

MADDOCK, Sir IEUAN (1917-1988), Chief Scientist to the Department of Industry

Name: Ieuan Maddock
Date of birth: 1917
Date of death: 1988
Gender: Male
Occupation: Chief Scientist to the Department of Industry
Area of activity: Business and Industry; Science and Mathematics
Author: Mary Auronwy James

Ieuan Maddock was born at Gorseinon, Glamorganshire, on 29 March 1917, son of Evan Maddock, a miner. His mother was an elementary school teacher. He was educated at Gowerton Grammar School, and University of Wales, Swansea, where he graduated BSc (Physics, 1st class honours) in 1937 and was awarded a University Studentship. His research on optical measurements for a PhD degree was disrupted by the evacuation of the Government Department of Explosives Research and Development to Swansea in 1940, which he joined as experimental officer. In 1944 he moved to the Armament Research Department, Fort Halstead, to work on the instrumentation of conventional explosions, and from 1947 on instruments for nuclear explosions. Extremely more accurate measurement of detonation speed and time of flight of projectiles was attained by his use of electronic instruments and use of the transistor following its invention in 1947. For ensuring the successful firing and collection of all required data from the atomic bomb test on 3 Oct 1952 at Montebello he was appointed OBE in 1953.

He became Head of the Field Experiments Division of the Atomic Weapons Research Establishment in 1960, continuing his involvement in early British bomb tests, and directing the UK Research programme for a Nuclear Test Ban Treaty. He was given the responsibility of directing research for developing and improving instruments and determining the strategy for their use at the seismological centre near Aldermaston. It was not difficult to detect and identify nuclear explosives in the atmosphere thousands of miles away from a test site, and no difficulties were anticipated with explosives in space. There remained the problem of detecting underground explosions which could be muffled if held in a large underground cavity or confused with an earthquake. His use of an array of seismographs and development of instruments to enhance the signal caused by the explosion alone made detection possible over several thousand kilometers, but very many such systems would be required world wide to attain political control of nuclear explosions. Eventually 150 countries signed the Partial Test-Ban Treaty of 1973.

In 1965 he was seconded from Aldermaston for two years as Deputy Controller B at the Ministry of Technology (and was Controller, 1967-71) to improve engineering and technical skills in design and manufacture. He was elected Fellow of the Royal Society in 1967 and appointed CB in 1968. He became Chief Scientist in the Department of Trade and Industry from 1971 to 1974 and then in the Department of Industry (1974-77), guiding and reshaping the government's research and development establishments. He received a knighthood in 1975, and was appointed Director of the National Physical Laboratory that year, before retiring from the Civil Service in 1977.

Thereafter he served on several advisory committees and courts of the colleges of Cranfield (1969-77), Surrey (1974-79), Brunel (1978) and Swansea (1981-87). He was elected Principal of St Edmund Hall, Oxford (1979-82). He was a member or held office as chairman or president of many scientific institutions and businesses, including: Sira Ltd. (formerly Scientific Instruments Research Association) (1978-87) and Fulmer Research Institute Ltd. (1978-87). He received many honours, including honorary doctorates from: Wales (1970), Bath (1978), Reading (1980), Salford (1980), Council for National Academic Awards (1980) and Surrey (1983); Honorary Fellow: Manchester Polytechnic (1977), Polytechnic of Wales (1982), St Edmund Hall, Oxford (1983), Institute of Electrical and Radio Engineers (1983), Swansea (1985) and Institute of Quality Assurance. He was Visiting Professor at Imperial College, London (1977-79), and as secretary to the British Association for the Advancement of Science (1977-81) he fostered greater public understanding of science. His publications appeared in various scientific and technical journals.

He married in 1943, Eurfron May Davies and they had one son. They lived at 13 Darell Road, Caversham, Reading, Berkshire from 1962. He died 29 December 1988.

Author

Dr Mary Auronwy James

Sources

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Biographical Memoirs of Fellows of the Royal Society, Vol. 37, 1991

The Times, 30 December 1988

Further Reading

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