

CENTREFOLD

Professor David Spence



David Spence, Professor of Mathematics at Imperial College, London and a graduate of the University of New Zealand (Auckland University College) has been visiting New Zealand recently renewing old, and making new, acquaintances. For the months of February–May 1983 he was the holder of a Visiting Erskine Fellowship at the University of Canterbury and in May–June 1983 he was the holder of a Visiting Fellowship at the Victoria University of Wellington. As a New Zealander with an impressive international record it is indeed appropriate that the Newsletter should acknowledge his contributions at this time.

David Spence was born in 1926 in Auckland and his early education took place there, culminating in his attaining top place in the Junior Scholarship examinations of 1942 while a sixth form student at Kings College. After a brief period of flirtation with medical studies at Otago, he found the lure of mathematics too much and embarked on the trail that led him to his present position. His undergraduate performance was capped by the award of the Cook Memorial prize as top Masters student in New Zealand in 1947. After a brief stint at Auckland as a Junior Lecturer in Mathematics, he left for Cambridge in 1948 to pursue further studies. He took there his B.A., then his M.A. in Mathematics, closely followed by a Ph.D. in Aeronautical Engineering in 1952; the latter under the supervision of Dr J.H. Preston (later Professor Preston). This represented his first real excursion into Aeronautical Engineering, though it is clear that he always intended to pursue studies in Applied Mathematics and Fluid Dynamics as witnessed by his chosen books purchased for the Cook prize (Whittaker, "Analytical Dynamics"; Lamb, "Hydrodynamics"; Jeffreys and Jeffreys, "Methods of Applied Mathematics").

His Ph.D. work, on the boundary layers in flow past aerofoils, set the scene for his later work in the Aerodynamics Department, Royal Aircraft Establishment, Farnborough, where he

worked from 1952 until 1964, rising to Senior Principal Scientific Officer (Individual Merit) in 1963. This period saw him take the first of many visiting appointments (MIT 1952, Cornell 1959–60, Caltech 1960–61). During this time he married Isobel Ramsay (in 1955) and they have produced a family of four children. David's work at Farnborough, almost inevitably of course, was also in aerodynamics and included his significant work on the modelling of jet-flapped wings—infinately thin jets with finite momentum.

After leaving Farnborough in 1964 he took up an appointment at the University of Oxford, as a Tutorial Fellow in Engineering Science at Lincoln College; where his position was later designated as a Fellow in Applied Mathematics. Concurrently with the Fellowship at Lincoln, he held appointments in the University successively as Lecturer, then Reader, in Engineering Science. David spent some sixteen years at Oxford and it was during this time that his work greatly increased in range and scope to include the theory of elastic contact especially with friction. This work in elasticity was of great importance in many technical applications such as that which arose in the Oxford study groups in mathematical problems in industry. It was during this time that the writer first met David (and family) while holding a visiting appointment at Oxford. As a member of an allied Faculty, an adjacent college (Brasenose College), and as a resident of the same Oxford suburb (Headington), I owe considerable gratitude to the advice and support received from David and Isobel Spence.

David's work has many related aspects not previously mentioned: his work in aerodynamics and elasticity included significant contributions to the theory of boundary value problems in general and to the theory of singular integral equations in particular. It is in these areas where the writer had a great deal of interaction with his work and indeed two of us at Victoria University have just completed some work on the solutions of the biharmonic equation in an infinite strip—a problem to which David himself has made significant contributions.

His work at Oxford led to further recognition: he was a frequent visitor to North America (Wisconsin, Mexico) during this time and was awarded a D.Sc. degree in Mathematics by Oxford University in 1967. Numerous opportunities to accept appointment to a Chair in (Applied) Mathematics never quite succeeded in luring David and Isobel permanently away from Oxford until, in 1981, he accepted a Chair of Mathematics at Imperial College. This has enabled him to keep his home in Oxford and to pursue there his recreational activities of gardening and walking.

David's contribution to British applied mathematics is considerable and will of course continue. He has served the international mathematical and scientific community well and special mention must be made of his continuing contribution as Editor of the Journal of the Institute of Mathematics and its Applications—now the IMA Journal of Applied Mathematics—since 1975.

It is fitting that these remarks are made during the year when David and Isobel have been able to enjoy an extensive visit to New Zealand while on leave from Imperial College. They have obviously enjoyed visiting David's early, and more recent, acquaintances here in New Zealand from all walks of life—not just the world of mathematics.

G.C. Wake