LETTERS  Animals in Research: M. S. Pallak; The Mohole Project: W. Bascom; Yosif Begun: M. Kac, J. L. Lebowitz, P. H. Plotz; A Manual Twitch: P. W. Leslie and J. T. McCabe; Prenatal Learning: K. Ramachandran  

EDITORIAL  Science and Two-Armed Diplomats: R. W. Nichols  

ARTICLES  Recent Sedimentation on the New Jersey Slope and Rise: D. J. Stanley, T. A. Nelson, R. Stuckenrath  

Volcanic Hotspots on Io: Stability and Longitudinal Distribution: T. V. Johnson et al.  

The Precursor of the Cretaceous-Tertiary Boundary Clays at Stevns Klint, Denmark, and DSDP Hole 465A: M. Kastner et al.  

NEWS AND COMMENT  Use of Antibiotics in Animal Feed Challenged  

Waiting for Sonic Booms  

World Bank Puts Priority on Africa Program  

Briefing: Endangered U.S. Plants to Be Collected, Conserved; OMB Relents on Rescue Satellite; IIASA Wins Support; Congress, NIH Dedicate Center to Mary Lasker; Researcher’s Suit Against NCI Wins Mixed Judgment  

RESEARCH NEWS  Far IR Free Electron Laser at Santa Barbara  

The Paleoclimatic Magic Numbers Game  

The Proper Display of Data  

MEETING  Call for Contributed Papers
Women and Minorities Continue to Grow in Workplace: B. M. Vetter and E. L. Babco; “Report on Science” Honored; AAAS Fellows End Summer Assignments; SWARM Division Annual Meeting to Be in Tucson; *Science* 84 Book Explains Science of Sports; Arid Lands Conference Issues Call for Papers; List of Women’s Science Groups Available ........................................ 159

Behavioral Ecology, reviewed by P. W. Sherman; Biology of the Integument, H. Oberlander; Current Problems in Germ Cell Differentiation, G. F. Erickson; Archeology and Volcanism in Central America: R. N. Zeitlin; Books Received ........................................ 161

Chenopodium as a Prehistoric Domesticate in Eastern North America: Evidence from Russell Cave, Alabama: B. D. Smith ........................................ 165

Venus: Volcanism and Rift Formation in Beta Regio: D. B. Campbell et al. ........ 167

Increased Stratospheric Hydrogen Chloride in the El Chichón Cloud: W. G. Mankin and M. T. Coffey .......................................................... 170

Suramin Protection of T Cells in Vitro Against Infectivity and Cytopathic Effect of HTLV-III: H. Mitsuya et al. ........................................ 172

Optical Measurements of Extracellular Calcium Depletion During a Single Heartbeat: L. Cleemann, G. Pizarro, M. Morad ........................................ 174

Expression of the 3’ Terminal Region of Human T-Cell Leukemia Viruses: W. Wachsman et al. .................................................. 177

Retarding Effect of Lowered Heart Rate on Coronary Atherosclerosis: P. A. Beere, S. Glagov, C. K. Zarins ........................................ 180

Rhodopsin Kinase Activity in the Mammalian Pineal Gland and Other Tissues: R. L. Somers and D. C. Klein ........................................ 182

Caffeine and Related Methylxanthines: Possible Naturally Occurring Pesticides: J. A. Nathanson ........................................ 184

Regulation of a Hybrid Gene by Glucose and Temperature in Hamster Fibroblasts: J. W. Attenello and A. S. Lee ........................................ 187

Io, one of Jupiter’s moons. Color, shown in mosaic of images acquired by Voyager 1 in 1979, is not the natural sulfurous yellow of Io but has been computer-enhanced to show the wide range of colored units on the satellite’s surface. The region shown is one of the most active volcanic regions on Io. The dark semicircular feature with a bright region within it is the Loki Patera, believed to be a lava lake more than 200 kilometers in diameter and possibly filled with molten sulfur. See page 134. [Computer processing and color enhancement by A. McEwen and L. A. Soderblom, Astrogeology Branch, U.S. Geological Survey, Flagstaff, Arizona; photo courtesy of Jet Propulsion Laboratory/NASA and U.S. Geological Survey]
Science and Two-Armed Diplomats

Members of Congress often complain that we need more one-armed scientists, experts who do not muddy their testimony with caveats, "on the one hand . . . on the other hand." In debates on national policies, major technological choices and genuine technical uncertainty do cause political friction. But in our foreign policies involving science, there are different problems. Diplomats rarely know much about science and technology, so they do not wrestle with technical choices and uncertainties. Constructively, Secretary of State George P. Shultz recently cabled U.S. diplomatic posts a message designed to press science and technology more powerfully into the management of U.S. foreign policy. He knows that we need two-armed diplomats.

"Foreign policy decisions in today's high technology world are driven by science and technology," Shultz said. Highly visible are debates on nuclear arms and controlling/restraining proliferation of nuclear weapons. Ongoing negotiations also focus on agriculture, population, and health; information and telecommunications; and the human rights of scientists. Moreover, our worldwide interests demand that our diplomats deal with such sweeping topics as energy, oceans, space, the environment, technical aid to developing countries, and technological exports to the East. Brisk confrontations emerge on issues such as acid rain and the impacts on research of withdrawal from Unesco. At the negotiating table, decisions affect international cooperation and competition in science.

So Secretary Shultz surely is correct. His mandate, emphasized in 1979 legislation, is that the State Department has "primary responsibility for coordination and oversight . . . on all major science and technology agreements and activities between the United States and foreign countries." Taking this responsibility seriously, Secretary Shultz said in his recent cable that "in foreign policy we simply must be ahead of the S&T power curve." Yet the State Department is not there.

The incentives within the diplomatic personnel system do not help. Qualitatively, political and economic officers are on top; science officers, where available, are on tap. Quantitatively, we have 30 science attachés and counselors serving abroad among approximately 4000 full-time foreign-service officers. The career-long retraining of our able diplomats—so impressive in many fields—does not require even short tutorials on the technical fields so crucial to American foreign policy.

There are other problems. One is the propensity of the government to use science and technology as last-minute exchange chips for diplomatic agreements when there is an impasse in negotiations on other subjects. Even worse, with our chronic neglect of the technical dimensions of much foreign policy, frequently we are forced to make hasty decisions on major choices which should have received longer range and more subtle planning.

We need sharply improved institutional structures in Washington. Beyond the State Department, many others are involved with international science—for example, the White House, the National Academy of Sciences, the National Academy of Engineering, the National Science Foundation, and most mission agencies. Congress is frustrated with the increasingly complex issues. The time is ripe for the academies to create a more coherent organization for science and technology in foreign policy.

What does all this mean for the technical communities in the United States? To fulfill the initiative of Secretary Shultz will take time, greater resources, and the vigorous participation of many professionals. The R&D community must tune in to the varied international opportunities and responsibilities for science, engineering, and medicine. We must help our diplomats by taking their problems—our problems—seriously. —RODNEY W. NICHOLS, Executive Vice President, Rockefeller University, New York 10021