

to start general degree courses in some combination of science and technology; metallurgy, wood technology, agricultural engineering and industrial chemistry are cited as examples. The Government accepts the Commission's proposal for the establishment of an Institute of African Studies, based on the University of Ghana, but having some measure of autonomy. The future of the College of Business Management at Achimota remains uncertain, and the National Council will examine ways of associating the College and also the Ghana School of Law with the Universities. The Commission welcomed the suggestion made by Prof. Carl Iversen, vice-chancellor of the University of Copenhagen, that the Government of Denmark might be willing to associate itself with a scheme for establishing further residential adult colleges in the various regions of Ghana.

In addition to the main proposal that the Colleges at Legon and Kumasi should become independent Universities, the Commission has recommended that a University College of Cape Coast be established. This College would be in some relationship with the University of Ghana, though few of the details have been worked out.

As one phase of the development of higher education in Ghana ends and another begins, the Government has paid tribute to the encouragement and practical assistance given to the Colleges by the University of London, the Inter-University Council for Higher Education Overseas and the Council for Overseas Colleges of Arts, Science and Technology. It records with satisfaction the high standards already achieved by the Colleges and its confidence in their future as independent Universities.

## OBITUARIES

### Dr. Otto Maass, C.B.E., F.R.S.

DR. OTTO MAASS, one of the most eminent of Canadian chemists, died in Montreal on July 3 at the age of seventy. As assistant to the President of the National Research Council during the war years, director of chemical warfare in the Department of National Defence and later as scientific adviser to the Chief of General Staff, he was well known to a multitude of colleagues in both the United Kingdom and the United States. As general director of the Pulp and Paper Research Institute of Canada, he had a wide acquaintance in the pulp and paper industry. But he is best and most affectionately remembered by the many generations of graduate students who gained their first insight into the significance of physical chemistry and the meaning of chemical research under his stimulating guidance.

Otto Maass was born in New York City on July 8, 1890, but went to Montreal with his parents at an early age. He was educated in Montreal High School and McGill University, obtaining the B.A. degree in 1911 and the M.Sc. in 1912. He was awarded an 1851 Exhibition scholarship and went to Berlin in 1913 to work in the laboratory of Prof. Walther Nernst. Trapped in Germany by the outbreak of war in the following year, he was able to escape across the border into Switzerland and thence return home. His interrupted studies were continued at Harvard under the late Prof. T. W. Richards. He submitted a thesis and received the Ph.D. degree from Harvard in 1919.

In 1917 he was appointed lecturer in physical chemistry at McGill. In 1923 he became Macdonald professor of physical chemistry and, in 1937, chairman of the Department, appointments which he occupied until his retirement in 1955.

From the very outset of his teaching career, he began to be surrounded by a rapidly expanding group of enthusiastic young graduate students eager to share in the development of his ideas. One very early achievement was the preparation, for the first time, of pure hydrogen peroxide; and this gave rise to a whole series of publications reporting accurate measurements of its physical properties. Another early investigation involved devising a simple and accurate method of measuring densities of condensable gases. This was ultimately refined to the point where reliable figures for the atomic weights of carbon

and sulphur were obtained from the molecular weights of carbon dioxide and sulphur dioxide. Meanwhile, similar techniques had been applied to observe density changes on mixing two gaseous components and to detect reaction between two components in the vapour phase. This led on to a comparison of reaction velocities below and above the critical temperature which, in turn, gave rise to the prolonged series of investigations of critical phenomena which brought about a wholesale revision of ideas concerning the critical region.

As early as 1920, Maass became aware that very few reliable physical data were available on sulphur dioxide solutions such as were used in the manufacture of sulphite pulp. Work in this field was followed by a series of investigations of the factors influencing the rate of penetration of sulphite solutions into wood chips. In 1928 the Pulp and Paper Research Institute of Canada was founded, and by arrangement with the Graduate Faculty of McGill, Maass and his students were enabled to pursue further researches in the laboratories of the Institute. He became its general director in 1940 and was instrumental in initiating a variety of investigations of problems directly concerned with the war effort.

On his retirement in 1955, Maass was appointed a principal research officer in the Division of Chemistry, National Research Council, and he spent the next three years in the laboratories of the Council in Ottawa. Then he returned once more to McGill as a research associate in the Chemistry Department. Much of his time was spent in his laboratory in the Chemistry Building up to the day of his death.

Space does not permit even a bare enumeration of the degrees, medals, memberships of learned societies and other honours which came to him. It would seem, in any event, superfluous to those who knew him. His work was his life and brought with it its own reward. By his work he will be remembered.

J. H. MENNIE

### Prof. R. F. Naylor

RALPH FRANCIS NAYLOR, professor of chemistry in the Royal College, Nairobi, was killed in a motor accident at Mkushi in Northern Rhodesia on August 6. In this tragic accident, at the regrettably early age of thirty-nine, one who has done much for