to the Pre-Cambrian rocks and of Recent fossil bones, and on the mineralogy of natural radioactive substances, are too numerous to itemize. But it is important to mention his numerous popular expositions of radiogeology and the place of geology in human progress, for his facility of lucid presentation rivalled that of the old masters of geology. Davidson's capacity for organization, his ready acceptance of responsibility, and his complete indifference to his own well-being in the course of duty were well known to his colleagues. They became apparent to an international gathering in the success of the recent symposium which he organized in St. Andrews at extremely short notice on behalf of the International Association on the Genesis of Ore Deposits. On the evening of his death he had been busy with proofs of the 50 papers and the proceedings of the meeting. Few men can have lived so full a life and so greatly enjoyed the living of it.

Professor James P. Todd

PROFESSOR TODD, who died on November 10, was appointed lecturer in pharmacy in the Royal Technical College, Glasgow, in 1921. In 1937 he became the first professor of pharmacy in the United Kingdom, in the same college. From modest beginnings, his work prospered that he leaves to his successors a great school of biological sciences with more than four hundred students, a large staff qualified in a wide range of scientific disciplines, and eight academic chairs all tracing their foundation directly or indirectly to his inspiration.

A native of Glasgow, James Todd attended Albert Road School and received his early training in the old Glasgow and West of Scotland School of Pharmacy. His military service in the Medical Corps during the First World War in South Africa, India and Iraq gave him an insight into some of the problems of tropical medicine. After the war he resumed his studies and was awarded the qualification of Ph.C. in 1921. In collaboration with the late Professor Ellis, he then helped to establish the first degree course in pharmacy in Britain under the relevant ordinances of Glasgow University. The first students were enrolled in 1924. In the meantime, and often in difficult conditions, he commenced his personal research into the properties of the digitalis drugs which later led to his award of the degree of Doctor of Philosophy by Glasgow University.

His subsequent research always concerned practical problems of medical science and covered a wide field. During the Second World War the Department of Health for Scotland sought his help in preparing pyrogen-free saline infusion fluids, and this led to his contributions in the field of bacterial pyrogens. His work on blood transfusion led to the establishment of the West of Scotland Blood Transfusion Service. For many years he was honorary director of this service.

War problems also attracted him to study the treatment of burns (in collaboration with the Medical Research Council, then established at the Royal Infirmary). This work, in turn, brought him into contact with the problems of plastic surgery. The establishment of the chair of bio-engineering at Strathclyde can be traced directly to these early contacts with Mr T. Gibson, the plastic surgeon, who first sought his advice in attempting to find means of bringing science and engineering to bear on the practical work of the operating theatre.

After the war Todd served on a working party set up by the Minister of Food to examine the provision of facilities for the training of young people in the study of the properties and processing of foodstuffs. British vulnerability to food shortage had been highlighted during the war, and after consultations with the experts in this field Todd concluded that this subject merited designation as a scientific discipline in its own right. He established an associateship course (at honours degree level) and described the field of study as "Food Science". This was

the first course of its kind in the United Kingdom, and is believed to be the first use of this term applied to a degree level course in the world. This course led to the establishment of the chair of food science at Strathclyde in 1958, and the term food science is now used internationally and on both sides of the Iron Curtain.

For a man who has been the focus of so much initiative in pharmacy, food science, microbiology, pharmacology, pharmaceutical technology, biology and biochemistry, Todd was no academic tycoon. Unassuming in manner, his kindly, simple and tolerant ways disguised a fixity of purpose which was only apparent to those who knew him well, or who had the misfortune to oppose his vision. In these days when it is often difficult to distinguish a professor from a business man, he was one of the last of the great race of university characters. Of course, his unorthodoxy bred opposition. Time and again the ranks would close against him, only to find themselves outflanked by his mental and administrative dexterity. If his opponents were sometimes a little bewildered as to how he achieved his ends, they learned to respect him by his success.

He devoted countless hours to the Pharmaceutical Society, served on expert committees, worked as an examiner and, above all, made behind-the-scenes contributions to the establishment of the University of Strathclyde. This must wait for later appraisal, but it is pleasant to record that in 1964 his services to medicine were recognized by his election as an Honorary Fellow of the Royal College of Physicians and Surgeons, Glasgow.

J. HAWTHORN

Professor Douglas McKie

ONE of Britain's leading historians of science died on August 28, 1967. The son of a Scot, Douglas McKie was born on July 15, 1896, in Tredegar, Monmouthshire, where he was educated at the Grammar School. Intending to be a regular soldier, he entered Sandhurst and served as a lieutenant on the Western Front until he was severely wounded in 1917. He became a chemistry student at University College, London, in 1920, graduated in 1923, and in 1927 obtained his Ph.D. under F. G. Donnan for research on gas adsorption.

Already interested in military history, McKie soon acquired a taste for the history of science, and in 1925 he became a part-time assistant in the new Department of History and Philosophy of Science (as it is now called) at University College, London. A full-time appointment followed, and eventually, from 1957 to 1964, he was professor and head of the department.

McKie will be chiefly remembered for his studies of seventeenth and eighteenth century theories of heat, combustion and related topics; of the men responsible for the advances in this field; and of the institutions to which they belonged. Only his principal works can be mentioned here. In 1935, he published *The Discovery of Specific and Latent Heats* (with N. H. de V. Heatcote) and *Antoine Lavoisier, the Father of Modern Chemistry*, which contains a detailed account of Lavoisier's chemical researches. There was then no British periodical devoted to the history of science; McKie was a founder of *Annals of Science*, and as its principal editor from 1936 until his death he exercised a great and beneficial influence on the subject. Early volumes contain his masterly series of "Historical Studies in the Phlogiston Theory" (with J. R. Partington) and the first part of his long study of Black's unpublished chemical lectures, completed only in 1967. He was also a foundation member of the Society for the Study of Alchemy and Early Chemistry; his account of the combustion theories of Boyle, Hooke and Mayow is in Volume 1 of its journal, *Ambix*.

During the 1939-45 war, McKie was attached to the Department of Chemistry of University College, but he found time to publish in 1942 a valuable account of

Newton's chemical theories. He wrote several papers about Priestley, but in later years he concentrated on the French and Scottish schools. All aspects of Lavoisier's career are considered in *Antoine Lavoisier, Scientist, Economist, Social Reformer* (1952), and McKie was largely responsible for negotiations leading to the preservation in France of Lavoisier's apparatus. For this and other services to the Académie des Sciences he was appointed Chevalier de la Légion d'Honneur. The Royal Society is also indebted to him for a detailed discussion of its origins, published in 1960. A lover of books, McKie had a great knowledge of the bibliography of science, and he wrote scholarly introductions to reprints of works by Rey, Boyle and Lavoisier, and to a finely produced transcript of a set of notes taken during Black's lectures.

McKie was one of the first full-time historians of science in any country, and he lived to see the subject attain full academic and professional status. He received many honours, but he probably derived most satisfaction from the knowledge that former students of his department are now teaching the history of science in universities, colleges and schools throughout Britain and also overseas.

W. A. SMEATON

University News :

London

DR E. H. ANDREWS, reader in science of materials at Queen Mary College, has been appointed to the chair of materials tenable at that college.

Appointments

PROFESSOR MICHAEL ABERCROMBIE has been appointed director of the Strangeways Research Laboratory as from July 1, 1970. He will succeed Dame Honor Fell.

THE following appointments have been made to the World Meteorological Organization Secretariat: *Dr Kaare Langlo*, at present chief of the Technical Division, is to be director of the Scientific and Technical Department; *Dr Hermann Sebastian*, at present chief of the Technical Co-operation Division, is to be director of the Technical Co-operation Department; *Dr G. G. Tarakanov*, at present special adviser on scientific matters to the secretary-general, is to be special assistant to the secretary-general for technical policies and programmes; *Mr B. Zavos*, at present chief of the Planning and Co-ordination Group at the National Environmental Satellite Centre, Environmental Science Services Administration, Washington DC, is to be special assistant to the secretary-general for World Weather Watch Management and Co-ordination.

Announcements

THE following have been made honorary fellows of the Royal Aeronautical Society: *Sir George Dowty*, chairman and managing director of the Dowty Group Ltd., in recognition of his services to aviation, especially in the design and development of aircraft accessory systems; *Professor H. J. Van Der Maas*, professor of aeronautics at the Technological University of Delft, in recognition of his contributions to aeronautics, especially in advancing international co-operation and goodwill; *Dr Barnes Wallis*, chief of the Department of Aeronautical Research and Development, BAC (Operating), Ltd., and special director, BAC Weybridge, for his contributions to aeronautical design over many years.

THE first Louisa Gross Horwitz Prize for basic research in biology or biochemistry has been awarded by Columbia University to Dr Luis F. Leloir, at present director of the Institute of Biochemistry of the Campomar Foundation and head of the Department of Biochemistry in the University of Buenos Aires. The prize of \$25,000 was given in recognition of his discovery of the nucleoside diphosphate sugars and the demonstration of their important role in the biosynthesis of sucrose, the plant starches, liver glycogen and other polysaccharides.

CORRESPONDENCE

No More Coal

SIR,—The comments on the coal industry in your issue of November 18 (*Nature*, 216, 627; 1967) may give a misleading impression of the future of this industry and of the attitude of those responsible for its leadership. One chronic problem facing the NCB is that while we are in the middle of a productivity and rationalization drive—which we are winning—we are continuously subjected to press comments which can only damage confidence in the industry's prospects.

We spend about £5 million a year on our research and development programme. There are some extremely exciting projects, especially involving new uses for coal and the up-grading of by-products and waste materials. To succeed in these projects we need not only a steady flow of good scientists, but also the interest of scientists outside the industry who may be able to help us.

We submitted a memorandum on these aspects of our research and development programme, covering our utilization and diversification activities, to the House of Commons Select Committee on Science and Technology. I enclose a copy of this and would be glad to supply one to anyone who cares to write to me.

Your heading "No More Coal" is, of course, belied by the figures included in the White Paper Fuel Policy (now being revised because of devaluation), and Mr Richard Marsh, the Minister of Power, has himself always been at great pains to emphasize what a large industry this will be even in the light of the White Paper forecasts. For example, between now and the end of 1980 at least 1,500 million tons of coal will be required and the turnover of the industry will total something like £10,000 million, with our increasing diversifications. But the NCB does not accept the inevitability of the decline forecast in the White Paper. You say that the White Paper figures on nuclear power "might almost convince Lord Robens". The figures to which you refer, however, are merely a new set of calculations, admittedly of greater sophistication, but they are not based on any more positive evidence about the presumed performance of the AGR nuclear power stations. Now that the Select Committee Report has been published our attitudes and arguments are fully available and would justify the closest consideration by all scientists and engineers. It is most important to appreciate that our case is not by any means related merely to social considerations, important—and expensive—though these are. We believe that coal can still be economically competitive throughout the 1970s.

Arguments for this belief and the reasons why previous studies have in our view been inadequate are complex. In the Select Committee Report there are three contributions from the NCB which set out the position. The last of these—and indeed the last page in the Report—ends as follows: "Conclusions. In view of the technical and economic doubts about the future performance of AGR stations, the NCB think that the proper course is now for an independent technical expert to make a full assessment of the nuclear power programme, supported by an independent financial assessment."

We should obviously not be asking for such an examination if we were not fully confident that our views would be sustained.

Yours faithfully,

L. GRAINGER

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