

Douglas Samuel Jones

10 January 1922 – 26 November 2013

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Image supplied by Professor Brian Sleeman

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In the mid 1970's when supersonic airliner capability was realised with the design of Concorde there was much concern regarding the noise created at take off and landing and the impact of 'sonic boom' on built up areas. This prompted an investigation of the noise level

experienced on the ground by a moving acoustic source. This led Douglas to develop a mathematical theory of noise shielding.

In order to gain insight into these difficult problems Douglas developed a range of new mathematical techniques and theories. These have become essential tools with which to solve a wide range of problems crucial to understanding wave behaviour.

Douglas Jones's style and approach to mathematical research is nicely encapsulated by the following remark of Sir James Lighthill relating to the theory of generalised functions made at a conference in 1992 at Dundee University to mark his 70th birthday.

It concerns Douglas's book *The Theory of Generalised functions*

"I have moreover been overjoyed that my tiny 80-page *Introduction to Fourier Analysis and Generalised Functions*, which concentrates on functions of just one variable, has proved to be a suitable "appetite-whetting starter", as it were, leading up to Douglas's superbly concocted "main

dish" in 540 pages which extends all the results in a comprehensive fashion and includes the corresponding properties of functions of many variables."

An appreciation of the depth and breadth of his research is to be found in the series of articles written by former students, collaborators and friends in the special issue of the *Bulletin* of the Institute of Mathematics and its Applications to commemorate Douglas's 70th birthday.

During the 1970s and 80s mathematicians began to direct attention to the potential of exploiting mathematical ideas to address problems arising in the biological and medical sciences. This initiative arose, in part, from the development of the ground breaking work done by Alan Turing on biological pattern formation and carried forward by J. D. Murray and others.

As a forward thinking mathematician and scientist, Douglas Jones realised that the new and rapidly evolving subject of "mathematical biology" should be made accessible to undergraduate students. This led, in 1983, to his co-authored book *Differential Equations and Mathematical Biology*.

Mathematical biology is now recognised as a major field of applied mathematical research and most Universities in the UK and worldwide offer mathematical biology courses to students.

Douglas Jones was born in Corby, Northants, on 10 January 1922. He won a scholarship to Wolverhampton Grammar School where he became Senior Prefect, Captain of both Chess and Cricket as well as Vice Captain of Soccer. In 1940 Douglas won an open Scholarship to Corpus Christi College, Oxford. As was the experience of many young men of that period Douglas's University career was interrupted by call up for war service. He joined the Royal Air Force and in 1942, as a Signals radar officer with the rank of Flight Lieutenant, led a research unit of about 100 people engaged in designing and commissioning new equipment for night fighter operations. In recognition of his abilities Douglas was "Mentioned in Dispatches" in 1943 and awarded an MBE in 1945. In the same year he returned to Oxford graduating MA in 1947.

Following a year as a Commonwealth Fellow at MIT, Douglas was appointed to an assistant lectureship at Manchester University rising to Senior Lecturer in 1955. It was during this period that Douglas made fundamental contributions to diffraction theory and demonstrated his phenomenal abilities as an analyst. In 1957 he moved to the Chair of Mathematics at the University of Keele where his reputation as a world leader was established with the publication of his monumental book *The Theory of Electromagnetism*. In 1965 Douglas was appointed to the Ivory Chair of Applied Mathematics at Queens College in the University of St Andrews, to become the University of Dundee in 1967, a position he held with great distinction, serving twice as head of department and as dean of the Faculty of Science. He retired in 1992, at which point he was made Emeritus Professor.

During his career his achievements have been recognised by numerous honours; Fellowship of the Royal Society, Fellowship of the Royal Society of Edinburgh (1967) and Honorary D.Sc of the University of Strathclyde. He was also elected an Honorary Fellow of Corpus Christi College Oxford, recipient of the Naylor prize and Lectureship of the London Mathematical Society, the Marconi prize of the Institute of Electrical Engineers, the van der Pol Gold Medal of the International Union of Radio Science and the Keith Prize of the Royal Society of Edinburgh (1971-1973).

Douglas served on the Editorial Board of Proceedings A of the Royal Society of Edinburgh and was instrumental in overseeing the transition of proceedings A from one concerned with the Mathematical and Physical Sciences to Mathematics in 1975.

Douglas Jones was a tireless champion and campaigner for the promotion of mathematics and that of the professional mathematician. He was chairman of the University Grants Council (UGC) mathematics sub-committee. In 1981 he published the controversial report on behalf of the UGC entitled *Whither Mathematics*. The report highlighted the serious problems caused by the bulge in the 35-45 age group of academic staff reflected in the boom in recruitment in the 1960's as a consequence of the Robbins report on University expansion. With a predicted fall by 36 per cent in mathematically trained students it was recommended that these staff in mid career be compulsorily retired. Due to both public and academic pressure no government action was taken.

Douglas was a founding member of the Institute of Mathematics and its Applications, served on Council and was appointed its President in 1988. It was during his Presidency that he led the negotiations with the Privy Council which resulted in the IMA being incorporated by Royal Charter and then subsequently granted the right to award Chartered Mathematician status.

Douglas Jones was a very private man, not given to small talk, but once engaged was stimulating and amusing company and always happy to engage in the exchange of ideas. He was an important mentor and guiding light to young staff and research students; many of whom have gone onto distinguished careers.

He and his wife Ivy, who pre-deceased him, were a devoted and mutually supportive team. They were both very active in the work of Tenovus Scotland and the World Wildlife Fund for Nature.

Douglas Jones was a fine man, a friend and mentor and is greatly missed.

He is survived by his sisters Dot and Joyce.

Professor B D Sleeman, FRSE

Douglas Samuel Jones, MBE (Mil), MA(Oxon), DSc(Manch), HonDSc(Strath), CMath, FRS, FIMA, CEng, FIEE. Born 10 January 1922. Elected FRSE 1967. Died 26 November 2013