

and patents awarded, and manufacturing licenses that American companies grant abroad, Boretsky claims it is possible to gauge and even quantify the state of the art for a given technology. Now, he says, this is done only on an ad hoc, "impressionistic" basis. The government should also look into a range of other actions: examination of the patent laws (the courts have been frequently ruling in favor of challengers, thus threatening the patent system as a whole); tax incentives in the form of rebates for increased investment in R & D (past tax incentive proposals have been opposed by the Treasury Department); a lowering of interest rates to facilitate venture investments in new, technology-oriented enterprises; a study of regulatory postures (such as the Interstate Commerce Commission's relatively low shipping rates for railroad freight, which, Boretsky thinks, indirectly curtailed railroad modernization by depriving them of revenues while truck lines and air carriers flourished). Finally, a government moving to assist private industry's technological advance should bring its own procurement policies, such as its purchase of computers, into line so as to buy things which involve the latest advances.

Some of the Ukrainian economist's suggestions are anything but new. Tax incentives, for example, have been suggested in the past as a means of stimulating research investment, but, apparently, the Treasury Department has opposed them. As one outside economist said, "If you roll back taxes in one place you've got to raise them in another."

Lawrence Krause, a Brookings Institution economist, is skeptical of the whole government-policy package as being too indirect. He says he favors supporting R & D for simpler reasons, such as to solve air and water pollution problems. Krause thinks Boretsky's thesis amounts to "doing an indirect thing by an indirect method. Then you won't necessarily get a direct response." If you have a balance of payments problem, Krause says, "you devalue the currency."

Krause also thinks that Boretsky's plans to keep American "know-how" at home smack of 18th-century mercantilism, and adds that the British failed in a similar move during the 19th century to keep their textile manufacturing technology to themselves in order to improve their trade balance.

Myron Tribus, a former Assistant

Secretary of Commerce for Science and Technology now with the Xerox Corporation, says Boretsky has influenced his own thinking on these matters and sympathizes with his analysis. However, Tribus says that U.S. high-technology industries need to reform themselves as much as they need outside government action. Tribus points out that many American companies see themselves as competing with each other for domestic markets at home far more than they perceive that they are, together, competing for foreign markets. "In Japan, they know it's export or die."

Tribus favors some governmental interventions, however. "I believe that incentives are a good idea if they are applied with the knowledge of what you're dealing with. It will boil down to whose judgment you will choose when you decide which industry is in need of help."

When it appears, Boretsky's new paper will provoke discussions of this sort both in and outside of government. However, if he succeeds in convincing the higher-ups to follow this general direction, the Administration would not start to emphasize "quality of life" research and development nor more direct research funding per se; instead, the drive would be on innovation, productivity, and teaching American researchers to keep a weather eye out on their foreign competitors.

—DEBORAH SHAPLEY

APPOINTMENTS

Walter B. Waetjen, executive vice president, University of Maryland, to president, Cleveland State University. **Robert L. Hirsch**, acting director, controlled thermonuclear research division, U.S. Atomic Energy Commission, appointed director . . . **William H. Moretz**, chairman, surgery department, Medical College of Georgia, to president of the college. . . . **Richard C. Kunkel**, associate professor of education, Ball State University, to chairman, education department, St. Louis University. . . . **Joseph R. Bianchine**, associate professor of medicine, Johns Hopkins University, to chairman, pharmacology department, Texas Tech University. . . . **Ralph Z. Levene**, associate professor of ophthalmology, New York University, to chairman, ophthalmology department, University of Alabama.

RECENT DEATHS

Loren D. Carlson, 57; associate dean for research development, School of Medicine, University of California, Davis; 12 December.

Willard C. Fleming, 73; former chancellor, Medical Center, University of California; 2 November.

Percy L. Gainey, 85; professor emeritus of bacteriology, Kansas State University; 30 October.

Richard E. Hibbard, 62; former vice president of academic affairs, University of Wisconsin, Eau Claire; 17 October.

William R. Hood, 51; professor of psychology, University of Oklahoma; 19 October.

William D. Johnston, Jr., 73; retired chief, international geology branch, U.S. Geological Survey; 4 November.

Clifford B. Jones, 67; president emeritus, Texas Tech University; 27 November.

Melvin L. Karon, 54; scientific associate, research and development division, Hunt-Wesson Foods, Inc.; 18 November.

Paul Meek, 75; chancellor emeritus, University of Tennessee, Martin; 2 November.

Raymond A. Peterson, 84; former professor of psychology, Mayville State College; 2 November.

William H. Rieman III, 73; professor emeritus of chemistry, Rutgers University; 29 October.

Lloyd K. Riggs, 84; former professor of physiological chemistry, Rutgers University College of Pharmacy; 28 October.

William F. Sayer, 82; professor emeritus of engineering, University of California, Los Angeles; 25 November.

Nicholas H. Serror, 76; former professor of biology, Providence College; 27 November.

Clement A. Smith, 58; professor of radiology, West Virginia University; 22 November.

Theodor Sorgenfrei, 57; professor of geology, Technical University of Denmark; 5 November.

Vivian L. Strickland, 93; professor emeritus of education, Kansas State University; 18 October.

William H. Vaughan, 73; former president, Morehead State University; 30 October.

Erratum: In the issue of 23 February 1973, an error appears on page 822. The resolution on Support for Population Research was not adopted by the AAAS Council. It was, instead, referred to the Board of Directors.