

Obituary.

PROF. ALBRECHT KOSSEL.

PHYSIOLOGICAL chemistry has suffered a severe loss at the death of Albrecht Kossel, emeritus professor of physiology in the University of Heidelberg and director of the Institute for Protein Investigation in that city. He was in his seventy-fourth year, and died after a very brief illness on July 5.

Kossel was (with Baumann and Thierfelder) one of the most distinguished pupils of Hoppe-Seyler. After being assistant to the latter at Strasbourg, he spent some years at Berlin, occupied the chair of physiology at Marburg from 1895 until 1901, and then migrated to Heidelberg. A physiologist by training and a medical graduate, he devoted his researches almost entirely to chemical subjects; both as an investigator and as editor of the *Zeitschrift für physiologische Chemie* for more than thirty years, he was one of the leaders in the new science of biochemistry. His earlier investigations were concerned with the nucleic acids; he recognised xanthine and hypoxanthine as among their constituents, and discovered adenine. The sugar group was detected in yeast nucleic acid (1893) and in thymus nucleic acid (1894); the pyrimidine derivative thymine was discovered in the same year.

Turning his attention to the simplest proteins of fish-roe, the protamines (first investigated by Miescher), Kossel recognised their high content in arginine and the other amino-acids termed by him "hexone" bases. Thus salmine was investigated in 1896, and in the same year the important amino-acid histidine was discovered by the hydrolysis of histone. Next he worked out the classical method for the quantitative separation of the hexone bases by means of phosphotungstates and silver compounds. Thus at the beginning of the century Kossel had reached a position of pre-eminence by his utilisation of the exact methods of organic chemistry, in contrast to the less precise processes of older physiologists.

Arginase, the ferment which hydrolyses arginine to urea and ornithine, provided perhaps the most physiological of Kossel's investigations, carried out in conjunction with H. D. Dakin, his distinguished English pupil. Later he discovered decarboxylated arginine (agmatine) in herring-roe, and based a most convenient method for preparing that amino acid on the use of naphthol yellow (flavianic acid).

Kossel naturally received many distinctions; in 1907 he presided over the International Congress of Physiology at Heidelberg; in 1910 he was awarded the Nobel prize for medicine. He received honorary degrees from several universities, including Edinburgh, where in 1923 he was recognised as the leading representative from Germany at the Physiological Congress of that year. He visited London so recently as April last as a delegate to the Lister Centenary Celebrations. Many British friends will mourn his loss. Kossel leaves one son, Walther, the well-known professor of theoretical physics at Kiel, and one daughter.

The words which Kossel wrote of Hoppe-Seyler are peculiarly applicable to himself: "Always ready to acknowledge the merits of others, he could not understand attempts to import personal motives into science. . . . For years he strove to secure the foundation of separate chairs of physiological or medical chemistry in German universities, in order to ensure the independent development of these subjects." Such was his character; such was his life's work.

G. B.

SIR WILLIAM ASHLEY.

SIR WILLIAM ASHLEY, whose death we regret to record, was an economist of note. He studied history at Oxford and afterwards went to Germany, where he came under the influence of Schmoller, which gave an impetus to most of his later work. For a period he held various university posts in the United States of America, returning to England to found the Commerce Department at the University of Birmingham, where he was professor, dean of the Faculty of Commerce, and later Vice-Principal of the University. On his retirement he settled at Canterbury and had several inquiries in hand, but these expectations were frustrated by a serious illness which terminated fatally on July 23.

Sir William Ashley was a realist in economics. He established his reputation early by his remarkable "Introduction to English Economic History." This book occupies a special place in British economic literature. While it is true that Archdeacon Cunningham had made important contributions earlier in the same field, Ashley's work had special qualities. He emphasised the comparative treatment of economic development, and showed the general continuity of that of England with the results already arrived at by a number of German writers. The book—considering that it was written in America—may be regarded as in many respects a *tour de force*. It opened a new field and almost set a new standard for British investigators. Also it opens up an interesting problem. Ashley traced the development of English economic life in the Middle Ages. The effect of the centralising power of the Church was towards a uniformity of organisation and of methods in different countries. With the bursting forth of distinctive national peculiarities at the beginning of the modern period, national diversity replaced uniformity, and one wonders how Ashley's method would have dealt with England of the sixteenth and seventeenth centuries or the period of the industrial revolution—alas, one wonders vainly.

Though Ashley was primarily an economist and historian, he had a great appreciation of scientific method and scientific discovery. This showed itself in an interesting way. When he was establishing the Faculty of Commerce at Birmingham, he was greatly impressed with the idea that the student who looked forward to a career in a manufacturing industry needed not only to know the economic issues involved and the commercial

technique, but also something, at least, of the main scientific ideas which lie at the root of the actual manufacturing operations, and in the conditions of study he made provision for this.

One important aspect of Ashley's work was the part he took in public affairs where economic issues were involved. More than twenty years ago he took part in the Tariff Reform controversy, and since the beginning of the War he was an able and energetic member of a great number of important commissions and governmental committees. Amongst these may be mentioned those on the Cost of Living and the Balfour Committee on Industry and Trade. In this way during the last twenty years Ashley spent himself freely, for, as a rule, when he accepted membership of a committee, he himself undertook a considerable amount of research on aspects of the terms of reference, while he was a valuable member in initiating investigations to be carried on on behalf of the committee. He had the gift of seizing what were the central points of an inquiry and of drawing together the data that existed bearing upon them. Then (as always happens in any inquiry which is worth making) there were gaps, and he was both fertile and happy in devising plans for bridging these so far as it was possible in the time available. For these reasons a great deal of Ashley's work—and that not the least valuable—is known only to a few, and it is fitting that this side of his labours, as well as his better known work, should be recorded.

W. R. SCOTT.

MR. J. H. REYNOLDS.

MR. JOHN HENRY REYNOLDS, whose death occurred on July 17 at the advanced age of eighty-five years, may be truly described as one of the great pioneers of technical education in Great Britain. Though his work was wrought chiefly in Manchester, his influence was felt throughout the whole of the United Kingdom, and even beyond the seas, and it is not too much to say that he is to be numbered among those to whose early vision and service we are indebted to-day for the great development in the teaching of technology and applied science during the past forty or fifty years. Mr. Reynolds' work began in days when the need for technical education had not been realised, save by an enlightened few, and he steadily set himself to the task of awakening interest in what he knew to be a thing of vital import to the industries of Great Britain—the provision of the highest instruction and training in science and technology for the equipment of those who are to guide and direct and, by the use of special knowledge, develop industrial work. He was in the highest sense an idealist, and in his early outlook visualised a national system of education which would afford a means of consecutive training from the elementary school to the highest work of the university for students of proved ability and application, however humble their circumstances. That he lived to see the ful-

filment in large measure of his ambitions was due, in part at least, to his own strenuous endeavours and clear vision.

Mr. Reynolds became secretary to the Manchester Mechanics Institution in April 1879, at a time when, to quote his own words, it "had declined in numbers and influence, and was heavily indebted financially." But under his wise administration, and with the help of generous firms and individuals, the work developed steadily, and in 1902 the present College of Technology building was opened—the direct outcome of his untiring energy, devotion, and far-sightedness through some twenty-three years. In 1905 the Faculty of Technology in the University of Manchester was established in the College, and Mr. Reynolds became the first dean of the Faculty. When in 1912, having attained the age of seventy, he relinquished his task, the College stood as a worthy expression of his ideals and a lasting memorial of his life work, for it had become a centre of the highest type of technological education and research, with a reputation that was world wide.

Mr. Reynolds' distinguished services in the cause of technical education were recognised by the Association of Technical Institutions by his election to the presidency of that body in 1913. He also took a prominent and active part in the work of numerous other educational organisations.

A fearless fighter on behalf of any cause he espoused, he was yet gentle and considerate in all his dealings with others. He possessed a ready sympathy and a kindliness of heart that endeared him to all whose privilege it was to labour with him. He will be remembered by those who knew him as a man who not only cherished ideals—ideals of truth, human brotherhood, and liberty—but who sought also with untiring zeal to work out those ideals in his daily life.

J. A. BINKS.

We regret to announce the following deaths:

Prof. Alexander Backhaus, formerly professor at Göttingen and director of the Agricultural Institute of the University of Königsberg, and from 1906 until 1913 director of the Agricultural School at Montevideo, aged sixty-one years.

Mr. C. W. Daniels, formerly Director of the London School of Tropical Medicine and a member of the Royal Society Malaria Commission to India and Central Africa, on Aug. 6, aged sixty-five years.

Dr. Henry Mills Hurd, emeritus professor of psychiatry at the Johns Hopkins University and president in 1899 of the American Medico-Psychological Association, who was editor of the *American Journal of Insanity* and the *Johns Hopkins Bulletin*, on July 20, aged eighty-four years.

Prof. V. Lenher, professor of analytical and inorganic chemistry in the University of Wisconsin, known for work on the chemistry of gold, tellurium, and selenium, on June 12, aged fifty-three years.

Dr. Erwin F. Smith, pathologist in charge of the laboratory of plant pathology in the U.S. Bureau of Plant Industry since 1886, and president in 1910 of the American Botanical Society, an authority on bacterial diseases of plants, on April 6, aged seventy-three years.