showed that the teaching salaries of engineering educators increase with age. These basic salaries ranged from a low of $6744 in the South to $8392 in the Pacific region.

The report, entitled *Salaries and Income of Engineering Teachers, 1958,* was published by the Engineers Joint Council as a supplement to a recent report, *Professional Income of Engineers —1958,* and was prepared by the Bureau of Business and Economic Research at Northwestern University, Boston. Copies are available from the Engineers Joint Council, 29 W. 39 St., New York 18, N.Y., at 25 cents to cover handling cost.

Scientific Manpower in Government

Attractive features found only in government scientific and technical programs must be emphasized if federal agencies are to be more successful in attracting and retaining their required share of first-rate scientists and engineers. This advice to federal officials was underscored by several prominent scientists, engineers, and personnel officials in speeches to the 2-day government-wide Conference on Scientific Manpower, held recently in Washington, D.C. Some 500 federal officials and others concerned with government scientific staffing attended the conference, which was sponsored by the U.S. Civil Service Commission, with the Office of Naval Research as host agency.

The conference was arranged to consider solutions to the problem of insuring the maintenance of highly competent research and development staffs in federal laboratories. The speakers included James R. Killian, Jr., special assistant to the President for science and technology; A. B. Kinzel, vice president for research, Union Carbide Corporation; Roger W. Jones, chairman of the Civil Service Commission; Rocco C. Siciliano, special assistant to the president for personnel management; Guy Suits, vice president and director of research, General Electric Company; Ralph D. Bennett, manager of the General Electric Company's Vallecitos Atomic Laboratory in California; John G. Darley, associate dean and head of the department of psychology, University of Minnesota; and Harry C. Kelly, assistant director for scientific personnel and education, National Science Foundation.

Conference participants emphasized the following points.

Competition for superior scientific personnel can be expected to continue, and possibly to be intensified in the foreseeable future.

It is unlikely that government compensation for scientists and engineers can be made fully competitive with pay offered by industry, but the gap can in large part be offset by other attractions which only the federal service can offer.

The solution to the pay problem requires more flexibility in the Government's pay structure rather than a separate pay system for scientists and engineers. Federal scientists already receive many of the benefits they seek, but agencies need to make them more aware of this fact.

The Government's career scientific service must be flexible enough to allow for advancement to top levels for scientists who wish to stay in creative work rather than transfer to administration.

The Government must recognize that scientists have different interests and motivation from nonscientists, which require special consideration, and agencies must develop attractions that interest them.

The popular image of the scientist must be improved.

Undue reliance on outside laboratories for new work of large scientific interest could greatly impair the morale of government scientists and the vitality of needed public facilities.

The Government has shown marked improvement in the recruiting of scientists and engineers in the past 2 years.

One of the most important challenges to the Government is the need to correct erroneous concepts of public service.

Speakers from industry, government, and universities stressed the point that federal scientific and technical programs offer unusual and challenging opportunities which exist nowhere else, and that the Government should take steps to point up the many areas in which it offers superior attractions. Among the benefits of the Government's career scientific service cited were the opportunity to conduct research on a wide variety of exciting and challenging programs; to engage in basic research without production-related pressures; to work in the most modern and fully equipped facilities without worry about the adequacy of research funds; to participate in pioneering work in new areas of science and technology; to publish research results without fear of compromising the employer's competitive position; to gain public recognition of professional achievements; and, finally, to participate in work that is important to national security and progress.

Expedition Monsoon

During the months of February to August 1960 two ships of the University of California's Scripps Institution of Oceanography will engage in a deep-sea expedition to the western Pacific and eastern Indian Ocean. The expedition, tentatively called Monsoon, will be similar to the 1952–53 Capricorn and 1957–58 Downwind investigations of the south and southeast Pacific. The ships, separately and together, will carry out bathymetric, sonoprobe, seismic-refraction, magnetic, heat-flow, bottom-sampling, bottom-photographic, hydrographic, and gravity reconnaissance studies of the western Pacific, part of the East Indian Archipelago, and the eastern part of the Indian Ocean. Measurements of carbon dioxide in the atmosphere and near-surface water will be made throughout the cruise. Large-volume water sampling and radioisotope and trace element studies will be carried out, especially in the north Pacific and Indian Ocean segments. The biological program will consist of plankton sampling throughout the cruise and of mid-water trawls and dredging for benthic organisms in the equatorial Pacific, East Indies, and eastern Indian Ocean.

As in the case of the Downwind cruise, there will be two expedition leaders. Henry W. Menard will supervise the East Indies-Indian Ocean operations; Robert L. Fisher will direct the ships' operations in the Philippine, Japanese, and Kuril areas.

NIH Grants Division Reorganized

The 31 study sections of the Division of Research Grants at the National Institutes of Health have recently been divided into four research groups for review of research grant applications. These review panels are comprised primarily of nongovernment scientists who have also the added responsibility of surveying the status of research in their respective fields and making recommendations to the Public Health Service as to what additional activity should be undertaken. The new administrative structure will enable the four research groups, operating under the Research Grants Review Branch of the Division of Research Grants, to expedite the large volume of research grant applications and at the same time to maintain a high quality of professional review.

The head of each group will coordinate the activities of his study sections and serve as project review officer for applications falling within the province of his group. The four research groups and their respective scientist-administrators are as follows: (i) clinical research, Clinton C. Powell, formerly executive secretary of the radiation and surgery study sections; (ii) biochemistry and physical science, Elsa O. Keiles, formerly executive secretary of the metabolism and nutrition study section; (iii) biological sciences, J. Palmer

Saunders, formerly executive secretary of the cancer chemotherapy study section; and (iv) health services, Murray Goldstein, formerly assistant chief of the grants and training branch, National Heart Institute.

Science and Public Policy Program Continued at Harvard

Harvard University has announced the receipt of a grant of $285,000 from the Rockefeller Foundation to continue the support of a research and training program in science and public policy that was started last year by the Graduate School of Public Administration. The program, which will extend through 1962–63, is investigating the broad range of problems involved in the financing and administration of scientific research and in the application of science to the formulation and determination of public policy.

Beginning in the autumn of 1960, the program will also undertake to train a number of scientists and administrators who are actively concerned with these problems. At that time, a group of 15 fellows will be admitted for graduate study. These students will be selected primarily from among candidates who have had a number of years of experience in Government or in research positions and who seek to prepare themselves to deal with public-policy issues at a higher level of responsibility. Such students may qualify for the master of public administration degree in one academic year.

Associated in the conduct of the program are four Harvard professors: Jerome S. Bruner, professor of social relations; I. Bernard Cohen, professor of the history of science; Carl Kaysen, professor of economics; and Don K. Price, professor of government and dean, Graduate School of Public Administration.

Transcontinental Radio Link

By using a large balloon, about 1000 miles out in space, the National Aeronautics and Space Administration plans to establish a transcontinental radio link late this year. The new project, which is said to be in an advanced stage of development, will relay radio signals between California and New Jersey by bouncing them off the aluminized skin of a balloon, 100 feet in diameter, which will be put into orbit by a rocket.

As the satellite, during its travels from 50° north to 50° south latitude, passes over the United States, radio signals will be directed toward it. After reflection, these signals will be picked up by receivers in either New Jersey or California, depending on the direction of transmission. The California facilities will be located at Goldstone, where there is an 80-foot antenna that has been used in the past for space communications.

The relay project is the first step in the Space Administration's long-range plan to establish a new global system for relaying radio messages, telephone calls, and television programs between continents. It also may represent, in the opinion of NASA officials, a means of breaking the potential log jam that is developing in conventional communication channels.

Congress Gets NATO Atom Pacts

Agreements by which four NATO countries would be given help in training their troops in the use of atomic weapons were sent to Congress last month. Under the pacts, military units in West Germany, the Netherlands, Turkey, and Canada would receive the necessary training, equipment, and information for use of nuclear weapons in defense operations. In line with amendments of the Atomic Energy Act adopted last year, the nuclear warheads would remain under the control of U.S. forces. The agreements, which were approved by the four NATO countries last month, will become effective 60 days after submission unless the Congress disapproves them by a concurrent, or combined, House and Senate resolution.

Western Commission for Higher Education Formed

More than 40 graduate deans from Western universities and colleges have approved a constitution outlining the functions and organization of the Western Association of Graduate Schools. A meeting of the deans has indicated that almost all of the Western colleges and universities giving graduate degrees will become members of WAGS.

Officers of the new organization are deans Herbert D. Rhodes (University of Arizona), chairman; Luther J. Lee, Jr. (Claremont Graduate School), chairman-elect; and Dayton D. McKean (University of Colorado), secretary-treasurer. These three men and deans Stewart E. Hazlet of the State College of Washington and Robert W. Hiatt of the University of Hawaii form the executive committee for the association. All graduate schools at public and private universities in the following states are eligible to apply for membership: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

Science Study Series

In September 1959, the first of a series of paperbacks devoted to the popular presentation of physics will be published. The series, which will have the Doubleday Anchor Books format, had its origin in the work of the Physical Science Study Committee, an educational group formed at the Massachusetts Institute of Technology in 1956. The committee is currently completing a final version of a new physics textbook (which is being used this year by 13,000 high-school seniors on a trial basis) and producing a series of classroom films.

The series of paperbacks (to be called the Science Study Series) was originally conceived of as supplementary reading for use in connection with the textbook and films, but it was later decided to make the books available to the general public. The first of the series to appear will be *The Neutron Story*, by Donald J. Hughes; *Magnets*, by Francis Bitter; *Soap Bubbles and the Forces Which Mould Them*, by C. V. Boys; *Echoes of Bats and Men*, by Donald R. Griffin; and *How Old is the Earth?* by Patrick M. Hurley.

International List of Translations

The United Nations Educational, Scientific, and Cultural Organization has published the 10th volume of *Index Translationum*, an international bibliography which lists 27,978 titles of books issued in translation from 65 countries in more than 200 languages. The annual compilation covers the year 1957, but some earlier works not previously listed are also included. The translations are grouped by countries in fields such as philosophy; religion and theology; law, social sciences, and education; philology and linguistics; natural and exact sciences; applied sciences; arts, games, and sports; literature; history, geography, and biography.

A tabulation according to subject and country shows that literary works, especially novels, account for more than half the translations (15,407). The U.S.S.R., as in previous years, holds the record for countries in the number of translations listed, with 4608, in all languages of the Soviet Union, in addition to some translations in Spanish and English. Of these, 700 are scientific works. Next comes Germany (including the Federal Republic and the Democratic Republic) with 2041, followed by France, Japan, Italy, Czechoslovakia, the Netherlands, Sweden, and Romania, with more than 1000 translations each. *Index Translationum* is available at the Unesco Publications Center, 801 3rd Ave., New York, (cloth, $20; paper, $18).