

educational institutions was primarily concerned with pure science. Owing to the initiative of Mr. W. E. Collinge of the University of Birmingham and others, however, the Society of Applied Biologists (as it is now termed) came into being. And as 1938 marked the publication of the twenty-fifth volume of its journal (*Annals of Applied Biology*), Prof. W. Brierley, joint editor since 1921, has written an interesting account of the development of the Association (*Ann. App. Biol.*, 26, 178; 1939), correlating it with more general trends of development in the country over the same period of years. From the outset the Society has welcomed all investigators in economic biology, whether agricultural, horticultural, medical or commercial, and since its inception has steadily widened its interests. The journal, too, has increased in scientific value, developing from a volume of 359 pages in 1922 to one of 891 pages in 1938. The inclusion of photographs of the presidents of the Association from 1904 up to the present time adds much to the interest of the retrospect.

Agricultural Research Institutes

THE reports on the work of the agricultural research institutes in the United Kingdom carried out during the year ending September 1936 have now been published (London: H.M. Stationery Office. 5s.). The volume also includes reports of a number of other investigations, particularly into animal diseases, set afoot by the Agricultural Research Council, and accounts of the research activities of the agricultural advisory officers. Those who require fuller information on any subject are invited to consult the original papers, a list of which is attached to each report, or to inquire of the director of the institution concerned. Farmers and others in need of advice on agricultural or horticultural matters are reminded that by applying to the agricultural organizer for their county, they can draw direct benefit from these research and advisory services. It is perhaps unfortunate that so much delay occurs before these reports are published, as thereby some of their value is inevitably lost.

"Know Your School" Movement in the United States

TO the various agencies which foster local interest in the public schools of the United States, such as the official popular magazine *School Life* and parents' associations, a notable addition has recently been made. At the request of the American Association of University Women, the Office of Education prepared a series of study outlines of certain aspects of the public school system for the use of the Association's branches. These proved so widely acceptable that they are being reprinted as ten-page leaflets. Those already issued are: "Know your Board of Education" (Local Education Authority), "Know your Superintendent", "Know your School Principal" and "Know your Teacher". They deal simply and clearly with such questions as "What are the duties of the principal?", "What should be his qualifications?", "Relationship to the local education authority, to the superintendent, to supervisors, to teachers, to the school janitor, to the community". They are

well adapted for guiding discussion by study circles and contain suggestions for investigation and discussion. In an article by the president of the University of Chicago which appeared in *The Times United States Supplement* of June 8, reference is made to "the deep and abiding faith of the people in education", and it concludes—"we shall yet make good our boast that we are giving the world a demonstration of education by and for democracy". The leaflets should serve as an acid test of this faith, and eventually tend to strengthen it.

Manufacture of Rare Gases

IN an article by H. C. A. Holleman on the manufacture of rare gases (*Philips Tech. Rev.*, May), a method is described by which rare gases, as well as oxygen and nitrogen are obtained from the air at the Philips' factories at Eindhoven in Holland. During the Great War, when it became more and more difficult to import the argon necessary for filling the incandescent lamps made in the factory, they were forced to manufacture the gas itself and a gas liquefaction plant was installed. This plant continued to grow steadily after the War, as it was found to supply many needs. So many different gases, all of which can be obtained from liquid air, are used in the Philips' factories that it was very important to have the whole manufacture under one control. Besides argon, which is used for filling electric lamps, the rare gases helium and neon are also used in gas discharge tubes. For glass blowing and in the machine shops large quantities of oxygen are used in order to reach higher combustion temperatures than it is possible to reach with air. Liquid oxygen and nitrogen are both used on a large scale for cooling purposes and as aids in obtaining a high vacuum.

As a protective gas in the working of metal parts for electric lamps and radio valves, much use is made of a mixture of nitrogen and hydrogen. Nitrogen is also used during the manufacture of electric lamps as a washing gas, while it is also used to fill special kinds of lamps. A modern installation for the separation of air by the Linde method is described. Since krypton and xenon have relatively high boiling points, they collect in the liquid container below the main column, which contains oxygen for the most part. Methane occurs in variable amounts in the air and has about the same boiling point as krypton, so that it is collected with the krypton in the liquid oxygen. This leads to difficulties in practice since liquid oxygen together with a combustible substance like methane can easily form an explosive mixture and lead to accidents. Hence the strictest precautions have to be taken in the preparation of krypton and xenon.

Earthquakes registered at De Bilt during 1936

THE "Seismische Registreringen in De Bilt", 24; 1936, published in November 1938 and written by Dr. G. Van Dijk with a foreword by Dr. H. G. Cannegieter, contains a description of the instruments in use at the station with the constants necessary for the interpretation of the seismograms obtained, a list of the abbreviations used, acknowledgments, a short