

use of modern electrical methods of programme recording for use in the transmitters. As an example of the use of the station, reference may be made to the occasion of the broadcasting of the King's Christmas message on December 25 last, when the vision of Sir Ambrose Fleming and other pioneers of radio communication, of a single human voice addressing listeners over the whole surface of the earth, was realised. In addition to being transmitted by all the B.B.C. stations serving Great Britain, it was sent through the two Empire transmitters at Daventry. One of these was connected to the Indian zone array, for which zone the transmission took place at the normal time. The other short wave transmitter was operated on a wave-length of about 20 metres,

and supplied an omnidirectional aerial, so as to broadcast so far as possible in all directions. In addition, the programme was recorded by Blattner-phone and used for re-transmission in the various zone programmes later in the day.

In addition to the direct reception from Daventry on listeners' private receiving sets, it is likely that the broadcasting authorities in the Dominions will arrange for the relaying of some programmes through their local stations operating on medium wave-lengths. From the point of view of the B.B.C., the whole Empire service will be experimental for a period of about six months, during which arrangements will be made to collect reports of reception from selected listeners in all parts of the Empire.

R. L. S.-R.

News and Views

New Year Honours

THE New Year Honours List includes the following names of scientific workers and others associated with scientific work: *Baron*: Sir Thomas Horder, Bt., senior physician to St. Bartholomew's Hospital. *Knight of the Thistle*: The Right Honourable Sir Herbert Maxwell, Bt., chairman of the Royal Commission on Scottish Historical Monuments, president of the Society of Antiquaries of Scotland, 1900-13. *K.C.B.*: Sir Frederick Leith-Ross, chief economic adviser to His Majesty's Government. *K.C.I.E.*: Major-General J. W. D. Megaw, Director-General of the Indian Medical Service. *K.C.V.O.*: Mr. F. J. Willans, surgeon apothecary to H.M. Household at Sandringham. *Knights*: Mr. C. A. Cochrane, chairman of the Council of Armstrong College, University of Durham. Mr. H. H. Dalrymple-Hay, consulting engineer, for his inventions and services in connexion with the construction of tube railways. Prof. F. T. G. Hobday, Principal and Dean of the Royal Veterinary College. Mr. A. J. C. Huddleston, lately economic adviser to the Sudan Government. Mr. J. L. McKelvey, for services to surgery in the Commonwealth of Australia. Mr. E. R. D. MacLagan, Director and Secretary, Victoria and Albert Museum. Mr. W. Perry, president of the Royal Agricultural Society, New Zealand. Mr. R. S. Rait, Principal and Vice-Chancellor of the University of Glasgow since 1929. *C.H.*: Rev. John Scott Lidgett, president of the Methodist Church, Vice-Chancellor of the University of London in 1930-31 and 1931-32. *C.M.G.*: Dr. J. J. C. Bradfield, Government engineer, Sydney Harbour Bridge, State of New South Wales. Prof. D. B. Copland, professor of commerce, University of Melbourne. Mr. L. Ennis, constructing engineer for Messrs. Dorman, Long and Co., Sydney Harbour Bridge, New South Wales. Mr. W. B. Johnson, director of Medical and Sanitary Service, Nigeria. Mr. W. J. U. Woolcock, formerly general manager of the Association of British Chemical Manufacturers, chairman of the Committee of Non-official Advisers associated with the industrial advisers of the United Kingdom

delegation at the Ottawa Conference. *C.I.E.*: Major-General W. C. H. Forster, Surgeon-General with the Government of Bombay. Lieut.-Col. R. B. Seymour Sewell, director of the Zoological Survey of India. Mr. C. G. Trevor, chief conservator of forests, Punjab and North-West Frontier Province. Col. J. N. Walker, director of the Medical Department and Sanitary Commissioner, his Exalted Highness the Nizam's Government, Hyderabad, Deccan. *C.B.E.*: Mrs. Alice Baker, one of the founders of the Thomas Baker, Alice Baker, and Eleanor Shaw Medical Research Institute, Melbourne, Commonwealth of Australia. Dr. F. H. A. Marshall, reader in agricultural physiology in the University of Cambridge. Dr. S. W. Smith, chief assayer, Royal Mint, and president of the Institute of Mining and Metallurgy. Dr. H. A. Tempany, director of agriculture, Straits Settlements and Federated Malay States. Prof. H. E. Whitfeld, Vice-Chancellor of the University, State of Western Australia. *O.B.E.*: Dr. J. T. Bradley, chief medical officer, Seychelles. Mr. A. V. Elsdon, War Department chemist, Royal Arsenal, Woolwich. Mr. A. McCallum, senior inspector for agricultural education, Department of Agriculture for Scotland. Mitharam Pribhdas Mathrani, executive engineer, Left Works Division, Lloyd Barrage Circle, Sukkur, Bombay. Dr. S. A. Neave, assistant director, Imperial Institute of Entomology. Mr. J. Smith, director of animal health and acting secretary for agriculture, Northern Rhodesia. Mr. H. W. O. Taylor, executive engineer, Right Works Division, Lloyd Barrage Circle, Sukkur, Bombay. Mr. R. S. Taylor, principal medical officer, Somaliland Protectorate. *M.B.E.*: Mr. J. Coelho, assistant Crown surveyor and assistant engineer, Public Works Department, Gibraltar. Mr. W. M. Schutte, agricultural engineer to the Government of Bombay. Mr. H. N. Williams, assistant engineer, Irrigation Department, Iraq.

Calendar of Nature Topics

FOR the past nine years calendars have been published in our columns recording week by week notes of historic interest relating to people and

institutions, discoveries and inventions, customs, festivals, geographical exploration and other matters appropriate to a scientific "Book of Days". We began in 1924 with "Early Science at the Royal Society", and during last year appeared a "Calendar of Geographical Exploration", which was contributed by Miss R. M. Fleming and most admirably fulfilled its purpose. With this issue begins an annual cycle of a different kind relating to natural history in a wide sense, as was understood, for example, by Gilbert White in the notes and letters which make up his famous "Natural History of Selborne". Prof. James Ritchie, Regius professor of natural history in the University of Aberdeen, will be chiefly responsible for the weekly notes in this "Calendar of Nature Topics", and Dr. C. E. P. Brooks will deal with meteorological events of topical interest. In addition, we hope to receive occasional notes on such subjects as agriculture, botany, marine biology, fisheries and similar branches of pure and applied natural history from other contributors.

It is not intended that this year's Calendar shall be of the usual type, recording aspects of Nature or country life week by week in Great Britain, but that it shall take a much wider outlook. The main idea will be to bring together, in chronological sequence throughout the year, observations and conclusions representing ascertained knowledge to-day on the subjects of the notes; and the range of the natural occurrences or phenomena may be that of the whole world. It is unlikely, therefore, that there will be any lack of suitable material; nevertheless, suggestions of topics of interest for inclusion in this new Calendar, or short notes which might be used, would be helpful and should be sent to Prof. Ritchie at the University of Aberdeen. It need scarcely be said that any such communications should be sent well in advance of the dates to which they refer.

Centenary of Legendre, 1752-1833

THE centenary occurs on January 10 of the death of the eminent French mathematician, Adrien Marie Legendre, whose labours over a period of sixty years were contemporary with those of Lagrange and Laplace, with whom he formed part of "that constellation of mathematical talent of which Paris was for more than two generations the main centre". Legendre was eighty years of age when he died, having been born at Toulouse on September 18, 1752. He was educated at the Collège Mazarin and at the age of twenty-five became a professor at the military school in Paris. He published his first important memoir, on attractions, in 1783, and in that year he was elected a member of the Paris Academy of Sciences. Four years later, with Cassini and Mechain, he was appointed to conduct the geodetical operations for connecting the Observatories of Paris and Greenwich. Through this he visited London, and was made a foreign member of the Royal Society. Unlike many of his contemporaries, he passed through the Revolution unscathed and by his writings and his work on commissions continued to add to his reputation.

In 1795 he became a member of the staff of the famous Ecole Normale. His chief works were his "Géométrie" (1794), which was translated into English by Thomas Carlyle, his "Théorie des Nombres" (1798), "Calcul Intégral" (1811-1826) and "Fonctions Elliptiques" (1825-26). A few weeks before his death he added to the last of these another volume, which contained some of the researches of the younger mathematicians, Abel and Jacobi, the value of whose work Legendre quickly recognised. Among the best-known pupils of Legendre were Cauchy and Arago. The death of Legendre took place at his house at Auteuil.

Sir Henry Roscoe, 1833-1915

AMONG those whose efforts aroused Great Britain to a realisation of the value of scientific education few did more than Sir Henry Enfield Roscoe, whose birth took place in London on January 7, 1833, a century ago. The son of a judge and a grandson of William Roscoe the historian, he got his second christian name from a great-grandfather, Dr. Enfield, a colleague of Priestley's at Warrington. He was sent first to Liverpool High School and afterwards to University College, London, where he came under the influence of Graham and Williamson. Later, he spent some time under Bunsen, working in the historic old laboratory at Heidelberg where "beneath the stone floor at our feet slept the dead monks, and on their tombstones we threw our waste precipitates". Returning from Germany, Roscoe at the age of twenty-four years was appointed to succeed Frankland at Owens College, Manchester, a position he held with conspicuous success for thirty years. He was one of the foremost in engendering a spirit of research and many of his students afterwards rose to high rank. His collaboration with Dittmar, Harden and Schorlemmer, the first professor of organic chemistry in Great Britain, led to the publication of many notable works some of which are still sought after. One of his achievements as an experimentalist was the isolation for the first time of vanadium. He was elected a fellow of the Royal Society in 1863 and awarded a Royal medal in 1874; he served as president of the Society of Chemical Industry in 1881, and as president of the Chemical Society in 1882. He was elected member of parliament for South Manchester in 1885; in 1887, the year in which he retired from Owens College, he was president of the British Association. He was a member of various Royal commissions, and from 1896 until 1902 was Vice-Chancellor of the University of London. His eightieth birthday was marked by the presentation of his bust to the Chemical Society. He died on December 18, 1915, at Woodcote Lodge, West Horsley, Surrey, and was buried four days later in Brookwood Cemetery.

North Atlantic Gale

THE last day of the old year and the first few days of the new have proved remarkably tempestuous on the North Atlantic. During the near approach to Ireland on December 31 of an exceptionally intense