RESEARCH FELLOWS AT YALE UNIVERSITY

EIGHTY-FIVE research projects are being carried on at Yale University this year by a similar number of research fellows who already have the Ph.D. degree. Many of them are recipients of fellowship awards by the Yale Graduate School or by outside organizations; others are members of the faculties of colleges and universities to whom the facilities of its faculties, its libraries and laboratories have been made available without charge. Eleven foreign countries and eighteen foreign and sixty-two American institutions of higher learning are represented among this group of scholars.

Among those carrying on research in the sciences are:

Dr. Charles D. Bock, of South Bend, Indiana, is making a study of the fundamental phenomena involved in the interaction between ions and gases. Dr. John S. Burlew, of New Haven, Conn., is beginning a coordinated series of researches on the nature of the liquid state. Dr. Tze Tuan Chen, of Foochow, China, is extending his study of the mechanism of heredity among some unicellular organisms.

Dr. Marion E. Howard, of New York City, is conducting research on vitamins. Dr. Fred E. Ingerson, of Barstow, Texas, has undertaken a study of petrofabrics.

Dr. Orvel H. Mowrer, of New Haven, Conn., is studying specific reflexes elicited in certain sense organs in the non-acoustic portion of the otic labyrinth. Dr. Sidney S. Newhall, of New Haven, in cooperation with Dr. Deane B. Judd, of the Colorimetry Section of the Bureau of Standards, is making a scientific study of the nature and course of chromatic adaptation.

Dr. Ernest C. Pollard, of Lincolnshire, England, continues his investigation of the light atomic nuclei. Dr. William C. Randels, of Alma, Michigan, is studying mathematical problems in connection with the Fourier series under the direction of Professor Hille.

Dr. Helen G. Richter, of New Haven, is attempting a completion of data obtained on sympathetic vaso-motor pathways and their central connection. Dr. Julien A. Ripley, Jr., of Hamden, Conn., is continuing research on the philosophy of science.

Dr. Harold H. Williams, of Howard, Pa., is extending his research to the possible rôle of cholesterol in fat mobilization. Dr. Max Zorn, of Hamburg, Germany, is attempting to develop an elementary method in studying higher laws of reciprocity in the field of mathematics.

Two Bishop Museum fellows are conducting research in the islands of the Pacific: Dr. Horace B. Baker, of Philadelphia, Pa., is making an anatomical and systematic study of the Pacific Zonitidae at the Bishop Museum under the direction of Dr. C. Montague Cook, Jr. Dr. Ernest Beaglehole, of Wellington, New Zealand, is making a general ethnographic study at Puca Puca in the Tuamotu group of islands. In the field of chemistry, Dr. Robert O. Bengis, of New Haven, is holder of the Standard Brands, Inc., fellowship; Dr. Werner Bergmann, of New Haven, and Dr. Mearl A. Kise, of Allentown, Pa., hold Textile Foundation, Inc., fellowships; Dr. John A. Crowder, of New Haven, and Dr. Frank Stodola, of Hopkins, Minnesota, are working under the auspices of the National Tuberculosis Association; Dr. Kathleen O. P. Jackson, of Devon, England, is the holder of a Henry Fund fellowship, and Maurice L. Moore, of Crestview, Fla., is A. Homer Smith fellow.

The following held fellowships from the General Education Board: Dr. Adrian Buyse, of Rochester, New York, in zoology; Dr. Harry G. Day, of Chariton, Iowa, in physiology; Dr. William W. Greulich, of Los Altos, California, in anatomy; Dr. Sander E. Lachman, of Baltimore, Maryland, in clinical medicine, and Dr. John B. Wolfe, of Dryden, Virginia, in psychology. The National Research Council is represented by the following: Dr. Harold E. Clark, of Montague, Massachusetts, in botany and physiological chemistry; Dr. Jack M. Curtis, of St. Louis, Missouri, in anatomy; Dr. William U. Gardner, of Columbia, Missouri, in anatomy, and Dr. Louis S. Goodman, of Portland, Oregon, in pharmacology and toxicology. Recipients of Rockefeller Foundation fellowships are: Dr. George Seth, of Edinburgh, Scotland, in psychology, and Dr. Donal Sheehan, of Manchester, England, in physiology. Holders of Alexander Brown Coxe Memorial fellowships are: Dr. Jane L. Chidsey, of Easton, Pa., in physiology; Dr. William G. Gordon, of New York City, in physiological chemistry; Dr. Arild E. Hansen, of Minneapolis, Minnesota, in clinical medicine and pathology, and Dr. James M. Orten, of Denver, Colorado, in physiological chemistry. The Davis and Geck fellows are: Dr. Irving Friedman, of New York City, and Dr. Orvan W. Hess, of Margaretville, New York, both in surgery.

SYMPOSIUM IN THEORETICAL PHYSICS AT THE UNIVERSITY OF MICHIGAN

THE Symposium in Theoretical Physics at the University of Michigan will be held between the dates of June 24 and August 16. Professor Enrico Fermi, of the Royal University of Rome, will lecture throughout the session on "Selected Subjects in Quantum Mechanics." He will place special emphasis upon applications to nuclear physics and other recent developments. Professor Felix Bloch, of Stanford University, will present the "Quantum Theory of the Metallic State." His lectures will extend from July 1 to July 26 and will treat theoretically the various properties of metals. "The Theory of Atomic Spectra" including interpretations of line spectra, the many electron problems, hyperfine structure and nuclear spin, will be offered by Professor S. A. Goudsmit, University of Michigan. He will lecture throughout the session. Professor G. E. Uhlenbeck, of the University of Michigan, will lecture for the first half of the session on "Advanced Quantum Mechanics." The Dirac theory of the electron and positron will receive special attention.

In addition to the formal lecture courses, there will be a series of informal seminars throughout the ses-

sion under the personal direction of Professors Fermi, Bloch, Goudsmit and Uhlenbeck, at which recent developments of theoretical physics will be discussed. Holders of the doctor's degrees may attend all sessions as guests of the university.

In addition to the symposium proper, the department of physics offers a very complete schedule of graduate courses, with special facilities for research in the following fields: spectroscopy, throughout the entire spectrum from x-rays to the far infrared, chemical analysis by spectroscopic methods, sound, vacuum tube phenomena and high-frequency measurements. For additional particulars and announcements address the director of the Physical Laboratories, University of Michigan.

THE HARVARD SUMMER GRADUATE SCHOOL OF ASTRONOMY

THE summer of 1935 marks the inauguration of the Harvard Summer School of Astronomy which is to meet concurrently with the Harvard Summer School of Arts and Sciences. While, in the past, the department of astronomy has offered instruction in elementary astronomy during the summer and has made available facilities for research under the guidance of members of the staff of the observatory, this reorganization of summer instruction provides particularly an extension of the opportunities for advanced instruction, for the pursuit of research, and for profit from informal conferences and colloquia. At the same time the program of elementary instruction has been extended.

The staff of the department is enlarged during the summer session by a number of visiting astronomers who offer seminars in their special fields, contribute to the informal discussions, and assist in the guidance of those engaged in research.

The equipment available to graduate students at the observatory and at the astronomical laboratory includes:

1. The collection of some 400,000 photographic plates accumulated by means of the many photographic telescopes at the three stations of the observatory—at Cambridge, at Oak Ridge and at the southern station, formerly at Arequipa, Peru, but, since 1927, at Bloemfontein, South Africa.

2. The library containing a complete collection of current journals, publications of observatories and astronomical treatises.

3. The telescopic equipment at Cambridge and Oak Ridge, comprising five visual telescopes with apertures ranging from 15 inches to 6 inches, fourteen photographic refractors with apertures ranging from 16 inches to 1¼ inches, the 24-inch reflector and the 61-inch Wyeth reflector equipped for photoelectric and spectrographic work. The Oak Ridge Station is located in the town of Harvard, 25 miles west of Cambridge, is easily accessible and possesses dormitory facilities for those engaged in observational work and a cottage for recreational purposes.

4. Accessory equipment comprising a Schilt photometer, a Moll microphotometer, a new microdensitometer, measuring machines, star-counting machines and telescopic photometers for use in visual variable-star photometry.

5. A completely equipped machine shop located at the Astronomical Laboratory, available for the use of those engaged in graduate study who desire to experiment in the construction of special apparatus.

Members of the visiting staff include:

Dr. Ira S. Bowen, of the California Institute of Technology, known for his solution of the riddle of nebulium and for his other applications of atomic theory to the prediction and verification of unidentified lines in astrophysical sources.

Dr. Freeman D. Miller, of Denison University, engaged in studies of the structure of the Milky Way on the basis of star counts.

Dr. Peter M. Millman, of the University of Toronto, an authority on meteors and meteor spectra.

Dr. Antonie Pannekoek, of the Astronomical Institute at Amsterdam, known for his studies of the galactic system and in recent years interested in problems dealing with the production of spectral lines in stellar atmospheres.

Dr. Otto Struve, director of the Yerkes Observatory of the University of Chicago, known for his interest in the spectroscopic problems that the stars present and for his contributions to the study of interstellar matter.

Dr. Olin C. Wilson, of the Mount Wilson Observatory, whose work concerns the interpretation of stellar spectra and related astrophysical problems.

PRESIDENT ANGELL AND THE SOCIETY OF EXPERIMENTAL PSYCHOLOGISTS

TRIBUTE was paid to President James R. Angell, of Yale University, as a pioneer and leader in the development of the science of psychology at a dinner given in his honor on April 5 in New Haven by a group of leading psychologists. Professor Walter R. Miles, president of the Society of Experimental Psychologists, in session at Yale, introduced President Angell and called attention to the fact that thirty years ago he became full professor of psychology at the University of Chicago and first head of the department in which many distinguished psychologists have been trained. A correspondent writes:

"For fifteen years President Angell was intensively engaged in experimentation and his scientific contributions are many. He also wrote a text-book on psychology which was the first after that of William James to come into wide-spread use in schools and colleges and to become an important factor in the dissemination of knowledge of psychology. He was for many years editor of *The Psychological Monographs,*