

equipment and other gear which he used; his lecture was illustrated by most beautiful slides.

As usual, a main feature of the meeting was provided by the exhibitions of apparatus and books by manufacturers and publishers; these, together with the exhibition of teaching apparatus devised by members, were bigger than ever before, and strained the accommodation of the Royal College of Science to the utmost. The Home Office contributed a display of apparatus used in Civil Defence work by technical reconnaissance officers, and also lent a control set and 'walkie-talkies' so that officers of the Association could maintain contact with the secretary's office from any part of the College. Some sixteen firms were visited by members during the afternoons, as also were the High Pressure Laboratories of the Chemical Engineering Department at the Imperial College. In addition, on each afternoon scientific films were shown, some of which were introduced by Dr. J. A. Harrison (Educational Foundation for Visual Aids).

The meeting created a record for attendance, and the Association must count itself as singularly fortunate in this year's president, Sir Edward Salisbury, who insisted on sharing in all the activities; his zest showed that he was not content with precept in his address, but followed it with action during the meeting.

FARMING HISTORY IN GREAT BRITAIN

FARMERS, industrialists and scholars from all over Great Britain attended a joint meeting of the British Agricultural History Society and the Association of Agriculture, which was held in the University of London on December 3. Sir James Scott Watson, president of the History Society, took the chair, and three papers were read, one in the morning and two in the afternoon. This event, which is one of the two annual meetings convened by the Agricultural History Society, is usually open to non-members on payment of the conference fee.

The morning paper, read by Dr. H. Hamshaw Thomas, president of the History of Science Society, dealt with the life and writings of Richard Bradley, F.R.S., who lived in the early years of the eighteenth century. The paper gave much food for thought, for Bradley came very close to some of the most modern scientific discoveries. By a series of experiments he found that variegated leaf colours could be induced in healthy plants by grafting scions of discoloured plants. The variegation, which is really a virus disease, was, he found, transmitted through the circulation of the sap. Similarly, he was able to produce the breaking of tulip bulbs, which was forgotten or neglected until Sir Daniel Hall, all unknowingly, so it is thought, repeated Bradley's experimental work on modern lines. Besides his achievements in pure science, Bradley was a severely practical man. Through correspondents and personal observation he collected and recorded a great mass of information about the farm practice of his day. As Dr. Hamshaw Thomas said, a complete description of English farming methods of the early eighteenth century can be compiled from his work. Until the present day, Bradley has been regarded as somewhat of a charlatan, but Dr. Hamshaw Thomas's work has done much to retrieve his reputation.

After lunch the first paper was by Prof. Cyril Tyler, of the University of Reading, who dealt with the historical development of feeding standards for livestock, a subject that must be very close to the hearts of farmers in these times. Prof. Tyler ranged over the ages from classical times until the present day, describing the theories of the ancients and the slow progress that was made in gaining real knowledge of the subject until von Thaer's work in the early nineteenth century. It was unfortunate that von Thaer chose such a variable as good hay for his basic unit, but his work pointed the way. Many German and British chemists followed in his steps and, with slowly increasing knowledge, have to-day been able to lay down simple and practical rules for the breeder, dairy farmer and meat producer alike. It is a fascinating story and demonstrates, if that is necessary, that the findings of science are of universal application.

The third paper was rather more recondite and dealt with pollen analysis and its bearing on agricultural history, being given by Mr. J. W. Franks, of the Department of Botany, University College, Leicester. Mr. Franks demonstrated how what happened in districts now covered with peat or fen can be discovered by cutting down through the layers. The depth of the layers and other indications show how long they have taken to accumulate. In these layers of peat the pollen of the various flora that flourished is embedded and preserved, and by carefully collecting this pollen, identifying it and counting it, the flora of that particular age can be deduced. If man was living in the place when the pollen was deposited, his activities in growing cereal or other crops, or the effect of grazing animals, will be shown by the different pollens recovered.

All three papers dealt with subjects that were well worth while, and the conference was a great success. Those interested in this field should write to the Honorary Secretary, British Agricultural History Society, Mr. J. W. Y. Higgs, at the Museum of English Rural Life, 7 Shinfield Road, Reading.

GOVERNMENT RESPONSIBILITY IN INDUSTRIAL RESEARCH

THE extent and character of the responsibility taken by governments for research varies enormously. In the scientifically more advanced countries, the government attitude ranges from the benevolence combined with restricted actual participation to be found in Germany and the United States to the complete control of science exercised in the U.S.S.R. Even within the British Commonwealth, where there is a common tradition of government, the countries have developed different ways of reaching the level of research activity essential in a modern State. Some of the differences and the reasons for them were brought out in a discussion on "Government Responsibility in Industrial Research" held at the Society for Visiting Scientists on December 6 under the chairmanship of Sir Henry Tizard. The principal speakers were Dr. E. W. R. Steacie, president of the National Research Council of Canada, and Dr. B. K. Blount, deputy secretary of the Department of Scientific and Industrial Research, and there were contributions from a number of Commonwealth countries and the United States.