OBITUARY NOTICES.

Henry Briggs, O.B.E., D.Sc.

THE premature and unexpected death of Henry Briggs in a London nursing home on August 26, 1935, was a loss to the Society of one of its active members, and to the University of a widely known and highly esteemed professor.

Henry Briggs was born at Stott Park, Lakeside, Lancashire, in 1883. His early education was at Bradford. At the age of sixteen he gained a National Scholarship, and Queen's Prizes in mathematics and applied mechanics, which enabled him to proceed to the Royal School of Mines, of which, after experience in several mines, he passed as Associate, afterwards receiving the very exceptional distinction of Honours Associate. He then served as Research Assistant and Demonstrator at the School of Mines under a very inspiring chief, Sir Clement le Neve Foster. In 1905 he became Lecturer in Mine Surveying at Birmingham University under Professor (now Sir Richard) Redmayne, and also Lecturer in Mining for Warwickshire. From these positions he was appointed in 1907 the first Lecturer in Mining at the Heriot-Watt College, Edinburgh, and soon began to make his mark as a teacher and investigator, gathering round him pupils and other friends, and developing vigorously the organisation and equipment of his department. In 1919 his lectureship was converted into a chair, and in 1924 Mr James Hood, Chairman of the Lothian Coal Company, who was impressed by the value of Briggs's work, presented to the University an endowment for a University Chair of Mining, which was held by Briggs, along with the Chair in the Heriot-Watt College, till his death.

Briggs was at no time a mere specialist. On looking at the long list of papers which he published, what is perhaps most striking is the variety of the subjects which he had investigated and written about. This variety brought him into contact with mining engineers and investigators of mining subjects throughout the country; and the Edinburgh school of coal-mining soon began to take a high place as a centre of knowledge and training place for mining engineers.

In a short memoir such as the present it would be impossible to give an adequate account of Briggs's many investigations, but I may perhaps refer to some in which I was specially interested. Before the War Briggs had begun to study the physiology of respiration in its relation to mining and mine-rescue apparatus, and we made some joint experiments on this subject at Newbattle Colliery, where ample facilities were given us by the management. As a development of these observations and others made in his laboratory with a bicycle ergometer, Briggs discovered that in men who are not in good physical condition the percentage of carbon dioxide in expired air does not rise, and may fall, during the increased breathing produced by muscular exertion, unless oxygen is added to the inspired air, whereas with men who are physically fit there is a very marked rise, which is not added to when oxygen is breathed. The physically fit man breathes, therefore, less air with the same physical exertion, and this is apparently due to active secretion of oxygen inwards by the lungs. On those observations Briggs based a method of testing recruits for physical fitness, and this was used in Edinburgh during the War.

A subject to which he gave much attention was the development and proper use of self-contained breathing apparatus for use in poisonous or irrespirable air in mines. A central mine-rescue station was established on a site off the Grassmarket, belonging to George Heriot's Trust, and this not only served the Lothian mining district but led to the establishment of efficient stations in other Scottish mining districts. New forms of breathing and reviving apparatus were also developed and tested at the rescue station or at the Royal Infirmary in connection with medical investigators there.

During the War a small Committee on Mine-rescue Apparatus was appointed by the newly appointed Department of Scientific and Industrial Research. Briggs took a leading part in the work of this Committee, and carried out numerous experiments published by it in three successive Reports.

Another subject on which he contributed several papers was the adsorption of gases by coal and other substances, and the sudden outbursts of gas which sometimes occur from disintegrated coal which is highly charged with adsorbed methane.

Further subjects on which Briggs wrote valuable papers were surveying, including the surveying of bore-holes; the laws of surface subsidence brought about by mining; the laying of dust on mine roadways; and testing for oxygen with a flame-lamp. One of his last experimental papers, and one of several published in the *Transactions* and *Proceedings*

of the Society, was on the contraction which is produced in coal when adsorbed gas escapes. Mention should also be made of a number of interesting historical notes and several short popular books on mining.

Early in his scientific career Briggs married Myfanwy Williams, daughter of a well-known Welsh writer; and she became almost as well known as her husband at scientific meetings south of the border and as a genial hostess in Edinburgh. Deep sympathy for her is associated with the widespread regret caused by her husband's death.

He was elected a Fellow of the Society in 1916, and served on the Council from 1923 to 1926.

J. S. H.