OBITUARIES

Sir Frederick Banting, K.B.E., F.R.S.

MAJOR SIR FREDERICK BANTING died in Newfoundland on February 21. He was on his way to England "on a mission", as the Prime Minister of Canada has said, "of high national and scientific importance". The pilot of the American bomber in which Banting was flying attempted a forced landing after the development of trouble with the engines, and in the resulting crash Banting and two of the crew members received injuries which proved to be fatal. In his death the Empire has lost one of its most distinguished citizens and the human race one of the greatest benefactors of our time. Canada could ill afford to lose him. There was no more important figure than his in our general war effort.

Frederick Grant Banting was born in Alliston, Ontario, on November 14, 1891, of Irish and Scottish ancestry. After receiving his preliminary education in the public and high schools of Alliston, he began his medical course at the University of Toronto in 1912. He enlisted as a private soldier in 1915, but was ordered back to finish his university training. He completed his medical course in 1916 and immediately joined the Canadian Army Medical Corps. He proceeded to France and was wounded at Cambrai in September 1918. He received the Military Cross for valorous conduct during the Cambrai engagement.

In 1919 and 1920 Banting served as resident surgeon in the Hospital for Sick Children, Toronto. He then moved to London, Ontario, where he began to build up a practice. He spent part of his time as research assistant in the Department of Physiology of the University of Western Ontario. In the course of the preparation of a lecture on diabetes the idea which was to change the course of his life presented itself. Banting was determined that this idea should receive an adequate trial and on the advice of his associates interviewed Prof. J. J. R. Macleod in the University of Toronto. In his lectures on carbohydrate metabolism to his senior students during the academic session of 1920–21, Prof. Macleod outlined Banting's hypothesis, and while he fully appreciated the difficulties of such an investigation he did feel that adequate opportunities for a trial should be provided. The work was begun on May 16, 1921, in collaboration with myself. The actual results of the experiments are recorded in our notebooks and in our published articles ; but the memories of that intimate association during the spring, summer and autumn in 1921 are now difficult to describe. Banting was always happiest when the investigations demanded great mental and physical activity. In these circumstances the days were always too short and continuous observations for several days and nights were not infrequently made. There is no doubt that his dogged perseverance was a highly important factor in the success which attended the insulin investigations. Banting always retained that freshness of mind and modesty of bearing which characterized him when he was conducting his first researches. These qualities were blended with an iron determination and an exceptional measure of courage to produce a character which will be vividly remembered by all who knew him intimately.

After the discovery of insulin a great many pathways were open to Banting. He would have had no difficulty in becoming a successful diabetic specialist. He often mentioned the possibility that he would return to the practice of surgery. Many institutions placed their facilities at his disposal, but he was steadfast in his determination to remain in Canada and probably always intended to spend at least a part of his time in medical research. His active interest in the clinical applications of insulin was shortlived and he soon turned his attention whole-heartedly to physiological problems. He did excellent work while investigating the functions of the suprarenal cortex and in several other intensive studies. It is greatly to his credit that after the initial dramatic discovery he was able to content himself for prolonged periods with programmes of research which promised no immediate results of practical value.

Banting directed and actively participated in cancer research for many years, and he was very proud when the experts in this field stated that his group was making a substantial contribution. Nothing gave him greater pleasure than to spend his time in experimental work which demanded his full attention. He often regretted that he could not spend more of his time in this way.

Banting was probably one of the few medical men of science in the Empire who actually made preparations for war researches well before the outbreak of hostilities. He was almost entirely responsible for the inception and organization of the researches in aviation medicine which have been carried out under the auspices of the National Research Council of Canada. His energy and enthusiasm in this work knew no bounds. He demonstrated an organizing ability which astonished even his intimate friends. Canada's war activities along medical lines owe much to the stimulus which it has received from Banting's efforts. It is probable that his last work will rank among his greatest achievements.

Banting appreciated deeply the honours which were showered upon him, but nothing diverted him from the development of medical research in Canada. He thoroughly enjoyed vacations, during which he was able to give scope to his talent for transferring the beauties of the Canadian landscape to canvas, but these periods away from his laboratory were always short. He had gathered around him a group of active young workers whose efforts have already been rewarded by a considerable measure of success. Their chief was keenly aware of all the difficulties in the problems which he asked them to attack. He

was inclined to be intolerant of those who favoured the leisurely approach and felt that a research worker should throw himself heart and soul into the struggle. His philosophy of life was that men are prevented from reaching their goal by their inability to "think and work hard enough and long enough".

During the last few years Banting had the opportunity of becoming intimately acquainted with most of the active workers in medical research in Canada and of studying their methods in their laboratories. His passionate devotion to the open-minded experimental approach to medical problems and his ability to communicate his enthusiasm to other people will be dominant factors in the development of this work in Canada for many years to come.

C. H. BEST.

Dr. J. Rendel Harris

WE regret to record the death of Dr. J. Rendel Harris, Biblical scholar, archæologist and orientalist, which took place at Selly Oak, Birmingham, on March 1 at the age of eighty-eight years.

James Rendel Harris was born in 1852 and educated at Weymouth Grammar School and Clare College, Cambridge, of which he became a fellow and lecturer after he had graduated as Third Wrangler in 1874. Although a mathematician—he served as moderator and examiner in the Mathematical Tripos—he turned to Biblical and patristic studies, to which he became ardently devoted, rapidly attaining an outstanding position in textual criticism. In 1882 he left Cambridge for the United States, where he remained for some years, holding the chair of New Testament Greek in Johns Hopkins University, Baltimore, and later that of Biblical languages at Haverford College, Pennsylvania.

In 1893, Harris returned to Cambridge, and for ten years he was University lecturer in palæography, travelling extensively the while in the East in search of manuscripts. His success in this field of research, combined with his profound scholarship, bore fruit in notable and lasting contributions to Biblical and Syriac studies. After a brief tenure of the professorial chair of theology at Leyden he became director of studies at the Settlement for Social and Religious Studies of the Society of Friends at Woodbrooke, near Birmingham.

At Woodbrooke, Harris continued his studies in Syriac, but turned in an increasing degree to research in anthropology and folk-lore, devoting himself more particularly to the examination of early Mediterranean cults and their relation to forms of popular and other beliefs in the Christian Church. In "The Cult of the Heavenly Twins" (1906) and "Boanerges" (1913), the former dealing with the legend of the Dioscuri, he showed, with a wealth of comparative illustration and much detached evidence, that many of the pairs of saints in the Christian calendar could be traced back to a connexion with a cult of the Great Twin Brethren. Further studies on analogous lines, issued separately, dealt with the cults of Dionysos, Apollo, Artemis and Aphrodite; two major works were "The Ascent of Olympus" and "Picus who is also Zeus".

Prof. Richard Bär

SWISS physics and Swiss physicists suffered a severe loss, when, on December 13, 1940, Prof. Richard Bär died in his home in Zurich (where he had been professor of physics in the University)—a home whose hospitality many of his colleagues from all parts of the world will remember, having passed the friendly town on pleasure trips to the Alps and having met there not only with the friendliest reception but with one of the most distinguished of Switzerland's learned and literary circles.

Only now, after his premature death, it has been known how lavishly R. Bär had used his wealth to alleviate the lot of the distressed—in the first place of those uprooted by any kind of spiritual intolerance. He had a sort of shyness of giving and would, ostensibly, deny his assistance but send the applicants to a friend of his, pretending that his friend was in charge of an ample assistance fund (which he actually was, but the fund was supplied by R. Bär). I am told that the reception of about thirty displaced scholars at Istanbul was mainly due to R. Bär's initiative, who seized the prospect as soon as it turned up and arranged matters by a personal visit to Istanbul, to which he invited two influential friends.

To most physicists R. Bär is best known by his vigorous and fully successful attempt to disprove by clear and decisive experiments the doubts which F. Ehrenhaft (Vienna) had thrown on the reality of the "elementary quantum of electricity". The doubts were serious, and a detailed experimental refutation was needed to support our theoretical convictions. His later work included important discoveries in the domain of electrical discharge through gases, of the Raman effect and of ultra-sonic waves. It was right in the middle of very beautiful results on the latter phenomenon—diffraction of light by a liquid that is permeated by ultra-sonic waves and thereby turned into a diffraction grating—that his untimely death has occurred. To all this work of his a singular fact, which seldom occurs, gave a peculiarly inspiring tinge: he had begun as a pure mathematician (he had been David Hilbert's assistant during 1916–17) and ended up as an experimental physicist.

ERWIN SCHRÖDINGER.

WE regret to announce the following deaths:

Prof. C. G. Cullis, professor of mining geology in the Royal School of Mines (Imperial College of Science and Technology), on April 27.

Mr. Francis Druce, the well-known botanist, hon. treasurer of the Royal Meteorological Socity during 1913–18 and 1925–32, and of the Linnean Society during 1931–40, by enemy action.

Prof. F. Francis, emeritus professor of chemistry in the University of Bristol, on April 15.

Mr. Hans G. P. Meier, librarian of the Warburg Institute, by enemy action.

Miss J. A. Paterson, librarian of Bedford College for Women (University of London), by enemy action.