a system which will find application in other parts of the world.

Equipment is already being manufactured for a scheme linking the north and south islands of New Zealand across the Cook Strait. This cable will transmit 600 MW. at 500 kV.

Operation of the cross-Channel system was temporarily suspended as a result of damage to one of the cables about four miles from the English coast by a ship's anchor on January 12. It has been reinstated for the time being at half-power, utilizing the damaged cable as an earthed return conductor. J. GREIG

OBITUARIES

Dr. Ezer Griffiths, O.B.E., F.R.S.

DR. EZER GRIFFITHS died at Teddington on February 14. His intellectual qualities combined with his open-hearted friendliness to win him the respect and affection of any community to which he belonged. His own interests and affections were deeply bound up with the National Physical Laboratory, which he served for nearly forty years.

Griffiths went to work at the National Physical Laboratory in 1915 being then twenty-seven years old and having already gained considerable experience as a research worker on thermal properties. A native of Aberdare, he had graduated at University College, Cardiff, with first-class honours in physics, gained the Isaac Roberts research scholarship and later elected a fellow of the University of Wales. With Principal E. H. Griffiths, he determined the heat capacities of several metals down to liquid air temperatures and also published papers on related subjects.

Early in 1916, full responsibility for the work of the Heat Section at the National Physical Laboratory fell on Griffiths and remained with him until his retirement in November 1953. Work on thermal insulation had already been started and was to assume major proportions, leading to the two outstanding investigations made by Griffiths in the 1920's into the transport to Great Britain of apples from Australia and frozen lamb from New Zealand. A series of special reports on this work was published in the years 1924-33 by the Food Investigation Board and can still be read with considerable profit. This was the work of which Griffiths himself was most proud and which he loved to recall in later years.

During the 1920's and 1930's Griffiths was also actively engaged on investigations for the Building Research Board and the Electrical Research Association. As a result of these researches, he published papers on heat transmission through walls, concretes and plasters, and on the thermal resistivity of solid dielectrics. Knowledge of the thermal resistivity of these component materials had been required in connexion with the calculation of the loss of heat from electrical machinery. For the Alloy Steels Research Committee he determined thermal expansion, total heat and thermal and electrical conductivity for twenty-one commercial steels over a wide temperature-range. This information was required in connexion with the heating and cooling of steel ingots.

Other subjects on which Dr. Griffiths worked were the use of the spectral line reversal method for the measurement of flame temperatures (1928 and 1929), the dependence of the mobility of ions in air or relative humidity (1929), the heats of combustion of carbon monoxide in oxygen and of nitrous oxide in carbon monoxide at constant pressure (1933), and the specific heat of pure iron to about 950° C. (1940).

During the Second World War, Dr. Griffiths and his Section were engaged on many special problems. These included tests on war emergency cold stores,

in which the usual cork insulation had been replaced by slag wool filling in a cavity-wall construction; storage and transport of meat in the tropics, heat treatment of stored grain to guard against pest infestation; tests on tanks and on special military equipment under simulated tropical conditions; temperature measurements of jet propulsion turbine blades—these were undertaken during the initial development work on the jet engine—problems of flax drying and processing, measurement of humidity and temperature at high altitudes, measurement of gun-barrel temperatures in connexion with the problem of gun erosion and measurement of the distribution of temperature at various distances in the flame of large flame projectors.

Griffiths was elected a Fellow of the Royal Society in 1926. He received the Moulton Medal of the Institution of Chemical Engineers in 1935 for a joint paper (with R. W. Powell) on the fundamentals of evaporation. In 1950, he was awarded the O.B.E.

The refrigeration industry recognized their great debt to him and constantly sought his advice. He was elected president of the Institute of Refrigeration from 1936 until 1938, later serving as a member of the Council, and was chairman of the Research Committee at the time of his death. He was well known internationally as an authority on refrigeration, being president of the Institut International du Froid during 1951-59, and after that president d'honneur. He was elected president of the Institute of Engineers in Charge in 1961. Many other organizations benefited from his knowledge and willingness to serve the public good. He was a governor of the National College for Heating, Ventilating, Refrigeration and Fan Engineering, and at various times held office or served on committees of the Physical Society, the British Association, the International Union of Pure and Applied Physics and the Twickenham Education Committee.

G. B. B. M. SUTHERLAND

Prof. Władysław Dziwulski

WŁADYSŁAW DZIEWULSKI was born in Warsaw on September 2, 1878. He entered the University of Warsaw and graduated in 1901. This was followed by one year of study in the University of Göttingen (1902-3). In 1903 he went to the Astronomical Observatory of the University of Cracow as an assistant. In 1906 he was awarded the Ph.D. degree of that University for his work on the secular perturbations of Eros caused by Mars. In 1907 he went to Göttingen again for two years of study and worked, under Karl Schwarzschild's direction, on photographic photometry of stars. In 1909 he was appointed adjunct at the Cracow Observatory, and in 1916 became lecturer in astronomy in the University of Cracow. In 1919, Dziwulski was appointed professor of astronomy in the University of Wilno. There he organized the Astronomical Observatory and remained

its director until December 1939, when the Polish University of Wilno was closed. He was elected rector of the University of Wilno in the year 1924–25.

The Astronomical Observatory of the University of Wilno, founded by Władysław Dziwulski, was destined mainly for astrophysical research. Dziwulski observed the Cepheid Variables visually and photographically. Beside the observations of variable stars, Władysław Dziwulski's astronomical researches were devoted to problems of statistical investigations of stellar space motions in the local system of the Galaxy. His contributions concerned the peculiar motions of stars of different spectral and luminosity classes, the moving clusters and the local rotation of the stars of A type. During 1922–26 his interests were directed to the problems of the determination of the solar apex by the Bravais method and of the determination of the vertex from the data of the *Boss Preliminary General Catalogue*. In 1945

Dziwulski went to Toruń, where the new University was founded. He took an active part in its organization and together with Prof. W. Iwanowska founded the Astronomical Observatory of the University of Toruń at Piwnice near Toruń. In that Observatory he continued his research on secular perturbations of minor planets, on the space motions of stars and on Cepheid Variables. He took a deep interest in the history of Polish astronomy of the nineteenth century, especially in the history of the Wilno Astronomical Observatory in the eighteenth and nineteenth centuries.

Władysław Dziwulski was a member of the Polish Academy of Sciences and Fellow of the Royal Astronomical Society. He was an excellent teacher and attracted many young pupils to astronomy. He was elected professor emeritus in 1960 but continued his research work until his death.

He died in Toruń on February 6, 1962.

EUGENIUSZ RYBKA

NEWS and VIEWS

The Anti-Locust Research Centre :

Dr. T. H. C. Taylor

DR. T. H. C. TAYLOR retired from the directorship of the Anti-Locust Research Centre, London, on March 31. Dr. Taylor has had a long and varied career in entomology; he graduated with first-class honours at the University of London in 1924 from what was then University College, Reading, and went to Fiji to undertake work on the biological control of the coconut moth which was then causing heavy damage in the plantations. In the course of his work for Fiji he travelled widely in Melanesia, Indonesia and the West Indies looking for suitable parasites. He and his collaborators, J. D. Tothill and R. W. Paine, working with the Government entomologist, H. W. Simmonds, succeeded in completely controlling the moth, and they described this classical example of biological control in a book, *The Coconut Moth in Fiji: a History of its Control by Means of Parasites*. Taylor and Paine went on to establish successful biological control of the coconut leaf-mining beetle and the coconut scale. In 1935 Taylor was transferred to Uganda, where he worked mainly on pests of cotton and coffee and their natural enemies, and during this period he published several papers and was awarded the D.Sc. degree. In 1944 he returned to England to join the Commonwealth Institute of Entomology, where he became assistant director in 1946. In 1953 he transferred to the Anti-Locust Research Centre as deputy director, and in 1959 he succeeded Dr. (now Sir Boris) Uvarov as director.

Dr. Taylor's years of office as director have been marked by enlargement of the scope and functions of the Centre, which has long been regarded as the main international body for locust research; important developments during this time have been the establishment of the Centre as one of the units of the new Department of Technical Co-operation and the increasing part it has played, notably in collaboration with the Food and Agriculture Organization, in promoting international co-operation in locust research and control. The recent constitutional changes in Africa have reacted on overseas locust organizations, and the Centre in general and Dr. Taylor in par-

ticular have played a large part in guiding the policy of newly emergent countries in the locust sphere.

Dr. P. T. Haskell

DR. TAYLOR has been succeeded as director by Dr. P. T. Haskell, who has been deputy director of the Centre since 1959. Dr. Haskell graduated at the Imperial College of Science and Technology in 1951 with first-class honours in entomology and was appointed assistant lecturer and then lecturer in entomology in the Department of Zoology. He gained the degree of Ph.D. in 1955 for research in insect acoustics, and in 1956 was awarded the Huxley Gold Medal for Biology for this work. He is most widely known for his work on insect acoustics and behaviour, and his recent book, *Insect Sounds*, is the only general text-book on the subject. Dr. Haskell joined the Anti-Locust Research Centre in 1955 to take charge of physiological research and devoted much time to building up such work in the Centre and also to stimulating physiological work on locusts in university departments at home and abroad. Since his appointment as deputy director he has travelled widely in Africa to familiarize himself with the problems relating to the most important locust species and to discuss and advise on problems of locust research, in which he intends to remain active. By both lecturing and writing he has contributed greatly to the dissemination of knowledge concerning locusts and their control.

Sir Henry Head, F.R.S.

THE centenary of the birth of Sir Henry Head, who achieved considerable distinction in the field of medicine, has been marked by a series of articles in a recent issue of *Brain* (84, Part 4; 1961), which he edited from 1910 until 1925. Sir Henry was born on August 4, 1861, and was educated at Charterhouse and Trinity College, Cambridge. He studied physiology under Hering at Prague and took a medical degree at Cambridge and University College Hospital. He was responsible between 1893 and 1896 for showing the areas of reflex cutaneous hyperæsthesia and hyperalgesia, due to visceral disease, and also the segmental distribution of the sensory nerve roots involved. The man and his ideas are described by