

in the United States. However, recent medical evidence reveals that some humans "killed" by lightning can be revived with little or no permanent injury. On the other hand, strikes to trees cause damage ranging from apparently no destruction to complete destruction and extensive forest fires. Our attempts to understand lightning are producing results in our efforts to understand the problems, and to progress in lightning modification.

RICHARD E. ORVILLE
State University of New York
at Albany

Speakers and Topics

27 December (morning)

Arranged by Richard E. Orville (State University of New York at Albany).

Bernard Vonnegut (State University of New York at Albany), chairman.

Richard E. Orville, *Introduction to the Lightning Flash*.

Martin A. Uman (Westinghouse Research Laboratories, Pittsburgh), *The Physical Parameters of Lightning and the Techniques by Which They Are Measured*.

Marx Brook (New Mexico Institute of Mining and Technology, Socorro), *The Apollo 12 Lightning Incident*.

E. P. Pierce (Stanford Research Insti-

tute, Menlo Park, Calif.), *Triggered Lightning and Some Unsuspected Lightning Hazards*.

27 December (afternoon)

R. H. Golde (Electrical Research Association, Leatherhead, Surrey, England), *Lightning Protection*.

Theodore Bernstein (University of Wisconsin, Madison), *The Effects of Lightning and Electrical Shocks on the Human Body and Animals*.

Alan R. Taylor (Northern Forest Fire Laboratory, Missoula, Montana), *Lightning Effects in Forests*.

Donald M. Fuquay (Northern Forest Fire Laboratory), *Problems and Progress in Lightning Modification*.

27-30 December

General Systems of the World Environment

Increasing concern with environmental problems in the past decade has led inevitably to recognition of the absolute necessity of dealing ultimately with the entire ecosystemic loop. It has become apparent that in large measure our environmental dilemmas have resulted from the convenience of looking at only one or at most a few facets of what are in fact intricately interrelated, vastly multifaceted problems. We have tended arbitrarily to bound the system in which we are at the moment especially interested, and in our optimization efforts have forgotten that we are often really suboptimizing, in the worst systemic meaning of that term. For example, in part at least, such a limited frame of reference accounts for the historic preoccupation with economic and technical values at an accumulated implicit cost only recently becoming all too explicit.

Thus we are compelled, by circumstance if not by a priori wisdom, to deal with larger and larger systems, and to curtail our ceteris paribus mode of reasoning. Now general systems concepts are increasingly imperative for ecosystemic research. As a pioneer organization in this area, the Society for General Systems Research has for almost two decades fostered the generation, evaluation, and communication of such holistic ideas.

The program theme of the Society's Philadelphia meeting was developed almost 2 years ago, in response to what even then seemed an obvious need. The subsequent evolution of the United Nations Conference on the Human Environment has created a new focus for the work of the Society for General Systems Research during 1972, which will in turn contribute to the development of its program a year from now,

when the theme will be "The World System."

The Society's interdisciplinary and transcontextual orientation is manifest in its program this year. The program commences with an address by its vice president, anthropologist Margaret Mead (Monday evening, 27 December, "General Systems Theory as a Framework for Transnational Cooperation") and concludes with an address by its president, British cybernetician, Stafford Beer (Wednesday evening, 29 December, "The Surrogate World We Manage"). A wide range of subject matter is scheduled for discussion on 28 December; the morning session dealing with the physical and biological aspects and the afternoon session addressing the social and philosophical dimensions of problems in the human environment. On Wednesday morning, 29 December, a panel comprised of representatives of the Society and of Simulation Councils will assess the general and technical problems in simulating the world environment.

Registration and Information Centers

Registration Desks: Sheraton (Third Floor), Benjamin Franklin (Lafayette Room), Bellevue-Stratford (First Floor, Elevator Foyer)

Information Desks: Sheraton (Third Floor), Benjamin Franklin (Lafayette Room); **Ticket Desk:** Sheraton (Third Floor)

Hours: 26 December, 9:00 a.m. to 8:00 p.m., and 27-30 December, 8:00 a.m. to 6:00 p.m.

The registration fee is \$15. A registrant and spouse may register for \$20, which entitles them to one program and two badges. The fee for young people and students is \$5.

Any person who purchased an advance copy of the program but did not register in advance may complete registration by paying an additional \$10, should he decide to attend the meeting.

Young people under 16 are not registered but will be admitted to the Exposition and Film Program if accompanied by a registered adult.

Science

27-30 December General Systems of the World Environment

Science **174** (4013), 1051.
DOI: 10.1126/science.174.4013.1051

ARTICLE TOOLS <http://science.sciencemag.org/content/174/4013/1051.citation>

PERMISSIONS <http://www.sciencemag.org/help/reprints-and-permissions>

Use of this article is subject to the [Terms of Service](#)

Science (print ISSN 0036-8075; online ISSN 1095-9203) is published by the American Association for the Advancement of Science, 1200 New York Avenue NW, Washington, DC 20005. 2017 © The Authors, some rights reserved; exclusive licensee American Association for the Advancement of Science. No claim to original U.S. Government Works. The title *Science* is a registered trademark of AAAS.