

officer to the Caernarvonshire War Agricultural Executive Committee. His secondment was later transferred to the Welsh Department of the Ministry of Education, in order to study its problems in rural Wales. Plant ecology, especially of the grasslands of Snowdonia, has been the favourite subject of research of Prof. Alun Roberts and his colleagues. His knowledge of early settlements and of Welsh history, enriched by long and close study of old estate manuscripts, enabled him to link up ecological changes with past land use. Particulars of early settlements, and later stocking of lowland and upland, with summer migration of the inhabitants from Hendre to Hafod, have added interest to his ecological studies. In addition to his scientific, historical and literary activities, he has found the time to serve on such bodies as the Royal Commission on Common Lands, the Welsh Land Sub-Commission and Nature Conservancy. His knowledge of land use, past and present, makes him a specially valuable member.

Prof. J. L. Harper

DR. J. L. HARPER has been appointed to succeed Prof. Alun Roberts. He gained honours in the final honours school of botany in 1946 at Magdalen College, Oxford, and was awarded the senior Mackinnon scholarship and a Department of Scientific and Industrial Research postgraduate scholarship. In 1949 he carried out research at the Imperial College of Tropical Agriculture and Colonial Microbiological Research Institute, Trinidad. He gained his D.Phil. in 1950 for his work in the interactions of soil micro-organisms. Dr. Harper is a lecturer in agriculture at University College, Oxford, and has been a member of the Board of the Faculty of Agriculture and Forestry since 1957. While he has published much in the realms of plant pathology and of genetics, he is perhaps best known for his researches in experimental ecology. By inclination and practice he is an ecologist in the widest sense, and from an agricultural point of view, in matters of weeds, prefers to start with the biology of control rather than with chemical applications. Dr. Harper, who gained a Rockefeller Foundation award, is at present working in the Department of Dr. G. Ledyard Stebbins, Davis University, California; he will not take up his appointment at Bangor until next year.

Ministry of Agriculture, Fisheries and Food:

Dr. H. R. Barnell

THE Ministry of Agriculture, Fisheries and Food has announced the appointment of Dr. H. R. Barnell as chief scientific adviser (food) in succession to Dr. N. C. Wright (see *Nature*, 182, 631; 1958), who has been appointed to the office of deputy director-general of the Food and Agriculture Organization of the United Nations.

Dr. Barnell was educated at Luton Grammar School and at Downing College, Cambridge. In 1929 he obtained first-class honours in the Natural Sciences Tripos Pt. II (Botany) and was awarded the Frank Smart Prize. He was afterwards Frank Smart Student in botany. He was a research student in the Cambridge Department of Botany from 1929 to 1932. After a period as research assistant and lecturer in the Cambridge School of Agriculture he was appointed to the staff of the Low-Temperature Research Station of the Imperial College of Tropical Agriculture, Trinidad. His work in Cambridge was on the biochemistry of cereals, and in Trinidad primarily on the biochemistry of the banana in

relation to the refrigerated and gas storage of tropical fruits. In 1943 he returned to the United Kingdom as a member of the Dehydration Division of the Ministry of Food, and was eventually transferred to the Scientific Adviser's Division, where he was primarily concerned with developments within fields of food science and technology. In this connexion he not only played a major part in developing the food aspects of Commonwealth defence science, but also was largely responsible for initiating and planning the programme of work of the Ministry's Experimental Factory and Research Establishment at Aberdeen. In 1950 he was appointed deputy chief scientific adviser.

In the course of his official work Dr. Barnell has made wide and warm personal contacts throughout the food industry, not only in Britain but also overseas, where he has travelled extensively in North America, Central and South Africa, Australia and India. He has served on the governing bodies of a number of food industry's research associations, and was one of the Ministry's assessors on the Food Investigation Board of the Department of Scientific and Industrial Research. He is a member of council of the Institute of Biology. Dr. Barnell's outstanding contributions in the building up of the Scientific Adviser's Division make his choice as chief scientific adviser a particularly appropriate one.

Difficulties in the Present Systems of Superannuation

A QUESTION was raised in the House of Commons on July 2 regarding difficulties in the exchange of teachers between universities and colleges of technology arising out of their differing schemes of superannuation. In reply Sir Edward Boyle, Parliamentary Secretary to the Ministry of Education, said that the possibility of transfer between the two superannuation systems had been exhaustively considered and found to be impracticable. There were, however, arrangements for integrating service under the two schemes and he believed these were not as widely understood as they might be. Sir Edward Boyle said he was investigating the matter. Transfer had proved impracticable because the pensions under the university scheme were based on an insurance policy and differed in content and kind from those under public service superannuation schemes. Mr. Allen pointed out that to fill vacancies in the colleges of advanced technology and the regional technical colleges it will be necessary to go to the universities for the senior posts. However, at present the difference between the two schemes was causing many suitable university candidates to decline posts as principals and heads of departments in colleges of technology.

The Zero Gradient Synchrotron

IN a press report dated June 27, 1959, the U.S. Atomic Energy Commission gives details of a large orbital accelerator for protons, to be constructed at the Argonne National Laboratory, Lemont, Illinois. Economic factors always entail a compromise between high energy and high intensity in proton synchrotrons, but improvements in design may materially enhance the output obtainable at a given cost. The technical advance known as alternating-gradient focusing led to the design of the 25 GeV. proton accelerators at Cern, Geneva, and at Brookhaven, but these machines may prove to be limited in beam intensity to about 10^{11} particles per acceleration pulse. In the Argonne Laboratory machine,