the supply of purified casein occurred at the present time, when many laboratories are deeply involved in nutritional studies that depend basically on the use of balanced purified diets.

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OBITUARIES

Prof. Selig Brodetsky

SELIG BRODETSKY was a man of distinguished and diversified gifts. His position as Senior Wrangler at Cambridge in 1908 showed the mathematical promise that was in him as a young man, and he later specialized in applied mathematics, particularly in aerodynamics, and published much in that field. He was a brilliant expositor and teacher on mathematical subjects, never failing to hold spellbound his hearers whether students of pure and applied science or people of a more general character. He was much sought after as a lecturer on astronomy, revealing the wonders of the heavens to popular audiences, and in this he carried on the tradition of Sir Robert Ball, the Irish astronomer, whose pupil he was. He wrote several text-books on mathematical subjects, mechanical principles of the aeroplane, nomography, etc.; his biography of Sir Isaac Newton was much appreciated by a wide variety of readers.

To regard Brodetsky, however, solely as a scientific man would be to convey little idea of the wider scope of his talents. In addition to mathematics, his main interests were Zionism and the cultivation of the Hebrew language as a medium of ordinary intercourse among Jews. In pursuance of his dream to see the Jews established in the traditional land of their forbears, he was indefatigable in his labours, and travelled by land, sea and air over all the four continents, lecturing and expounding his views and aspirations for the Jewish people. There would seem little doubt that these years of strain and overexertion led to that ultimate exhaustion which lay at the root of his final illness. During these journeyings the world over, Brodetsky established many contacts with numerous nations and personalities. He did not merely confine himself to Judaism in his wanderings, for he noted intensively systems of government, social manners of life, school and university education, etc. The result of these wide experiences was that his contributions to debates on educational and academic policy and development on the wide scale were recognized as particularly valuable.

Selig Brodetsky was born in Russia, near Odessa, into a poor but cultured home. His father was the traditional Jew, mighty in the Scriptures and well versed in the Talmud. Brodetsky used to relate that he was born at midnight and hence could not say which of two dates was his birthday. On account of the ever-recurrent pogroms against the Jews in Russia, his father decided to leave that country and to settle with his family in England. He migrated to the East End of London, which according to the scanty information he could gather was about the only place in England where foreign Jews could hope to get a footing. He arrived entirely ignorant of the English language or of English customs, but by grim determination he succeeded in getting a foothold. He then summoned his wife and four small children to join him, and she had to cross Europe unaided with a baby girl to be carried in her arms. Brodetsky as a child of four years of age remembers them hiding in a hen-coop until a kindly army officer signalled to them after nightfall that now was the time to cross the frontier; while crossing, the baby in arms started to cry, but her mother pushed her shawl into the child's mouth. Their struggle for existence in London during their first years was rigorous, for they lived in a block of buildings surrounding a courtyard with twenty families to one pump situated down in the area. All the ultimately large family had to toil hard for daily bread from their childhood days, but they made good in the end.

Brodetsky was educated at the Central Foundation School, London, and by the aid of scholarships he entered Trinity College, Cambridge. After being placed Senior Wrangler in Part I of the Mathematical Tripos, he won a good position in Part II of the Tripos and thereafter studied on the Continent of Europe at the University of Leipzig. He joined the mathematical staff of the University of Bristol, whence he went to Leeds in 1920, becoming professor of applied mathematics four years later. He left Leeds in 1948 on his appointment as president of the Hebrew University at Jerusalem, but ill-health supervened, and he had to resign and come back into retirement in England. He died in London on May 18 at the age of sixty-six and is survived by his widow, Mania Berenblum, of Bialystok, and a son and daughter.

In temperament, Brodetsky was a very charming man, most obliging in co-operating with his colleagues and ever ready to help a student in financial or other difficulties. He leaves a very pleasant memory behind him.

WILLIAM P. MILNE

Prof. F. Ll. Hopwood

THE sudden death on May 2 of Frank Lloyd Hopwood is a heavy and unexpected blow to his many friends all over the world and leaves a conspicuous gap among the pioneers of medical physics. It seems impossible that this large, impressive, and yet so friendly figure has passed from our scene and will no longer encourage, or perhaps gently reprove, the actions of those individuals, single or corporate, working in his field.

Hopwood's scientific interests were wide—perhaps even too wide, yet befitting a rapidly growing borderline subject where the possibilities of immediate or ultimate application of physics to human welfare so attracted him. First as demonstrator, and later as professor of physics in the Medical College of St. Bartholomew's Hospital, London, he was active early in the radiological field; first in the application of the then new Coolidge tube and high-tension techniques and their possibilities of use in procuring more penetrating and therefore more effective X-radiations in the treatment of cancer, as well as in the more physical studies of radiation dosimetry. Later, as a member of the International Commission on Radiological Units, he played an important part in the