

**Hazel Rossotti: in memoriam**  
**St Anne's College, Oxford**  
**Saturday 10 February 2024**

I first encountered Hazel in the late autumn of 1961. I had taken the Oxford entrance exam, as one did in those days, in the term after I had done my A levels, and I was thrilled to be offered an interview at St Anne's.

Hazel was seated in an easy chair of what I later came to know as her tutorial room in 9 Bevington Road. The impression she made on me remains to this day: small, bright-eyed, neat dark curly hair, with the hint of a chuckle in her pleasing, slightly throaty voice. I don't remember much of our conversation, though I do recall she quizzed me about the oxidation states of manganese. She must have been satisfied with my reply because I received a telegram a couple of weeks later offering me a scholarship to read Chemistry at the college.

My school wanted me to stay on and take the Cambridge entrance exam in the spring, but with that one interview I was sold on Hazel and St Anne's. I came up in Michaelmas Term 1962, one of four chemists Hazel admitted that year. I had a fine ground floor room in 4 Bevington Road – fine though chilly, because the winter of 1962/63 was bitterly cold.

My weekly one-on-one tutorials with Hazel were a lode star of my undergraduate years. She set broad subjects – mass spectrometry, nuclear chemistry, catalysis – which I would read up in the Radcliffe Science Library and then work late into the night to handwrite the required weekly essay. Hazel's comments on my written efforts were generally brief, but in our tutorial discussions she would sketch wide, new vistas for me about the significance of chemistry far beyond the library or laboratory that were the limits of my experience.

Another feature of undergraduate life were the problem classes that Hazel ran for her chemists, in which we worked our way through some of the 700 or so problems in physical chemistry in the 1952 book by Sillén, Lange and Gabrielson.

My heavily annotated copy of that book, together with the folder of my essays written for Hazel and my undergraduate lab notebooks, are now in the Science Museum archives, a time capsule that shows the remarkable breadth and depth of the Oxford chemistry course of that time.

At that time, I didn't appreciate the breadth and depth of Hazel's own chemistry and perhaps have only recently fully done so as the result of reading her research papers and rereading some of her books on chemistry.

As we have heard from Ian, Hazel was an Exhibitioner at St Hugh's, tutored for a time by no less a figure than Dorothy Hodgkin – who some fifteen years later was to give rise to the priceless headline in the Oxford Mail: 'Oxford housewife wins Nobel Prize'.

Hazel went on to do a DPhil in the Inorganic Chemistry Laboratory under the supervision of Harry Irving, who was at that time a lecturer in the Department. His long-standing research interest was in coordination chemistry and Hazel's doctoral research project was to look at the coordination complexes formed by metal ions with a range of oxine derivatives with a view to

finding ones that were selective for only one metal in a mixture of metals in solution, and thus could be the basis of an analytical method.

In this initial aim, Hazel had only modest success but, as is often the way with research, she discovered something more interesting instead: that she could work out by a range of careful measurements, what all the coordination complexes that simultaneously existed in her solutions were.

Hazel's dissertation, entitled *Some Investigations of Organic Reagents for Metals*, was submitted in Trinity Term 1954. It's a meticulous piece of work, complete with many hand-drawn graphs and long and carefully typed chemical and mathematical equations, and it was also very fruitful in terms of publications.

She published no fewer than six papers with Irving based on her doctoral work, the first before she even got her DPhil and the last two when she and her husband Francis had already moved to the Department of Inorganic Chemistry at the Royal Institute of Technology in Stockholm, where they spent eighteen fruitful months working with the distinguished Swedish chemist Lars Gunnar Sillén (he of the book with the 700 problems).

That collaboration with Sillén gave rise to several papers jointly authored by Hazel and Francis in which they examined various methods of determining the stability constants of coordination complexes, which are a measure of how tightly the metal ion binds its ligands, ligand by ligand.

In these papers, as well as the half dozen or so that Hazel and Francis co-authored while working in the Department of Chemistry at the University of Edinburgh, we see the first sketches of the magisterial book they were to write together: *The Determination of Stability Constants*, published by McGraw-Hill in 1961, still a classic and indeed republished by Hassell Street Press a couple of years ago as 'a work of cultural significance'.

In 1961, they returned to Oxford, Hazel to a Fellowship at St Anne's and Francis to a Fellowship at St Edmund Hall and a lectureship in the ICL. With the heavy teaching load that her college teaching post entailed and with two young children in tow, it is no surprise that Hazel's laboratory-based research output dwindled.

She wrote a clutch of further research papers with Francis, but in the main turned her hand to science writing, publishing a series of highly readable and informative books on the big subjects of *Water*, *Air*, *Metals* and *Fire* – a nod there perhaps to the four elements of classical Greek science from Hazel, who was, as we heard from Ian, a passionate lover of Greece and all things Greek.

*Water*, *Air* and *Metals* were written for children in the seventies, but *Fire*, written in 1993, is much longer and more technical interdisciplinary book that addresses a lay adult audience. Of this book, Oliver Sacks commented that Hazel was a born teacher and writer, incapable of writing a dull word.

Indeed she was incapable of that. She wrote two excellent monographs on chemistry, as well as a substantial and original textbook entitled *Diverse Atoms*, which introduced the chemical

elements in order of increasing atomic number reading horizontally across the Periodic Table rather than vertically group by group, as is conventional.

The breadth and generosity of Hazel's chemistry and personality shine through her writing and are reflected in what her former pupils wrote of her on hearing the news of her passing: *kind*, *thoughtful* and *warm* are the words that come up again and again. Hazel nurtured, not only her own chemistry students, but the many biochemists and others to whom she was moral tutor.

She also took enormous care over admissions: as one of her chemists remarked, she chose her students for what they had the potential to be – she was ahead of her time in that regard. She was very much a college Dean of Wellbeing years before such posts were recognised to be necessary.

Hazel shaped my life in more ways than I think she ever realised. Her doctoral work had been supported by a grant from the Atomic Energy Research Establishment at Harwell, and it was through her influence that I got what we would now call work experience at Harwell in one of my Long Vacs, working on analytical methods for determining the rhodium content of certain alloys.

My choice of my Chemistry Part II project, my PhD at Imperial and my first post-doc back at Oxford as a Junior Research Fellow at St Hilda's were all influenced by Hazel's enthusiasm and interests. Later, the way I conducted my supervisions – the Cambridge word for undergraduate tutorials – owed much to the way Hazel taught me.

So thank you, Hazel. Long may your memory be green in and beyond this college, which you served for so long and loved so well.