

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 Dziewulski

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, Dziewulski was appointed professor of astronomy in the University of Wilno. There he organized the Astronomical Observatory and remained