This Week in Science

Scientists' Roles in AIDS Control: D. JENNESS


Proposal to Ban Mobile Missiles Favors Targeting Over Arms Control

U. S.—Soviet Exchanges—Redefining Coexistence

Nuclear Waste Program Faces Political Burial

Briefing: Illinois Wipes Out State Budget for Psychiatric Research ■ Forest Death Showing Up in the United States ■ Chernobyl-Type Accident Deemed Unlikely at Hanford Plant ■ Senate Amendment Seeks Curb on Pork Barrel Funding ■ Biotech Field Test Halted by State Court

Youth Suicide: New Research Focuses on a Growing Social Problem

Briefing: Astronomers Find Their First Embryonic Star

Spotting the Atoms in Grain Boundaries

Neuronal Circuits: An Evolutionary Perspective: J. P. C. DUMONT and R. M. ROBERTSON

The Complete Primary Structure of Protein Kinase C—the Major Phorbol Ester Receptor: P. J. PARKER, L. COUSSENS, N. TOTTY, L. RHEE, S. YOUNG, E. CHEN, S. STABEL, M. D. WATERFIELD, A.ULLRICH

Multiple, Distinct Forms of Bovine and Human Protein Kinase C Suggest Diversity in Cellular Signaling Pathways: L. COUSSENS, P. J. PARKER, L. RHEE, T. L. YANG-FENG, E. CHEN, M. D. WATERFIELD, U. FRANCKE, A. ULLRICH

SCIENCE is published weekly on Friday, except the last week in December, and with a plus issue in May by the American Association for the Advancement of Science, 1333 H Street, NW, Washington, DC 20005. Second-class postage (publication No. 484480) paid at Washington, DC, and at an additional entry. Now combined with The Scientific Monthly. Copyright © 1986 by the American Association for the Advancement of Science. The title SCIENCE is a registered trademark of the AAAS. Domestic individual membership and subscription ($11 issues): $65. Domestic institutional subscription ($11 issues): $98. Foreign postage extra: Canada $24, other (surface mail) $27, air-surface via Amsterdam $65. First class, airmail, school-year, and student rates on request. Single copies $2.50 ($3 by mail); back issues $4 ($4.50 by mail); Biotechnology issue, $5.50 ($6 by mail); classroom rates on request; Guide to Biotechnology Products and Instruments $16 ($17 by mail). Change of address: Allow 6 weeks, giving old and new addresses and seven-digit account number. Authorization to photocopy material for internal or personal use under circumstances not falling within the fair use provisions of the Copyright Act is granted by AAAS to libraries and other users registered with the Copyright Clearance Center (CCC) Transactional Reporting Service, provided that the base fee of $1 per copy plus $.10 per page is paid directly to CCC, 21 Congress Street, Salem, Massachusetts 01970. The identification code for Science is 0036-8075/86 $1 + .10. Postmaster: Send Form 3579 to Science, 1333 H Street, NW, Washington, DC 20005. Science is indexed in the Reader's Guide to Periodical Literature and in several specialized indexes.

The American Association for the Advancement of Science was founded in 1848 and incorporated in 1874. Its objects are to further the work of scientists, to facilitate cooperation among them, to foster scientific freedom and responsibility, to improve the effectiveness of science in the promotion of human welfare, and to increase public understanding and appreciation of the importance and promise of the methods of science in human progress.
COVER Experimental watershed no. 5 in the Hubbard Brook Experimental Forest, in central New Hampshire. This watershed was commercially whole-tree harvested in 1983. Experimental watershed no. 6, the location of a continuous 25-year record of precipitation and stream water chemistry, is to the immediate left of watershed no. 5. Massive disturbances, such as whole-tree harvesting, set in motion a series of biogeochemical responses that shape both the long- and short-term behavior of the recovering landscape. See page 867. [Ashton Hall]t

Reports

867 Transport and Loss of Nitrous Oxide in Soil Water After Forest Clear-Cutting: W. B. Bowden and F. H. Bormann
875 Observations of Polygonally Twinned Precipitate Needles of Germanium in Aluminum: U. Dahmen and K. H. Westmacott
876 A Fossil Grass (Gramineae: Chloridoideae) from the Miocene with Kranz Anatomy: J. R. Thomasson, M. E. Nelson, R. J. Zakrzewski
879 Structure and Diversity of the Human T-Cell Receptor B-Chain Variable Region Genes: J. P. Tillinghast, M. A. Behlke, D. Y. Loh
883 Replication of the B19 Parvovirus in Human Bone Marrow Cell Cultures: K. Ozawa, G. Kurtzman, N. Young
886 Calcium Rises Abruptly and Briefly Throughout the Cell at the Onset of Anaphase: M. Poenie, J. Alderton, R. Steinhardt, R. Tsien
889 Upstream Operators Enhance Repression of the lac Promoter: M. C. Mossing and M. T. Record, Jr.

Products & Materials

893 Incubation Hood ■ Cell and Tissue Adhesive ■ Research Project Database ■ Supercritical Fluid Chromatography ■ Custom DNA and Peptide Synthesis ■ Automated Pipetor ■ Literature

Book Reviews

896 The Dilemmas of an Upright Man, reviewed by D. G. Cassidy ■ The Photochemistry of Atmospheres, R. J. Cicerone ■ Hope for a New Neurology, J. B. Martin ■ Transport and Diffusion across Cell Membranes, C. Tanford ■ Books Received
Scientists’ Roles in AIDS Control

Experts now project that by 1991 as many as 54,000 Americans will be dying each year from AIDS. Given the extent of infection by the virus in the present population (conservatively, 1 million people), the fact that transmission of the virus is invisible and usually unwitting, and the likelihood that developing a vaccine is at best a number of years away, the United States—and other societies—are still near the onset of an agonizing episode that will have far-reaching personal, social, economic, and political ramifications.

It is obvious to all that we must plan for the serious dislocations that will surely come. We do in principle know what must be done to stop the spread of infection. Epidemiologists tell us, for example, that of the projected 54,000 who will, statistically speaking, die in 1991, some substantial share are not currently infected with the virus: perhaps 13,000 individuals could be saved in 1991 by preventing transmission of the disease to them.

In recent months, officials at the Public Health Service (PHS) have acknowledged that, in the absence of a vaccine and effective treatment, our most powerful tools in the next few years will be information, education, and prevention campaigns. To some scientists these terms may sound abstract, even vacuous—but not to public health professionals or social scientists. These endeavors have specific procedural meaning, and they save lives. Social scientists have a crucial role, both in preparing for societal stresses of major proportions and in devising means for intervention and prevention of illness. They know how to elicit reliable reports of personal behavior, knowledge, and attitudes; how to reach special cultural groups; how social networks, peer interactions, and voluntary associations function within the general society; how political processes work at the local level; and how to effect attitude change. They have studied risk-seeking and additive patterns and the basis for cooperative rather than selfish behavior.

There is, in addition, a long-established tradition of cooperation between social scientists and public health workers—in improving diet, preventing infection, and introducing healthful practices on a significant scale. There is a similarly recognized partnership between social science and experimental medicine—in the design of trials, assessment of outcomes, evaluation of illness-correlated factors, and reinforcement of new behavior.

There has been a marked reluctance by the federal government—reflecting a natural distaste for sex, drugs, and disease—to launch serious programs of prevention or even to conduct strategic research. But officials of the PHS are now seeking a trebling of the administration’s 1987 budget for AIDS education and risk reduction. It is a courageous move; all concerned scientists should support it.

Coordinated intervention projects on a demonstration basis must be undertaken in communities across the country, without delay. However, as demands on public health professionals and social scientists increase, it will be essential to have designed already ways to evaluate what is done in the effort. An effort by the National Research Council or similar organization will be needed for sound scientific evaluation of health promotion and disease prevention projects funded by government or by private groups.

It is also important that a program of directed applied research be started, covering, for example, how to reach particular segments of the population, how to protect the medical care system from intolerable strain, and how to deal with persons who may be infectious for the rest of their lives. The National Institutes of Health’s system of investigator-initiated research proposals is not efficient for this purpose; a central coordinating mechanism is needed. It is also crucial, however, that NIH and other agencies fund longer range basic research. Ironically, the AIDS crisis may stimulate work on fundamental research topics where little is known: the malleability of sexual behavior in adult life, psychobiological aspects of risk-seeking, or community organization and cultural change as a response to external threat.

As citizens, social scientists should advocate and participate in knowledge-based action in their own locales. No university town or rural area will prove an Isle of the Blest, safe from threat. As professional scientists, they should insist on proper funding levels for both directed and fundamental research. Finally, they should move to participate as consultants, partners, and leaders in the enormous effort that lies ahead.—DAVID JENNESS, Executive Director, Consortium of Social Science Associations, Washington, DC 20036