OBITUARIES

SIR FREDERIC BANTING

BY the death of SIR FREDERIC BANTING, the famous discoverer of Insulin, in a plane crash in Goose Bay, Newfoundland, a great personality has been lost to the world of Science. It is reported that this most unfortunate incident occurred while he was flying, with three others on a very important scientific mission to Britain. The New York correspondent of the '*News Chronicle*' has given further details of this mission. Dr. Banting, it appears, was flying to Britain to demonstrate a new gas defence method he had perfected in collaboration with chemists and physiologists of the University of Toronto. It is to be regretted that he has not lived to see the benefits of his labour in this respect.

Frederic Banting was born at Alliston, Ontario, on the 14th November 1891, and had his medical education at the University of Toronto. Even before he obtained the M.D. Degree in the year 1922, he was lecturing on Physiology at the Western Ontario University at London and thereafter on Pharmacology at Toronto University. Within a period of two years of his graduation, he was appointed Professor of Medicine at the very early age of 32 years.

The researches on the role of pancreas in carbohydrate metabolism attracted the attention of Dr. Banting even while he was a student for the M.D. Degree. In the year 1921 and 1922, Banting and Best succeeded in preparing physiologically active extracts of the pancreas. These extracts were found to inhibit glycosuria and hyperglycemia in depancreatized animals and to alleviate the symptoms of diabetes mellitus in human beings. From a critical study of the existing literature it became apparent to Dr. Banting that in order to prepare active extracts from the pancreas, it was necessary to circumvent the destructive action of the pancreatic enzymes on the hormone. It had been shown previously that the Acinar enzyme secreting cells degenerate more rapidly than the hormone secreting islands of langerhans. The brilliant idea of ligating the pancreatic ducts of dogs and keeping the animals for a period of several weeks to allow the Acinar tissue of the pancreas to degenerate, is entirely credited to Dr. Banting although the work was done in the laboratory of Dr. Macleod, the co-discoverer of Insulin, who was at that time the Professor of Physiology at the University of Toronto. The potential possibility of such a procedure was fully taken advantage of and the brilliant efforts of Banting, Best, Collip and Macleod in this direction, culminated in the successful achievement of the goal. A record of the development of these investigations is given by Banting.[1,2] Patents for the manufacture of Insulin were taken out by the Insulin Committee of the University of Toronto, to whom Dr. Banting and his co-workers made over the process discovered by them. Since this epoch-making discovery, Dr. Banting continued his investigations on the nature and effect of Insulin which is of very great importance in the treatment of diabetes.

The discovery of Insulin, its isolation and therapy is one of the greatest landmarks in modern medicine. This is regarded as one of the biggest contributions of the twentieth century for the alleviation of human suffering. Honours and awards came to Dr. Banting freely from Scientific Bodies and Universities from all over the world. He was awarded the Gold Medal and the Reeve Prize of Toronto University in 1922. In 1925, the Canadian parliament voted him an annuity for life, while in the same year, Toronto University established an amply endowed Institute for medical research known as the Banting Institute. In the year 1923, he was awarded the Nobel Prize for the discovery of Insulin jointly with Macleod.

I had the pleasure of meeting Sir Frederic Banting for the first time in September 1939, at Toronto, where I had been working as a Vincent Massey scholar. I felt at once that he was somewhat out of the ordinary run of scientific men. He was known as a great figure in science, but he could have been equally great at almost anything else.

Immediately after the declaration of War, he was appointed the head of medical research for War, by the Canadian Government. Under his inspiring leadership, a

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[1] *Canad. Med. A. J.*, 1926, **16**, 221.
[2] *Edinburg Med. J.*, 1929, **1**, 1.

method of preparing concentrated serum and its application in war wounds was perfected. Simultaneously the investigations on antidotes for poison gas were being carried out in the various scientific laboratories in the University. Dr. Banting must have scored a success in his spectacular work on the new gas defence method. This work is as great as his discovery of Insulin. The new formula has been made known to others and it will therefore be available. Mr. Mackenzie, President of the Canadian National Research Council, is reported to have made the statement that the story of this discovery is a great one and will be told after the war.

Besides being a sympathetic teacher, Dr. Banting was a delightful colleague. All those who have had the pleasure of association with him will cherish his memory with affection and admiration.

N. K. IYENGAR.

SIR SHAH MOHAMMAD SULAIMAN

THE news of Sir Shah Sulaiman's passing away came as a shock to the whole country. But perhaps no one was shocked more than those (of whom the present writer is one) who had enjoyed his overwhelming hospitality just before he fell ill, and who had seen him only three weeks ago taking the most active part in the annual session of the National Academy of Sciences, India, of which he was the President. It is heart-rending to think that he has been snatched away when his mental faculties were at their zenith, and when he was making valuable contributions to human knowledge. His countrymen and others would mourn his irreparable loss for a long time to come!!

Shah Mohammad Sulaiman was born in Jaunpur in 1886. After an exceptionally brilliant school and college career at Jaunpore and at Allahabad, he proceeded to England in 1906 with a State scholarship and joined Christchurch College, Cambridge. He took the Mathematical Tripos in 1909, and the Law Tripos in 1910. That he was no ordinary student pursuing only the prescribed course, is proved by the fact that he had pondered deeply over the prevalent theories of matter and light, and had made notes of his "ideas about radions" which he developed into a coherent theory twenty-five years later. He was also called to the Bar in 1909, and obtained the LL.D. of Dublin in 1910. Returning to India, he joined the Allahabad Bar, and had such a distinguished record that he was offered a seat on the Bench at the unusually early age of 34. In 1929 he was appointed the first Indian Chief Justice of the Allahabad High Court when still comparatively young. When the Federal Court of India was created in 1937, his was an obvious choice for one of the two posts. His work there elicited praise and admiration not only from his colleagues but also from the celebrated English jurist, J. H. Morgan. His was a meteoric rise, and it is not difficult to imagine what further heights he would have attained if he had been spared a little longer. He had an equally phenomenal career as a Scientist. He appeared suddenly and most unexpectedly on the scientific horizon, shone with an ever-increasing lustre for an all too brief period, gained some recognition, and disappeared just as suddenly.

In spite of his being engrossed in the heavy duties of a lawyer and a judge, he took a keen interest in educational matters, and did a great deal for the education of his people. He was a member of the court and academic committees of several Universities and presided over various educational conferences of an all-India character. He was invited to deliver the Convocation addresses of the Agra, Aligarh, Dacca and Osmania Universities. For a number of years he was Vice-Chancellor of the Muslim University, and discharged the exacting duties of his office up to the time of his death. Though his enthusiasm sometimes carried him too far in trying to model the working of the Institution according to his ideas, the whole nation owes him a heavy debt of gratitude for the sacrifice of an immense amount of his time and energy in the cause of education which was so dear to his heart.

All this by no means exhausted his capacities. His energy and vitality knew no bounds. He was a versatile reader, and his library contains one of the finest private collections of manuscripts and books to be found in the country. The present writer had an opportunity of seeing in his possession about a hundred rare Arabic and Persian manuscripts on mathematical and