will discuss secondary succession in general, as well as their work and ideas about secondary vegetation in the lowland tropics of Mexico. Miss Moreno will present the first data on seed viability and dormancy of a lowland tropical tall rainforest, which is research of great importance in understanding the dynamics of the regeneration of rainforests. Regeneration can hardly be understood without discussing soil recovery after cultivation and the changes in element concentrations during this process—a topic that will be discussed by Dr. Zinke. Knowledge of tropical taxa is inadequate, and this problem will be covered by Dr. Nevling, using a subfamily of the legumes. Dr. Pannier will

then discuss the physiological ecology of mangrove swamps to illustrate the highly selective environment of tropical ecosystems.

From the applied point of view, Dr. Janzen will discuss the need for basic research if future application is to be possible, using the field of entomology as example. Tropical ecosystems and shifting agriculture are linked together, and will be discussed by Ing. Hernández Xolocotzi, who has a deep knowledge of the problem. Great portions of tropical ecosystems in Mexico have been given to groups of families by the Mexican government for their use (the "ejidos"). Problems of ejido land use will be provocatively discussed by Mr. Toledo. It is clear to many that optimal conservation of primary tropical ecosystems could be accomplished by their rational utilization, applying methods that will allow both regeneration and the use of their products. This unsolved world problem has been a critical point in promoting conservation, and Dr. Echenique will present his ideas on the subject.

This symposium is sponsored by the Ecological Society of America and arranged by Dr. Arturo Gómez-Pompa and Dr. Charles R. Malone.

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Tropical ecosystems. [Standard Oil Company]

