effacing and helpful manner, in the inauguration of a new scientific policy in an old and complex observatory. He was largely responsible for the Boyden Station of the Harvard Observatory, having established the Peruvian station in 1890 and explored the possibilities of the South African plateau in 1908 and 1909.

Professor Bailey's early work on the variable stars in globular clusters led to the similar work on the Magellanic Clouds by Miss Leavitt. He devoted more than twenty years to the study of variable stars in star clusters, producing four monographs on the subject. The work also involved the classification of star clusters and the study of stellar distribution within the brighter systems.

Bailey was a pioneer in the photographic discovery and measurement of extra-galactic nebulae. With his associates he added several thousand new systems to our catalogues, the work being based almost exclusively on the photographs made with the Bruce refractor at the southern station. Incidentally, Bailey has long had the reputation of having made the best photographs obtained with that important but somewhat rebellious instrument.

When in 1922 at the age of sixty-seven Bailey returned to Arequipa to take charge of and rehabilitate the southern station, he resumed his studies of globular clusters, which had been interrupted by some years of administrative work. He also turned his attention to stellar distribution and made extensive star counts on long exposure Bruce photographs covering the south galactic pole and the rich regions of the southern Milky Way. This work has been much quoted in recent years.

Next to his work on globular star clusters, Bailey's volume on the "History and Work of the Harvard Observatory" will be most remembered in future years. His long association with the observatory made him the logical person to survey the development and the scientific problems of one of the oldest of American research institutions. This new volume is divided into three parts, the first dealing with the historical background and material growth of the observatory; the second discussing briefly the numerous research problems of the past and present, and the third dealing biographically with individuals on the observatory staff. In the second part he discusses the observatory's contributions to the problems of the solar system, the astronomy of position, astronomical photography, stellar photometry, spectroscopy, variable stars and novae, clusters and nebulae, and the structure and dimensions of stellar systems. He approaches personal problems with kind generosity, and scientific problems, especially the newer developments, with conservatism and objectivity. Such an attitude was characteristic of him in all his dealings with people and problems; it was the source of his high standing throughout the past forty-five years in the regard of the observatory staff and of the general astronomical community.

HARLOW SHAPLEY
HARVARD COLLEGE OBSERVATORY

RECENT DEATHS

DR. STEPHEN MOULTON BABCOCK, emeritus professor of agricultural chemistry at the University of Wisconsin, died on July 1. He was eighty-eight years old.

DR. GEORGE FILLMORE SWAIN, Gordon McKay professor of civil engineering at Harvard University, died suddenly on July 1 in his seventy-fourth year.

PROFESSOR MYER EDWARD JAFFA, professor of nutrition emeritus in the University of California, chief of the Bureau of Food and Drugs of the California State Board of Health since 1925 and a consulting nutrition expert for the board since 1915, died on June 28 at the age of seventy-three years.

DR. CHARLES ALLEN PORTER, professor emeritus of clinical surgery at the Harvard Medical School and formerly surgeon-in-chief of the Massachusetts General Hospital, died on July 3 in his sixty-fifth year.

DR. ALBERT E. STERNE, professor of nervous and mental diseases at the Indiana University School of Medicine, died on June 30 at the age of sixty-five years.

JOHN EDWIN STARR, president of the Starr Engineering Company of New York, a former president of the American Society of Refrigerating Engineers, has died at the age of seventy-one years.

PROFESSOR HARALD HÖFFDING, who held the chair of philosophy in the University of Copenhagen from 1883 to 1915, and was distinguished for his contributions to psychology, died on July 2. He was eighty-eight years old.

THE death is announced of M. E. Cossarat, director of the observatory at Toulouse.

SCIENTIFIC EVENTS

THE BRITISH NATIONAL PHYSICAL LABORATORY

THE National Physical Laboratory at Teddington was open yesterday afternoon to visitors, and the annual function was preceded by the formal opening of the new physics building. This building will eventually form three sides of a rectangle, but only the central part has so far been erected. Its door

was unlocked by Sir Gowland Hopkins, president of the Royal Society, and chairman of the general board of the National Physical Laboratory, with a gold key, handed to him by the architect, Mr. F. A. Llewellyn, after speeches by Sir Richard Glazebrook, the first director of the laboratory, and Sir Joseph Thomson.

Sir Joseph Thomson congratulated Sir Richard Glazebrook on this further step in the phenomenal development of the National Physical Laboratory, which owed its prosperity and progress to his wisdom, energy and insight more than to anything else. The National Physical Laboratory had a great part to play in the modern applications of science to industry.

The completed portion of the new physics building will house the heat and general physics section of the physics department, with part of the radiology and sound work. Apparatus for the measurement of noises was on view in this building. The loudness of the noise to be assessed is determined by varying the strength of a standard sound until it is either just "drowned" by the noise or judged to be equally loud. It was explained that, measured on a convenient scale of loudness with zero at the threshold of hearing, sounds become painful at about 130 "degrees" above threshold, where each "degree," known as a decibel, is approximately the least change in loudness perceptible to the ear. The level of conversational speech is at about 50–60 decibels above threshold. Aeroplane cabin noises are at present in the region of 80–110 decibels above the threshold. The lower of these levels corresponds to that of the noise in a tube train, and it is almost impossible to converse in a loudness level of 110 decibels, even by shouting. In street traffic and in ordinary trains the noise ranges from 50–70 decibels above threshold, and the laboratory is assisting the Aeronautical Research Committee in its endeavor to reduce noise in aircraft cabins to such a level.

One of the new exhibits in the Aerodynamics Department this year was a large steel tunnel, the equipment of which is nearly completed, in which compressed air at 25 atmospheres pressure can be circulated round an aeroplane model. Tests carried out under this high pressure are directly comparable with those on a full-scale machine—in other words, the "scale effect" which exists when working with a model in a tunnel at atmospheric pressure is eliminated. When the compressed air is circulated at full pressure by an airscrew the conditions will correspond with those surrounding a full-sized aeroplane flying at 150 miles an hour. In one of the older wind tunnels tests were shown in progress on a model of the Hill Pterodactyl, the new tailless aeroplane. A new and neat method of rendering streamline flow visible was displayed in the same department. A number of fine platinum wires, heated by an electric current, are stretched across the airflow near a model. Each wire gives rise to a band of heated air, which follows the direction of the streamline passing the wire. The shadows of these heated air filaments are cast on a screen and thus give a direct picture of the streamlines.

THE POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL AND COLUMBIA UNIVERSITY

IN accordance with the agreement between the New York Post-Graduate Medical School and Hospital and Columbia University, effective on July 1, by which the former became the Post-Graduate School of Medicine of Columbia, an administrative board of post-graduate studies in medicine has been established on which will be represented members of the governing body of the university, the undergraduate medical school and the postgraduate school of medicine.

Under the terms of the affiliation, this board will have general oversight and control of all post-graduate instruction in medicine offered by the university, whether at the Medical Center, the Post-Graduate Medical School or elsewhere in the city, and is constituted as follows: Dean Willard C. Rappleye, *chairman,* Dr. Linsly R. Williams, Dean Howard Lee McBain, Director James C. Egbert, Dr. Walter W. Palmer, Dr. James W. Jobling, Dr. Frederick Tilney, Dr. Arthur F. Chace, Dr. Herman O. Mosenthal, Dr. Howard F. Shattuck, Dr. Edward H. Hume, Dr. Harry S. Dunning, Dr. Lewis F. Frissell and Mr. Frank D. Fackenthal.

Dr. Edward H. Hume has been appointed director and Dr. Alan R. Anderson associate director of the New York Post-Graduate Medical School.

This incorporation of the New York Post-Graduate Medical School into the teaching system of Columbia University as its post-graduate school of medicine, distinct from the undergraduate school, carries into fruition, after some forty-nine years, the ambition of the seven founders of the Post-Graduate who resigned from the faculty of the New York University upon the refusal of the trustees to grant them a separate building for post-graduate instruction and, early in the year 1882, organized the present New York Post-Graduate Medical School and Hospital.

Dr. D. B. St. John Roosa, first president of the institution he helped to found, in his inaugural address in November, 1882, pointed out that while temporarily undertaken in an independent institution, this type of medical education rightly belonged with other forms of professional instruction within a uni-