

For fifty years Heaviside lived practically a hermit's life at Torquay. He was a good correspondent, but very difficult to approach personally. In his later years Dr. and Mrs. Searle of Cambridge were practically his only friends. The Government gave him a civil list pension, and about twenty years ago Mr. Asquith increased it. The Institution of Electrical Engineers took a filial interest in him, and it is gratifying to remember that during the last few years of his life the Institution kept in constant touch with him. In the preface to his "Electrical Papers" he says that the question "Will it pay?" never interested him. He was, he said, mainly actuated by philanthropic motives. Looking back—as he has probably saved the Government of every large civilised country in the world millions of pounds in the costs of their telephone schemes—he was truly a philanthropist. He died at Torquay on Tuesday, February 3, and was buried on Friday, February 6, in the same grave as his father and mother, only relatives and Mr. R. H. Tree, representing the Institution of Electrical Engineers, being present. Thus ended the life of one who has left a record of work which has proved of great value to the world.

A. RUSSELL.

PROF. N. KULCHITSKY.

THE death of Prof. Nicholas Kulchitsky on January 30, at the age of sixty-nine, has removed one of the foremost of Russian histologists. For many years he occupied the chair of histology at the University of Charkov, where he accomplished most of his researches. His methods of fixing and staining tissues are now in universal use—those for smooth muscle are particularly well known. He devoted much attention and made numerous important observations on the distribution of connective tissue in the intestinal tract and other organs. His text-books of histology are standard works and at present are commonly used by Russian medical students. That his work was well known outside his own country is shown by the fact that he was an honorary member of the Anatomical Society of Great Britain and Ireland.

Prof. Kulchitsky was a man of wide interests and sympathies. He responded whole-heartedly to the request of his government for his expert assistance in the work of the Ministry of Education, and for a number of years he held the post of administrator of education in the Charkov district and later in the Petrograd district. During the period just before the first revolution he held the post of Minister of Education. During the period of upheaval he suffered severely from the hardships attending revolution and counter-revolution: in order to maintain his family and himself he was reduced to hard manual labour. That he was able to live through these hardships, at his advanced age, is evidence of his characteristic power for hard work and perseverance. At length he was fortunate enough to embark on a British refugee ship together with remnants of Wrangel's forces, and this brought him to London, where he found shelter and opportunities for continuing his scientific endeavours.

During the brief time of less than three years, as lecturer in the Department of Histology at University College, London, Kulchitsky was largely concerned with the teaching of students, but he also completed several

important and significant researches. Not the least of these is that in which he showed that voluntary muscles are supplied by both medullated and sympathetic nerve fibres, the former being attached to the large muscle fibres, whilst the latter supply small muscle fibres. These facts led to the physiological and clinical investigations of the late Prof. Hunter, who showed that the smaller fibres are responsible for the maintenance of tone in voluntary muscles. The work has found important applications in the operation of dividing the sympathetic nerves supplying the muscles affected in cases of spastic paraplegia.

Prof. Kulchitsky and Prof. J. I. Hunter were associated in their work, and it is indeed a sad coincidence that the untimely death of young Prof. Hunter should so soon have been followed by the unfortunate accident, a fall down an elevator shaft at University College, which led to the death of Prof. Kulchitsky.

The loss of Prof. Kulchitsky is deeply mourned by all his associates and friends at University College and by the scientific world in general. G. V. A.

DR. DAVID B. SPOONER.

THE Archæological Department of the Indian Government has suffered a heavy loss by the death at Agra on January 30 of Dr. David B. Spooner, who had been Deputy Director-General of Archæology in India since 1919 and had acted on one occasion as head of the Survey during Sir John Marshall's absence on leave. Dr. Spooner's connexion with the Department commenced at the opening of the present century, and there can be no doubt that by his own efforts and achievements he did much towards giving practical effect to the policy of conservation and research inaugurated by Lord Curzon in 1902. Up to that date, official efforts to preserve the monuments of past ages and to investigate the hidden remains of antiquity were "spasmodic, desultory, unscientific and planned on a penurious scale." With the appointment of a Director-General of Archæology and a staff of able assistants, among whom Dr. Spooner was deservedly considered one of the most capable, there began that enormous development of historical and archæological study which has been one of the most striking features of the twentieth century in India.

Dr. Spooner did excellent work as Superintendent of the difficult Frontier Circle; but his name is more likely to be remembered in connexion with his excavations at Pataliputra, now known as Patna, the ancient capital of the Maurya dynasty of Magadha, and with the somewhat startling theory which he advanced as to the origin of the family of Chandragupta and his successors. The fact that the palace of the Mauryas, discovered near the modern village of Kumrahar, was almost certainly designed in imitation of the Persian palace at Persepolis, together with other traces of Iranian influence upon the practice of the Mauryan court, led Dr. Spooner to assert that Chandragupta and his successors were of Persian origin. This theory, which he published in the *Journal of the Royal Asiatic Society*, has been accepted by no one except, possibly, certain Parsi scholars, who were naturally gratified at the idea of a "Zoroastrian period" of Indian history. But while no one disputes the fact that Persian institu-

tions were familiar to the people of northern India in the fourth and third centuries B.C., the assumption of an Iranian origin for the rulers of Magadha has no historical warranty at present, and involves the rejection of important traditional and literary evidence as to their descent.

Dr. Spooner's research work at Kumrahar needs no commendation, and he was probably led into his novel speculations about the Mauryas by his intense enthusiasm—the very quality which, combined with sedulous activity, rendered him so valuable a servant of the Government of India. *Ave atque vale.* S. M. E.

WE regret to announce the following deaths:

Sir Anderson Critchett, Bart., K.C.V.O., surgeon-oculist to the King, first president of the Council of British Ophthalmologists, president in 1894 and 1899 of the Ophthalmological Society of the United Kingdom and in 1913 of the Ophthalmic Section of the International Medical Congress held in London, on February 9, aged seventy-nine.

Dr. Horace T. Brown, F.R.S., distinguished for his work on the chemistry of carbohydrates, on the assimilation of atmospheric carbon dioxide by leaves, and on gaseous diffusion through small apertures, on February 6, aged seventy-six.

Current Topics and Events.

WIDESPREAD interest has been aroused among the general public by the publication of Prof. Dart's account of the discovery of *Australopithecus africanus*, or the Taungs Man, as the Press has elected to call him, in last week's issue of NATURE. Although the discovery dated from November last, the news had been carefully guarded, and it was only when a cable was received in England on February 4, and appeared in the Press on the following day, on the eve of the publication of the article in NATURE, that it became known. Notwithstanding the absence of precise details, the importance of the news was at once recognised by the leading London and provincial daily papers, which quoted freely from Prof. Dart's article as soon as it was available. In another part of this issue, Sir Arthur Keith, Prof. G. Elliot Smith and Dr. W. L. H. Duckworth discuss the significance of the discovery.

THE debt which the modern civilised world owes to science has seldom been acknowledged so generously, or expressed so eloquently, by responsible statesmen as by President Coolidge and by Mr. C. E. Hughes, Secretary of State, in their addresses to the recent meeting of the American Association for the Advancement of Science at Washington, D.C., which have been printed in a recent issue of *Science*. No other single agency, says the President of the United States, has relied so much upon the work of men and women of science as has his government, which has been foremost in employing and most liberal in endowing science, although it cannot claim to have been "impressively liberal" to the scientific workers whom it has employed. The scientific work done under the administrative departments has, he says, been of enormous value to the whole people. Men of science are "the wonder-workers of all the ages"; the discoveries made by them have become commonplace because their number has paralysed the capacity of the mind for wonderment. Representatives of social and political organisations regard the march of science with awe, and sometimes with fear, when they ask themselves what will be the next revolution to which their schemes will have to be adapted; but the conviction that science works for the public weal, and that at the worst it saves life from being very monotonous, restores their confidence. It has taken endless ages to create in men the courage that will accept the truth simply because it is the

truth. Comparatively few men are sufficiently gifted to be able to use the scientific method in seeking for the truth, but they no longer fear the results to which it leads. Truth is essential, and therefore all encouragement should be given to men of science and of faith.

MR. HUGHES spoke on the value of science in promoting international co-operation and concord. Science may forge new and terrible weapons of destruction, but she is far more eloquent as she points to the wastes of strife, to the retarding of progress, and to the vast opportunities which are open to those peoples who will abandon mutual fears and destroy artificial barriers to community of enterprise. Each nation should collect, collate, and safeguard all data and records made within its territory, and should make them readily available to other nations. International co-operation in research is absolutely necessary, and both national research organisations and the International Research Council are doing good work and opening up a new era of international co-operation in science. Scientific method is needed in government, in making and administering the law. The scientific attitude of mind is needed because it comprises search for pure knowledge, distrust of phrases and catchwords, hatred of shams, willingness to discard outworn beliefs, and, above all, faith in humanity and zeal for the public good.

THE Right Hon. T. R. Ferens, High Steward of Hull, has presented to Hull the princely sum of 250,000*l.* as a nucleus towards a University College for the city. In his letter to the Lord Mayor announcing his intention of making the gift, Mr. Ferens stated that he had carefully consulted university professors and others interested in educational matters, and was satisfied that the time was arriving when Hull should join other cities, such as Birmingham, Manchester, Liverpool, Leeds, etc., in giving opportunities to its sons and daughters for higher education. We believe it was at the meeting of the British Association at Hull, when the retiring president, Sir Edward Thorpe, and the president, Sir Charles Sherrington, were the guests of Mr. Ferens, that the idea was first suggested. In addition to this magnificent gift, a new Art Gallery, costing something like 90,000*l.*, together with its site in the centre of the city, has been presented by Mr. Ferens.