that has recently been criticized as being meagre in view of the possibilities through research of the reduction of expenditure on the country's toll of sickness, which costs the Government between 200 and 300 million pounds annually. In addition, private funds held by the Council contribute £13,000 per annum, and a sum amounting to £12,000 is derived from grants made by certain bodies for special purposes, including the Rockefeller Foundation, the Leverhulme Trustees, the British Empire Cancer Campaign and others.

The principal factor limiting research activity is personnel, and one of the endeavours of the Council is to increase the number of research workers, but more funds will be necessary when more trained investigators become available. Some system is also required for financing sudden important calls for organized research when these arise.

The Council has also established and maintains the National Institute for Medical Research at Hampstead and Mill Hill, supports a growing number of research units, both clinical and laboratory, and provides grants for individual workers. At the National Institute for Medical Research, under the direction of Sir Henry Dale, work is done in two main divisions, one including researches coming under physiology, pharmacology, and biochemistry, the other those under experimental pathology and bacteriology. Here, in addition to research, the standardization of biological products, such as antitoxins, certain drugs, vitamins, and hormones, is undertaken, whereby the exact strengths of these products may be described in terms of units, and the doctor is thus able to prescribe known amounts of their active principles.

The Medical Research Council also maintains at the Lister Institute a National Collection of Type Cultures, so that any medical man in the world can obtain at nominal cost a culture of almost any known micro-organism. At the Pathological Laboratory of the University of Oxford a Standards Department is maintained, from which prepara-

tions of bacterial suspensions and sera are supplied for use in the diagnosis of diseases, such as enteric and undulant fevers, and dysentery.

The placing of units of research in different institutions has developed with much success in recent years. The Council provides the salaries and the actual cost of the research, the institution furnishing the accommodation. There have thus been established the neurological research unit at the Hospital for Diseases of the Nervous System, Queen Square, London, the research department on puerperal infections at Queen Charlotte's Hospital, London, the clinical research department at University College Hospital, London, and others. Research grants to individuals are also made, such personal grants being usually limited to three years, and the worker is given full freedom to develop his problem. A third activity of the Council is the award of travelling fellowships in research, and a number of the younger medical men of Great Britain have been past holders of these fellowships. Assistance is also given to Government departments on problems of health and disease.

After some remarks regarding initiative in research, and a reply to criticisms respecting the type of medical research supported by the Council, Sir Edward Mellanby had something to say about the future, observing that the difficulty he foresaw was not that of obtaining knowledge, but of its application to human needs. He concluded his oration by pointing out that it is the function of the Medical Research Council to promote discovery, not to implement its application. He made an appeal to the Royal College of Physicians of London, suggesting that the College as a body and through its fellows and members might use its prestige and influence in guiding the profession and the public to appropriate action, if such be needed, when scientific discovery has supplied new knowledge of importance to public health. Finally, he submitted that the entry of the State into the field of medical discovery has been both stimulating and fruitful.

Obituary Notice

Sir Basil Mott, Bart., C.B., F.R.S.

BY the death of Sir Basil Mott on September 7, a pioneer in engineering practice, the Royal Society loses one of the few engineers who have been admitted to its fellowship. He formed a link—one of the very few remaining—with those great figures whose names became almost household words in the latter part of the nineteenth century as the creators of outstanding engineering works—Benjamin Baker, Wolfe Barry, Charles Hawksley, Douglas Fox and

others. When a young man he gained experience, as a mining engineer, in work underground, which was invaluable in the pioneering work involved in deep tunnelling with the Greathead shield, the use of which has revolutionized the solution of transport problems in crowded cities. The first use of this method on a large scale was in the construction of the 'City and Southwark Subway', which formed the first part of the 'City and South London Railway' and was taken in hand in October 1886. Basil

Mott became assistant to Greathead on this work and, so much was his skill and energy relied on, that he became Greathead's partner. He had the further valuable experience of operating the railway for the first eighteen months after it was opened in December 1890.

The difficulties attendant on maintaining electric traction underground—the first time that this had been attempted—were such as to call forth to the utmost Mott's natural ingenuity and resource, and this experience proved invaluable when, some years later, he joined Sir Benjamin Baker for the construction of the Central London Railway, the first 'Twopenny Tube' from Shepherd's Bush to the Bank, which was opened in 1900. These works and others which followed were the means of establishing the practice of deep tube tunnelling as an engineering method, and the process was thereafter applied in many other cities throughout the world, where it is probable that the public who make daily use of the transport facilities provided, have little recollection of what they owe to British engineering practice in general, and to Greathead, Baker and Mott in particular.

Mott was, however, a civil engineer in the widest sense, and there are few branches of the profession in which at one time or another he did not exercise his skill. For example, he gained an outstanding reputation as a great bridge builder. He was responsible, at first in partnership with Benjamin Baker and later in sole charge, for the widening of the Blackfriars Bridge, completed in 1909. In later years, with his partners in the firm of Mott, Hay and Anderson, he was responsible for many important bridges, the Queensferry Bridge at Chester, the Wearmouth Bridge at Sunderland, Boothferry Bridge near Goole, the Newport Bridge, the Tees Bridge at Middlesbrough, and the Tyne Bridge at Newcastle, completed in 1928. Possibly the greatest of the works with which he was

associated and one which very fully absorbed his time and energies in his later life, was the Mersey Tunnel, connecting Liverpool and Birkenhead, the largest under-water tunnel in the world, completed in 1934.

During the Great War, Sir Basil rendered notable service to the Government in many directions, visiting both France and India. For his services he was made a C.B. Later, his experience was of great assistance to the Ministry of Transport in connexion with the Charing Cross Bridge scheme. He also gave advice on the Channel Tunnel project and the Severn Barrage. In 1925 he was chairman of a committee of engineers and architects which took the necessary steps for the preservation and safety of St. Paul's Cathedral.

Sir Basil was born on September 16, 1859, and was educated at Leicester, in Switzerland and at the Royal School of Mines, where he won the Murchison Medal. He became a member of the Institution of Civil Engineers in 1895 and was president of the Institution in 1924. He was elected to the Royal Society in 1927, and was also an associate of the Royal School of Mines, a fellow of the Imperial College of Science and Technology and a member of the Société des Ingénieurs Civils de France. He succeeded in the baronetcy, conferred on him in 1930, by his eldest son, Adrian Spear Mott.

CLEMENT D. M. HINDLEY.

WE regret to announce the following deaths:

Prof. L. S. Dudgeon, C.M.G., C.B.E., professor of pathology in the University of London and dean of St. Thomas's Hospital Medical School, on October 22, aged sixty-two years.

Sir Robert Mond, F.R.S., known for his researches in pure, applied and electro-chemistry, and for his archaeological investigations in Egypt, Palestine and elsewhere, on October 22, aged seventy-one years.

News and Views

Mr. Sidney Smith

MR. SIDNEY SMITH, whose appointment to the recently instituted chair of Near Eastern Archaeology in the University of London (Institute of Archaeology) is announced (p. 806), has been keeper of the Department of Egyptian and Assyrian antiquities in the British Museum (Bloomsbury) since 1930, when he succeeded the late Dr. H. R. Hall. Mr. Smith was educated at the City of London School and Queens' College, Cambridge, of which he was a scholar and is now an honorary fellow. He took the Classical Tripos in 1911, and proceeded to Berlin for further study in 1912. In 1914 he was appointed an assistant in the British Museum; but during the Great War he was commissioned in the Middlesex Regiment, and

while on active service was mentioned in dispatches. On his return to the British Museum he continued his studies of cuneiform texts, and between 1921 and 1927 published a number of volumes of texts from Cappadocia, as well as from the Babylonian historical records. In 1921 he also published an account of the first campaign of Sannacherib. Mr. Smith was a member of the British Museum's expedition excavating at Ur in 1922-23; and in 1929-30 he served as director of antiquities in Iraq. Among much other work, Mr. Smith has contributed to the *Cambridge Ancient History*, and initiated and edited *Iraq*, the publication of the British School of Archaeology in Iraq. Since 1923 he has been lecturer in Assyriology at King's College, London.