armament" whenever the United States offered a piecemeal proposal. "Complete and general disarmament" has now become the official policy of the Kennedy Administration, and any step en route can be justified in terms of the ultimate goal. One of these steps is the newly proposed test-ban agreement, which, happily for the United States, conforms to the terms of a memorandum offered last spring by the eight non-aligned nations at the disarmament talks. A key point in the memorandum —the authority of international inspectors to conduct on-site investigations— is subject to varying interpretations, since it was phrased to avoid offending East or West: (". . . the party on whose territory [an unexplained seismic] event had occurred should consult with the commission as to what further measures of clarification, including verification in loco, would facilitate the assessment"). But the memorandum reflects the view that outside inspectors have a role to play in the enforcement of a test ban, thus putting the U.S. in a good position to claim that it is responsive to the neutral proposal.

The strenuous efforts that have been devoted to devising a mutually acceptable test ban have imbued the goal with a Holy Grail quality, and little thought has been devoted to the unpleasant possibility that, after all, a test ban might not be very important in the broad context of East-West relations. The immediate benefit would be the elimination of fallout-producing tests by the United States and Russia, but at this late stage in the arms race it is not certain what other benefits might result. It is said that the existence of a Soviet-American test-ban agreement would constitute a moral force against the development of nuclear weapons by other nations, but it does not seem likely that France would feel compelled to end its nuclear weapons development program simply because the United States and Russia had called off testing; nor does it seem likely that Communist China would be willing to drop out of the race. The very existence of a test ban might be a symptom of better relations between the two major nuclear powers, and thus it could be valuable as a first step toward more significant agreements, but it should be kept in mind that a test ban might reflect nothing more than the conclusion, East and West, that further testing is not a military necessity at this point in the arms race. A test ban itself would not forestall further weapons development or refinement—such work could still go on in the laboratory, as it did prior to the Soviet resumption of testing last fall. Nor would the long sought after test ban affect existing stocks of weapons. In view of the inability of East and West to come to any sort of arms control agreement, a test ban, in relative terms, would be a major achievement, especially if it involved a Soviet willingness to open its territory to foreign inspectors. But the volume of energy that has been devoted to arriving at a ban has obscured the considerable possibility that, once achieved, a test ban might actually mean very little in relation to the vast range of differences that separate the two nations.

Soviet Motives

Attempts to divine Soviet motives on the issue of a test ban lead to a variety of conclusions, all of which should be viewed against the fact that no one outside the Kremlin can claim any grounds for certainly. (A useful preparatory exercise for those who seek to read the Soviet mind would be to analyze the various American test-ban positions over the past few years; along the lengthy and contentious route, evidence can be found that at various points the U.S. government had very mixed views about the desirability of achieving a test ban.)

The evidence at present indicates that the Kennedy Administration is overwhelmingly dedicated to working out a test ban. The Soviet interests in this area can only be a matter of speculation, but it is widely felt that Khrushchev shares Kennedy's concern about the hazards implicit in the arms race and is interested in steps, such as a test ban, that would help to reduce East-West tension. Working against this interest, however, is the determination of both sides not to be second in the arms race. Khrushchev has said that since the U.S. tested first, the Soviet Union reserves the right to test last. Kennedy has said that if it is determined that the new Soviet test series produced important advances, the United States would not deny itself the opportunity to regain ground. With the Republicans suspiciously looking over Kennedy's shoulder and the Soviets showing no inclination to soften their opposition to foreign inspection, the prospects for a test ban—whatever its worth—appear fairly dim.—D. S. GREENBERG

Announcements

A **Commission on Drug Safety** has been established by the Pharmaceutical Manufacturers Association to improve the detection of toxic effects in drugs. The PMA, comprising most of the nation's major drug manufacturers, set up the commission after disclosure that the drug thalidomide has caused malformation in infants.

Members of the group are:

Lowell T. Coggeshall, chairman; vice president of the University of Chicago.

Paul Cannon, pathologist and editor of the American Medical Association's *Archives of Pathology*.

Thomas Francis, Jr., chairman of the department of epidemiology at the University of Michigan Medical School.

Philip S. Hench, Nobel prize laureate currently with the Mayo Clinic.

Hugh Hussey, dean of the Georgetown University School of Medicine.

Chester S. Keefer, director of Boston University, the Massachusetts Memorial Hospitals Medical Center, and a member of the National Research Council's executive committee.

John Litchfield, director of Lederle Laboratories' experimental therapeutic research section, Pearl River, N.Y.

Maurice R. Nance, medical director of Smith, Kline and French Laboratories, Philadelphia.

Leonard Scheele, senior vice president of Warner-Lambert Pharmaceutical Company, Morris Plains, N.J.

Leon H. Schmidt, research professor in biochemistry at the University of Cincinnati College of Medicine.

Austin Smith, president of the Pharmaceutical Manufacturers Association, editor of all American Medical Association publications, and executive editor of the *World Medical Journal*.

Theodore Klumpp, president and director of the Winthrop Laboratories, New York.

Thomas B. Turner, dean of the medical faculty at Johns Hopkins School of Medicine.

Josef Warkany, fellow of the Children's Hospital Research Foundation, Cincinnati.

The Air Force Cambridge Research Laboratories plans to establish facilities for investigating the **neural structure of mammals**—primarily rats. A Linc computer, now being assembled at AFCRL, will be used to process electrical signals from the mammals'

brains while experiments are in progress.

The computer is capable of simultaneously handling information from eight electrodes implanted in the brain, converting the electrode signals from analog to digital form. Attempts will be made to correlate patterns obtained from gross areas of the brain with patterns obtained from a single neuron, or from a small group of neurons.

The research groups will be under the direction of Theodore Kalin, former chief of the AFCRL Computer and Mathematical Sciences Laboratory and currently on leave at Massachusetts General Hospital. It is expected that research personnel at the hospital, the Lincoln Laboratory, and other organizations will be invited to use the facility to conduct complementary experiments.

Meeting Notes

A symposium on **protein nutrition and metabolism**, sponsored by the University of Illinois College of Agriculture, will be held on 16 and 17 October. Discussion topics include protein metabolism in mammary tissue, nucleic acid metabolism, protein and amino acids in human nutrition, amino acid metabolism in animal tissues, protein biosynthesis, and molecular mechanisms regulating replication of protein macromolecules. (J. Kastelic, 120 Animal Sciences Laboratory, University of Illinois, Urbana)

Papers on **control theory, applications, and components** are being solicited for the 4th Joint Automatic Control Conference, to be held in Minneapolis from 19 to 21 June 1963. Deadlines: *30 September*, 100-word abstracts; *15 November*, completed manuscripts. (Otis L. Updike, Department of Chemical Engineering, University of Virginia, Charlottesville)

A 3-day program on **information problems in the biological sciences** will be offered during the joint meeting of the American Institute of Biological Sciences and the AAAS Pacific Division from 26 to 31 August at Corvallis, Ore. The program, intended to provide an interchange of ideas between biologists and information specialists, will include a symposium covering basic techniques in information handling and retrieval, design of information systems, organization and functions of an industrial scientific information department, and information services of interest to biologists. The material presented during these meetings is to be published by the Society for Industrial Microbiology.

Consulting services will be available on 28 August for biologists who wish to discuss specific information problems. (Society for Industrial Microbiology, 97 N. Broad St., Norwich, N.Y.)

Publications

A compilation of basic information on **Soviet scientific and technical activity** has been completed with the aid of a National Science Foundation grant. Entitled *Soviet Science and Technology: A Bibliography on the State of the Art, 1955–1961*, the 209-page publication contains entries for periodic and monographic materials from Soviet and Western sources. References cover surveys, bibliographies, reports of visits to Soviet scientific and industrial institutions, and articles on significant Soviet achievements in various fields. (Superintendent of Documents, Government Printing Office, Washington 25, D.C. $1)

The Bureau of Economic Geology, University of Texas, has published an *Annotated Bibliography and Index of Conodonts* (Publication 6210), a 128-page volume with six charts, by S. P. Ellison, Jr. Included are a bibliography, a stratigraphic, geographic, and subject index, and an index to genera. (University Station, Box 8022, Austin 12, Tex. $2.25)

Copies are now available of the proceedings of the 1961 international conference on **high energy accelerators** (New York, 6–12 Sept.). Main topics discussed at the conference were the present status of accelerator technology, and the possibilities for future accelerators of higher energies and intensities. (Superintendent of Documents, GPO, Washington 25, D.C. $4)

Films

Nuclear Radiation Detectors; 15 minutes, color or black-and-white. Uses live-action photography and animation to describe special techniques and instruments used to detect and measure nuclear radiation and x-rays. [Cenco Educational Films, 1700 Irving Park Rd., Chicago 13, Ill. Order No. 58513 (color), 58512 (black and white)]

Antigen Analysis by Cellulose Chromatography and Gel Diffusion of Hydatid Fluid; 27 minutes, color, short-term loan. Reports research project on analysis of the antigens in human hydatid fluid by cellulose chromatography and gel diffusion techniques, and demonstrates application of the techniques. (Communicable Disease Center, Atlanta 22, Ga. Order M-545)

Laboratory Diagnosis of Rabies in Animals; 30 minutes, color, list price $220.68. Demonstrates latest laboratory examination techniques and shows preparation of brain impressions, animal inoculation, and serum neutralization and fluorescent antibody tests. (Norwood Studios, 926 New Jersey Ave., NW, Washington 1, D.C. Order M-458)

Scientists in the News

First appointments to the international advisory panel to the University of Hawaii's Center for Cultural and Technical Interchange Between East and West:

Clark Kerr, president, University of California.

Detlev W. Bronk, president, Rockefeller Institute of Medical Research.

Ralph J. Bunche, undersecretary, United Nations.

Katharine E. McBride, president, Bryn Mawr College.

Gerald W. Fisher, president, Bishop Trust Company, Hawaii.

Yoichi Maeda, professor of humanities, Tokyo University.

Dean J. Salcedo, Jr., Ramon Magsaysay Memorial Medical Center, University of the East, Philipines.

M. R. Chakratong Tongyai, Undersecretary of State for Agriculture, Thailand.

At Ohio State University:

Robert A. Oetjen, associate dean of the College of Arts and Sciences, chairman of the department of geodetic science, and professor in the department of physics and astronomy, will be on leave during the 1962–63 academic year to serve as chief scientist at the National Science Foundation's Tokyo office. **Edward Q. Moulton**, associate dean of the graduate school and associate professor of civil engineering, will serve as part-time as-

sociate dean of the college and acting chairman of geodetic science.

Walter C. Rothenbuhler, of Iowa State University, and **John D. Briggs**, of Bioferm Corporation, Wasco, Calif., have been appointed professors in the department of zoology and entomology, effective in October.

Edward M. Purcell, professor of physics at Harvard and a 1952 Nobel laureate, has been appointed a member of the President's Science Advisory Committee.

Edward J. Taaffe, associate professor at Northwestern University, has been named professor of geography and chairman of the department at Ohio State University, effective July 1963. He succeeds **Guy-Harold Smith**, who has asked to be relieved of his administrative duties.

James F. L. Connell, associate professor of geology at the University of Southwestern Louisiana, will join the faculty of Alabama College, Montevallo, as professor of biology and geology, effective in September.

Harry C. Kelly, associate director for international and educational activities of the National Science Foundation, has been appointed dean of the faculty at North Carolina State College.

W. Clark Cooper, has been appointed chief of the Public Health Service's division of occupational health. Cooper, formerly deputy chief of the division, succeeds **Harold J. Magnuson**, who has retired.

Anders Angström, retired director of the Swedish Meteorological and Hydrological Institute, has received the $1200 International Meteorological Organization prize, awarded annually for "outstanding work in meteorology and international collaboration."

Richard Paul Sims, head of the Canadian Department of Agriculture's lipid research section, genetic and plant breeding institute, has been appointed director of the department's newly established food research institute.

Milton S. Schechter, chemist in the Department of Agriculture's entomology research division, will receive the 1962 Harvey W. Wiley award of the Association of Official Agricultural Chemists.

Frank C. Whitmore, of the Jet Propulsion Laboratory at California Institute of Technology, has become coordinator for NASA affairs and programs at Texas A & M College.

George P. Woollard, professor of geophysics and director of the Polar Research Institute at the University of Wisconsin, has been named director of the Hawaii Institute of Geophysics.

John A. Logan, chairman of the department of civil engineering at Northwestern University's Technological Institute, has accepted the presidency of Rose Polytechnic Institute, Terre Haute, Ind., effective 1 September.

Georges Ungar, director of the department of pharmacology at the U.S. Vitamin and Pharmaceutical Corporation, New York, has been named director of research at the Institute for Comparative Biology of the Zoological Society of San Diego.

Onofre Avendano, professor of obstetrics at the University of Chile, has been appointed a visiting professor at the University of Puerto Rico and the Puerto Rican Center for Research in Primate Biology.

Donald G. Fink, director of the Philco Scientific Laboratory, has been appointed general manager of the newly formed Institute of Electrical and Electronic Engineers.

George M. Krause, senior scientist at Warner-Lambert Research Institute, will become an associate professor in Northeastern University's new College of Pharmacy, to be formed this fall when the university merges with the New England College of Pharmacy.

Franklin E. Lowance, president of Electronic Communications' advanced technology division at Santa Barbara, Calif., has been named to the newly created position of chief scientist in Hoffman Electronics Corporation's military products division, Los Angeles.

Veronica L. Conley, director of the American Medical Association's department of nursing, has been appointed executive director of the National Association for Practical Nurse Education and Service, New York. She succeeds recently retired **Hilda M. Torrop**, now executive director emeritus.

Recent Deaths

Edgar C. Britton, 70; research consultant with the Dow Chemical Company and former president of the American Chemical Society; 31 July.

Benjamin T. Brooks, 76; petroleum chemistry consultant in New York, American editor of the *Science of Petroleum*, and senior editor of the *Chemistry of Hydrocarbons*; 6 Aug.

Joseph B. Claffey, 62; chemical engineer at the U.S. Department of Agriculture's Eastern Utilization Research and Development Division, Wyndmoor, Pa.; 29 July.

Conrad A. Elvehjem, 61, president of the University of Wisconsin, since 1958, died 27 July in Madison.

Elvehjem, a biochemist and nutritionist, was a leading contributor to the identification of vitamins. In 1937 he identified nicotinic acid, a major step toward the development of a cure for pellagra and other deficiency diseases. A lifelong resident of Wisconsin, Elvehjem began teaching at the University of Wisconsin upon his graduation there in 1923. He became head of the biochemistry department in 1944 and was department chairman and dean of the graduate school at the time of his appointment to the university presidency.

Max A. Faucett; professor and former head of the department of electrical engineering at the University of Illinois; 24 May.

Francis L. Friedman, 43; professor of physics and director of the Massachusetts Institute of Technology's Science Teaching Center; 4 Aug.

Earl R. Glenn, 75; retired professor and head of the science department at Montclair (N.J.) State College, and a founder of the American Science Teachers Association and the National Association for Research in Science Teaching; 7 Aug.

Ellsworth Jaeger, 64; education curator at the Buffalo (N.Y.) Museum of Science; 7 Aug.

Robert N. Jeffrey, 56; plant physiologist at the Department of Agriculture Beltsville research center; 17 July.

Alfred T. Navarre, 68; professor of geochemistry at Georgia Institute of Technology; 8 June.

Laurence W. Roth, 51; senior research pharmacologist with Riker Laboratories, Northridge, Calif.; 21 June.

Erratum: The correct address for applications for the 1963-64 Glorney-Raisbeck fellowship in the medical sciences is 2 East 103 St., New York 29. [*Science* **137**, 214 (1962)].