maments was the most sensible approach to reducing military expenditures.

At the end of the session there was no solid evidence of progress. But American officials were heartened by the relative absence of polemic, by the willingness of the Russians to discuss concrete measures apart from the context of general disarmament, and by what seemed to be the growing recognition of all parties that the gradual approach would be most productive in the end.

Where does all this leave the disarmament agency? The change in attitude of both American and Soviet governments which benefits arms control is not of the agency's making. Nor is it clear —judging from Mr. Foster's early reception on Capitol Hill—that the agency is going to benefit from it. The agency is still beset by congressional hostility and internal problems, and it has not become the source of dynamic new proposals or the effective governmental advocate of arms control policies that its supporters initially hoped it would be. On the other hand, it has helped considerably in focusing the attention of both government and scholars on the difficulties and possibilities of arms control, and it is widely thought to be performing patiently and well in its sometimes delicate international negotiations. Further, any upgrading in the status of arms control within the government is inevitably going to upgrade the status of the agency as well. This does not mean that the agency is about to take over the chief role in formulating U.S. disarmament policy. But it has secured a comfortable place in the government establishment, it appears to have the backing of the President, and it will undoubtedly continue to function from the galleries in the modest role it has so far been content to assume.—ELINOR LANGER

Announcements

The U.S. Atomic Energy Commission is soliciting proposals from U.S. citizens for biological research to be carried out at the **Eniwetok Marine Biological Laboratory**, Marshall Islands. Transportation and living costs will be defrayed for male investigators with approved research programs. Brief proposals should be submitted at least 3 months prior to the expected date of travel. Inquiries about the feasibility of research projects at EMBL should be sent to Robert W. Hiatt, University of Hawaii, Honolulu.

A collection of the **scientific writings of Fritz W. London**, late professor of chemical physics at Duke University, is available in the university library's manuscript department. The collection consists of more than 1900 items, including correspondence with several hundred scientists throughout the world, his early notebooks and manuscript drafts, and a book-length unpublished manuscript. Copies of specific items are available on request. The library's rare book room has a complete set of reprints of Professor London's published works, also available on request. For further information contact the Librarian, Duke University, Durham, North Carolina.

The University of California has announced plans to establish a center for continuing education in **hospital administration**, to be administered by the university's extension division. It will have headquarters on the Berkeley campus. The center will develop a statewide program of in-service courses, institutes, and workshops in cooperation with regional and state hospital associations and the schools of public health at Berkeley and Los Angeles. Financial support, projected at $75,000 for the first 3 years, is intended to cover the initial development costs, the program becoming self-supporting when it is fully established. E. Dwight Barnett, of the school of public health at U.C.L.A., has been appointed coordinator of the center's educational programming.

Grants, Fellowships, and Awards

The Dartmouth medical school has begun a graduate program that combines the first year's study in the departments of **physiology** and **pharmacology and toxicology**. Participants working toward the Ph.D. degree in the program will receive stipends of $3000 a year. Additional information and applications are available from H. Borison, Department of Pharmacology and Toxicology, Dartmouth Medical School, Hanover, New Hampshire.

Grants for short-term studies of **computer simulation** programs are available through the Social Science Research Council's committee on simulation of psychological and social processes. The program, funded by the I.B.M. Corporation, will allow social scientists working on simulation to spend up to 15 days at a computer installation in supervised study of a simulation program. Applicants must hold a Ph.D. degree, or have completed all requirements except the dissertation. Application deadline: *1 May*. (Social Science Research Council Fellowships and Grants, 230 Park Avenue, New York 10017)

Graduate assistantships are being offered in **communication and technical writing** programs leading to a master of science degree at Rensselaer Polytechnic Institute. Each assistantship provides a remission of tuition of $55 a credit hour and a stipend of between $2000 and $2400. Scholarships, fellowships, and part-time editorial work are also available. (Sterling P. Olmsted, Department of Language and Literature, R.P.I., Troy, New York)

Yale University is offering a 4-year fellowship leading to a Ph.D. in **forest economics**, with emphasis on industrial forest economics. The stipend is $3300 a year, plus dependents' allowance and extra funds for research and publications during the last 2 years. Applicants must be U.S. or Canadian citizens. Application deadline: *1 March*. (Dean, Forestry School, Yale University, New Haven, Conn.)

Courses

The college of engineering at the University of Michigan is offering a series of 1- and 2-week, noncredit courses for practicing **scientists and engineers**. The courses, scheduled for May through August, will cover recent advances in the various areas of engineering. Additional information regarding schedules, fees, and course content are available from Engineering Summer Conferences, West Engineering Building, University of Michigan, Ann Arbor.

The University of Wisconsin's extension division will present a course in work design 7–18 June. It will cover the design of complete **management systems**, with emphasis on application, presented through the use of case studies. (W. W. Wuerger, Engineering Institutes, University of Wisconsin Extension Division, 432 North Lake Street, Madison 53706)

Applications are being accepted for **summer internships** for graduate students in the physical sciences, mathematics, economics, and research engineering. The program is sponsored by

the Center for Naval Analyses of the Franklin Institute. The interns will work for 3 months in CNA's research group or one of the three operating groups—operations evaluation, naval analysis warfare, or the institute of naval studies. The assignments will be in the Washington, D.C., area or in Cambridge, Massachusetts. Basic expenses will be paid, plus a salary based on age and experience. Deadline for receipt of applications: *15 April.* (J. Hibarger, 1401 Wilson Blvd., Arlington, Virginia)

The Graduate School of Library Science, Drexel Institute of Technology, will offer a course in **medical librarianship** during the winter and spring quarters, 1965. It will include a study of the history of medicine with special emphasis on types of publications in the medical sciences, and will be followed by a course in medical library administration and organization. All phases of medical library practice, including technical processes and reference services, will be considered. Further information is available from the Office of Admissions, Drexel Institute of Technology, Philadelphia, Pa.

The Massachusetts Institute of Technology will present two courses in **infrared spectroscopy** next summer. They are: "Technique," scheduled 21–25 June, and "Applications," scheduled 28 June to 2 July. (J. M. Austin, Director of the Summer Session, Room 7-103, M.I.T., Cambridge)

The theory and practical applications of **fracture mechanics** will be the subject of a workshop to be held 8–27 August at the University of Denver. The program is sponsored by the Universal Technology Corporation of Dayton, Ohio, and the Denver Research Institute. Participants must have a college-level background and experience in mechanical or metallurgical engineering; they also must be familiar with calculus and ordinary differential equations. (D. L. Wells, Universal Technology Corporation, P.O. Box 7, Dayton, Ohio 45449)

Meetings

An international symposium on **high speed testing** will be held 8–9 March in Boston. The meeting will emphasize materials characterization and performance criteria for in-service applications. Following the symposium will be a 3-day workshop-seminar on the "analysis of viscoelastic materials for engineering applications and product design." (R. H. Supnik, Plas-Tech Equipment Corporation, 4 Mercer Road, Natick, Mass.)

Sarasota, Florida, will be the site of a conference on **intersexuality in fishes**, 20–25 May. The meeting will include field work, and papers on protogyny, proterandry, gonochorism, and simultaneous functional hermaphroditism based on morphological, physiological, genetic, embryological, and behavioral studies. (E. Clark, Cape Haze Marine Laboratory, 9501 Blind Pass Road, Sarasota)

The National Bureau of Standards, under a grant from the National Science Foundation, will sponsor a conference on **phenomena in the neighborhood of critical points**, 5–9 April, in Washington, D.C. Topics to be included are liquid-vapor, liquid-mixture, magnetic, solid-solution, and order-disorder transitions; light, x-ray, and neutron scattering; and ultrasonic propagation. (M. S. Green, Chief, Statistical Physics Section, National Bureau of Standards, Washington, D.C. 20234)

Publications

The U.S. Public Health Service's Robert A. Taft Sanitary Engineering Center has announced the publication of five reports dealing with various aspects of the **advanced waste treatment** program being conducted there. All are available free of charge, and must be requested by number. They are: AWTR-8 999-WP-10, *Ultimate Disposal of Advanced-Treatment Waste;* AWTR-9 999-WP-11, *Adsorption of Biochemically Resistant Materials from Solution*; AWTR-10 999-WP-12, *Feasibility of Granular, Activated-Carbon Adsorption for Waste-Water Renovation*; AWTR-11 999-WP-13, *Evaluation of the Use of Activated Carbons and Chemical Regenerants in Treatment of Waste Water*; and AWTR-12 999-WP-14, *Evaluation of Various Adsorbents and Coagulants for Waste-Water Renovation.* (Publications Office, Robert A. Taft Sanitary Engineering Center, 4676 Columbia Parkway, Cincinnati, Ohio 45226)

The U.S. Atomic Energy Commission has announced the publication of *Whole Body Counters.* The 32-page booklet includes a discussion of **radiation detection and measurement instruments,** their uses, and contribution to scientific knowledge. It provides information on the Geneva counter, the Los Alamos liquid scintillation counter, and crystal counters, as well as potassium-40 in human bodies, protection of reactor and atom laboratory personnel, and special uses of whole body counters. Single copies are available free of charge. (U.S. Atomic Energy Commission, P.O. Box 62, Oak Ridge, Tennessee, 37831)

The U.S. Air Force has produced a set of **lunar charts** taken from photographs of the recent Ranger VII mission. The set consists of five charts drawn at scales of 1:1,000,000; 1:500,000; 1:10,000; and 1:1000. It is available for $3 a set from the Government Printing Office; individual charts are not available. (Superintendent of Documents, GPO, Washington, D.C. 20402)

The Scientific Manpower Commission recently published a bibliography of pamphlets on **science and engineering careers.** The listings are aimed mainly at young persons and vocational guidance counselors. Single copies of the bibliography, entitled "Search, scientific, engineering, and related career hints," are available free of charge. (Scientific Manpower Commission, 2101 Constitution Avenue NW, Washington, D.C. 20418)

The first ten in a new series of reprints on **birth defects** are being distributed by the National Foundation–March of Dimes. The reprints will be of articles which have appeared in scientific and medical literature both in the U.S. and abroad. Titles and additional information are available from the National Foundation–March of Dimes, 800 Second Avenue, New York, N.Y. 10017.

Scientists in the News

The new editor of *Mental Hygiene*, professional journal of the National Association for Mental Health, is **Henry A. Davidson**, clinical professor of psychiatry at the New Jersey College of Medicine and medical director of Essex County Overbrook Hospital, New Jersey. He succeeds **George S. Stevenson**.

Velvl W. Greene, formerly manager of life sciences research in the applied

science division of Litton Industries, has been appointed associate professor of public health at the University of Minnesota college of medical sciences.

Francis W. Reichelderfer, retired chief of the U.S. Weather Bureau, recently received the 1964 International Meteorological Organization prize, for "outstanding work in meteorology and international collaboration."

The new president of Michigan Technological University is **Raymond Lloyd Smith**, formerly head of the university's department of metallurgical engineering. He succeeded **J. R. Van Pelt**.

Raymond D. Pruitt, professor and chairman of the department of internal medicine, Baylor University College of Medicine, has been appointed to a 4-year term as a member of the National Advisory Heart Council. The council is the official advisory body for the National Heart Institute, one of the nine National Institutes of Health.

The following have been named to 4-year terms as members of the National Advisory Child Health and Human Development Council, National Institutes of Health:

Lewis Thomas, professor and chairman of the department of medicine, New York University School of Medicine;

E. Stewart Taylor, professor and head of the department of obstetrics and gynecology, University of Colorado School of Medicine, Denver; and **Esther M. Raushenbush**, director of the Center for Continuing Education and acting dean of Sarah Lawrence College, Bronxville, N.Y.

Gerald D. Timmons, former dean of the School of Dentistry, Temple University, Philadelphia, has been appointed to serve on the National Advisory Dental Research Council for a 4-year term.

John D. Spikes has been named dean of the College of Letters and Science at the University of Utah. He had been head of the department of molecular biology at the university.

Dan McLachlan, Jr., formerly professor of metallurgy, mineralogy, and physics at the University of Denver, has been appointed professor of mineralogy at Ohio State University.

Norbert J. Kreidl, director of materials research and development at Bausch & Lomb, Inc., Rochester, N.Y., has been appointed professor of ceramics at Rutgers University for the academic year 1964–65. Kreidl will help establish a graduate school of ceramics in Rutgers' new engineering center.

C. Jacobsz, formerly with the department of mathematics at Stellenbosch University, South Africa, has been named head of the numerical analysis division of the National Research Institute for Mathematical Sciences, of the Council for Scientific and Industrial Research, Pretoria, South Africa. He succeeds **J. D. Neethling**, who has resigned from CSIR.

G. Raymond Fitterer, formerly chairman of the metallurgical engineering department and dean of the schools of engineering and mines at the University of Pittsburgh, has been named director of the university's new center for the study of thermodynamic properties of materials.

Working with Fitterer will be **Oswald Kubaschewski**, senior principal scientific officer of the National Physical Laboratory in Teddington, Middlesex, England, and **Leslie L. Seigle**, head of the metal physics group of the General Telephone and Electronics Laboratories, Bayside, New York, both of whom will serve as visiting professors at the center during the 1964–65 academic year.

John S. Rankin, Jr., formerly director of the Marine Research Laboratory at the University of Connecticut, has been appointed program director for environmental biology, division of biological and medical sciences, at the National Science Foundation.

Maurice Pryce has become a Distinguished Professor and chairman of the physics department at the University of Southern California, Los Angeles. He had been with the H. H. Wills Physics Laboratory at Bristol University, England.

John G. Small has been named to head a new division, Project Engineering, at the Jet Propulsion Laboratory of the California Institute of Technology. The division will be comprised of four major sections: launch vehicle integration, system design and integration, system test and launch operations, and environmental requirements. Small formerly was with the laboratory's Systems Division.

Brigadier General **B. G. Holzman**, Commander of the Air Force Cambridge Research Laboratories at Bedford, Mass., has retired. Holzman, who is succeeded by Colonel **Leo A. Kiley**, will become a consultant to the National Aeronautics and Space Administration, to assist in planning and administration of NASA's research and technology program.

At North Carolina State University:

Horace D. Rawls, associate professor of sociology and anthropology, has been appointed director of the university's 4-year degree program that was inaugurated this fall at Ft. Bragg, North Carolina.

Jay Goldman, formerly with the department of industrial engineering at Washington University, St. Louis, has been appointed professor of industrial engineering at the Raleigh campus.

James A. Slater has been appointed professor and head of the department of zoology and entomology at the University of Connecticut. He had been on the faculty as associate professor.

Carl Pfaffmann, former psychology professor at Brown University, has been appointed vice president and professor at the Rockefeller Institute, in New York. He will take charge of developing "a broad program of graduate teaching and research in the behavioral sciences," which is to stress the relations of the natural and social sciences.

Richard L. Snyder, formerly associate director of laboratories at M.I.T., has become director of libraries at Drexel Institute of Technology, Philadelphia. He was succeeded in the M.I.T. post by **Myer M. Kessler**, director of the technical information program at the school's library.

Jack G. Calvert and **W. T. Lippincott** have been named chairman and vice-chairman, respectively, of the chemistry department at Ohio State University. Both had been with the department prior to their appointments.

The 1964 Samuel W. Stratton award of the National Bureau of Standards was presented last month to four NBS scientists for their work in demonstrat-

ing that the quantum mechanical law of parity conservation does not hold in weak interactions. Sharing equally in the $5000 honorarium were **Ernest Ambler**, chief of the cryogenic physics section; **Raymond W. Hayward**, chief of the nuclear spectroscopy laboratory; **Dale D. Hoppes**, of the nuclear spectroscopy laboratory; and **Ralph P. Hudson**, chief of the heat division.

William J. McGanity has become dean of the faculty of medicine at the University of Texas medical branch, Galveston. He has been chairman of the department of obstetrics and gynecology at the university.

The California Academy of Sciences has presented its first Fellows' Medal to **Ira L. Wiggins**, who retired last spring as professor of biology at Stanford University. He was cited for his "outstanding fundamental contribution to natural history and systematic botany."

Richard A. Strand, formerly of Pennsylvania State University, has become chairman of the department of electrical engineering at the University of Bridgeport, Connecticut. He succeeds **Andrew I. Peterson**, who has announced plans to retire at the end of the spring semester.

Sydney Chapman has received the Copley medal, highest medal of the Royal Society of England. Dr. Chapman is on the staff of the High Altitude Laboratory in Boulder, Colorado; advisory scientific director of the University of Alaska's geophysical institute; and senior research scientist at the Institute of Science and Technology, University of Michigan.

Robert Glen, assistant deputy minister (research) for the Canada Department of Agriculture, has won the 1964 gold medal award of the Entomological Society of Canada.

The American Society of Plant Taxonomists has elected as president **George H. M. Lawrence** of the Hunt Botanical Library, Pittsburgh.

David H. Rank, professor of physics at Pennsylvania State University, has been named head of the department.

Charles A. Janeway, pediatrics professor at Harvard, has received the 1965 Alan Gregg travel fellowship in medical education from the China Medical Board of New York.

Charles Baker Metz, formerly at Florida State University, has become a professor of zoology at the University of Miami's school of environmental and planetary sciences.

Lewis M. Cline, chairman of the geology department at the University of Wisconsin, has been elected president of the Society of Economic Paleontologists and Mineralogists.

Alan H. Mehler, formerly at NIH, is the new chairman of the biochemistry department at Marquette University medical school. He was chief of the enzyme chemistry section at the National Institute of Dental Research.

Erratum: In the report "Particle size fractionation of airborne gamma-emitting radionuclides by graded filters" by B. Shleien, T. P. Glavin, and A. G. Friend (15 Jan., p. 290), the second sentence of the fourth paragraph should have read, "A rotary blower provided a sampling rate of 1400 liters per minute through the system."

REPORT FROM EUROPE

West Germany Debates a "Cultural Crisis"

Bonn. West Germany, which achieved its postwar "economic miracle" without spending a great deal on research, is entering a decisive period in its educational and scientific development. In the next few years, forces which politicians can control and others beyond their control may test harshly the technical base of German prosperity. Some of the forecasts are so gloomy that there is talk of a "cultural crisis."

As 1965 opens, German scientists and politicians are debating large increases in budgets for science and, at the same time, worrying about a potentially severe shortage of technically qualified people. It will probably be a decade before the yearly totals of university graduates in science and engineering expand. Because of the low birthrates of World War II, the number of students entering the universities is falling each year. Shortages of qualified teachers and budgetary restrictions make it doubtful that there will be much increase in the proportion of students in secondary-school graduating classes who go on to attend a university. Unless programs to recruit talent are very successful, the supply of university graduates in technical fields will lessen, and this could easily offset the effect of increased spending for research which is now being considered by the German Federal Republic.

The number of students completing technical courses at the university level necessarily affects a nation's technical and economic strength, thus the trend of Germany's industry and economy may make a sharp downturn in the next few years. According to forecasts made in 1963 by the Organization for Eco-

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