upon the enemy. Thus, when an individual scientist, without complaint and without heroics of any sort, willingly relinquishes a higher paying and more conveniently located job in order to assume a particular wartime task, his decision to transfer more often than not is based on the higher need for his services in the new undertaking rather than because of any lack of contribution to the war effort in the position vacated. To the individual scientist, the question to-day is not "where can he serve" but "where can he serve best." Cold figures can not tell this story, but the enemy has already been made to understand it.

OBITUARY

WILLIAM SHIRLEY BAYLEY

WHEN the late William Shirley Bayley, professor of geology, emeritus, University of Illinois, graduated from the Male High School of the City of Baltimore at the age of seventeen, he was the recipient of a prize given by the Peabody Institute of the City of Baltimore "for fidelity to his studies and attainment therein, for correct moral deportment and personal habits, and for propriety of manners." A more accurate characterization of him could scarcely be written now. Some elaboration of his life, however, is quite appropriate.

He was born in Baltimore, Md., on November 10, 1861, the son of Robert P. and Emma Downing Bayley. On his father's side the family was of old Irish ancestry, and resided at Crossharm, Ireland. On his mother's side the family was English, dating back to Stephen Williams of Great Yarmouth, County Norfolk, in the sixteenth century. In 1637, Robert Williams, of the eighth generation removed, emigrated to Massachusetts, and subsequent members of his lineage filled places of trust and distinction in colonial affairs.

From high school young Bayley entered the Johns Hopkins University with a view to becoming a chemist, but he found increasing interest in the new and growing science of geology which offered opportunities for young men in both the field and the research laboratory. One time he tried to help his father out in his business of importing china, when his father was stricken with paralysis, but business life did not appeal to him and he returned to his studies. Receiving his A.B. in 1883 he continued his postgraduate studies, was awarded a fellowship in 1885–86 and received his Ph.D. degree in 1886.

From 1888 to 1904 he served as professor of geology at Colby College, where his popularity as a teacher and his devotion to research made him an inspiring faculty man. Among his students was the young George Otis Smith, who later became director of the U. S. Geological Survey. In tribute to Professor Bayley's teaching, Dr. Smith relates in the March, 1942, issue of *The Colby Alumnus* that in a Johns Hopkins laboratory in the course of his graduate work, a debate among the graduate students was closed by one of them remarking: "It isn't that 'G. O.' learned more geology in college than we did, but he didn't learn so much that wasn't so."

After teaching two years at Lehigh University, Professor Bayley was invited by President Edmund Janes James to come to the University of Illinois in 1906 where, from assistant professor of mineralogy and economic geology he rose to professor of geology in 1913 and head of the department in 1928, in which capacity he served until his retirement in 1931 with the designation of professor emeritus, thus completing twenty-four years of highly creditable service to the university. As a junior member of the department from 1919 to 1923, the present writer came to recognize his thorough-going teaching and his challenging attitude toward his students in stimulating their devotion to the highest ideals of science. Twenty years more of association with him personally and professionally made indelible these impressions of his critical guardianship of science.

But Professor Bayley was not only a teacher and a critic. He was a research investigator and writer of great merit. For many years he devoted his summers to intensive field work. Establishing an early connection with the U. S. Geological Survey as assistant geologist and later as geologist he did a great deal of work on the pre-Cambrian rocks and iron ores of the Lake Superior region in northeastern Minnesota and in northern Michigan. Many articles came from this work as it progressed, nine of them within six years, besides a continued series of five articles on the basic massive rocks of the Lake Superior region. Then came two extensive reports as junior author with Professor C. R. Van Hise on the Marquette iron-bearing district of Michigan in 1895 and 1897 and a monograph under his own authorship on the Menominee iron-bearing district of Michigan in 1904, besides more papers of increasing significance, including one on the water resources of Maine and two geologic atlases of areas in Michigan and New Jersey, which were in joint authorship with Van Hise and N. H. Darton, respectively. Seven other notable publications punctuated a total of forty-one scientific entries, ninety-seven book reviews and three text-books in his labor-won bibliography. The scope of his work embraced mineralogy, petrography, areal geology, under-

ground waters, economic geology, metalliferous deposits, clays and the history of geology, which was in widely distributed areas—Maine, New York, New Jersey, Birmingham, North Carolina, Tennessee, Georgia, Texas, Minnesota, Michigan and Canada. He was connected at one time or another with the state geological surveys of New Jersey, North Carolina and Tennessee.

Some of his life's energies were also devoted to certain scientific journals, having been associate editor of *American Naturalist,* 1886–87, reviewer for Neues "Jahrbuch für Mineralogie," Berlin, 1890–1908; and business editor of the *Journal of Economic Geology,* 1905–42. He was honored by being made councilor of the Mineralogical Society of America, 1931–34, and its president in 1936; councilor of the Geological Society of America in 1919 and 1937, and a vice-president in 1936; councilor of the Society of Economic Geologists, 1925–27, and vice-president in 1932. He was also faithful in promoting interest in science in his state of adoption and was honored with the presidency of the Illinois Academy of Science in 1922–23, during which office he sponsored the organization of a Junior Academy of Science for high-school students. He was always solicitous in safeguarding the educational interests and standards of the University of Illinois and served on important and influential committees. In recognition of Professor Bayley's scientific attainments and of his devotion to his alma mater he was selected by the Johns Hopkins University as a representative of its scientific alumni on the occasion of the celebration in 1927 of its fiftieth anniversary.

Although his death on February 13, 1943, is a real loss to science, all of us who knew him well and the many who knew only his work must feel a deep sense of gratification and inspiration in a life so full, so exemplary and so richly productive.

M. M. LEIGHTON
ILLINOIS STATE GEOLOGICAL SURVEY

RECENT DEATHS

DR. C. STUART GAGER, for thirty-three years, since its establishment, director of the Brooklyn Botanic Garden, died on August 9 at the age of seventy years.

DR. CHARLES MACFIE CAMPBELL, professor of psychiatry at the Harvard Medical School, died on August 7 at the age of sixty-six years.

DR. ARTHUR MONRAD JOHNSON, associate professor of botany at the University of California, Los Angeles, died on July 16 at the age of sixty-five years.

THE REVEREND ARTHUR J. HOHMAN, professor of chemistry and head of the department at St. Peter's College, Jersey City, N. J., died on August 3. He was fifty-six years old.

JAMES MOFFITT, curator of the department of ornithology and mammalogy of the California Academy of Sciences since 1936, while on active duty as a Lieutenant in the U. S. Naval Reserve was killed in an airplane crash at Dutch Harbor, Alaska, on July 2.

ALBERT W. WHITNEY, formerly consulting director of the National Conservation Bureau of the accident prevention division of the Association of Casualty and Surety Executives, from 1904 to 1913 assistant and associate professor of mathematics and insurance at the University of California at Berkeley, died on July 27. He was seventy-three years old.

JOHN WATSON ALFORD, consulting engineer of Chicago, died on July 31 at the age of eighty-two years.

ROBERT SPURR WESTON, of Rhode Island, consulting sanitary engineer, died on July 29 at the age of seventy-four years.

DR. ARTHUR NEIVA, head of the Division of Entomology at the Oswaldo Cruz Institute, died in Rio de Janeiro on June 6 at the age of sixty-three years.

SCIENTIFIC EVENTS

INDUSTRIAL RESEARCH IN GREAT BRITAIN

SIR EDWARD APPLETON, secretary of the British Department of Scientific and Industrial Research, in opening the new physico-chemical laboratories of the British Coal Utilization Research Association at Coombe Springs on June 23, is reported in *Nature* to have congratulated the association both on its new facilities in laboratory space and on the financial provision now available for large-scale work. Sir Edward said that the steps the association has taken are among the first notable signs of a great forward movement in industrial research in Great Britain, which he confidently expects will be one of the features of post-war Britain. The Coal Utilization Research Association is serving the coal industry as a whole, and he particularly welcomed the expression of the interest of the miners themselves, shown in the recent appointment of two members of the Mineworkers' Federation to the council of the association. It is, he said, fashionable nowadays to decry British industrial research effort, because it is claimed that the amount of money spent on research per head of population is less than that in certain other countries. Much depends, of course, on what basis such a calculation is founded; whether or not, for example, development costs are included under the heading of