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1918 2016

Thomas H. Spurling

Wellesley Street primary school. Robin's father lost his job during the Depression and bought a small dairy farm near Hobsonville.

According to Peggy Stokes (later Peace), her elder brother, John, had to leave school after two years at Auckland Technical Institute to help on the farm, and resented it, but:

Robin, who was a brilliant student, had gained a national scholarship which enabled him to attend Auckland Boys' Grammar School. Teased and bullied because of his total lack of interest in sports, he took refuge in the chemistry laboratory, where he enjoyed working as lab assistant for all the time he was not in the classroom. In this way, he developed the single-minded passion for science that was to be the foundation of a distinguished academic career. At home he would pore for hours over the massive volumes of the *Encyclopedia Britannica* (the highly regarded eleventh edition), sifting laboriously through the scientific entries. When not reading he was occupied in the shed, which he had set up as a laboratory with, shelves of equipment and chemicals. For him the farm simply did not exist.⁶

Robin met Jean Mary Wilson in 1939 while attending Auckland University College. They married in 1942. Robin described the romance:

Yes. Well, she was a year behind me in the university entrance; nevertheless, with the way the syllabus was organised, we had some classes that we both went to. I very quickly realised that she was a great rarity—somebody who had the same sort of interests as me and the same general outlook on life, and it was just encountering a kindred spirit.

Jean Wilson was a daughter of Colin and Martha Wilson, who were farmers. A student at Epsom Girls' Grammar School in Auckland, Jean won a University National Scholarship in 1937.

Their first paper was part 1 in a series of 17 papers in the *Transactions of the Faraday Society*.¹² Robin was the author or

successful in this application, so he resigned from the university in October 1947 to take up a fellowship at Cambridge. He, Jean and their (then) two children left by ship to England, arriving in Cambridge just after Christmas 1947. Robin reflected that:

one of the reasons for this success was that I'd had a bit over a year in Auckland, before the war started, to do some more research after Honours. I had also managed to fit in bits and pieces in Auckland during the war, for part of the time, so I had quite a few publications; whereas most of my contemporaries, in England particularly, had been very much involved in war work and hadn't got any time for publications. So I was, in that sense, just very lucky, and that luck seems to have been with me a good deal of my life actually.

Or perhaps his experience is yet another example of the old adage 'diligence is the mother of good fortune'.¹⁷

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One of Robin's antecedents, Sir George Gabriel Stokes (of the Navier-Stokes equation) had been Master of Pembroke College (from 12 August 1902 until his death at the age of 83 on 1 February 1903). Robin was welcomed by the college 'with open arms' even though he could not live in the College because of family commitments.

Robin spent the first few months at Cambridge finishing some calculations (using the wedding present) in connection with his work in Perth. The calculating machine 'made a tremendous impression: here was a man who actually had his own calculating machine'. He decided that diffusion in liquids would be an interesting field in which to work. As he recalled:

Diffusion in liquids is very closely connected with two of my other interests, which were the thermodynamic properties of solutions and electrical conductivity. The difference between diffusion and conduction in an electrolyte solution is that in diffusion the ions are all moving one way from a concentrated solution to a dilute solution, whereas in conduction, of course, positive ions move one way and negative ions the other.

Robin saw the need for more data on diffusion and developed the stirred diaphragm cell method.

His PhD supervisor was John Agar who introduced the idea of a magnetic stirrer. Robin published two papers from his PhD work and these are two of his ten most highly cited papers.¹⁸

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Robin returned to Perth in 1950 as a senior lecturer in physical chemistry. The Senate Minutes of 19 September 1949 recorded:

The Vice-Chancellor referred to an attachment to this report setting out the qualifications of applicants for the lectureship in Physical and Inorganic Chemistry. He said that the committee had

J. N. Agar, J. E. Prue, R. A. Robinson, L. G. Hepler, R. J. Bearman, R. L. Scott, J. B. Ott, R. Battino, J. S. Rowlinson, M. L. McGlashan, A. G. Williamson and F. Kohler.

In 1978 Robin and Jean were in a car accident near Dorrigo. Tony Gregson, who was a reader in the Department of Chemistry and later a CSIRO board member, recalled:

they took him to hospital, gave him some X-rays and his whole lung was black. Because he smoked like a chimney, 'You've got lung cancer.' I remember he called us into his office, all the staff, and he said, 'Well, this is it, chaps. I reckon I've got a couple of months to live. And Ken Marsh, I want you to do this, and Tony, I want you to do this, and John, he rattled off all the things we had to do. He said, 'That's it.' We all walked out thinking, 'Bloody hell!' You know. The guy's going to be dead in a couple of months. Well, step forward 30 or 40 years—no, sorry, then they discovered that it wasn't cancer after all, it was just a collapsed lung, which gave up this crazy black image. So he lived on for another 40 or 50 years.²¹

This was a pre-requisite conference for the formation of the Electrochemistry Division in 1966. Robin was the chair of one of the Sydney sessions 'Thermodynamics of Electrolytes' and gave the chairman's address: 'Thermodynamics of Electrolytes in Multi-Component Systems'. He commenced the address in typically strong fashion:

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Robin was admitted as a member of the ACI in June 1946 but not elected a Fellow until 1993. This seems surprising given his early achievements with the Rennie Memorial Medal in 1946 and the H. G. Smith Memorial Medal in 1953. Nevertheless, an application by the candidate, rather than nomination by other Fellows of the Institute, was required for consideration of a candidate for Fellowship, and for whatever reason it seems that Stokes did not apply until the early 1990s. He was, however, an active participant of two specialist Divisions created in the (then) RACI.

The First Australian Conference on Electrochemistry was held in Sydney (13–15 February) and Hobart (18–20 February) 1963.

awarded for distinguished research in the field of electrochemistry carried out mainly in Australasia. Past recipients include R. H. Stokes, R. Mills, R. Woods, Alan M. Bond, B. Welch, I. M. Ritchie, Stephen Fletcher, Gordon Wallace, and David Rand. Nominations should provide an assessment of the nominee's work and list relevant publications. The nominee must consent in writing to the nomination. The Committee reserves the right not to make an award. While an active participant in Electrochemistry Division events, Robin was never an office bearer of the division.

In the early 1970s, physical chemists around the country (including one of the current authors) decided that it was time to form the RACI Physical Chemistry Division. The group included Dr K. N. Marsh, then at the University of New England. Ken Marsh persuaded Robin to be the interim chairman of the proposed new division. At the time, a division had to have one successful national meeting before it was officially established. This was held in Perth as part of the 45th ANZAAS meeting in August 1973. The second meeting, (after which the division was formed) was at the 5th National Convention in Canberra in May 1974. Dr Reginald Mills took over as Chairman after the Canberra meeting. The divisional committee did ask Robin if he would permit the new division to award the Robin Stokes Memorial Medal. He declined because he 'wasn't dead yet!'

Robin Stokes

Robin Stokes devoted his scientific career to the accurate measurement and interpretation of the equilibrium and transport properties of electrolyte and nonelectrolyte solutions. His 90th birthday in 2008 provided opportunities for the international community to recognise his contributions to physical chemistry. The



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