

OBITUARY.

JOHN PERCY, third son of Mr. Henry Percy, was born at Nottingham on the 23rd of April, 1817. He received his early education from the Reverend Charles Fletcher, of Southwell, in Nottinghamshire, under whose guidance the inclination of his mind in the direction of chemical and physical studies, which soon became apparent, was carefully and systematically trained. Between 1834 and 1836 he studied in Paris, where he came more particularly under the influence of Gay Lussac, Chevreul, and Thenard, the great teachers of physics and chemistry of the day. Subsequently he proceeded to the University of Edinburgh, where he devoted himself to medical studies, and graduated M.D. in 1839, receiving a gold medal for a thesis on the detection of alcohol in the brain, in cases of alcoholic poisoning, which was subsequently published. He also received a medal for proficiency in botany, and a third for general merit. After the close of his academical career, he settled down to medical practice in Birmingham, and became physician to the Queen's Hospital in that city, where he attained to considerable professional eminence, having, in addition to the ordinary duties of his office, carried out some elaborate pathological researches, the value of which was recognized by his election to the Fellowship of the Royal Society in 1847. Other researches in mineral and metallurgical chemistry were not, however, less actively pursued, and during his residence in Birmingham Dr. Percy was largely engaged in the study of the properties of nickel, manganese, and other allied metals, and contributed in no small degree to the foundation of the modern method of nickel and cobalt extraction, whereby these metals are obtained of any desired degree of purity. He also made the experiments on the use of sodium hyposulphite for silver extraction, which process was afterwards applied on the large scale by the late Bergrath von Paterna, in Bohemia; and in subsequent modifications, by Russell and others, is now becoming a formidable rival to amalgamation as a means of treating refractory silver ores in the Western States of America. The effects of phosphorus upon copper formed another subject of his early investigation, and subsequently a method of refining founded upon his experiments was practically developed at Chatham Dockyard by

his pupil and assistant, Mr. William Weston, now the chemist to the Admiralty.

In 1851, upon the foundation of the Royal School of Mines, by the late Sir H. T. DeLaBeche, Dr. Percy accepted the position of lecturer upon metallurgy, and Metallurgist to the Museum of Practical Geology, which offices he retained until 1879, having given up medical practice on leaving Birmingham. During these years he delivered a long course of lectures yearly, besides superintending a large teaching laboratory, and a smaller advanced one devoted to research purposes; and in one form or another, either as pupils or assistants, most of the metallurgical chemists who have risen to eminence since 1851 came under his influence. The first important work undertaken in his private laboratory was the systematic analysis of the collection of the iron ores of Great Britain, made for the Great Exhibition of 1851, by the late Mr. S. H. Blackwell, who contributed a sum of £500 for the expenses, which amount was largely supplemented by Dr. Percy, the work having employed for several years a succession of chemists, including Messrs. R. Smith, E. Riley, Allan Dick, John Spiller, Charles Tookey, and W. J. Ward. The results were afterwards published in the Memoirs of the Geological Survey, but no part of the cost, except that of fuel and water in the laboratory, was met from public funds. Large numbers of original experiments for the illustration of his volumes on metallurgy were also carried out both by his regular assistants and by several of his old students. Among the results obtained in this way were the discovery of the method of producing aluminium from cryolite, and the alloys known as aluminium bronzes, and the relation between the composition of the pig-iron used and the metal obtained in the Bessemer process. Very extensive researches were also carried out for the War Office committee on iron armour-plates, and subsequently for the Admiralty committee on steam-boiler corrosion. Doctor Percy also served on the Royal Commission on Coal in the United Kingdom, and on that on Spontaneous Combustion in coal-laden ships. He was also a member of the Royal Commission on the Ordnance Store Department, presided over by Sir James Stephen, whose report was published in 1888.

Upon the death of the late Dr. D. B. Reid, he was appointed superintendent of ventilation to the Houses of Parliament, and on the foundation of the department of advanced artillery studies at Woolwich, now the Artillery College, he became lecturer on metallurgy, which offices he held until his death.

The greater part of his life was, however, devoted to the pro-

duction of his great systematic treatise on metallurgy, of which five volumes appeared at intervals between 1861 and 1880, and which, though incomplete, remains a remarkable monument to his genius and industry. The volume on iron and steel is, after twenty-five years, still in demand, as, although in great part obsolete as regards processes in use, it possesses a high value as a magazine of historical information, and as a record of original research.

A new edition of this volume was in course of preparation, and it is believed that a considerable portion has been left nearly ready for publication. This work earned for its author the award of the Howard Prize in 1887, which was expended at his request upon a microscope equipped under Dr. H. C. Sorby's direction, with all necessary appliances for the study of the micro-crystalline structure of metals, to be placed, under the direction of the Council, at the disposal of members of the Institution desirous of undertaking researches of this kind, in which he felt great interest. In 1863 he was appointed by the Trustees of the British Museum to the Swiney Lectureship in Geology, and during his four years' tenure of office he delivered a systematic course of lectures on chemical geology, which did much to popularize the study of a subject which at that time received very little attention from English geologists.

Dr. Percy was a keen student of photography in the earlier days of the collodion processes, and was one of the founders of the Photographic Society, having served as a Vice-President in 1857. He rendered important services in this connection as a member of the committee on fixing and toning prints, whose report may be said to have formed the basis of photographic practice up to a comparatively recent date. He was an artist of very considerable ability, and for many years was in the habit of going on sketching tours with artist friends, particularly with the late Mr. C. Landseer, R.A., and Mr. E. W. Cooke, R.A. His knowledge of English water-colour art was very great, and his collection illustrating its history is one of the most complete in existence.

Dr. Percy was elected an Honorary Member of the Institution on the 14th of May, 1872, and of the Iron and Steel Institute in 1875. He received the Bessemer Medal of the latter body in 1876, and served as President in 1885-86. The meetings during his term of office were of exceptional interest, no small part of which was due to the original and suggestive addresses delivered at each successive occasion from the chair. After the close of his presidential term, Dr. Percy's health gradually failed, and he was

unable to attend the opening meeting of this Institution in November 1887, on the occasion of the award of the Howard Prize. Although confined to his house for nearly two years, no symptoms of any immediate danger were apparent until the commencement of June, 1889, when he was seized with an alarming attack of cardiac inflammation, which, though not immediately fatal, prostrated him so completely, that he never rallied again, and passed away quietly on the 28th of that month, being then in his 73rd year. Although very weak, he retained full command of his faculties to within a very short time of his death, and was thus enabled to learn that the Council of the Society of Arts had awarded him the Albert Gold Medal, the highest honour in its gift, and the announcement was made public in a very feeling notice in the Journal of the Society, which appeared on the day of his death.

WILLIAM CHRISTOPHER BENNETT, eldest son of Ignatius Bennett, of Rathmines, co. Dublin, was born on the 4th of July, 1824. He was articled to Mr. P. Griffin, who was then managing the completion of the boundary survey of Ireland, under Mr. (afterwards Sir Richard) Griffith, Bart. Mr. Bennett was employed on territorial and railway surveys for local works and measurement of artificers' works until the year 1845. At this period he was employed in the field on the survey of the proposed line of railway from Limerick to Belfast, the longest line at that time projected in Ireland; and was charged with the preparation of the plans at the office in Dublin.

Early in 1846, he entered the service of the Irish Board of Works in the Drainage Commission, and was employed on surveys and works of the Kenman Tarka and Inmy districts; but in 1847 he was transferred to Mayo, when he took charge of the Castlebar and other lakes in the Mullafarry and Balla districts, under Mr. Frederick Barry, and executed some very important works in a highly satisfactory manner, eliciting on several occasions the warm approval of Colonel (afterwards Sir H. D.) Jones, with Mr. Commissioner Mulvany, who remarked in a jocular way when inspecting the works,—“ You will be a Commissioner, Mr. Bennett, yourself some day.” And his prediction has been fulfilled.

Mr. Barry, his chief, to whose great kindness he always attributed his advances in life, at this time became a warm friend; and on one occasion, for several months Mr. Bennett acted as District Engineer, in charge of all the drainage works in Mayo, having