schools of Columbus, Ohio, and the Ohio State University, which awarded him the degree of M.E. in 1883 and of Sc.D. (honorary) in 1932. From 1879 to 1883 he taught mechanical drawing in this university and instructed in its mechanical and physical laboratories. In 1884 he was appointed a junior professor in the Office of the Chief Signal Officer of the U. S. Army, where he remained until the establishment of the Weather Bureau in 1891. After this date and through several administrative changes, he served as "professor of meteorology" until 1913, when, following the recommendation of the National Academy of Sciences, President Wilson appointed him chief of the Weather Bureau, a position he held until his retirement in 1934, after 50 years of service.

Dr. Marvin's services to the Weather Bureau and to meteorology naturally had to do with several branches of this science. His principal contributions were in the designing, construction and standardizing of meteorological instruments of many kinds; and in guiding the policies of the Bureau during the early stages of its transition into an important influence in the present era of aeronautical expansion. The leadership of the Weather Bureau was his responsibility during troublous times; his inherent qualities of judgment and stability played their part in his administration of the Bureau's affairs.

Above all, his interest in improving the exactness of meteorological measurements stood out. For nearly every weather element—wind direction, wind velocity, barometric pressure, evaporation, cloudiness, precipitation (both rain and snow), duration of sunshine, intensity of sunshine, temperature, humidity—he developed one or more measuring and automatically recording devices, either original or modified, and designed to improve meteorological observations and records for a variety of public uses. One of his most important contributions in this connection, and also one of his earliest, was the experimental evaluation of the constants in humidity equations and the construction of humidity tables; it is from these tables that one can read off at once the current humidity of the air as soon as he knows the simultaneous readings of a properly exposed dry thermometer and an adequately ventilated wet thermometer—information valuable on its own account, and vital to the forecasting of the coming weather of the next few to 24 hours.

Of all the meteorological instruments, however, the Robinson cup anemometer, to measure the velocity of the wind, seemed to fascinate him most. He worked on it, effectively, and wrote about it, from early in his career with the Weather Bureau until years after his retirement. Another of the studies and one of particular significance in early systematic investigation of the upper air was the design and construction of kites and kite instruments.

Besides these distinctly meteorological contributions, he found time and energy to devote to other practical and important interests—notably the design and building of seismographs and the reform of the calendar. One of his seismographs was in operation at the Central Office of the Weather Bureau in Washington, D. C., for many years, and when finally dismantled was one of the best mechanically recording seismographs then in use anywhere. His work with calendar reform, devoted and constant though it was, found the inertia of public conservatism in this subject too great to be overcome by logic. Dr. Marvin was a member of a number of scientific societies, among them the American Geophysical Union; the American Meteorological Society (president, 1926); the Washington Philosophical Society (president, 1903); the Washington Academy of Sciences, and the National Advisory Committee for Aeronautics.

In 1928 he was knighted by the King of Norway to the Order of St. Olaf, first order, in recognition of the aid given by the Weather Bureau to Raold Amundsen during his Arctic explorations; and in 1934 was a U. S. delegate to the League of Nations at Geneva.

He was a member of the Cosmos Club of Washington, D. C.

Dr. Marvin was three times married: to Nellie Limeburner, June 27, 1894, died February 27, 1905; 2d, to Mabel Bartholow, November 8, 1911, died February 8, 1932; 3rd, to Sophia A. Beuter, November 12, 1932, died February 3, 1943. He is survived by two daughters, Mrs. E. Parks Norwood, of Tucson, Arizona, and Mrs. Claud Livingston, of Kenwood, Md., and one son, Charles F. Marvin, Jr., of Washington, D. C., all children by his first wife; and by six grandchildren.

W. J. HUMPHREYS

U. S. WEATHER BUREAU,
WASHINGTON, D. C.

RECENT DEATHS

DR. KARL LANDSTEINER, emeritus member of the Rockefeller Institute for Medical Research, died on June 26 at the age of seventy-five years. Dr. Landsteiner was Nobel Laureate for Medicine in 1930.

DR. STANLEY E. COULTER, emeritus dean of the School of Science of Purdue University, died on June 26 at the age of ninety years.

DR. JAMES MCGIFFERT, head of the department of mathematics at the Rensselaer Polytechnic Institute, Troy, N. Y., died on June 18 at the age of seventy-five years. He had been a member of the faculty since 1892.

DR. GILBERT A. YOUNG, since 1912 until his retirement with the title emeritus in 1942 head of the

School of Mechanical Engineering of Purdue University, died on June 27 at the age of seventy-one years.

DR. GEORGE CURTIS MARTIN, from 1909 to 1924 geologist of the Geological Survey, later consulting geologist, died on June 23. He was sixty-seven years old.

Nature records the death on April 24 at the age of seventy-four years of Lionel R. Crawshay, at one time a member of the scientific staff of the Marine Biological Association and for many years research officer of the Sponge Fishery Investigations in the West Indies and British Honduras, and of Professor Kurt Huber, professor of experimental psychology in the University of Munich, recently executed for "traitorous conspiracy."

SCIENTIFIC EVENTS

THE BIRTHDAY HONORS OF THE KING OF ENGLAND

IT is stated in *Nature* that the following names of men of science and others associated with scientific development appear in the Birthday Honors list of the King of England:

Baronet: Sir John Fraser, regius professor of clinical surgery, University of Edinburgh.

K.C.B.: Dr. N. K. Johnson, director of the Meteorological Office.

K.B.E.: Sir T. Franklin Sibly, vice-chancellor of the University of Reading and chairman of the Committee of Vice-Chancellors and Principals.

Knights: Captain J. P. Black, managing director of the Standard Motor Co., Ltd., and chairman of the Joint Aero-engine Committee; D. A. E. Cabot, chief veterinary officer, Ministry of Agriculture; Dr. H. L. Eason, president of the General Medical Council; Dr. C. S. Fox, director of the Geological Survey, India; Dr. H. Spencer Jones, astronomer royal; J. M. Kennedy, deputy chairman of the Electricity Commission; P. M. Kharegat, vice-chairman, Imperial Council of Agricultural Research, India; E. Macfadyen, chairman of the governing body, Imperial College of Tropical Agriculture; Dr. A. D. McNair, vice-chancellor of the University of Liverpool; Professor J. L. Myres, formerly Wykeham professor of ancient history, University of Oxford, for services to learning; Professor G. P. Thomson, professor of physics, Imperial College of Science and Technology.

C.H.: E. W. Hives, for services in the design of aero-engines.

C.B.: J. M. Caie, deputy secretary, Department of Agriculture for Scotland; W. S. Farren, director, Royal Aircraft Establishment, Ministry of Aircraft Production.

C.I.E.: H. Trotter, utilization officer, Forest Research Institute, Dehra Dun.

C.B.E.: R. Chadwick, chief designer and director, A. V. Roe and Co., Ltd.; Dr. H. L. Guy, chairman of the Gun Design Committee, Scientific Advisory Council; Professor J. Jewkes, deputy director-general of statistics and programs, Ministry of Aircraft Production; Professor J. N. Mukherjee, professor of chemistry, University of Calcutta; R. K. Pierson, chief designer, Vickers-Armstrong, Ltd. (Aircraft); Major R. W. Sharpe, chairman, Agricultural Executive Committee, Berwickshire; Lieutenant-Colonel W. W. Zambra, secretary, Imperial Communications Advisory Committee.

THE NATIONAL FOUNDATION FOR INFANTILE PARALYSIS

TWENTY-EIGHT grants, amounting to $354,370, have been made by the National Foundation for Infantile Paralysis to universities, hospitals, laboratories and other organizations in eleven states to continue the fight against the disease. Dr. Basil O'Connor is president of the foundation.

The grants were recommended by the medical advisory committees at the semi-annual meeting and have now been approved by the board of trustees. The funds which make the program possible are raised annually in January through the celebration of President Roosevelt's birthday.

Sixteen grants, amounting to $216,020, were made for virus and after-effects research. Four of these are on long-term projects being conducted at Yale University, the Johns Hopkins University, the University of Michigan and the University of Wisconsin.

Twelve grants, amounting to $138,350, were made for various educational programs including the training of technicians in the Kenny method of treatment. Some of these grants include projects for educational work for physicians and the public. The sum of $2,500 was appropriated for the preparation of a complete bibliography on poliomyelitis. The compilation is being done for the foundation with the aid of the library of the American Medical Association and the John Crerar Library, both in Chicago.

The list by states follows:

CALIFORNIA

Stanford University School of Health (Women)	$ 11,820
American Physiotherapy Association, Stanford University	10,000
Stanford University	6,800