the industry. But in 1916 he returned to academic life and to Finsbury to succeed Meldola, transferring to Birmingham as Mason professor in 1919. In 1925 came what he described as "a State experiment in Chemical Research", namely the decision to form a Government Research Laboratory at Teddington under the Department of Scientific and Industrial Research, with Morgan as its first director.

It was generally felt that no one was better fitted for the task, but opinions were sharply divided as to the nature of the work which could best be carried out there. It is widely accepted now that Morgan made a success of the task, and that when he retired after thirteen years he left the Chemical Research Laboratory as an asset of real value to the nation. The work done by the Laboratory during the first few months of the War has fully justified all the hopes which Morgan had for its future, and it was a keen pleasure to him to hand over the directorship to one of his students, Dr. G. S. Whitby.

Morgan organized a variety of work at Teddington, including an installation for high-pressure reactions, a branch of chemistry then in its infancy. His interest in chemical engineering had always been strong, and he did much to develop the autoclave.

Morgan's scientific researches cover so wide a field that any reference to them in detail here is impossible for lack of space. Their very diversity prevented perhaps the highest achievement in any one field, though all were fruitful to a greater or less extent. Morgan's claim to fame rests on broader foundations. He did as much as anyone to place the science of chemistry on a sure basis in Britain. By teaching and research, by co-operation with industry, he inspired men to succeed in solving chemical problems and advanced the national status and prestige in chemistry, pure and applied.

At a moment when most men would have sought ease, he was ready to start again in a new branch of his subject as chairman of the Research Fund Committee, Institute of Brewing. He received numerous honours, a knighthood in 1936, honorary degrees at Dublin, Birmingham, St. Andrews, the fellowship of the City and Guilds Institute, to mention only a few. He was formerly president of the Chemical Society and of the Society of Chemical Industry, and an indefatigable worker on committees.

We have lost his kindly presence and the help of his clear incisive mind all too soon. A life crowded with change and incident may have caused him to live faster than some of us; we could have wished for his ripe counsel in old age.

E. F. ARMSTRONG.

Mr. E. S. Harkness

MR. EDWARD STEPHEN HARKNESS, the American philanthropist, who died on January 30 just a week after his sixty-sixth birthday, devoted his last score of years to administering and sustaining the benefactions instituted by his mother, who founded the Commonwealth Fund in America in 1918. The Harkness fortune was made in Standard oil. It dates from about seventy years ago, at which time Stephen V. Harkness, the father, who was in a small way of business in Cleveland, Ohio, is said to have lent the daring young Rockefeller £1,200. In the present century the example set by Rockefeller in efficient philanthropy inspired the Harkness family. After the death of the father, mother and son made philanthropy their first interest. The elder Mrs. Harkness died in 1926, leaving for the Fund an endowment of about £7,500,000, which sum Edward Harkness later increased to more than £10,000,000. But he also bestowed large personal gifts.

Efforts of the Commonwealth Fund have taken chiefly the lines of education and of public health. In England the first major gift was the fellowships for post-graduate Britons in American universities, the counterpart to the Rhodes scholarships, except that Commonwealth fellows may proceed to any of about twelve universities in America, either between the Atlantic coast and the Mississippi, or on the Pacific coast. The stipend is £600 a year for two or three years; to date appropriations for these fellowships have reached a total of £650,000. Most of the holders have studied science in America—physics, chemistry, biology, engineering. In 1930 Harkness gave to England the Pilgrim Trust, £2,000,000, the first grant from which was given to the building fund of the Royal Institution. The five original trustees of the Pilgrim Trust still serve. A third Harkness philanthropy in Great Britain was the Child Guidance Council, a centre of information upon 'mental health' for children. Recently in Woburn House, the Council is now evacuated to Bath, and is itself at present engaged in an inquiry into "emotional and behaviour problems" of evacuees.

Grants from the Commonwealth Fund in America have taken a general medical turn, following in that subject the pattern of the Rockefeller Foundation, and contributing in the past twenty years about £4,000,000. Part of this sum has subsidized research in trachoma, leukæmia, functions of the kidneys, and bodily resistance to disease. An annual grant has been given to Dr. May Wilson's clinic in New York for rheumatic fever. Large sums have gone on one hand to the advance of medical teaching, and on the other to fellowships for young post-graduates in medicine. Harkness built ten hospitals. In these, mostly in the rural south, as in Virginia and Tennessee, he took a steady personal interest. In one area, Rutherford County, Tennessee, the Fund has for fifteen years served the cause of public health, and has strikingly reduced the death-rate there from typhoid fever, diarrhœa, tuberculosis and puerperal fever together with infant mortality. Only a fortnight before Harkness died he announced the enlargement of two of his hospitals in this region. But apart from this medical philanthropy, Harkness will be chiefly remembered in America for his great gifts to Harvard and Yale Universities—about £6,000,000 altogether—for a scheme under which those unwieldy institutions were enabled to build separate colleges—seven at Harvard and nine at Yale—after the plan of Oxford and Cambridge, and at last give staff and students an opportunity to become individuals.

A reticent and diffident man, Harkness used to say he devoted almost as much time to shunning publicity as to studying philanthropy. A widow survives him, but no children. WILLARD CONNELY.

[It has been announced that Mr. Harkness has left the bulk of his estate, which is believed to exceed 100,000,000 dollars, in trust to his wife. After her death it is to be divided among twelve institutions including: the Commonwealth Fund, the College of Physicians and Surgeons of Columbia University, Harvard University, Yale University, and Atlanta University.]

WE regret to announce the following deaths:

Prof. Alexandre Desgrez, a member of the Section of Free Academicians of the Paris Academy of Sciences, and professor of medical physics in the Faculty of Medicine, University of Paris, on January 20.

Prof. S. J. Hickson, F.R.S., emeritus professor of zoology in the University of Manchester, on February 6, aged eighty years.

Mr. H. I. Smith, formerly chief Dominion archæologist and assistant director of the Canadian National Museum, aged sixty-seven years.

NEWS AND VIEWS

Horace Bénédict de Saussure (1740–1799)

ON February 17 occurs the bicentenary of the birth of the celebrated Swiss naturalist and geologist Horace Bénédict de Saussure. He was born at Conches, near Geneva, in which city he passed most of his life and in which he died on January 22, 1799. As a boy he was a diligent collector of plants and minerals, being stimulated in his studies by his uncle, the naturalist Charles Bonnet (1720–93). At the age of twenty he made his first tour to the glacier of Chamonix, an excursion regarded generally as dangerous. This was the beginning of his many journeys in the Western Alps and his travels in England, Germany, Sicily and Italy. At the age of twenty-two he was given the chair of physics and philosophy at the Academy of Geneva, and this post he held until 1786 when he resigned and was succeeded by his pupil Marc-Auguste Pictet (1752–1825). Among his earliest writings was a volume on electricity published in 1766. Year by year he extended his knowledge of the Alps, and in 1787 on August 2 with Michel Cachet he ascended Mont Blanc. The first Englishman to make the ascent, Mark Beaufoy (1764–1827), reached the summit a week later. In 1788 Saussure spent about a fortnight on Col du Geant and between 1789 and 1792 climbed Monte Rosa, the Breithorn, and other mountains. The upheaval in Switzerland due to the revolutionary movement in France drew him for a time into political life, but in 1794 most of his activities were brought to an end by a stroke of paralysis. From this he never really recovered.

Saussure's great work "Travels in the Alps 1779–1786" was described by von Zittel as a model of clear language, exact observation and cautious reasoning. His "glowing descriptions of the Alpine world removed the prejudice against the 'Montagnes Maudits', and awakened a feeling of enthusiasm for the infinite wonderland of beauty and delight in the higher altitudes of the Alps. Apart from his achievements in science de Saussure may be regarded as the pioneer of a practically new cult in human enjoyment, the love of mountain climbing". As a geologist de Saussure's aim was to observe, and to observe accurately. He examined the mineral composition of the rocks and studied their topographical, meteorological and physical relations on the mountains. He improved the hygrometer and the anemometer and devised a cyanometer and a diaphonometer for comparing the degrees of transparency of the atmosphere at different altitudes. Half a century after de Saussure's stay on the Col du Géant, J. D. Forbes visited the same spot and in 1843 he wrote in his "Travels through the Alps of Savoy" that "No system of connected physical observations at a great height in the atmosphere has ever been undertaken which can compare with that of de Saussure. At any time such self-denial and perseverance would be admirable; but if we look to the small acquaintance which philosophers of sixty years ago had with the dangers of the higher Alps, and the consequently exaggerated colouring which was given to them, it must be pronounced heroic".

A biography of de Saussure was published by Dr. Douglas Freshfield in 1920 and was reviewed by Prof. T. G. Bonney in NATURE of February 10, 1921.

Evacuation and the Schools

LORD DE LA WARR'S recent speech as President of the Board of Education in the House of Lords in reply to a motion by the Archbishop of Canterbury has been sent out as an announcement of the Board. It is a timely recognition that educational affairs in Great Britain are not as they should be, and that improvements are needed at once. Granting that the wholesale evacuation of children was a necessary and difficult process, more pains should have been taken to cope with the problems to be faced, one of which, now urgent, is an increase of illness at this time of the year. Every schoolmaster knows the dangers of the Easter term. Things have been done in a hurry and in alarm which should certainly be undone. An important school in a non-danger area was closed until further notice and reopened when better sense prevailed; much of the commandeering or use of school buildings for Government officials or civil defence was unwarranted, and its extent has been reduced.