

Total allowances and pensions in force, 1,496 as contrasted with 1,414 in the preceding year.

Widows receiving new pensions, 51.

Total allowances granted, 1906-1939, 2,965.

Total expenditures for retiring allowances and pensions, 1906-1939, \$36,694,421.30.

Since 1905 the foundation disbursed more than \$36,694,000 for retiring allowances and widows' pensions, or more than double its General Endowment Fund. Of these disbursements, Harvard University has received more than \$2,985,000; Columbia University, \$2,645,000; Yale University, \$2,218,000; Cornell University, \$1,671,000; the University of Michigan, \$1,227,000, and the University of California, \$1,062,000.

The report discusses the operation of thirty-one research projects at a cost, during the fiscal year 1938-39, of \$91,350.

The cooperative arrangement between Carnegie Corporation of New York and the Carnegie Foundation for the Advancement of Teaching respecting projects in the field of higher education has now been in effect for about fifteen years. A series of 148 grants amounting to \$1,449,393 have been made by the corporation for eighty-five projects, of which fourteen, involving thirty-four grants, have been carried on in the offices of the foundation, and seventy-one projects involving \$1,087,350 in 114 grants have been carried on under the auspices of forty-one other educational institutions or bodies. To these the foundation has allocated and transmitted the funds provided by the corporation.

SUMMER CONFERENCES ON ASTRONOMY AT THE HARVARD OBSERVATORY

THE fifth session of Summer Conferences on Astronomy will be held at the Harvard Observatory from July 1 to August 10. It is believed that many investigators and teachers will welcome the special opportunities for discussion and research available during the six-week session. Visitors who wish to use the plate collection or the instrumental equipment of the observatory will be accommodated to the greatest possible extent. Colloquia will be conducted twice each week by staff members and visiting investigators.

The conferences will include:

Topics in Celestial Mechanics, Professor Dirk Brouwer, Yale University. A discussion of the theory and application of planetary perturbations.

The Internal Constitution of the Stars, Dr. T. E. Sterne and Dr. Martin Schwarzschild. An application of the laws of physics to stellar interiors and a comparison of the results with observation; an introductory course.

Introduction to Astronomical Optics, James G. Baker. A treatment of the general problem of astronomical optics with numerous illustrations of the designing of specific

types of instruments, both in theory and in practical details.

Photographic Photometry, Dr. Cecilia Payne-Gaposhkin and Dr. F. L. Whipple. A comprehensive discussion of the problems of photographic photometry found in the study of point-images, surfaces and spectra.

Opportunities for research under guidance will be available in the topics of the conferences and also in galaxies, astrophysics, variable stars, photoelectric photometry, meteors and meteorites.

Professor Shapley and Dr. Watson, assisted by visiting lecturers, will present a survey course, Introduction to Cosmogony. The lecturers will consider origins, processes and destinies; the subjects will include stars, galaxies, the structure of the universe, relativity, cosmic rays, the generation of stellar energy, ancient cosmogonies, mountain building, the age of the earth, planetary atmospheres and the origin of the solar system. Among the visiting lecturers will be: Professor Henry N. Russell and Professor H. P. Robertson, of Princeton University; Dr. Lyman Spitzer, Jr., of Yale University; Dr. R. E. Marshak, of Cornell University; Professor Kirtley F. Mather and Dr. I. A. Getting, of Harvard University, and Dr. Daniel Norman, of the Harvard Observatory. There will be two lectures and one discussion group each week.

As in 1939, auditors holding the degree of Ph.D. in astronomy, physics or mathematics will be allowed reductions in their fees. Further information can be obtained from the Harvard Observatory or from the Summer School Office, Wadsworth House, Cambridge, Mass.

THE AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS

THE hundred and fifty-second annual meeting of the American Institute of Mining and Metallurgical Engineers was held from February 12 to 15, in the Engineering Societies Building, New York City, under the presidency of Donald B. Gillies, vice-president of the Republic Steel Corporation.

In addition to a full program of technical papers the events at the meeting included an "All-Institute" session, presided over by President Gillies, with the president-elect, Herbert G. Moulton, consulting mining engineer of New York City, as vice-chairman. Addresses were made by Colonel L. A. Codd, secretary of the U. S. Army Ordnance Association, and by Merlin H. Aylesworth, formerly utility executive-president of the National Broadcasting System.

At the directors' dinner on Tuesday evening Harvey S. Mudd, vice-president of the institute, presented four prizes, two of \$100 and two of \$50, in the first Institute National Student Contest.

The nineteenth annual lecture of the Institute of Metals Division was delivered on Wednesday by Edgar Hutton Dix, Jr., chief metallurgist of the Research Laboratories, Aluminum Company of America, on "Acceleration of Rate of Corrosion by High Constant Stresses." Following the dinner of the division on Thursday evening, Herbert T. Strong, color consultant of the New York Museum of Science and Industry, spoke on "Exploring the Magic World of Color." At this dinner the award of the division for 1940 was presented to Alden B. Greninger, assistant professor of metallurgy in the Graduate School of Engineering of Harvard University.

The seventeenth Howe Lecture was given on Thursday afternoon by Charles H. Herty, of the department of research and development of the Bethlehem Steel Company. He spoke on "Slag Control." Following the annual dinner of the Petroleum Division on Thursday evening, Herbert Hoover, Jr., of the United Geophysical Company, spoke on the "Economic Effects of Geophysical Exploration in the Petroleum Industry."

At a meeting of the Mining Geology Committee on Tuesday morning brief tributes were paid to the late Waldemar Lindgren by W. C. Mendenhall, B. S. Butler, Alan M. Bateman, W. H. Newhouse and R. D. Butler.

The medals and honors of the institute presented at the annual banquet at the Waldorf-Astoria on the evening of February 14 were:

The James Douglas Medal to Louis Davidson Ricketts, "for inspirational leadership and distinguished achievements in the metallurgy of copper."

The Anthony F. Lucas Medal to E. DeGolyer, "for initiating applied geophysics, directing the early practical seismic exploration and fostering applied science in finding, developing and producing oil."

The Robert W. Hunt Medal for 1940 to Axel Hultgren and Gösta Phragmén, for their paper, contributed to the institute, entitled "Solidification of Rimming-steel Ingots."

A certificate of honorary membership to Henry Krumb, vice-president of the institute for the last twelve years, "in recognition of his notable attainments as an engineer; of his constant and effective efforts in behalf of the profession; and of his never-failing and wise counsel in the administration of the institute's affairs during critical years."

The J. E. Johnson, Jr., Award to P. V. Martin, for his published research on the "Effect of the Solution-loss Reaction on Blast-furnace Efficiency."

Ninety living members of the institute have been on its rolls continuously for fifty years or more. Ten attained that status this year, thus becoming members of the Legion of Honor, Class of 1940, and receiving a special gold pin emblematic of the honor. They are: William R. Appleby, Henry C. Banon, Walter A. Barrows, Jr., L. E. Dunham, James MacNaughton, Spencer Miller, E. W. Parker, Franklin B. Richards, W. J. Richards and H. L. Smyth.

Herbert G. Moulton was introduced as president of the institute for 1940.

SCIENTIFIC NOTES AND NEWS

THE title of president emeritus has been conferred by the trustees of the Ohio State University on Dr. William McPherson, emeritus professor of chemistry, who has been acting president of the university since the retirement of Dr. George W. Rightmire nineteen months ago. The newly elected president, Dr. Howard Landis Bevis, previously William Ziegler professor of law and government in the Graduate School of Business Administration at Harvard University, has taken up his work at the university.

DR. EDWARD RAY WEIDLEIN, director of the Mellon Institute, was presented with the 1939 Pittsburgh Award by the Pittsburgh Section of the American Chemical Society at a dinner given in his honor at the University Club on February 15.

DR. WILLIAM CROCKER, director of the Boyce Thompson Institute for Plant Research, Yonkers, N. Y., was the guest of honor at a surprise party given on January 27 by the staff of the institute in honor of his sixty-fourth birthday.

A DINNER was given recently by former students and

friends of Dr. John F. Lyman, who has completed twenty-five years as chairman of the department of agricultural chemistry at the Ohio State University. Dean Emeritus Alfred Vivian, of the College of Agriculture, presided and made the presentation speech, to which Dr. Lyman responded. Gifts included a gold fountain pen, an engraved silver tray and a bound volume of letters from graduate students.

THE Council of the British Institution of Electrical Engineers has made the eighteenth award of the Faraday Medal to Dr. Alexander Russell, principal of Faraday House, London, a past president of the institution. The medal is awarded either for notable scientific or industrial achievement in electrical engineering or for conspicuous service rendered to the advancement of electrical science.

DR. ERICH VON DRYGALSKI, professor of geography at the University of Munich, celebrated his seventy-fifth birthday on February 9.

LIEUTENANT COMMANDER F. W. REICHELDERFER, acting chief of the U. S. Weather Bureau, was elected