Obituary

Derek H. R. Barton (1918–98)

Polymath of organic chemistry

TEXAS A&M

With the death of Sir Derek Barton, on 16 March, we will miss not only a great chemical intellect but a fascinating and delightful human being. He was always full of plans and receptive to ideas, and he took pleasure in the company of his colleagues. Like his long-time colleague Geoffrey Wilkinson, he passed away suddenly and unexpectedly of a heart attack. In both cases this was the best way, as neither would have tolerated a state of forced inactivity.

Derek Barton was born in Gravesend, England, on 8 September 1918. His family were in what he referred to as "the wood business". The young Barton followed in this for several years, but became acutely bored, and decided to seek a university degree, entering Imperial College, London, at 20. The late start was compensated by his securing a bachelor's degree in only two years and then a PhD in only two more. He spent the next two years on war-related research and then another two in industry, where he did not "find the work very challenging in its intellectual content". However, he was able to return to academia, first at Imperial College and then at Birkbeck, where he was appointed reader in 1950.

But the academic year before that was the crucial one of his career. He spent it at Harvard as a visiting lecturer, filling in for R. B. Woodward who was on sabbatical. Barton had already been thinking about the small barrier to rotation about the C–C bond in ethane, and about the work of Hassel on the shape (conformation, to use the technical term) of the cyclohexane ring. In a seminar given by the Harvard expert on steroid chemistry, L. F. Fieser, Barton proposed explanations for chemical facts that had not been explicable before, based on his developing ideas of 'conformational analysis'. Fieser urged him to publish a short article expounding his explanation, and this article was the spark that lit the powder keg. Soon all organic chemists recognized that Barton's conformational analysis held the key to understanding a multitude of problems (and in 1969 he was to receive the Nobel prize for this work, sharing it with Hassel).

His career moved rapidly thereafter. In 1957, after professorships at Birkbeck and Glasgow (where he received his FRS), he became professor of organic chemistry at Imperial College. There, Barton's interests broadened into a great range of synthetic problems, photochemistry (discovering the Barton reaction) and many other topics. He built up a stunning list of students and postdoctoral co-workers from all over the world who went on to be leaders in organic chemistry. He was also a tireless attender of meetings and giver of lectures, and so became personally known and admired by virtually every important organic chemist in the world.

Along the way, his first marriage (from which there came his only child, a son) failed. At the same time his interest in and fondness for France grew, and led him to undertake earnest study of the language, which he did with the help of a charming French lady. Soon they were married, and he and Christiane made a very happy couple.

Nevertheless, a great black hole was inexorably approaching: retirement. The whole idea was abhorrent to him, and he averted it in a timely way. At the age of 59, in 1977, he became director of research at Gif-sur-Yvette, not far from Paris. With a French wife, a good position in France and an easy commute to Paris, Barton could indulge his Francophilia to the full. He also did more brilliant organic chemistry, and returned to what had always been a keen interest — radical chemistry — and to an activity he considered paramount — the invention of new reactions. The result of this was what he called 'Gif chemistry'. Succinctly, this was a scheme to employ reagents based on iron to carry out selective oxidation reactions on hydrocarbons.

Once again in 1985 the black hole of retirement loomed, and once again Barton was not prepared to retire. This brought him to Texas A&M. Why? Quite simply, because we offered him what he wanted: not a name chair, not a big office, not the role of being a brilliant but non-functional adornment. We offered a regular full professorship, a decent office and all the lab space he needed — which turned out to be a lot. Barton was thus able to continue his unflagging study of Gif chemistry and the invention of new reactions.

His time in College Station was both sad and happy. Not long after his arrival Christiane developed cancer, and after several very painful years for both, she died. Barton threw himself more than ever into his work, but he soon had the great good fortune to remarry (to Judith Cobb, a neighbour) and again enjoy a very well-rounded life.

One of Barton's best friends, until his own untimely death in 1981, was R. B. Woodward. I was often struck by the similarities and differences between Barton and Woodward, probably the two most charismatic organic chemists of the postwar period. Each was both a quick study and a deep thinker. Each had an extraordinary memory, and each was a masterly lecturer, although in different styles. Each had the judgement to focus on big problems. Both enjoyed, until their respective ends, robust health whereby they could work extraordinarily hard. The main difference was that Barton led a well-managed life. In his love of fine wine, good food and, until his last few years, dry Martinis, Barton was second to none, but he was always in control. I offer this comparison because there was deep mutual respect between these two superstars, but also a spirit of friendly yet serious competition.

Barton's ability to organize and concentrate his efforts was not the least of his talents. Although he was always generous with his time, he never wasted it. He was unfailingly collegial in entering into discussion of questions on which others sought advice, but it was never difficult to read the signs when he thought that enough had been said.

Barton's death only a few months short of his eightieth birthday was a shock to all who knew and admired him. All that can be said is that it was a privilege to have had him with us for as long as we did.

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