quently feed huge overflows of untreated waste into the waterways during periods of heavy rainfall. Finally, the new bill begins to make some inroads on the admittedly inadequate levels of federal financial support for state and local pollution abatement activities. The annual appropriation ceiling has been raised from $100 million to $150 million. Some of the inequitable provisions that limited effective use of the $100 million have also been modified for the additional $50 million, which is to be allotted on a straight population basis. (The formula still governing the first $100 million stipulates that half of the funds must go to communities with a population of 125,000 or less—a system which has actually discriminated against the populous urban areas where pollution problems are most serious.) The new bill also doubles present limitations on grants for the construction of waste treatment works from $600,000 to $1.2 million for a single project and from $2.4 million to $4.8 million for a project serving more than one municipality —figures still only a fraction of what cities must spend for effective abatement systems.

Widespread satisfaction with the new legislation is balanced by an equally widespread conviction that much more remains to be done. The pollution problem is not the work of a malevolent few but of an ingrained national habit of treating the waterways as sewers. A recent HEW study of pollution on the Hudson River, for example, reports that 43 percent of the waste dumped into the river is discharged without any treatment whatever. In some of the heavily industrialized areas of New England, the proportion may be even higher. The result is a threat not only to the rising conservationist values of a well-heeled and recreation-minded public but to the water supply itself. "When all is said and done," a congressional aide remarked last week, "our best friend on the water pollution bill was the northeast drought. If anything gives a guy courage to thumb his nose at a lobbyist, it's 400 housewives screaming about watering their lawns." Sentiment is growing, even among some industrial polluters, that a change in philosophy is in order and veterans of this year's congressional battle are already casting about for new ways of embodying it in progressive legislation. One thing they are sure about is that in the field of water pollution there will be plenty to do for an encore.

—ELINOR LANGER

Arches of Science Award to Weaver

The Pacific Science Center Foundation this week named Warren Weaver to receive its first Arches of Science Award on 25 October in Seattle. The award, created earlier in the year to recognize outstanding contributions by people in all professions to better public understanding of science, carries a $25,000 prize and a gold medal.

Although Weaver retired last year as vice president of the Alfred P. Sloan Foundation in New York, he has continued as a special consultant and a trustee of the foundation. He is also chairman of the board of the Salk Institute for Biological Studies in San Diego. A fellow of AAAS since 1928, he was the 1954 president of the AAAS. Next week, in Paris, he will receive the Kalinga prize, awarded annually by UNESCO for distinguished contributions to public understanding of science.

Wheeler Receives Einstein Award

John Wheeler, professor of physics at Princeton, is the recipient of this year's Einstein Award. The award, which provides $5000, a gold medal, and a citation, is presented by the Lewis and Rosa Strauss Memorial Foundation.

Established in 1950, the award is made in recognition of significant additions to human knowledge in the natural sciences.

During World War II Wheeler was a consultant and senior physicist on atomic energy projects, first at Princeton, later at Chicago, Richland, and Los Alamos. He was a vice president of the Battelle Memorial Institute in Columbus, Ohio, where he is now a trustee. He is a member of the advisory committee at Oak Ridge National Laboratory.

Announcements

NASA last week stopped telemetry operations of the **Mariner IV** spacecraft. The craft had operated since November 1964, transmitting scientific and engineering measurements on the environment of interplanetary space. In July it recorded the first close-up pictures of Mars. Project officials at Caltech's Jet Propulsion Laboratory said that the craft will continue in its present orbit around the sun; tracking it will be possible only with a new 210-foot antenna, which will begin

operation next spring at the Goldstone Space Communications Station in California. The spacecraft will continue transmitting signals; it may resume its radio link with Earth in September 1967, when it will be at its closest approach to this planet, some 29 million miles away. At that time, according to JPL engineers, several months of useful telemetry may be obtained if the transmitter and other critical systems are still operating.

The National Library of Medicine has introduced a new service for the biomedical public, consisting of a monthly listing of selected demand-search **bibliographies**, orginally compiled by the library at the request of individual researchers. The bibliographies are in subject areas which the library feels may be of interest to a broader audience. Listings will include the topic of the searches and the number of citations; individuals may write for copies of the particular bibliographies in which they are interested. Additional information is available from the National Library of Medicine 8600 Rockville Pike, Bethesda, Maryland 20014.

The University of Bridgeport, Connecticut, has established a **graduate division** in its college of arts and science. Graduate courses leading to the master's degree will include biology, chemistry, mathematics, physics, poltical science, and sociology. Initially, courses will be offered on a part-time basis, most meeting once a week. The college plans to seek formal approval of the program from the Connecticut State Board of Education during the 1966–67 academic year, and to confer the first master's degrees not later than June 1968. Applications for the graduate division are being accepted by William Walker, director of the College of Arts and Science Graduate Admissions Office, Bridgeport.

An **Office of Biochemical Nomenclature** has been established by the National Academy of Sciences–National Research Council. The office will seek to coordinate information on activities of national and international organizations in biochemical nomenclature, to stimulate new activities in the field, and to encourage dissemination of information to interested groups. Waldo E. Cohn, of the biology division at Oak Ridge National Laboratory, is director of the office. He also is secretary of the Joint Commission on the Nomenclature of Biological Chemistry of the International Unions of Pure and Applied Chemistry and of Biochemistry.

An **Advisory Committee on Emergency Planning** has been established by the National Academy of Sciences, under an agreement with the Office of Emergency Planning in the Executive Office of the President. It will assist OEP in planning and coordination of federal activities in times of national emergency. The committee will be concerned with such problems as long-range requirements for stockpiling of strategic and critical materials, recovery and construction after a nuclear attack, and the impact of new developments in science and technology on the emergency planning effort. Carl F. Prutton, of Food Machinery and Chemical Corporation, is chairman of the committee; vice chairman is Philip Arnold, of Phillips Petroleum Company. The other members include:

Clay P. Bedford, Henry Kaiser Company, Oakland.

S. H. Bingham, president of his own

firm of consulting engineers in New York.

James H. Campbell, Consumers Power Company, Jackson, Michigan.

Gilbert H. Clee, McKinsey and Company, New York.

Thomas L. Martin, Jr., University of Florida.

Charles E. Reed, General Electric Company, Bridgeport, Connecticut.

Lauriston S. Taylor, special assistant to the president of the NAS, is executive director of the committee.

An academic committee offering a graduate degree program in the **information sciences** has been formed at the University of Chicago. The committee on information sciences will accept its first masters and doctoral students this fall. Richard H. Miller, associate professor of astronomy and director of the University's Institute for Computer Research, is acting chairman. He points out that the creation of the committee reflects the emergence of "an important new body of knowledge which does not fit into traditional university departments." Its purpose is to provide a multidisciplinary academic base for research and training in the field. Students entering the program will need a background in advanced calculus, linear algebra, numerical methods, and probability statistics.

George Washington University is offering a program in **law, science, and technology** in its graduate school of public law. The program's aim is to help train lawyers to deal more effectively in the areas of reciprocal relationships between law and science. It treats social, economic, legal, and political sciences. The program offers courses leading to the master-of-laws degree in law, science, and technology. A limited number of research assistantships are available for law and social-science graduates. Courses and conferences are also offered on a noncredit basis for members of the bar. Additional information may be obtained from the dean, Graduate School of Public Law, George Washington University, Washington, D.C. 20006.

Brown University has incorporated its departments of biology and botany and the division of medical science into a **Division of Biological and Medical Sciences**. Administration will be chiefly by an executive council, chaired by Paul F. Fenton, of the former

biology department. Mac V. Edds, Jr., formerly chairman of the division of medical science, will be director of medicine; and Herman B. Chase, formerly chairman of the biology department, will be director of biology.

An **Institute of Philosophy and Politics of Education** was formed recently at Teachers College, Columbia University. The institute will sponsor research and publications on the purposes and politics of American education. Its first project, supported by a $196,000 grant from the Carnegie Corporation of New York, will be an interpretive history of American education, prepared by Lawrence R. Cremin, Barnard professor of education at the college and the institute's executive officer.

Grants, Fellowships, and Awards

The Technical University of Karlsruhe, West Germany, is planning a postgraduate course in **chemical engineering and physical chemistry**, from 2 May 1966 to 15 July 1967. The program, sponsored by UNESCO, is open to persons under 40, preferably from developing countries; candidates should have at least a master's degree and should be active in teaching or research in their home country. Preference will be given persons with previous research experience in foreign countries. German-language training will be given at the Goethe Institute, then course and research work at Karlsruhe and Frankfurt. Participants will receive fellowships to cover economy-class travel; tuition and fees; room, board, and a small allowance at the Goethe Institute; and a monthly stipend of DM 700 (about $175 U.S.) during study at Karlsruhe and Frankfurt. Applications may be obtained from UNESCO, the various countries' embassies in Germany, or the Technical University at Karlsruhe. Deadline for receipt of completed applications: *15 November*. (Internationales Seminar, 75 Karlsruhe, Karlstrasse 42-44, Germany)

The University of Colorado medical school is accepting entries in the Jane Nugent Cochems competition. A prize of $2500 will be presented for the best paper on "**thrombophlebitis and basic vascular problems.**" The vascular problems under consideration should be concerned with the underlying mechanisms or processes of vas-

cular disease, particularly those associated with thrombosis, but not necessarily restricted to it. There are no restrictions as to length or format, joint authorship, or use of pictures, charts, or figures; but papers may not be published until after the winner is announced early next year. Deadline for receipt of entries: *15 November*. Information about eligibility may be obtained from J. J. Conger, School of Medicine, University of Colorado Medical Center, 4200 East Ninth Avenue, Denver 80220.

The Fund for **Overseas Research Grants and Education**, Inc. (FORGE) offers research grants to junior members of science faculties in Latin American universities. The grants are designed to help recently trained science and engineering faculty members to start projects that promise worthwhile results and effective teaching. Funds go directly to the researchers for supplies, equipment, and student assistants. Applicants may write to FORGE, describing their project, its importance, and the basic requirements; there are no deadlines or calendar dates for starting or completing the work. Applications are reviewed throughout the year by a panel of U.S. scientists who are familiar with science in Latin American institutions.

FORGE, established in 1963, is supported by private corporations and individuals. The amounts granted are usually small by U.S. standards, averaging about $2000; they are given on the assumption that small amounts of U.S. currency may be used with great advantage in institutions in developing countries. At the present time FORGE limits its operation to Latin America. Additional information is available from the executive director, FORGE, 60 East 42nd Street, New York 10017, Room 4310.

Publications

A 40-page brochure on "**Coronary Care Units**," issued by the PHS Heart Disease Control Program, describes specialized intensive care units for acute myocardial infarction patients. It is aimed toward hospital administrators and professionals concerned with hospital care of heart-attack patients. It covers full-time electronic monitoring, staffing patterns for medical and nursing personnel, and nurse training for work in the special units. The booklet

also includes suggested design for 4- and 5-bed units. (Public Health Service, Washington 20201; single copies free of charge. For more copies: Superintendent of Documents, U.S. Government Printing Office, Washington 20402; 20 cents each, $15 per hundred)

The Atomic Energy Commission has published a booklet describing its organization and principal functions. The brochure includes descriptions of the **AEC programs** of production, research and development, and training, along with a brief explanation of the procedures for regulating the nongovernment uses of atomic energy to assure safety. It contains maps locating major AEC installations across the nation and the sites of power reactors. The booklet is nontechnical, designed for students, teachers, and the public. (*The USAEC—What It Is, What It Does*; 68 pages, no charge. Division of Technical Information Extension, Atomic Energy Commission, P.O. Box 62, Oak Ridge, Tenn.)

The National Association of Educational Broadcasters (NAEB) has released a study on the **financing of educational television stations**, by Educational Television Stations (ETS), a division of NAEB. The publication contains analyses of ETV station financing and a description of the meeting last December of ETV station representatives. Copies of the report, "The Financing of Educational Television Stations, Present Patterns and Recommendations for the Future," are available for $2 from the ETS Division, NAEB, 1346 Connecticut Avenue, NW, Washington 20036.

The National Science Foundation has issued the results of its most recent annual survey of **federal spending for scientific activities**. *Federal Funds for Research, Development, and Other Scientific Activities, Fiscal Years 1963, 1964, and 1965, volume 13*, emphasizes obligations for research and development, with major stress on obligations for the related but separate activities of basic research, applied research and development. (Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. No. NSF 65-13. 244 pages; $1.25)

The Organization for Economic Cooperation (OECD) has published a summary of its first ministerial meeting on **science**, held in Paris, October 1963. The meeting, attended by ministers of

science and technology of the member nations, "marked the first time that the implications of science and technology for the formulation of public policies were discussed at a high-level intergovernmental forum," according to Thorkil Kristensen, OECD secretary general. It covered national and international science policy and science and economic growth. (*Ministers Talk about Science.* McGraw-Hill Book Company, OECD Unit, 351 West 41st St., New York 10036. 178 pages; $2.50)

A brochure on **radiation pyrometry** is available free of charge from Milletron, Inc. The bulletin presents charts and equations showing types of errors to be anticipated in radiation measurements, and various tables, curves, and definitions pertinent to the field. It also includes the theory of pyrometry operation for total radiation, brightness, and two-color instruments. (*Radiation Pyrometry*, Technical Bulletin 31565, Milletron Inc., 454 Lincoln Highway East, Irwin, Pennsylvania 15642)

A report on the technical and economic **status of magnesium-lithium alloys** has been published by the National Aeronautics and Space Administration's technology utilization division. The 45-page booklet, prepared for NASA by the Battelle Memorial Institute, is based on research and development activity at NASA's R&D centers across the nation. It deals with current uses of the alloys and with their potential for adaptation to commerce and industry. (*Technical and Economic Status of Magnesium-Lithium Alloys.* Superintendent of Documents, U.S. Government Printing Office, Washington 20402. NASA SP-5029. 25 cents)

The Department of Health, Education, and Welfare has published a report on the numbers of **graduate science students in selected U.S. institutions** from 1959 to 1964. The book summarizes data from an annual survey by the Office of Education. (*Five-Year Trend in Graduate Enrollment and Ph.D. Output in Scientific Fields at 100 Leading Institutions, 1959–60 to 1963–1964.* Superintendent of Documents, Government Printing Office, Washington 20402. $1)

The role of **minerals** in the world's economy is assessed in the latest in a series of Interior Department publications. Statistics are presented on more

than 130 foreign countries and areas, plus detailed accounts of their mineral industries. (*Minerals Yearbook; Vol. IV, Area Reports: International.* Superintendent of Documents; U.S. Government Printing Office, Washington, D.C. 20402. $5)

NASA has released its semiannual publication, "Opportunities for Participation in **Space Flight Investigations**." The 107-page book includes detailed descriptions and timetables covering a wide range of NASA flight projects, both manned and unmanned. The projects are described briefly, and details of the space that may be available for locating instrument packages are included. Flight dates cover the period between 1966 and 1972, and the deadlines for proposals vary according to each project. (Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. 60¢)

Scientists in the News

The new president of the American Society for Testing and Materials is **Robert F. Legget**, director of the Division of Building Research, National Research Council of Canada.

The new president of the Society of Women Engineers is **Isabelle French**, of Bell Telephone Laboratories, Allentown, Pennsylvania.

Elizabeth M. Rona, of the special training division at Oak Ridge Institute of Nuclear Studies, has been appointed a professor in the chemistry department and in the marine laboratory at the University of Miami.

The new president of the Forest History Society is **Ralph W. Hidy**, professor of business history at Harvard graduate school.

John T. Schlebecker, formerly at Iowa State University, Ames, has become curator of agriculture and forest products at the Smithsonian Institution.

William H. Danforth, associate professor of medicine at Washington University, has been appointed vice chancellor for medical affairs at the university.

Rupert E. Billingham, professor of zoology at the University of Pennsylvania, has been appointed chairman of

the newly created department of medical genetics at the university.

William Rea Keast has become president of Wayne State University, succeeding **Clarence B. Hilberry**. Keast was formerly vice president for academic affairs at Cornell.

George K. Davis, formerly director of the nuclear science program at the University of Florida, has been appointed director of the university's division of biological sciences.

Robert C. Wood, professor of political science at M.I.T., has been appointed head of the newly formed department of political science at the school.

Donald Crossan, associate professor of plant pathology at the University of Delaware, has been appointed assistant dean of the college of agricultural sciences and assistant director of the Delaware Agricultural Experiment Station.

Donald Harting has been named director of the National Institute of Child Health and Human Development. He had been acting director since last fall, when **Robert A. Aldrich** resigned to return to the University of Washington.

William R. Bennett, head of the data theory department, Bell Telephone Laboratories at Holmdel, New Jersey, has been appointed professor of electrical engineering at Columbia University.

William J. Youden, formerly a senior statistical consultant at the National Bureau of Standards, has been appointed professor of applied science at the George Washington Uuniversity school of engineering and applied science.

The University of Chicago has named **H. Stanley Bennett** director of the new Laboratories for Cell Biology, effective 1 January. He will be succeeded as dean of the division of the biological sciences by **Leon O. Jacobson**, who is now chairman of the department of medicine.

William J. Rutter, formerly professor of biochemistry at the University of Illinois, has been appointed professor of biochemistry and professor of genetics at the University of Washington.

Willard J. Jacobson, professor of natural sciences at Teachers College,

Columbia University, has been appointed chairman of the department of science education at the college.

Homer W. Schamp, professor of physics at the University of Maryland and director of the university's Institute for Molecular Physics, has been appointed dean of faculty for the University of Maryland in Baltimore County. The new campus will open in the fall of 1966 for about 500 freshman students.

George James will become vice president of the Mount Sinai Medical Center and dean of the new Mount Sinai School of Medicine, as of 1 November; he will retire in October as New York City Commissioner of Health. The medical school plans to admit its first students in the fall of 1968.

Miles D. McCarthy, chairman of the division of science and mathematics and of the department of biological sciences at California State College, Fullerton, has been named dean of the college's school of letters, arts, and sciences. He will be on sabbatical leave during the fall semester for a tour of European science laboratories.

Eville Gorham, associate professor of botany at the University of Minnesota, has been appointed professor and head of the department of biology at the University of Alberta, Calgary, Canada.

Massachusetts Institute of Technology has appointed **Emily L. Wick** associate dean of student affairs, succeeding **Jacquelyn A. Mattfeld**, who will become dean of Sarah Lawrence College. Dr. Wick is an associate professor of food chemistry at M.I.T.

S. Douglas Cornell, formerly executive officer of the National Academy of Sciences–National Research Council, has been appointed president of Mackinac College, Michigan. The school is scheduled to open in September 1966.

Roger G. S. Bidwell, formerly associate professor of botany at the University of Toronto, has been appointed professor of biology at Western Reserve University.

John A. Hutcheson, recently retired vice president of the Westinghouse

Electric Corporation, Pittsburgh, has become chairman of the division of engineering and industrial research of the National Research Council.

The University of California, San Diego, has appointed **Robert B. Livingston** chairman of the department of neurosciences. He had been chief of the general research support branch in the NIH Division of Research Facilities and Resources.

Leon Katz, professor of physics and director of the linear electron accelerator laboratory at the University of Saskatchewan, has become head of the university's physics department.

The following have been appointed professors of mathematics at Case Institute of Technology:

John R. Isbell, formerly at the University of Washington.

Milton Lees, formerly associate professor at California Institute of Technology.

A. J. Lohwater, formerly at Rice University.

The Federation of American Societies for Experimental Biology has appointed **Joseph F. A. McManus** executive officer. He had been a professor of pathology in the experimental program of medical education at Indiana University, Bloomington. He was a member of the FASEB Board from 1957 to 1964, and a member of the FASEB Advisory Committee from 1961 to 1964.

Wallace R. Brode, chairman of the AAAS Science Youth Activities Committee and a former AAAS president, has become foreign secretary of the American Chemical Society. He will head the International Activities office, a recently established unit in the Division of Membership Activities of ACS, with offices in Washington. He is retaining his position at AAAS.

John H. Law, formerly of Harvard, has been appointed professor in the biochemistry department of the University of Chicago.

Arthur B. Callahan, formerly biological sciences coordinator in the Office of Naval Research San Francisco branch, has become head of the medicine and dentistry branch of ONR, in Washington.

The University of Pennsylvania medical school has named **Walter B. Shelley** chairman of the dermatology department, succeeding **Donald M. Pillsbury**, who will remain at the school as a professor of dermatology.

Thomas K. Barber has been appointed professor and head of the department of pedodontics at the University of Illinois College of Dentistry, Chicago. He has been associate head of the department. He succeeds **Maury Massler**, who has been appointed assistant dean for postgraduate and teacher education.

The new president of the Medical Library Association is **Alfred N. Brandon**, of Johns Hopkins University Welch Medical Library.

Morton Rothstein, formerly of the Kaiser Research Foundation, has been appointed professor of biology at the State University of New York at Buffalo. **Carmelo A. Privitera**, formerly of St. Louis University, has become associate professor and vice chairman of the biology department.

Janis V. Klavins, formerly professor of pathology at Duke University, has been appointed clinical professor of pathology at the State University of New York Downstate Medical Center, and pathologist-in-chief at the Brooklyn-Cumberland Medical Center.

Recent Deaths

Samuel A. Alexander, 73; clinical professor of medicine at Georgetown University; 22 September.

Samuel K. Allison, 64; director of the Fermi Institute for Nuclear Studies at the University of Chicago; while representing the U.S. Atomic Energy Commission at an international conference on thermonuclear programs, in England; 15 September.

Othmar H. Ammann, 86; designer of many of New York's bridges, most recently of the Verrazano-Narrows Bridge; he was elected this year to the National Academy of Engineering; 22 September.

Alva Raymond Davis, 78; vice chancellor and former dean of the college of letters and science, University of California, Berkeley; 15 July.

John E. Flynn, 68; chief scientist in New York for the Office of Naval Research; 22 September.

Morris B. Jacobs, 59; professor of occupational medicine at Columbia; 12 July.

Dwight E. Minnich, 76; retired chairman of the zoology department at the University of Minnesota; 4 September.