NEWS and VIEWS

Sexcentenary of the University of Prague

THE decree of Charles IV, king of Bohemia, founding the Universitas Carolina, now the University of Prague, was dated April 7, 1348. Its sexcentenary was to have been celebrated by an international gathering; but events in Czechoslovakia have led to the withdrawal of acceptances of invitations by universities of Britain,. on the ground that the University no longer enjoys its academic freedom. Charles' decree appointed the archbishop, Arnost of Pardubice, as chancellor and stipulated that it should "serve the cultural needs of the Bohemian people, that they should no longer beg at foreign tables but have a worthy feast brought to their own table". At first, instruction was in Latin, and being one of the few educational centres it attracted many German and other students. During the rectorship of John Hus at the beginning of the fifteenth century, the Czechs were outvoted in administrative appointments. This led to the famous Kutná Hora decree of King Wenceslas, in 1409, giving the Czech 'nation' three votes and the others (German, Polish and Silesian) one each, an action that led to the departure of the Germans and hastened the founding of the University of Leipzig in 1411.

Religious matters often dominated university life, and many magisters found themselves against ecclesiastical and royal authority, especially after the advent of the Habsburg rulers in 1526. The botanist, Zaluzianský, was rector about 1600 and tried in vain to secularize the University; when the Czechs lost their independence in 1620, Ferdinand II installed Jesuit teachers and it became the Charles-Ferdinand University. A long period of stagnation followed, but eventually it regained some of its earlier significance, and during the nineteenth century several professors achieved world-wide reputations. Czech was again used by some, and in 1882 the University was divided into Czech and German institutions. These endured through the period of the first republic until Czech higher educational establishments were closed by the Nazis in 1939. The Charles University reopened in 1945 and had to cope with six years accumulation of students and with teaching staff depleted through age and executions. In the present academic year there are altogether 23,977 students (including 5,423 medical, 4,977 philosophy, 2,181 science) and provision has been made for research work in practically every subject.

Duddell Medal of the Physical Society : Dr. R. J. Van de Graaff

THE Duddell Medal for 1947 of the Physical Society has been awarded to Dr. R. J. Van de Graaff, of the Massachusetts Institute of Technology, in recognition of the invention and development of the high-voltage electrostatic generator already known by his name. To Van de Graaff belongs the credit of making a type of particle accelerator based on the simplest possible conception. Electric charge, sprayed on to a moving belt, is carried into a sphere, acting as a Faraday cage, until the potential rises to the desired value. The full potential to be applied to the particles thus exists between the sphere and the earth, and the great practical difficulty is to avoid discharges at undesired positions and corona losses. Van de Graaff overcame all these difficulties

and so long ago as 1937 he exhibited at the Paris Exhibition an apparatus producing 4,000,000 volts. Sets for 10,000,000 volts have more recently been built and operated successfully. Dr. Van de Graaff will receive the Medal at a meeting of the American Physical Society in Washington, D.C., on April 29; the presentation will be made by the British Ambassador, Lord Inverchapel.

Chemistry at University College, London: Prof. E. D. Hughes

RECENTLY the Chemistry Department of University College was reinforced on the side of inorganic and physical chemistry by the addition to the staff of Dr. Kathleen Lonsdale; now organic chemistry in the Department is to be strengthened by the appoint. ment of Prof. E. D. Hughes to the additional chair of chemistry which the Senate of the University has just created. The other professors in the Department are Prof. S. Sugden and Prof. C. K. Ingold. Prof. Hughes was originally trained in the University of Wales. His first researches were carried out during 1927-30 at Bangor under the leadership of the late Prof. Kennedy Orton and Dr. H. B. Watson. In 1930 he went to London to work with Prof. Ingold at University College, and in 1934 joined the staff of that College. There he formed an active research group, closely integrated with that of Prof. Ingold. In 1936 he received the Meldola Medal, which is awarded for the most distinguished chemical work carried out under the age of thirty. In 1943 he was appointed professor of chemistry at University College, Bangor, thus succeeding to a chair which his former master, Frof. Orton, was the first to make famous.

Prof. Hughes is distinguished for his researches on the mechanism and kinetics of organic reactions, particularly in relation to substitution and elimination. He discovered and firmly established the unimolecular forms of these reactions, and made many extensions of these basic observations, for example, to the elucidation of the multiform mechanisms of carboxyl esterification and hydrolysis, and to the clarification of the conditions for the Walden inversion. In these studies he has made considerable use of both radioactive and non-radioactive tracers : the stills at Bangor for the production of heavy oxygen are probably the most powerful in existence. His most recent work refines the concept of steric hindrance, provides direct evidence concerning the formation and stability of the nitronium ion and its role in nitration, and defines the mechanisms operative in anionotropic change. He has published more than ninety original papers.

Geography at Bedford College, London: Mr. Gordon Manley

MR. GORDON MANLEY will go to the newly created chair of geography at Bedford College, University of London, with wide experience of university life in Britain and as an acknowledged authority on climatology. Mr. Manley graduated at both the Universities of Manchester and Cambridge, where he was an exhibitioner of Gonville and Caius College, and he has held university posts successively at Birmingham, Durham-as first head of the Geography Department -and Cambridge. His interests in the meteorological aspects of snow-cover may have derived from his enthusiasm for the Pennines and the Lake District.

as a keen mountaineer and rock climber as well as geographer. A visit to East Greenland as a member of Mr. J. M. Wordie's expedition of 1926 confirmed these interests. More recently he has analysed longperiod temperature records in the north of England and revealed the gradual warming of our winters since 1820. The close resemblance between these changes and those for Stockholm suggests that this matter is of far more than local significance. In these early records Mr. Manley sees a valuable source of information that may throw light on the greater climatic changes of the Pleistocene Ice Age. Mr. Manley is, too, a keen but balanced advocate of the geographer's contribution to meteorology. This was the theme of his second presidential address to the Royal Meteorological Society. The Buchan Prize in 1943, the Symons Lecture in 1944, and the Murchison Grant of the Royal Geographical Society in 1947, all marked Mr. Manley's contributions to climatology; but his papers also include other branches of geography, particularly the history of cartography. Mr. Manley remained at Cambridge long enough to see the University give somewhat belated recognition to meteorological studies by setting up a Meteorological Committee, of which he was the first secretary.

Iron and Steel Institute Awards

THE Council of the Iron and Steel Institute has made the following awards : Bessemer Gold Medal for 1948, to Mr. W. J. Dawson, formerly of Hadfield's, Ltd., in recognition of his contributions to the development of steel castings and to the production of alloy and heat-resisting steels; Sir Robert Hadfield Medal for 1948, to Mr. A. Preece, reader in metallurgy in the University of Leeds, in recognition of his researches on the scaling and on the overheating and burning of steel ; Williams Prize for 1947, to Mr. R. Fowler, of Richard Thomas and Baldwins, Ltd., for his paper on "Blowing out a Blast-Furnace", printed in the Journal of the Iron and Steel Institute, 155, 513 (1947). The presentations will be made on May 5 during the annual general meeting of the Institute.

American Institute of Biological Sciences

An American Institute of Biological Sciences has recently been established. The rapid advance of the biological sciences and their impact on human welfare have created new problems relating to the development and application of those sciences. During recent years many biologists have recognized that the biological sciences suffer from the lack of a service organisation, which would help the various biological societies to discharge more effectively those functions which are of common concern to them all, but which they cannot adequately exercise as individual societies. The new organisation is designed to fill this need as well as to serve the biological sciences in other ways. A governing board has now elected the officers and an executive committee. Recognizing the potential importance of this new undertaking for the advancement of the biological sciences, and through them for all biologists, the U.S. National Research Council has not only endorsed the programme, but has also agreed to make available the general services of the Council. As a part of the National Research Council, the Institute will also provide biologists with an agency through which they can maintain close relations with governmental activities and with other fields of science represented within the Council.

The Fall Webworm of North America in Europe

DR. PAUL SURÁNYI, University of Agricultural Sciences, Budapest, states in a letter that the first specimen of the moth of fall webworm (Hyphantria cunea Drury) to be caught in Europe was found in the vicinity of the Danubian Free Port of Budapest in 1940. Hitherto it has not been observed outside the United States and Canada. The way it has increased shows that its caterpillar has found very favourable conditions of life in Europe. Nests of the caterpillars were first observed in 1943; since then it has increased rapidly, and during 1945-46 it did considerable damage in orchards and on various trees. It was distributed over a semicircular area with a diameter of 80 km. in 1946, which has now increased to 200 km. Indeed, this destructive insect has overrun two-thirds of Hungary, has reached the borders of Czechoslovakia and Yugoslavia, and is approaching those of Austria and Rumania. North of Budapest it is seldom observed, due probably to the prevailing north to north-west wind. Its favourite feeding-plants-the same as in North America-are Acer negundo L. and Morus alba L., from the latter of which it strips the leaves in groves and along the highways. But it feeds on all fruit-bearing and garden trees, and-what is much more dangerous-it has established itself also in the woods. Fifty-eight species belonging to different genera are known to be food plants; they include oak (Quercus spp.), alder (Alnus glutinosa L.), black locust, (Robinia pseudacacia L.), common stinging nettle (Urtica dioica L.), cabbage (Brassica oleracea L.), and also horseradish (Armoracia lapathifolia Gilibi). Two generations of the fall webworm normally hatch in a year. Its swift spread seems to be due not only to suitable conditions, but also to the fact that, so far as Dr. Surånyi's experience goes, the caterpillars are seldom attacked by European parasites.

Mechanics of Packings of Granular Material

In view of the many technological fields where an understanding of the properties of granular materials is fundamental, it is surprising that there has been little systematic investigation, the present inchoate body of knowledge being derived from ad hoc studies. In reviewing the more recent literature, D. R. Hudson (Machinery, 70, 617, 681; 1947) discusses work on packings of material in bulk carried out by investigators in the fields of geology, fuel technology, the ceramic industry, civil and chemical engineering, and powder metallurgy. This widespread interest may account partly for the diffuse study in industrial research. On the academic side the present preoccupation with the fine-structure of matter has led to the neglect of Osborne Reynolds' pioneer work on packings, undertaken in the 1890's in an attempt to provide a mechanical explanation of the universe.

Hudson's review is more concerned with the structure and characteristics of a compacted granular bed—the voidage and number of interparticle contacts and their dependence on particle size and size distribution, the relative size and the shape of the container—than with the effect on the structure of deformation of the packing, which is of especial importance in earth pressure theory, in the study of handling and conveying mechanisms and in the design of hoppers, bunkers and silos, where Reynolds'