Scientific Advisory Committee to the Indian Cabinet—this Committee also acts as the National Committee for the International Council of Scientific Unions. He was a member of the Governing Body of the Indian Council of Scientific and Industrial Research, and of several committees concerned with planning and development of science. He was awarded the title of *Padma Bhushan* by the Indian Government in 1954. He received honorary doctorates from several universities in India and abroad, including London and Cambridge.

Bhabha's interests covered a wide range. He was fond of music, and was no mean musician and painter himself. He had a keen aesthetic sense and sophisticated tastes: the Tata Institute at Bombay is not only a great centre of vigorous research but it is also one of India's 'prestige buildings'.

He was a man of great personal charm. He was always eager to seek outstanding talent (even in fields remote from his own interests) and give it every possible encouragement. He had travelled extensively, and had wide international contacts. He will be sorely missed by his numerous friends in and outside India.

He is survived by his mother and a younger brother.

D. S. KOTHARI

Prof. T. J. Jenkin

PROF. THOMAS JAMES JENKIN, who died on November 7, 1965, was professor of agricultural botany at the University College of Wales, Aberystwyth, and director of the Welsh Plant Breeding Station from 1942 until he retired in 1950. He was an agricultural scientist of the highest repute, and his pioneer work on the breeding of improved varieties of grasses earned for him world-wide recognition.

As a young man, Jenkin could not have envisaged a scientific career, for this only became possible later by taking advantage of the few and unexpected opportunities that came his way.

Born in 1885 on a small isolated farm in North Pembrokeshire, his youthful ambition was to become a successful farmer, and for this purpose he attended, in 1907, a short course of one academic term in the University Department of Agriculture at Aberystwyth. However, in the following year he was seriously injured on the farm. This accident, which made him less fit for manual work, was probably the turning-point in his career, because it led him to further academic study. Following a continuation course of another term at Aberystwyth he was advised and encouraged to enter the Old College School at Carmarthen, where he achieved the distinction of obtaining university matriculation in one year. In 1910 he returned to Aberystwyth to read for a degree in rural science, where he graduated with first-class honours in botany in 1914.

After a year as agricultural organizer for the Counties of Brecon and Radnor, Jenkin was appointed adviser in agricultural botany at the University College of North Wales, Bangor, where he remained until his return to Aberystwyth to occupy a similar post in 1919. This gave him the opportunity to study the botanical composition and productivity of sown pastures, when he showed that the varieties of herbage plants then available lacked persistency in the sward and were soon replaced by indigenous grasses. His work attracted the attention of Prof. (later Sir) R. G. Stapledon, and he joined the newly established Welsh Plant Breeding Station as senior research assistant in 1920. This was the beginning of a long and fruitful association between two great agricultural scientists who, although differing widely in personality and in their scientific approach and methods, made outstanding contributions to grassland improvement and productivity.

Jenkin's extensive collection of indigenous grasses, which showed considerable genetic variation, formed the basis for the deliberate breeding of improved varieties. The techniques for controlled hybridization had to be developed, but even after adequate testing of the progeny as single plants he was confronted with the problem of assessing the value of a combination of favourable genotypes when grown in a sward under highly competitive conditions. Without modern knowledge of population genetics he was extremely successful in producing a series of improved varieties which maintained their identity and performance after several generations of seed production. His variety *S*23 of perennial ryegrass has probably contributed more to the improvement of both hill and lowland pastures in Britain than a whole series of commercial seed mixtures.

Although the greater part of his work involved the production of new varieties for use on the farm, Prof. Jenkin was able to conduct pioneer research on interspecific and inter-generic relationships of the grasses, particularly *Lolium*, *Festuca* and *Phalaris*. He was awarded the degree of D.Sc. for these investigations.

As professor and director he guided the work of the Department of Agricultural Botany and the Welsh Plant Breeding Station with distinction throughout the difficult war and immediate post-war years, and when he retired in 1950 he was made a C.B.E. He was later awarded the Gold Medal of the Royal Welsh Agricultural Society and made an Honorary Member of the Swedish Seed Association for his outstanding contribution to agriculture.

Thomas James Jenkin belonged to that unique band of pioneers who have contributed so much towards the advancement of agriculture, and future generations will acknowledge their debt to the young Pembrokeshire farmer who became an outstanding agricultural scientist.

P. T. THOMAS

Prof. Ferdinand Herčík

PROF. F. HERČÍK died on January 20 at the age of sixty. He was director of the Institute of Biophysics of the Czechoslovak Academy of Sciences at Brno since its inception in 1955. One of the foremost contemporary research workers of Czechoslovakia, his work was widely known throughout the world and his friendship was cherished by many of us who had the good fortune to know him well. His activities in connexion with the affairs of the United Nations Organization brought him into extensive touch with Western scientists. Being a member of the United Nations Scientific Committee on the Effects of Atomic Radiation and a governor and vice-chairman of the International Atomic Energy Agency made it possible for him to travel and to meet colleagues freely at a time when contacts between Eastern and Western scientists were much more restricted than they are now. When chairman of the United Nations Scientific Committee, his tact, perseverance and unquestionable integrity made it possible for this Committee to publish a balanced and unanimous report, though there was then no test-ban treaty and the question of the hazard from fall-out was in the arena of emotion and politics. At the International Atomic Energy Agency, Prof. Herčík was tireless in his support for fundamental investigations on the biological effects of radiation, which he considered an essential part of any research programme designed to further the peaceful uses of atomic energy. His unique status enabled him to ensure that investigations into the problems of health and safety were not too narrowly based and he emphasized the importance of studying chemical agents which modified the degree of biological damage produced by a given dose of radiation.

These achievements as a scientific statesman required more than technical competence, and as soon as one met him one was struck by his extremely rich personality. He was a talented and very active painter, had a passion

for mountaineering and a full and very happy family life. An abiding impression of a visit to his Institute was the intense affection and admiration in which he was held by members of his staff. He defended and protected their scientific integrity under conditions which were not always easy and his reward was that the Institute he established had in the surprisingly short time of ten years acquired a world reputation. The work of the Institute is of a very high quality and shows a marked originality of approach which may, in part, be the outcome of struggling with shortages and difficulties in obtaining the most modern equipment.

Prof. Herčík's own researches were varied; being trained both in medicine and in physics, he held at different times chairs in both schools of medicine and of science. After his thesis, taken in Brno, which dealt with surface tension in relation to biology, he worked for a time at both the Pasteur Institute in Paris under Lecomte du Nouy and in the Rockefeller Institute in New York under R. W. G. Wyckoff. He was among the first to appreciate the importance of electron microscopy in biology and medicine, but he is perhaps best remembered for his researches into radiation effects at the cellular and sub-cellular level, where he made full use of viruses and micro-organisms to elucidate basic mechanism. He brought to biophysics the extensive knowledge and breadth of interest which a successful pursuit of this complex subject demands. PETER ALEXANDER

NEWS AND VIEWS

New Fellows of the Royal Society

AT a meeting of the Royal Society on March 17, the following were elected to fellowship of the society: PROF. A. R. BATTERSBY, professor of organic chemistry in the University of Liverpool; DR. T. BROOKE BENJAMIN, assistant director of research, Department of Engineering and Department of Applied Mathematics and Theoretical Physics in the University of Cambridge; DR. K. G. BUDDEN, lecturer in physics at the Cavendish Laboratory, in the University of Cambridge; PROF. R. E. DAVIES, professor of biochemistry and chairman, Department of Animal Biology in the University of Pennsylvania, School of Veterinary Medicine, Philadelphia; DR. W. R. S. DOLL, director of the Medical Research Council Statistical Research Unit and lecturer in Medical Statistics and epidemiology at University College Hospital Medical School in the University of London; PROF. S. F. EDWARDS, professor of theoretical physics in the University of Manchester; DR. J. S. Forrest, director of the Central Electricity Research Laboratories, Leatherhead, Surrey; DR. F. C. FRASER, keeper of zoology and deputy chief scientific officer at the British Museum (Natural History), London; PROF. H. HARRIS, Galton professor of human genetics, head of Department, and director of the Galton Laboratory at University College, in the University of London; PROF. D. O. HEBB, professor of experimental psychology in McGill University, Montreal; SIR WILLIAM HUTCHISON, deputy chairman, Gas Council, London; DR. A. ISAACS, member of scientific staff, National Institute for Medical Research, London; DR. B. KASSANIS, senior principal scientific officer at the Department of Plant Pathology, Rothamsted Experimental Station, Harpenden, Herts; DR. R. A. KEKWICK, reader in chemical biophysics and head of the Department at the Lister Institute of Preventive Medicine, in the University of London; DR. P. E. KENT, chief geologist, British Petroleum Co. Ltd., London; MR. D. G. KING-HELE, senior principal scientific officer, Royal Aircraft Establishment, Farnborough, Hants; SIR FRANCIS KNOWLES, reader in comparative endocrinology at the Medical School, University of Birmingham; PROF. G. KREISEL, professor of mathematics in the University of Paris; DR. C. E. LUCAS, director of Fisheries Research for Scotland (Department of Agriculture and Fisheries for Scotland) and director of the Marine Laboratory, Aberdeen; PROF. J. D. MCGEE, professor of applied physics, at the Imperial College of Science and Technology, in the University of London; DR. J. W. MENTER, director of research and development, Tube Investments, Ltd., Hinxton, Cambridge; DR. A. E. MOURANT, director, Medical Research Council Serological Population Genetics Unit, at St. Bartholomew's Hospital, London; PROF. E. S. PEARSON, emeritus professor of statistics at University College, in the University of London; PROF. D. H. PERKINS, professor of elementary particle physics at the Nuclear Physics Laboratory in the University of Oxford; DR. LILLIAN M. PICKFORD, reader in physiology in the University of Edinburgh; PROF. H. O. SCHILD, professor of pharmacology at University College in the University of London; DR. H. M. STANLEY, director and controller of Research and Development Division, The Distillers Co. Ltd., London; PROF. B. A. D. STOCKER, professor of medical microbiology in Stanford University, California; PROF. J. SUTTON, professor of geology and head of the department at the Imperial College of Science and Technology, in the University of London; PROF. M. SZWARC, research professor and director of polymer research at the State University College of Forestry, in Syracuse University, N.Y.; DR. D. H. WHIFFEN, deputy chief scientific officer, Basic Physics Division at the National Physical Laboratory, Teddington, Middlesex; SIR FREDERICK WHITE, chairman of the Commonwealth Scientific and Industrial Research Organisation, Canberra.

Structural Chemistry in the Bradford Institute of Technology : Prof. D. A. Long

DR. D. A. LONG, who has been appointed to the new chair of structural chemistry in the Bradford Institute of Technology (proposed University of Bradford), was educated at Sir Thomas Rich's School, Gloucester, and Jesus College, Oxford, where he graduated in 1947 with first-class honours. Dr. Long then carried out postgraduate research with Dr. L. A. Woodward and Mr. R. P. Bell. After completing the degree of D.Phil. in 1949, he spent a year with Prof. B. L. Crawford in the University of Minnesota and then returned to Oxford as Pressed Steel Research Fellow in spectroscopy from 1950 until 1955. During this period he continued his studies in spectroscopy, concentrating particularly on intensities of vibrational Raman spectra. He was appointed lecturer in chemistry at the University College of Swansea in 1956 and was promoted to senior lecturer in 1958 and to reader in 1963. During his period in Swansea, Dr. Long continued work on Raman intensities and in the application of computer techniques to the study of force constants. More recently he has investigated the use of lasers in both Raman and the stimulated Raman effect. He has also undertaken studies of the kinetics of hydrolysis of peptides. In 1964 Dr. Long was awarded an Organization for Economic Co-operation and Development senior visiting fellowship of the Department of Scientific and Industrial Research, to enable him to visit a number of centres of laser research in the United States and Canada.

Port Development

IN replying for the Government in a short debate on port development in the House of Commons on March 9, the Joint Parliamentary Secretary to the Ministry of