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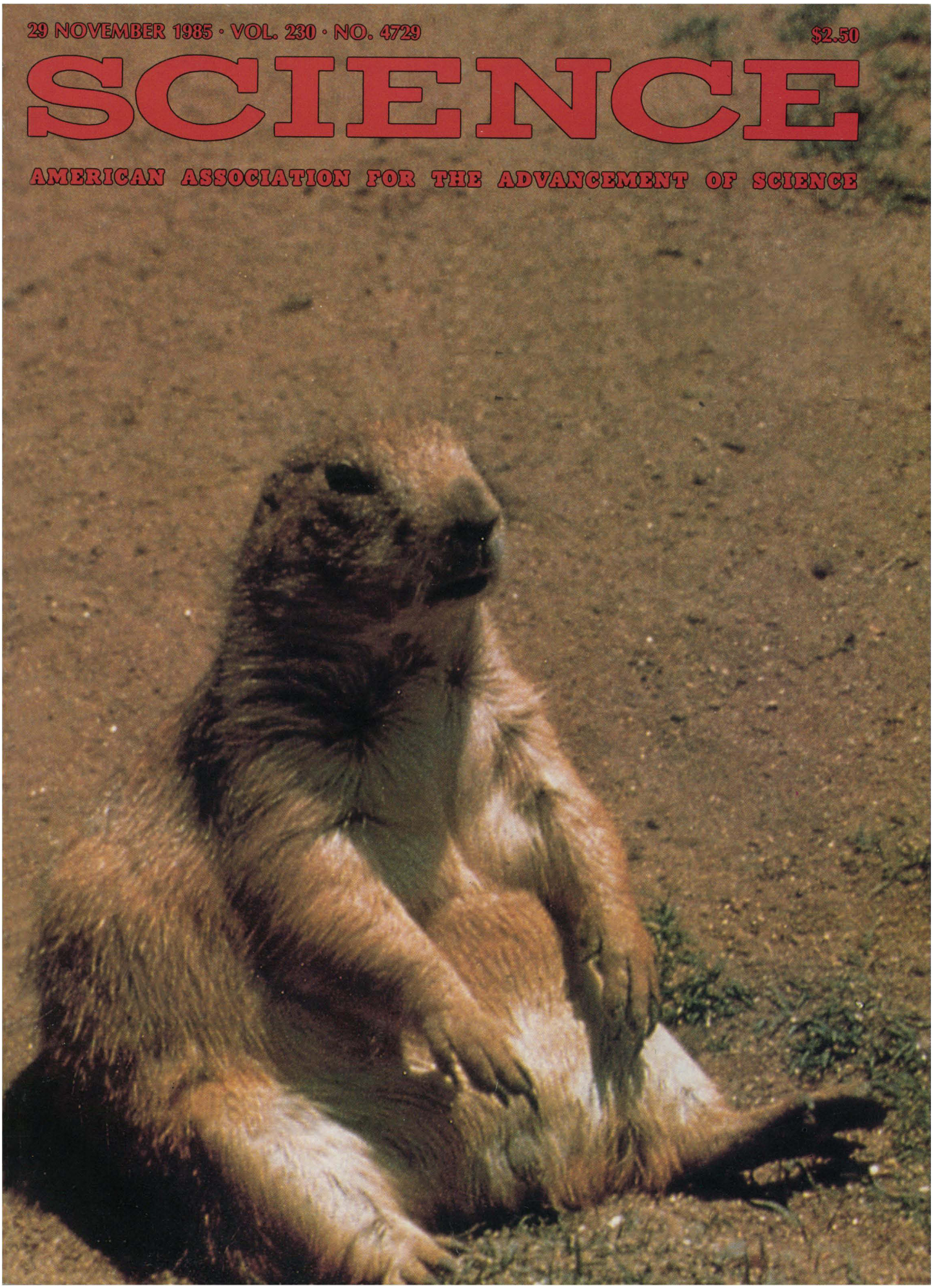

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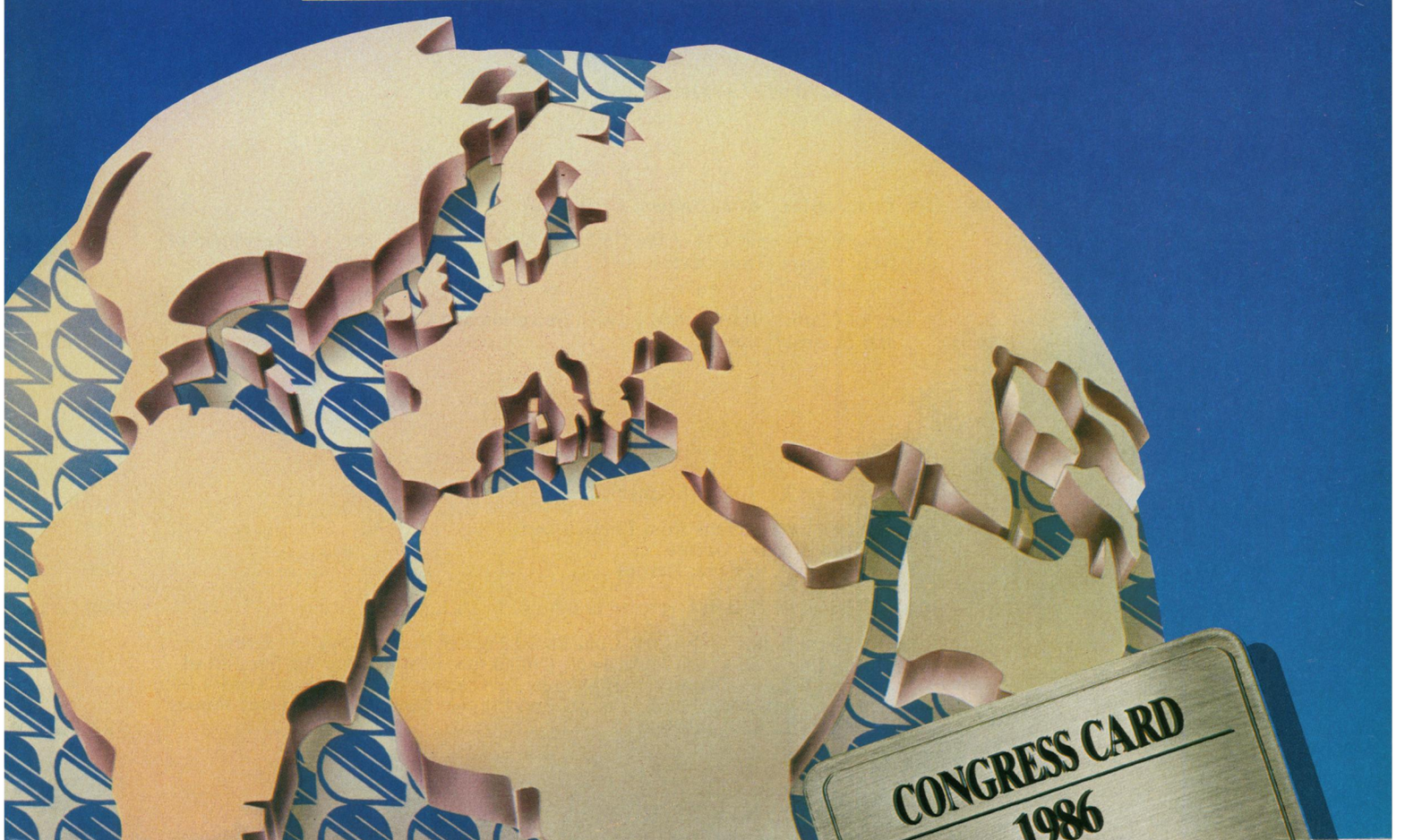

Some of the international meetings scheduled for 1986 are:

Biological Regulation of Cell Proliferation
9th International Chalone Conference
Milan, March 3-6
Scientific Organization: E.E. Polli (I) and O.H. Iversen (N)

The Control of Follicle Development, Ovulation and Luteal Function: Lessons from In Vitro Fertilization
Paris, April 7-9
Scientific Organization: F. Naftolin (USA) and A.H. DeCherney (USA)

Dexamethasone-Suppressible Hyperaldosteronism
Rome, June 5-6
Scientific Organization: M.I. New (USA)

Corticosteroids and Peptide Hormones in Hypertension
Mannheim, Sept. 6-7
Scientific Organization: E.G. Biglieri (USA), F. Mantero (I) and P. Vecsei (D)

Recent Advances in Adrenal Regulation and Function
Madrid, Sept. 19-20
Scientific Organization: M. Lipsett (USA), G. Chrousos (USA) and L. Loriaux (USA)

Fertility Regulation Today and Tomorrow
Stockholm, Sept. 29-30, Oct. 1
Scientific Organization: E. Diczfalusy (S) and M. Bygdeman (S)

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COVER

Black-tailed prairie dog (*Cynomys ludovicianus*) at Wind Cave National Park, South Dakota. Infanticide in prairie dogs is the major source of juvenile mortality, accounting for the partial or total demise of 51 percent of all litters born. The most common victims of prairie dog infanticide are the offspring of close kin. See page 1037. [National Park Service, Wind Cave National Park, South Dakota]

5th World Congress on Medical Informatics
October 26–30, 1986

Medinfo 86 Washington

General Information

The Fifth World Congress on Medical Informatics (MEDINFO 86) will be held in Washington, D.C., USA, October 26–30, 1986. These Congresses, presented by IMIA, The International Medical Informatics Association, have been successfully held in Stockholm (1974), Toronto (1977), Tokyo (1980) and Amsterdam (1983). The Organizing Committee has been appointed by IMIA at the request of the U.S. Council for MEDINFO 86, a non-profit corporation sponsored by 12 leading medical and engineering societies in the United States. MEDINFO 86 will endeavor to promote all aspects of medical and health care computing from all countries of the world, as has been accomplished so successfully in the four previous Congresses. Participation will be sought from health information scientists, medical computing specialists, public health and hospital administrators, physicians, nurses, dentists, allied health personnel, and consultants in the various health fields.

Location

MEDINFO 86 will be held at the Sheraton Washington Hotel in Washington, D.C. The facility is the largest hotel/meeting room/exhibit hall complex in the US capital, and is linked by subway or short taxi ride to more than 15 other hotels, which will provide accommodations at a wide range of prices and styles. Three airports, Dulles International, Baltimore–Washington International, and National, serve the Washington, D.C. area. The meeting site is central to international embassies, cultural and historic locations and scientific facilities that will host social and technical excursions.

Fifth World Congress on Medical Informatics (MEDINFO 86)
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c/o George Washington University Medical Center
Office of Continuing Medical Education
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Deadlines

Now	Fill in the enclosed reply form. Notifications of Intent to Submit are required by the Secretariat of the Organizing Committee MEDINFO 86
March–November 1985	Detailed information and authors kits sent to potential authors.
January 15, 1986	Final date for receipt of camera-ready material for consideration by the Scientific Committee and inclusion in the Proceedings
May, 1986	General mailing of the Invitation to Register
May 15, 1986	Notification of acceptance of papers and distribution of the Preliminary Program
October 26, 1986	MEDINFO 86—Washington, D.C.

Papers

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Clathrin

Although clathrin-coated vesicles have been associated with growth and secretion in diverse cell types, neither process is obligately coupled to the presence of coated vesicles (page 1009). Clathrin, which has a three-legged structure containing three heavy and three light polypeptide chains, typically coats membrane vesicles that are involved in transporting molecules from their sites of synthesis in the cell to the surface or outside. Payne and Schekman used genetic engineering techniques to replace the clathrin heavy chain gene of yeast with a nonfunctional gene. Despite the clathrin deficit that resulted, yeast cells could grow, albeit slowly, and could secrete newly synthesized proteins. Thus, while clathrin may expedite the secretion process, it is not essential for it.

Immune and endocrine interactions

Two-way communication occurs in the body between the immune and endocrine systems (page 1035). On the basis of experiments showing how secreted mediators from each system can alter secretion of mediators from the other, Woloski *et al.* developed a model of the communication network. In inflammation, monocytic cells of the immune system release proteins, including interleukin-1 and hepatocyte-stimulating factor (HSF). Each of these mediators was shown to stimulate pituitary cells of the endocrine system in culture to release adrenocorticotropic hormone. Similarly, a synthetic glucocorticoid inhibited production of HSF by cultured monocytes. For the many diseases in which both systems play a part, the regulation of host defenses may rely on a number of interactions and feedback loops between immune and endocrine mediators.

Autoimmunity by molecular mimicry

A part of a virus that resembles a part of its host may initiate autoimmune disease (page 1043). As host components are then damaged and released, they provide additional stimulation to the immune system; the follow-up reactivity is not dependent on continued availability of initiating virus. Some form of "molecular mimicry" may be involved in measles encephalitis, thyroiditis, diabetes, multiple sclerosis, and other diseases. Fujinami and Oldstone found by computer analysis that the polymerase protein of hepatitis B virus and the host's myelin basic protein (MBP) have identical stretches of six amino acids; the region on MBP is part of a site that in rabbits induces experimental autoimmune allergic encephalomyelitis. When rabbits were immunized with a small synthetic peptide containing the shared sequence, autoimmune signs—antibodies, lymphocytes, and nervous system lesions—developed. Other viruses have MBP-like sequences, which perhaps explains why encephalitis is a sequel to many viral infections.

Canine parvovirus evolution

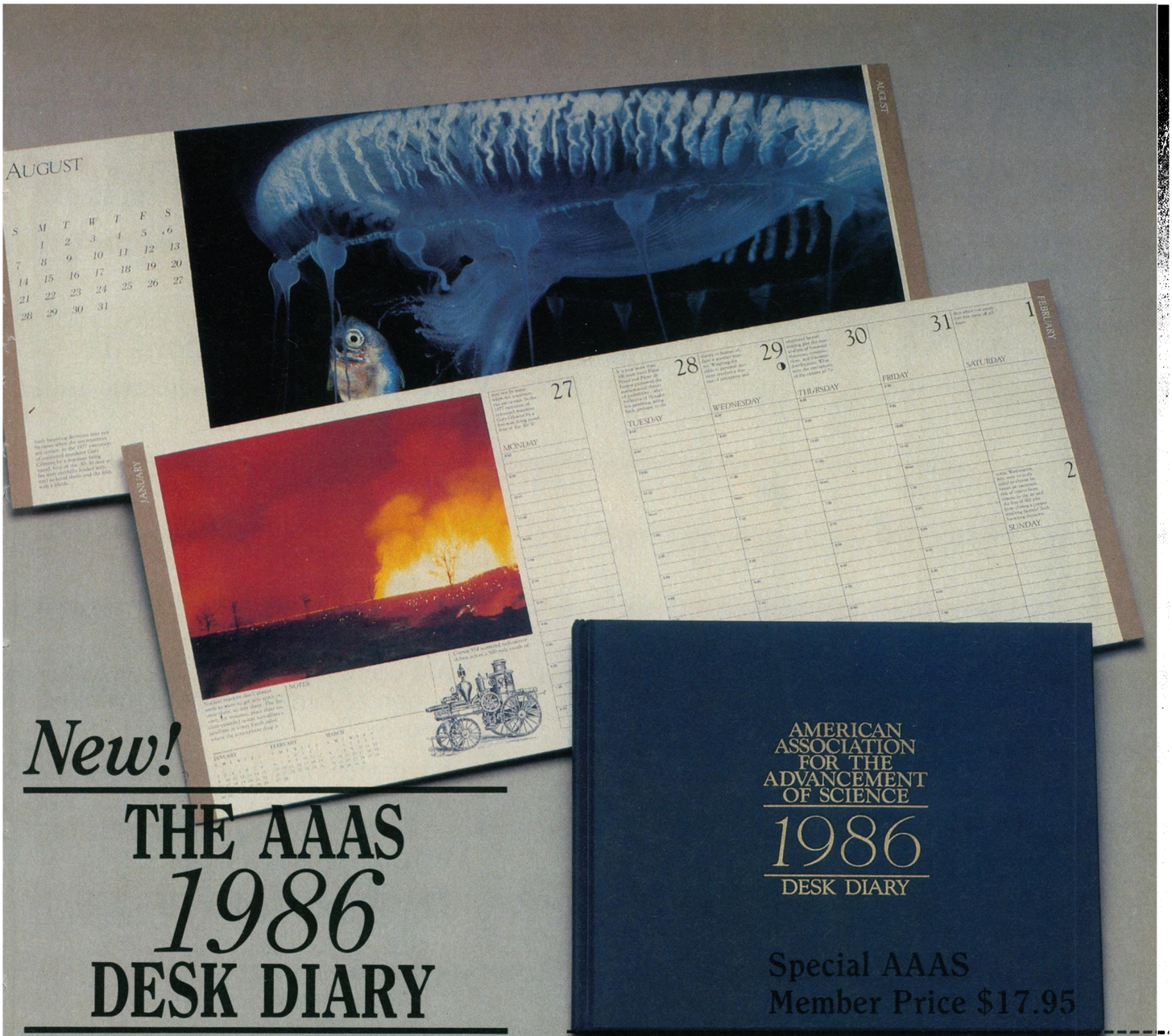
In 1978 a new parvovirus was identified as the cause of myocarditis and enteritis in dogs; by 1980 new features characterized the virus; and by 1984 a variant virus had largely supplanted the original parvovirus in dogs in the United States (page 1046). The de novo appearance of the virus and its similarity to feline panleukopenia virus suggested that it might be derived from the cat virus. Parrish *et al.* found by restriction enzyme cleavages that genes of the 1978 and 1984 isolates were different and that the differences correlated with antigenic variations. With a panel of monoclonal antibodies, shared and unique antigens were identified on the original and evolved forms. Compared with the original virus, the evolved virus may have been much better suited for replication in dogs; thus it efficiently spread throughout the United States, doggedly replacing the original virus throughout the canine population.

Cytomegalovirus transmission

Blood lymphocytes may be both a reservoir for and a transmitter of infectious cytomegalovirus (CMV) among humans (page 1048). This herpesvirus establishes itself in the body and can remain latent for long periods; later reactivation to cause disease is often a consequence of immunosuppression. The virus itself is immunosuppressive and has been considered a possible cofactor in predisposing individuals to AIDS. About 70 percent of adults have antibodies to CMV, indicating prior exposure to the virus; yet CMV has not been easy to detect in such individuals. Schrier *et al.* used a sensitive hybridization technique to show that viral nucleic acid sequences are present in blood lymphocytes of individuals having antibodies to CMV. The technique may be valuable for monitoring donated blood and blood of known carriers. The carriers may be more effectively treated for pneumonia and other symptoms accompanying CMV infections if viral reactivation can be detected early.

Inheriting the cystic fibrosis trait

The pattern of inheritance of cystic fibrosis (CF)—a chronic lung disease—suggests that CF results from a single defective gene; a family study of CF inheritance has narrowed the search for the gene defect to a specific DNA marker fragment and to 1 percent of the human genome (page 1054). Tsui *et al.* used fragments of DNA generated by restriction enzyme digestion to home in on the CF defect. Analyses of DNA from members of 43 affected families showed to which fragment the trait was linked. CF is the most common serious genetic disorder of Caucasians in North America, inherited by 1 in 2000 children; thus other similar DNA markers even closer on the human chromosome to the CF gene are being sought for future use in genetic testing and cloning of the disease gene.



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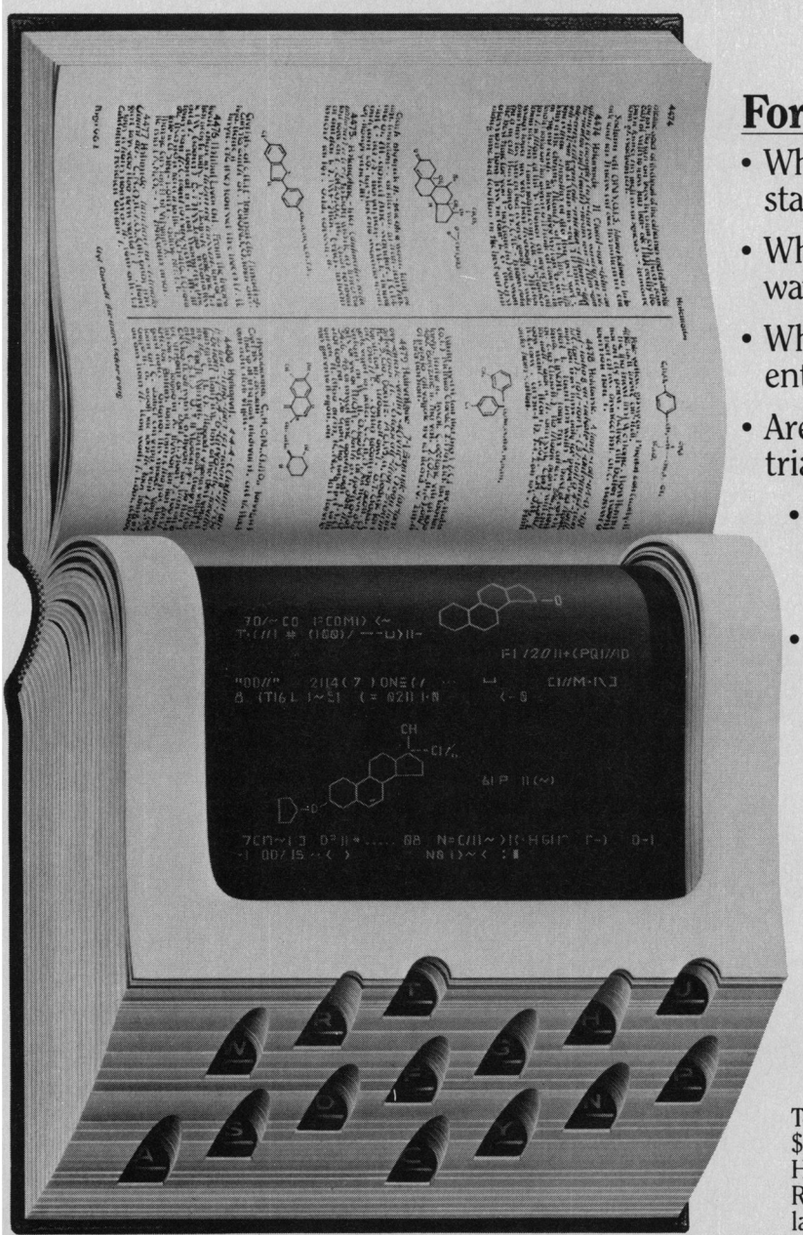

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29 November 1985, Volume 230, Number 4729 **SCIENCE**

America's Ultimate Christmas Catalog

In this season when mailboxes overflow with catalogs featuring every imaginable Christmas gift, the National Academy of Sciences has sent us what should be one of the most exciting—*Opportunities in Chemistry**. It is an impressive 350-page catalog of the gifts to society that the chemical sciences can provide if we will just fill out our national order blank.

Twenty years ago another NAS report†, usually called the "Westheimer" report, made a similar case for those times. Yet 9 months ago (22 February, page 847) in this space, Philip H. Abelson had to report, "In proportion to its contribution to the advancement of other sciences and its contributions to the economy, chemistry is the most underfunded of all the natural sciences." This new report (called the "Pimentel" report, for its chairman), after a masterful exposition of chemistry's advances and their potential applications, outlines specific and sensible shifts in federal budgets that would allow more effective exploitation of these advances for the national good. A determined effort is needed to ensure an adequate response this time, despite current budget stringencies.

The report underlines the great range of the chemical sciences. Examples in catalysis, optics, photochemistry, superconductors, biosynthesis, biopolymer structure, enzymology, spectroscopy, chromatography, molecular structure theory, computer graphics, stratospheric chemistry, geochemistry, and many more areas stress the interaction of chemistry with other sciences. The view of chemistry as the "central science" is *not* just a chauvinistic blanket worn by those of us with the word "chemistry" somewhere on our diplomas, but we have not always convinced others of that. This report should convince the careful reader.

It also lays to rest any notion that chemistry is a "mature" science, lacking in exciting research challenges. The many areas of practical importance are highlighted in each of the three technical chapters, and a section in each describes the "intellectual frontiers." Chemistry continues to offer major challenges to the "pure" researcher. At the same time it is the key to meeting many of the needs of society.

The chemical sciences have made many vital contributions to the welfare of mankind and have the potential for even greater contributions in the future. This is ably documented in the Pimentel report.

All who are concerned that science make its full contribution to national life should study this report and its recommendations. They will be convinced that we need full support of the chemical sciences by government, industry, and our educational institutions. Society will be repaid manyfold for such an investment of resources.—E. G. JEFFERSON, *Chairman of the Board, E. I. du Pont de Nemours & Company, Wilmington, Delaware 19898*

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*Committee to Survey Opportunities in the Chemical Sciences, *Opportunities in Chemistry* (National Academy Press, Washington, D.C., 1985).
†Committee for the Survey of Chemistry, *Chemistry: Opportunities and Needs* (National Research Council, Washington, D.C., 1965).

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PROGRAM

MORNING SESSIONS – Thursday, January 30, 1986

The Role of People in High Technology Automation: R.G. Miller, Ortho Pharmaceutical Canada, Ontario, Canada.

Development and Evolution of Perfusion Culture Systems and Static Maintenance Systems for Large Scale Production of Mammalian Cell Derived Products: W. Tolbert and C.V. Benton, Invitron, Clayton, MO.

Multiple Approaches to Protein Purification Using Solid Phase Interaction on Silica Based Bonded Phases: L.J. Crane, J.T. Baker Company, Phillipsburg, NJ.

POSTER SESSIONS – EXHIBITS

Synthetic DNA: Application of Robotics to the Purification of Oligonucleotides: S.S. Jones, J.E. Brown, D. Stone and E.L. Brown, Genetics Institute, Cambridge, MA.

Preparative High Performance Liquid Chromatography of Proteins: L. Beadling, C. Mason and G. Sofer. Pharmacia, Inc., Piscataway, NJ.

Ultrafiltration Processes for the Purification of the Enzyme Alkaline Phosphatase: C.S. Slater, H.C. Hollein, T.G. Hugguns, Jr., and C.A. Brooks III, Manhattan College, Riverdale, NY.

AFTERNOON SESSIONS – Thursday, January 30, 1986

Cell Culture on Porous Microcarrier Particles: A.F. Steuer and F. Cahn, Biotech Research Laboratories, Inc., Rockville, MD. I.V. Yannas, Massachusetts Institute of Technology, Cambridge, MA.

L-Asparaginase from "Erwinia Cartovara": An Improved Recovery and Purification Process Using Affinity Chromatography: S. Lee, M.H. Wroble, J.T. Ross, G.M. Muschik and W.B. Lebherz III, National Cancer Institute – Frederick Cancer Research Facility, Frederick, MD.

Proteolytic Enzyme Removal by Zeta-Affinity Cartridge: K.C. Hou, AMF Specialty materials group, Meriden, CT.

Optimal Control of Temperature and Enzyme Feed Rate in Simultaneous Batch Saccharification and Fermentation: J.L. Spencer, W.H. Sun and J.A. Assenjo, Columbia University, New York, NY.

MORNING SESSIONS – Friday, January 31, 1986

Factors Influencing Monoclonal Antibody Production in Mouse Ascites Fluid: J.P. Chandler, Charles River Biotechnical Services, Inc., Wilmington, MA.

Study of High Immunoglobulin Productivity in Immobilized Hybridoma Cultures: N.G. Ray, Verax Corporation, Hanover, NH.

Hybridoma Data Bank: A New Resource: L. Blaine, American Type Culture Collection, Rockville, MD.

Buying and Selling Biotechnology Equipment, Supplies and Chemicals: W.J. Carik, The Salk Institute, San Diego, CA.

Optimization Strategies for Increasing Production of Monoclonal Antibodies in Hollow-Fiber Bioreactors: M. Tyo and M. Gruenberg, Endotronics, Inc., Coon Rapids, MN.

Production and Concentration of Monoclonal Antibodies Using the Opticell™ Culture System: J.E. Putnam, G.G. Pugh and L.A. Noll, KC Biological, Lenexa, KS.

Disposable Fermenters for Mammalian Cell Cultures – Cellift™: H. Founds and M. Young, Ventrex, Portland, ME.

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