

The Quality of Science

Over the last few months we have used this page to report to you, at frequent intervals, on the contents of the forthcoming Annual Meeting in New York City, 26-31 January 1975, just about 1 week from now, culminating in a more-or-less complete rundown of the Meeting which appeared in the three mid-December issues:

List of Tours and Special Events, page 918, 6 December, *Science*;

Final Meeting Program, pages 1015 to 1025, 13 December, *Science*;

List of Exhibits and Films, page 1111, 20 December, *Science*.

In our previous discussions we have emphasized those aspects of the program which deal with issues of great public concern and the relationship of science and technology to these issues (see, for example, page 727, 22 November, *Science*). We would now like to tell you about some of the *scientific* content of the Annual Meeting, particularly as related to the contributions of the AAAS Sections, who are responsible for about two-thirds of the Meeting program.

Although the symposia which are listed represent only the highlights of the scientific contributions of each AAAS Section (and groups of sec-

tions), the list is by no means exhaustive of the total scientific content of the Meeting itself, nor does it anywhere indicate the full scope of the Meeting program, a large part of which deals with pressing national and international issues involving science and technology, as well as questions involving the public understanding and responsibilities in science and technology.

All in all, we feel that the Meeting will be a rewarding experience for all scientists and all citizens interested in science and its relationship with their world. We strongly suggest that, if you have not already done so, make your plans to come and join us. Registration will be in the lower lobby of the Americana Hotel, 52nd Street and 7th Avenue, in New York City.

—ARTHUR HERSCHMAN

A. Mathematics

Some Mathematical Questions in Biology (29-30 Jan.): Ecological systems, age-structured populations, and neurobiological problems, including signal propagation (sponsored by the American Mathematical Society, the Society for Industrial and Applied Mathematics, and AAAS Section A).

Theory versus Practice: The Finite Element Method (31 Jan.): Wave propagation, computer programming, and impact on engineering calculations (sponsored by the American Mathematical Society and AAAS Section A).

B. Physics

Science for the Naked Eye: Or the Physics of Everyday Experience, II (28 Jan.): Physics of pyramids, observations in prehistoric cultures, violin construction, mathematical observations, and a view from space (sponsored by AAAS Section B).

The Frontiers of Physics (31 Jan.): Directions for elementary-particle physics, physics of biological molecules, and our understanding of the very large (sponsored by AAAS Section B).

C. Chemistry

The Bile Acids (27 Jan.): Biosynthesis of the acids and transport and binding of bile salts (sponsored by AAAS Section C).

Biochemical and Photosynthetic Aspects of Energy (29 Jan.): Cellulose production, energy plantation, solar-energy fixation, ocean farming, photosynthesis, and use of wastes (sponsored by AAAS Section C).

D. Astronomy

Observational Tests of Theories of Gravitation (27 Jan.): Solar-system observations and experimental tests, including

low-temperature procedures for observing gravitational waves (sponsored by AAAS Sections D and B).

The Formation of Stars and Solar Systems (29 Jan.): Interstellar clouds, protostars, main sequence stars, and the presolar-system nebula (sponsored by AAAS Section D).

The Exploration of the Solar System: A Review of Recent Results (30 Jan.): Surface and interior of Mercury, atmospheres of Venus and Mars, and magnetosphere of Jupiter (sponsored by AAAS Sections D and B).

E. Geology and Geography

Land Use (28 Jan.): Administrative and legal aspects of planning, development, and coastal management, and of urban land use and water-resource management (sponsored by the American Geographical Society and AAAS Section E).

Land Use and Mineral Resources (30 Jan.): Oil shale, reclamation, revegetation, surface mining, and land-use planning (sponsored by AAAS Section E).

G. Biological Sciences

Human Sexuality as a Science (28 Jan.): Review of animal studies which provide a basis, as well as hormonal and behavioral implications (sponsored by AAAS Sections G and H).

U.S. Contributions to the International Biological Program (27-29 Jan.): Primary and secondary production, decomposition and mineral cycling, aquatic regulation, modeling, and human adaptation in ecosystems (sponsored by AAAS Section G).

The Structure and Function of the U.S. Tundra Ecosystems (29-31 Jan.): Climate and primary production, decomposition and nutrient flux, grazing and population dynamics of animals, and carbon flow in tundra ponds (sponsored by AAAS Section G).

H. Anthropology

The Mode of Production: Method and Theory (28–29 Jan.): Division of labor, primate and primitive human patterns, and developments in early societies and in contemporary cultures (sponsored by the American Anthropological Association and AAAS Sections H and K).

Anthropological Studies of Fertility (27 Jan.): Inbreeding, fertility trends, population and health planning, poverty, and evolution (sponsored by the American Association of Physical Anthropologists and AAAS Section H).

Frontiers of Population Research (29 Jan.): Fertility control and regulation, contraception, genealogy and demography, and hormonal use (sponsored by AAAS Section H, the Society for Applied Anthropology, and the AAAS Office of International Science).

J. Psychology

Brain Functions and Physical Well-Being (27 Jan.): Stability versus stress in physical illness, studies of effects on immune mechanism, and effects of learning on emotion and health (sponsored by AAAS Section J).

The Structure of Human Memory (29 Jan.): Meaning and word recognition, modeling of short-term memory, perception and cognition, associative mechanisms, language processing, and retrieval from long-term memory (sponsored by AAAS Sections J and T).

Developmental Psycholinguistics: From Sound to Meaning (29 Jan.): Unique human capacities for acquiring sophisticated language systems (sponsored by the Society for Research in Child Development and AAAS Section J).

K. Social and Economic Sciences

Health Care and Social Control (27 Jan.): The impact of medical labeling, such as healthy and ill, in our daily lives (sponsored by AAAS Section K).

Quantitative Methods and Improvement of Health Care Delivery (31 Jan.): Ambulatory patients, data banks and chronic disease, and anesthesia teams (sponsored by the Institute of Management Science and AAAS Sections K and U).

Regulatory Decision-Making (27 Jan.): Medical innovation and the Food and Drug Administration, economics and legal procedures, and the Federal Energy Administration (sponsored by AAAS Section K).

Economic Change and Family Size (27 Jan.): Female status, parents in an Iranian city, black families, and complex-household formation (sponsored by AAAS Sections H and K, the AAAS Office of International Science, and Graduate Women in Science).

L. History and Philosophy of Science

Seventy Years of Special Relativity (30 Jan.): Development of the theory, including conceptual and philosophical problems, and a discussion of faster-than-light motion (sponsored by AAAS Sections B and L).

Prospects for Increased Professional Responsibility in Science (29 Jan.): Compatibility of professional responsibility with the ethos of science (sponsored by AAAS Sections K and L).

M. Engineering

Needs and Trends in Medical Electronics (27 Jan.): Electronic technology, ultrasonic imaging and photoacoustic technology, microoptical and microacoustic devices, implanting, and educational needs (sponsored by the Institute of Electrical and Electronic Engineers Group on Engineering in Medicine and Biology and AAAS Section M).

The Impact of Engineering on Food Supply (30 Jan.): Agricultural and bioengineering, energy use, hydrology, food preservation and transportation, wastes, fish and aquatic foods, and new marine sources (sponsored by AAAS Sections M and O).

N. Medical Sciences

Control Systems in Biology and Medicine—A Sampler (30 Jan.): Biological command-control and organ-systems model. Cell growth, development, metabolism, membrane transport, population growth, and so forth (sponsored by AAAS Sections G and N).

Rehabilitation of the Handicapped: A Model of the Human Usage of Science and Technology (28–29 Jan.): Physiological and behavioral aspects, new technological capabilities and needs, and system-based services for the handicapped (sponsored by AAAS Sections X and N).

O. Agriculture

Introduction of New Foods—Principles and Problems (29 Jan.): Legal aspects, food habits, food technology, unconventional proteins, and developing countries (sponsored by AAAS Section O).

Land-Use Policies and Management in Relation to Food Production (30 Jan.): Resource capabilities for food and fiber production and environmental impact and hazards of agricultural technology (sponsored by the Association of American Geographers and AAAS Sections K, O, and E).

P. Industrial Science

Advances in the Corporate Planning Process (31 Jan.): Corporate scenarios, planning, industrial behavior, and formation of judgments (sponsored by AAAS Section P).

Q. Education

The Role of Comprehensive Problem-Solving Curriculum in the Secondary School (27 Jan.): Mathematics, physical science, and social science (sponsored by AAAS Section Q and the National Council of Teachers of Mathematics).

Innovations in Education: Curricular and Technological (30 Jan.): Interdisciplinary programs on campus, new educational technology, and evaluation of effectiveness (sponsored by the AAAS Office of Science Education and AAAS Section Q).

R. Dentistry

The Control of Pain, II: New Therapeutic Approaches and Frontiers for Immediate Research (29–30 Jan.): Behavioral, hypnotic, and acupunctural techniques, relation to dying patients and research aspects (sponsored by AAAS Section R).

The Cutting Edge: Interfacial Dynamics of Cutting (27 Jan.): Thermodynamics and thermal stress, adhesion and

cohesion, separation of biological tissues, chemical effects, and drilling and grinding (sponsored by AAAS Sections R and E).

S. Pharmaceutical Sciences

Are There Thresholds in the Effects of Pollutants on Health? (30 Jan.): Mammalian repair of damages, development of resistance, and extrapolation to low-dose effects (sponsored by AAAS Sections U, C, G, S, and X).

Biochemical and Nutritional Aspects of Trace Elements (27-28 Jan.): Zinc, copper, manganese, chromium, selenium, cadmium—biochemistry, physiology, pathology, teratogenesis, endocrinology, and infectious processes (sponsored by AAAS Section S).

T. Information and Communication

The Chain of Communication in Population Studies (28 Jan.): Information networks, community health clinics, mothers' clubs, structure and ecology, and American Indians (sponsored by AAAS Sections H and T, the AAAS Office of International Science, the Anthropological Society of Washington, and Graduate Women in Science).

Urban Information Systems: Present Capabilities and Future Needs (28 Jan.): Interaction between representatives of computer-based information systems and those who face real urban problems (sponsored by the American Society for Information Science and AAAS Section T).

U. Statistics

The Use of Quantitative Information and Modeling in Public Policy Decision-Making (28 Jan.): Social-policy anal-

ysis, modeling for decision-making, urban emergency services, health insurance, and contributions of systems analysis (sponsored by the SIAM Institute for Mathematics and Society and AAAS Sections A, M, P, and U).

The Problems of Longitudinal Comparisons in Educational Outcomes (28 Jan.): Science education, baseline and follow-up data, background adjustments, and so forth (sponsored by AAAS Sections U and Q).

W. Atmospheric and Hydrospheric Sciences

The Atmospheric and Hydrospheric Science in Transition (27 Jan.): Global atmospheric research, tropical experiments, Great Lakes observations, hail research, and cloud physics (sponsored by the American Meteorological Society and AAAS Section W).

Lead: Its Sources, Transport, Sinks, and Impacts (30 Jan.): Environmental contamination, watershed ecosystems, biological effects, and effects on man (sponsored by AAAS Section W).

X. General

Technology Assessment (27-28 Jan.): Political context and ongoing projects, including work schedules, geothermal energy, and mass transportation (sponsored by AAAS Sections X, K, and M and the AAAS Committee on Science and Public Policy).

The Future of Cars: Energy, Environment, and Economics (27-28 Jan.): Auto-emission options, energy and power-plant options, and long-term prospects (sponsored by AAAS Sections X and M).

AAAS PUBLIC LECTURES

National Geographic Society Public Lecture (26 Jan., 8:30 p.m.).

Kenan T. Erim (Professor of Classics; Director, Aphrodisias Excavations, New York University).
Aphrodisias.

Co-Chairmen's Public Lecture (27 Jan., 4:30 p.m.).

Max Black (Susan Linn Sage Professor of Philosophy and Humane Letters; Academic Head of Unit on Humanities, Science, and Technology, Cornell University).
Is Scientific Neutrality a Myth?

AAAS Public Lecture (27 Jan., 8:30 p.m.).

Thomas Stockham (Professor of Computer Science, University of Utah).
Recovering Caruso.

AAAS Public Lecture (28 Jan., 4:30 p.m.).

Dixy Lee Ray (Chairman, U.S. Atomic Energy Commission).
Topic to be announced.

AAAS Public Lecture (28 Jan., 8:30 p.m.).

Edwin H. Land (Chairman of the Board, President, and Director of Research, Polaroid Corporation).

Color Vision and the Retinex Theory: A Demonstration Lecture.

Phi Beta Kappa Public Lecture (29 Jan., 4:30 p.m.).

Lewis M. Branscomb (Vice President and Chief Scientist, IBM Corporation).
Science and Art.

AAAS Retiring President's Public Lecture (29 Jan., 8:30 p.m.).

Roger Revelle (Director, Center for Population Studies, Harvard University).
Topic to be announced.

AAAS Public Lecture (30 Jan., 4:30 p.m.).

Russell Peterson (Chairman, Council on Environmental Quality).
The Impact of Population on Resources, Environment, and the Quality of Life.

AAAS Public Lecture (30 Jan., 8:30 p.m.).

Isaac Asimov (Associate Professor of Biochemistry, Boston University School of Medicine).
The Science Fiction Writer as Prophet.