GANDHI MEMORIAL LECTURES
1969

GANDHI MEMORIAL LECTURES
1969

Professor Blackett, Vice Chancellor, Mr. Principal,
Ladies and Gentlemen,

This is the second of the Gandhi Memorial Lectures Series inaugurated last year. I am afraid that being out of the country at the time, I was unable to attend the First Series, but I know that I was ably represented by the Vice Chairman of Council, Mr. E. T. Jones.

The Gandhi Memorial Lectures Series have been made possible by a generous grant from the Gandhi Memorial Society as a tribute to Mahatma Gandhi. I should like to take this opportunity of expressing the College's gratitude to the Gandhi Memorial Society whose continuous and generous association with University College, Nairobi, dates back to 1954.

2/....

The University of East Africa has been singularly fortunate in successfully persuading such an academic giant as Professor P. M. S. Blackett O. M., C. H., F. R. S. to deliver the Second Series of these Lectures which he will be doing both here at Nairobi and at our sister Colleges in Makerere and Dar-es-Salaam. It is therefore for me a matter of great pleasure to have the honour of presiding at the first lecture this evening. Next Thursday evening when Professor Blackett delivers his second lecture, I will change places with the Principal, Dr. Arthur T. Porter, who will take the Chair.

It is good to see not only so many of the members of faculty and students, but also such a good cross-section of members of the general public whom we are always delighted to see at this College.

3/.....

Let me right at the outset extend a very warm welcome to Professor and Mrs. Blackett during their visit to University College, Nairobi. At the same time I should like, on behalf of the College, to extend to Professor Blackett our congratulations on his elevation to a Life Peerage in this New Year's Honours List.

Professor Blackett is President of the Royal Society and a distinguished scientist who has made significant contributions in three main fields of scientific reserach: the interaction with matter of fast particles from radio-active sources, the nature of the particles in cosmic rays, and the magnetism of the earth. In 1948 he was awarded the Nobel Prize for Physics, "an acknowledgement of his development of the Wilson cloud chamber method of tracing the tracks of swift atomic particles, and of his discoveries in nuclear physics.".

4/.....

Professor Blackett was Professor of Physics at the Imperial College of Science and Technology in London from 1953 until the end of the 1965 academic year, and is now Professor Emeritus and a Senior Research Fellow. While continuing to supervise his research team at the College, he devotes much of his time to the duties he undertook when, on the formation of the Labour Government in 1964, he accepted the appointment of Deputy Chairman and Scientific Adviser to the Advisory Council on Technology.

Professor Blackett began his scientific career at Cambridge in the great days of the late Lord Rutherford. He had achieved an international reputation before he was thirty - a more remarkable achievement in that he started late, for he began life as a sailor. He was born on 18th November, 1897, was educated at the Royal Naval Colleges at Osborne and Dartmouth, and served in the

5/.....

Royal Navy throughout the first world war, taking part in the battles of Jutland and the Falkland Isles. He was, however, keenly interested in science, and going up to Cambridge with a batch of young naval officers after the war, he decided to leave the sea and study physics instead. He studied at Magdalene College, graduated in 1921, and was made a Fellow of King's College two years later. He worked for 12 years at the Cavendish Laboratory under Rutherford, with an intermission of a year in Gottingen under Professor James Franck, working on the excitation of spectra by electron impact.

Following Rutherford's disintegration of the atom in 1919, research continued apace, with one member of his team after another making fundamental discoveries. Patrick Blackett first made his name by photographing, in 1924, the collisions by which the transmutation

of elements/.....

of elements took place. The exact mechanism was uncertain until Blackett carried out experiments in an expansion chamber and was able to photograph a number of collisions between alpha particles and nitrogen, in which the proton track was shown, and in which a then unknown form of oxygen was produced.

Blackett went on to study cosmic rays by the cloud method, and he and the young Italian scientist B. Occhialini, devised an apparatus which took photographs automatically only when a cosmic ray entered the chamber. In the course of this work they confirmed another fundamental of nuclear physics, when in 1933 they confirmed the existence of the positive electron or positron (first discovered by Anderson in America) through study of cosmic rays by the cloud method. Blackett and Occhialini also discovered the phenomenon of showers of positive and negative electrons among the cosmic radiation.

7/....

From 1933 to 1953 Blackett was successively Professor of Physics at Birkbeck College in the University of London, and then for 15 years Langworthy Professor of Physics in the University of Manchester, although absent for long spells on war work. Outstanding was his analytical study for Coastal Command, one of the biggest factors in the defeat of the submarine menace, which brought him the highest American civilian award, the Medal of Merit.

After the war he was a member of the Advisory Committee which considered problems of atomic energy. Meanwhile he returned to Manchester and to his research on cosmic rays, which he had carried on since leaving Cambridge. The work of his Manchester team opened up an entirely new field, that of the neutral V-particles and the charged V-particles.

In recent years Professor Blackett has carried studies in earth magnetism with a specially designed sensitive magnetometer,

the work/....

the work having bearings on polar wandering and continental drift. He published a book Lectures on Rock Magnetism in 1956. His team at the Imperial College is carrying on further work in this field.

Professor Blackett is the author of other books and of many scientific papers. He has been associated with many bodies concerned with scientific research, and is a member of the Council for Scientific Policy and the Central Advisory Council on Science Technology. He was President of the British Association in 1957. In his Presidential address he departed from the customary scientific subject-matter to make a strong plea for massive financial aid from the developed to developing and under-developed countries - a subject which exercises him greatly. In 1960 he became a member of the Council of the Overseas Development Institute.

9/.....

He takes a keen interest in the social aspects of science, and is a former President of the Association of Scientific Workers, affiliated to the Trades Union Congress.

Professor Blackett is Companion of Honour and has been awarded the Order of Merit - an Order which is limited to 24 members - has received honorary degrees from many universities in Britain and overseas, and is a member of Academies of Science in overseas countries. He has been a Fellow of the Royal Society since 1933 and holds its Royal and Copley Medals. He married in 1924 and has a son and a daughter. Mrs. Blackett, whom we are delighted to see in our midst, is accompanying her husband on his visit to this College as well as to Makerere and Dar-es-Salaam.

The Lectures:

Professor Blackett has chosen as the title of his lectures the subject "Reflections on Science and Technology in Developing Countries". In his first lecture Professor Blackett will outline the causes of the huge/.....

the huge differences in material wealth between the developed and the developing countries.

Industrial and Scientific revolutions occured in the North Western world and, in the space of some 200 years, the ~~the~~ affects of these revolutions, which were absent in the South Western world, have led to the material wealth gap which exists to-day. Professor Blackett will, in addition, be examining the reasons why the South Eastern world experienced no industrial/scientific revolution, examine how, notwithstanding this, the developing countries can make best use of modern technology and science to increase their material well being.

In his second lecture next Thursday, Professor Blackett will examine in greater depth, problems associated with the transition of a developing country to developed status. Topics such as the need to develop

material/.....

material resources, the need for trained manpower, the need for capital investment, the need to encourage industrial development will be discussed and the role of science and technology in providing solutions to applied problems studied.

Forgive me, ladies and gentlemen, for such a lengthy introduction, but it is not every day that one gets the President of the Royal Society at this College. I will now firmly shut my mouth and with you, listen most intently to the words and thoughts of Professor Blackett's lecture.

Nairobi.
7.1.69.