OBITUARIES.

Prof. Raymond Pearl

PROF. RAYMOND PEARL, whose sudden death from angina pectoris has been announced, was born at Farmington, New Hampshire, in 1879. He graduated A.B. from Dartmouth College in 1899, took the degree of Ph.D. in the University of Michigan in 1902 and afterwards worked at Leipzig and under Prof. Karl Pearson at University College, London. After holding some junior posts in the Universities of Michigan and Pennsylvania, Pearl was appointed head of the Biological Department of Maine Agricultural Station, where he remained until 1918, when he was chosen to be the first professor of biometry and vital statistics in the newly created School of Hygiene in Johns Hopkins University.

Although few heads of departments have been more inspiring teachers and Pearl's enthusiasm was invaluable in the infancy of the School, he did not care for routine teaching and in 1925 took a research professorship, being succeeded in the chair of biometry by his friend and collaborator L. J. Reed; from 1930 to his death he was professor of biology in the School of Hygiene and had in his institute an enthusiastic group of research students.

Pearl was an indefatigable worker; he published thirteen books and a large number of papers. His fundamental training and interests were biological and his outlook had some resemblance to that of Weldon. Although most of the publications of his later years would probably be indexed as statistical, he was a biometrician rather than a statistician, not greatly interested or highly skilled in the modern mathematical developments of statistical theory. His contributions to statistical technique, although far from negligible, were not of first-rate importance; his *forte* was the planning of experiments and using a sound biometric method in the analysis of results.

His earlier work on poultry breeding showed these characteristics, and his well-known experiments with *Drosophila* probably mark his highest level of purely scientific work. Weldon had substituted groups for individual specimens in biological study; Pearl carried this further. He acquired consummate skill in varying the environmental conditions of genetically pure strains of *Drosophila*, maintaining numerically respectable 'populations' under the desired conditions. He was thus able to record the vital-statistical histories of communities of flies with a precision which a medical officer of health might envy.

Pearl was led to generalizations respecting the influence of environment on mortality which were of much interest—for example, that, from the point of view of mortality, there was an optimum density of population—and should stimulate much more experimental work.

Pearl, like Alexander Pope, believed that the proper study of mankind was man, and in his later years, although he still actively promoted laboratory experiments in his institute, devoted much of his

own energies to the study of demography, to the factors regulating the growth and decline of nations. He was a clear and forceful writer so that what he wrote was always interesting; but, to those old enough to remember the thrill of early biometry, his demographic researches have not the charm of his experimental work.

Eager and original-minded men sometimes make mistakes. Great enthusiasm and stern self-criticism are not common bed-fellows. Pearl was sometimes involved in controversies and not always on the winning side. He would scarcely have been so lovable a man and had so many friends on both sides of the Atlantic had he been the ideal man of science of fiction. His general influence on the development of biometry has been great and salutary. His death is a serious loss to science.

MAJOR GREENWOOD.

Prof. J. H. Smith

THE death took place on December 24 of Prof. J. H. Smith, formerly head of the Mechanical Engineering Department at the College of Technology, Belfast. Prof. Smith studied at the Royal College of Science, London, and afterwards at Victoria University, Manchester, where he carried out important researches on the fatigue of metals under the late Prof. Osborne Reynolds. His first appointment was to Sunderland Technical College, where he was head of the Department of Civil and Mechanical Engineering for a period of two years.

Going to Belfast in 1905 as head of the Mechanical Engineering Department in the College of Technology, he found the present building just completed, and his first task entailed the equipment of the engineering laboratories and workshops. His careful planning and inventive genius resulted in the production of laboratories, etc., which were opened by the late Prof. Perry in the year 1911, and described by him as the finest he had ever seen. A description of the laboratories appeared in *Engineering* at the end of 1911.

Technical education at this period was in its infancy in Ireland, and Smith took a leading part in organizing engineering courses not only for the Belfast College but also for those in the provinces.

Smith's fertile brain was continually engaged on research problems, and the results of his many investigations on fatigue of metals, which he continued in Belfast, appear in the publications of the Iron and Steel Institute. The ability which he possessed in applying theory to practice was recognized by many engineering firms, and he was continually engaged in the investigation of practical engineering problems. Chief amongst these was his investigation of the vibration in double reduction geared turbine-driven ships, undertaken at the request of Messrs. Workman, Clark, Ltd., Belfast.

He patented a "Nodal" arrangement which eliminated vibration and which was applied to many famous ships. A fine tribute to this work was paid by Prof. A. L. Mellanby of Glasgow in a recent address to the Institution of Mechanical Engineers, entitled: "Fifty Years of Marine Engineering". During the War of 1914-18 he reorganized the College workshops and a large quantity of valuable munitions was produced.

Prof. Smith took a leading part in cementing the union between the Technical College and Queen's University, Belfast. He built up an excellent degree course in his department, and many of his students proceeded to investigations leading to higher degrees under his direction. He retired in 1938, and Queen's University showed its recognition of his outstanding work in engineering by conferring on him the honorary degree of doctor of science.

As a teacher Smith was in a class by himself, and his passing will be regretted by that large band of engineers who during a period of thirty-three years were enabled to benefit from his lectures.

F. V. WARNOCK.

Viscount Wakefield, G.C.V.O., C.B.E.

By the death on January 15 at the age of eighty-one of Viscount Wakefield, the world has lost an industrialist and philanthropist whose benefactions, apart from support to hospitals and similar institutions, have played a considerable part in the development of aviation. Early in the century he was urging the importance of aviation, both commercially and in other spheres, to the British Empire, and he gave financial support to long-distance flights between various points in the Empire, notably those by Sir Alan Cobham from Great Britain to Australia and back, and those to Cape Town and back by Mollison and by Miss Amy Johnson, whose death occurred on January 5 last. It would be a grave error to look upon these flights as simply attempts at record breaking. They were planned with the project for linking up the Empire by air in mind, and they involved long and intensive preparation and investigation, in design and other directions, the fruits of which are of permanent value.

Lord Wakefield also supported aeronautical studies through the Institution of Aeronautical Engineers, of which he was an honorary member, by the gift of an annual gold medal for the best invention relating to safety in flight; and he established Wakefield Scholarships at Cranwell for R.A.F. cadets.

In the allied fields of motoring and motor-boat racing, Lord Wakefield gave generous aid, which again, though directed in the first place to the achievement of new records, has had a significant influence on design from the point of view of efficiency.

Among Lord Wakefield's other benefactions may be mentioned the reconstruction of the rooms of the British Academy at Burlington House, a guarantee, originally anonymous, of £50,000 to the trustees of the British Museum to enable them to purchase the Codex Sinaiticus, and a gift of £25,000 in aid of the Empire research work of the Imperial Institute.

Mr. F. W. Young, C.B.E.

THE death is reported of Mr. Frank W. Young, lately of the Department of Education for Scotland. Mr. Young, who was in his ninetieth year, was a native of Dundee and studied at the Royal College of Science in the days of Tyndall, Huxley and the elder Frankland. In 1877 he was appointed science master in the High School, Dundee. In those days systematic teaching of science in schools was an innovation, and the laboratory which Young established must have been one of the first school science laboratories, if not the very first, in Scotland. He had an almost boyish enthusiasm for his subject, which quickly won the hearts of the boys whom he taught, and not a few of them afterwards adopted a scientific career.

Among the more distinguished of his pupils were the late Sir James Walker, professor of chemistry in the University of Edinburgh, Prof. Alexander McKenzie, emeritus professor of chemistry in the University of St. Andrews (University College, Dundee), and Dr. W. T. Calman, formerly keeper of zoology in the British Museum (Natural History). In 1900 he was appointed one of H.M. inspectors of schools, and from then on he exercised a very great influence on the development of science and technical teaching in Scotland. While in Dundee he was one of the founders of the Dundee Association for the Promotion of Technical Education, which later became merged in the Scottish Association for Technical Education, of which he was the first honorary secretary. In 1917 he was appointed to take charge of the scheme for the training of ex-Service men in the universities and technical colleges of Scotland. He retired in 1924. One of his "old boys" who passed through his class-room well over half a century ago writes: "Frank Young was a great administrator, whose work has left its mark on Scottish education, but I think he was still greater as a schoolmaster. I have not met more than two or three scientific men who seemed to me to have his aptitude for teaching boys."

WE regret to announce the following deaths:

Dr. E. Baker, the author, and former director of the University of London School of Librarianship, on January 18, aged seventy-one.

Mr. H. W. Macrosty, O.B.E., president of the Royal Statistical Society, and formerly of the Board of Trade, on January 19, aged seventy-six.

Lieut.-Colonel J. M. Mitchell, formerly secretary of the Carnegie United Kingdom Trust, on December 25, aged sixty-one.

Mr. F. T. Paul, a distinguished surgeon and emeritus professor of medical jurisprudence in the University of Liverpool, a past president of the British Medical Association, on January 17, aged eighty-nine.

Prof. Miles Walker, F.R.S., emeritus professor of electrical engineering in the University of Manchester, on January 22, aged seventy-three.