

1629 This Week in *Science*

## Editorial

1631 Soviet Science and Technology at the Boston Meeting: A. W. Trivelpiece

## Letters

1633 Paleolithic Diet, Evolution, and Carcinogens: D. L. DAVIS; B. N. AMES AND L. S. GOLD ■ Definition Required: R. A. STAIRS ■ California's Proposition 65: A Reply: S. A. BOOK ■ Cholesterol Guidelines: R. E. OLSEN ■ Liability Insurance and Litigation: R. M. HAYDEN; P. W. HUBER ■ Development in the Guinea Savanna: A. E. NYERGES ■ The Cognitive Unconscious: V. R. POTTER; J. S. KAFKA; J. F. KIHLMSTROM

## News & Comment

1639 Adapting to Pork-Barrel Science  
1641 A Matter of Time  
1643 Maxwell May Back Gallo  
1644 Soviets Pin Economic Hopes on Technology  
1645 Europe in Space: The Program Is in French  
1647 Is Alcoholism a Disease?  
1648 *Briefing*: Protests Nix Plan to Orbit a Ring of Light ■ Soviets Test Monsanto's Milk Production Hormone ■ NASA Denied Access to DOE Laser Fusion Data ■ NIMH Gets New Director ■ European Southern Observatory

## Research News

1649 Atomic Bomb Doses Reassessed  
1651 Broad Attack Launched on the Nervous System: Thanks for the Memory ■ Alzheimer's Protein Is Also in Infant Brains ■ Peptide Turn-On for the ACh Receptor Gene  
1653 Insect Viruses Invade Biotechnology  
1654 Tower Study Hints at a "Sixth Force"  
1655 Superconductor's Critical Current at a New High

## Association Affairs

1657 Walter E. Massey: President-Elect of AAAS: N. M. BRADBURN AND D. ROSEN

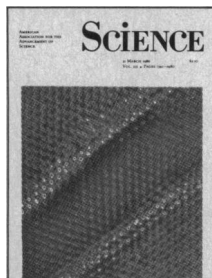
## Articles

1659 A Weakness in Process Technology: L. C. THUROW  
1664 Ceramics by the Solution-Sol-Gel Route: R. ROY  
1670 Does Ammonia Hydrogen Bond?: D. D. NELSON, JR., G. T. FRASER, W. KLEMPERER  
1675 Determination of Anteroposterior Polarity in *Drosophila*: C. NÜSSLEIN-VOLHARD, H. G. FROHNHÖFER, RUTH LEHMANN

## Research Articles

1682 Identification of the Human U7 snRNP as One of Several Factors Involved in the 3' End Maturation of Histone Premessenger RNA's: K. L. MOWRY AND J. A. STEITZ  
1688 Genetic Reconstitution of Functional Acetylcholine Receptor Channels in Mouse Fibroblasts: T. CLAUDIO, W. N. GREEN, D. S. HARTMAN, D. HAYDEN, H. L. PAULSON, F. J. SIGWORTH, S. M. SINE, A. SWEDLUND

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**COVER** Image of the core of a crystallographic dislocation in grossular garnet (approximate composition  $\text{Ca}_3\text{Al}_2\text{Si}_3\text{O}_{12}$ ) obtained by high-resolution transmission electron microscopy. The two parallel yellow lines are partial dislocations, separated by a core region of stacking fault. Perfect, unfaulted crystal structure surrounds the defect on the outside of the partial dislocations. The width of the fault corresponds to about 6 nanometers, or approximately 5 unit cells of garnet structure. See page 1695. [Computer processing of the image is by P. R. BUSECK and A. RIMSKY, Laboratoire de Mineralogie-Cristallographie, U.A. 09, Centre National de la Recherche Scientifique, Universit s P. M. Curie and Paris, 7 Paris, France]

## Reports

- 1695 Direct Observation of Dissociated Dislocations in Garnet: F. M. ALLEN, B. K. SMITH, P. R. BUSECK
- 1697 Horizontal Plate Motion: A Key Allocyclic Factor in the Evolution of the Great Barrier Reef: P. J. DAVIES, P. A. SYMONDS, D. A. FEARY, C. J. PIGRAM
- 1700 Quantitative Three-Dimensional Optical Tomographic Imaging of Supersonic Flows: G. W. FARIS AND R. L. BYER
- 1702 Was Venus Wet? Deuterium Reconsidered: D. H. GRINSPON
- 1704 Blocking of HIV-1 Infectivity by a Soluble, Secreted Form of the CD4 Antigen: D. H. SMITH, R. A. BYRN, S. A. MARSTERS, T. GREGORY, J. E. GROOPMAN, D. J. CAPON
- 1707 Three-Dimensional Structure of Interleukin-2: B. J. BRANDHUBER, T. BOONE, W. C. KENNEY, D. B. MCKAY
- 1710 Stimulation of Heterotrophic Microplankton Production by Resuspended Marine Sediments: S. C. WAINRIGHT
- 1712 Quantal Release of Transmitter Is Not Associated with Channel Opening on the Neuronal Membrane: S. H. YOUNG AND I. CHOW
- 1713 The Structure of Sister Minichromosome DNA Before Anaphase in *Saccharomyces cerevisiae*: D. KOSHLAND AND L. H. HARTWELL
- 1716 Intracellular Topography of Rhodopsin Bleaching: C. L. MAKINO, L. N. HOWARD, T. P. WILLIAMS
- 1717 A Novel Putative Tyrosine Kinase Receptor Encoded by the *eph* Gene: H. HIRAI, Y. MARU, K. HAGIWARA, J. NISHIDA, F. TAKAKU
- 1720 Sodium-Calcium Exchange in Heart: Membrane Currents and Changes in  $[\text{Ca}^{2+}]_i$ : L. BARCENAS-RUIZ, D. J. BEUCKELMANN, W. G. WIER
- 1722 Structure of a Psoralen Cross-Linked DNA in Solution by Nuclear Magnetic Resonance: M. T. TOMIC, D. E. WEMMER, S.-H. KIM
- 1726 Protein Kinase C Contains a Pseudosubstrate Prototope in Its Regulatory Domain: C. HOUSE AND B. E. KEMP

## Technical Comments

- 1728 The Cerebellum and Memory Storage: J. R. BLOEDEL; R. F. THOMPSON ■  
Monoclonal Antibodies as Phylogenetic Labels: C. M. FAIR; S. HOCKFIELD ■  
Color Vision and the Retinex Theory: R. A. YOUNG; D. INGLE

## Book Reviews

- 1738 Domestic Tyranny, reviewed by N. TOMES ■ Beyond the Laboratory, D. JORAVSKY ■  
Superluminal Radio Sources, D. WILLS ■ The Retina, R. SHAPELY ■  
Evolutionary Genetics of Invertebrate Behavior, M. J. WADE ■ Books Received

## Products & Materials

- 1744 Cell Harvester ■ Bibliography Software ■ Scintillation Solutions ■ Immunoassay for T8 ■ Scanning Electron Microscope ■ Chromatographic System ■ Math Function Software Library ■ Graphic Workstations ■ Literature

*Author Index to Volume 238 is found on pages I-X*  
*Information for Contributors is found on pages XI-XII*

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## Soviet Science and Technology at the Boston Meeting

Much has been written about the Washington summit and the activities surrounding it. More is sure to be written about what it means in terms of world peace, arms control, *glasnost*, and *perestroika*. Unfortunately, not much has been written about the importance that the Soviet Union attaches to science and technology as engines of present and future development. The Soviet Union now trains more scientists and engineers than any other country in the world. The Soviets have an outstanding space research and development program and world-class efforts in some areas of basic research, as well as some of the same problems that we do in transforming basic research into practical products. They also have problems with the environment, ecology, and quality control that are not unlike some of those that concern the United States.

Members of the Soviet delegation touched on these and several other subjects in a 3-hour meeting at the National Academy of Sciences on 8 December. What was remarkable about this meeting was the openness and frankness with which the Soviet delegation discussed issues of science, technology, and economic development. The makeup of the Soviet delegation included leaders in science, engineering, economics, and law.

Academician Yevgeni Velikhov pointed out the problems with producing personal computers, the fact that the country needs 1.0 million by 1990 and that one half would go to precollege education programs. Sergei Zaligin discussed how a government plan to divert some northern rivers to the south would have been an environmental and ecological disaster and how the role he played as the editor of *Novy Mir* helped in mobilizing a popular effort that stopped the project. I found this even more remarkable than stopping a major water project in the United States on environmental grounds. Academician A. G. Aganbegyan, secretary of the Economics Department, discussed the economic aspects of *perestroika* and said that Soviet management must change: "It has served as a brake on economic and social development." He pointed out that this change will cause serious problems of disruption in careers of mid-level managers: "It is not possible to make progress if you don't touch anyone."

It is unfortunate that U.S. delegations to summit meetings do not also include a group of leading scientists, engineers, economists, and editors—not as window dressing, not just brought along for the ride, but rather, as an involved, informed group capable of discussing the scientific and technical issues on their merits with their peers and counterparts from the other side. Economics, arms control, and management do not exist as disembodied activities, but influence and, in turn, are influenced by science and technology.

Later, on the same day as the meeting, an eclectic collection of individuals were invited to the Soviet Embassy for a meeting with General Secretary Gorbachev. The group included several scientists and engineers in addition to some 40 authors, actors, religious leaders, and arms control activists. After a brief reception, Gorbachev addressed the group for about 40 minutes, calling attention to Velikhov and the importance of science. This was followed by about a 40-minute discussion period during which most of those who commented praised Gorbachev for his role in *perestroika* and *glasnost*. On the basis of my limited observations, I believe that Gorbachev has a good understanding of the roles that science and technology play in economic development and that he is going to give increased emphasis to science and technology in his government's *perestroika* efforts.

I was pleased to see the emphasis placed on science and technology in some of the activities associated with the summit. I have long felt that the United States would benefit from a better understanding of basic and applied research in the Soviet Union. So about 8 months ago, I invited Velikhov to come to the AAAS Annual Meeting in Boston in February and to bring with him about ten Soviet scientists and engineers to make presentations on Soviet science and technology. Velikhov accepted but, unfortunately, the names of the Soviet speakers and their subjects were not provided in time to be included in the meeting program. A complete listing of the names and titles of the talks will appear later in *Science*. The AAAS meeting will provide an excellent forum for talks in areas such as biology, chemistry, physics, archeology, genetic engineering, and military-political research by leading Soviet scientists and engineers. I hope that many of you will attend the Boston meeting and participate in what promises to be an interesting event.

—ALVIN W. TRIVELPIECE