NEWS and VIEWS

Sir Arthur Schuster (1851–1934)

SIR ARTHUR SCHUSTER, who was born in Frankfurt-on-Main a century ago, on September 12, entered his father's business at Manchester in 1870. After studying physics and mathematics at Owens College, he took up spectrum analysis and went to work with Kirchhoff at Heidelberg, where he obtained his Ph.D. degree in 1873. Further study at Göttingen and Berlin was followed by his leadership, when only twenty-four, of the Royal Society's solar eclipse expedition to Siam. Subsequent expeditions took him to Colorado, Egypt and the West Indies. He became a naturalized British subject in 1875. After five years under Clerk Maxwell and Lord Rayleigh at the Cavendish Laboratory, Cambridge, he was appointed professor of applied mathematics at Owens College in 1881, succeeding his former teacher, Balfour Stewart, as Langworthy professor of physics in 1888. He was elected a Fellow of the Royal Society at the age of twenty-eight. He was secretary of the Royal Society during 1912–19, foreign secretary during 1920–24, and vice-president 1919–24; he received a Royal and the Rumford and Copley Medals. Schuster carried out important work on the discharge of electricity through gases, in meteorology, in terrestrial magnetism, and on the mathematical theory of periodicity; he was the first to photograph the spectrum of the solar corona. His classic "An Introduction to the Theory of Optics" was published in 1904. He was president of the British Association for the Manchester meeting in 1915, and was knighted in 1920. After his retirement from the chair at Manchester, he took an active part in fostering international collaboration in science, and was the first secretary of the International Research Council, which in 1931 became the International Council of Scientific Unions. Reserved and difficult to know, Schuster was always the friend of his students. He died on October 14, 1934.

National Physical Laboratory: Fifty Years of Progress

ON January 1, 1900, Sir (then Mr.) Richard Glazebrook was appointed the first director of the National Physical Laboratory at Teddington, and although Bushy House, once a Royal residence, was not formally opened as the Laboratory proper until March 19, 1902, the Laboratory can be said to date from Glazebrook's appointment. Thus to celebrate the jubilee, an exhibition of the work of the Laboratory was held in the Royal Society's rooms on January 30, 1950 (see *Nature*, **165**, 257; 1950), and during May 23–29 this year the 'open days' of the Laboratory were intended partly as a jubilee celebration (see *Nature*, June 23, p. 1006). Bushy House with its gardens is still part, but now only a corner, of the fifty-acre estate on which sixteen major and minor buildings have been constructed to house the ever-growing needs of the Laboratory. The history of the growth and development of the Laboratory and the story of its many activities is of interest, not only to men of science all over the world, but also makes fascinating reading for the less technically minded public. The publication, therefore, of the Jubilee Book of the National Physical Laboratory (pp. 104+32 plates; London: H.M. Stationery Office, 1951; 4*s*. net) in time for the many visitors both from home and overseas in London for the Festival was greatly to be welcomed. Written by John Langdon-Davies and profusely and beautifully illustrated, it gives an accurate, interesting and easily read description of the way in which, in spite of difficulties and the increasing number of new branches of applied science, the Laboratory still gives pride of place to the science and art of measurement. The book consists of seven chapters, beginning with a discussion of the importance of accuracy in all the work at Teddington. Chapter 2 describes the origin of the Laboratory and chapter 3 its organization and relation to other bodies. The two succeeding chapters outline the maintenance of standards and the type of research that is undertaken, and the final two discuss some recent investigations and special types of research. There can be no doubt that the Laboratory will continue, as in the past, to be the champion of accuracy in measurement; an invaluable storehouse of equipment, techniques and personnel which could not be spared without serious loss to the nation's scientific capital; and an effective instrument for making existing scientific knowledge known as rapidly as possible to industry and others who are in a position to use it.

Research Council of Alberta

THE thirty-first annual report of the Research Council of Alberta covering the year 1950, like earlier reports, stresses the importance of the investigations of the Athabasca bituminous sands, both as road material and as a source of liquid fuel. Co-operative experiments in the National Research Laboratories have demonstrated the feasibility of combining the hot-water separation process with the fluidized-bed cracking and distillation process, using the wet crude oil from the former as feed stock for the latter process; and by use of this combination the economic development of the bituminous sand is reported as immediately practicable. Besides further work on the cleaning, briquetting and balling of coal, studies on the constitution of coal have been made, including an investigation of the oxidation of low-rank Alberta coals. A preliminary survey was made of the Pleistocene deposits of the Edmonton area and a survey of automobile lubricating oils for sale within the Province was continued, as well as various other investigations of petroleum and associated products, including a study of anti-freeze solutions. Work continued on compaction studies on new road construction, and as a result of preliminary investigations on the causes of cracks in asphalt paving that do not appear to be associated with overloading of the road structure, consisting of pavement-supporting base and sub-soil, a detailed programme has been planned for the winter period. Two locations of unstable hillsides have been studied in detail to assess the soil conditions accompanying such instability.

The natural gas research programme comprises three current projects: the catalytic pyrolysis of natural gas in a fluidized bed; the kinetics and yields of the partial oxidation of butane in the gas phase; and an evaluation on the pilot plant of the National Research Council's process for carbon black from natural gas. An irrigation survey of the Bow River was completed as well as one of the Carmangay, and a preliminary survey of the William Pearce project for diverting some of the water of the Red Deer River. Some 400,000 acres were mapped in the Brazeau–Rocky Mountains House area, and about 1,750,000 acres in the McLennan and High Prairie area. Exploratory surveys were made of an area