

A REMINISCENCE OR TWO ON PROFESSOR SIR DEREK BARTON, NOBEL LAUREATE

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I first met Sir Derek Barton in late 1972 in the Department of Chemistry at Imperial College, when I was summoned from the undergraduate teaching laboratories in the depths of the building to his office on Level 7. He was writing at a roll top desk in the corner of the T-shaped room with a small rather insignificant chalk board in the opposite corner. I do not remember whether the board was covered in writing or not. This board would be a significant part of my life, in due course, but at that time its role to be passed me by. I was rather anxious but the meeting went well; indeed it was short and pleasant. Sir Derek asked me which book I had chosen for the Hofmann Prize which I had won in June that year. He approved my choice of *Survey of Organic Syntheses* by Buchler and Pearson and asked to see my copy of the book. Reassured that I had chosen an appropriate learned text he inquired as to the price. Satisfied, he wrote and gave me a personal check with the explanation that as Hofmann Professor of Chemistry it was his duty to cover my winnings. On February 22 1998, Derek and I sat side by side in business class on a charter flight from London Gatwick to Male in the Maldives to attend a conference, *Perspectives on the 21st Century-II*, on Kureda Island in celebration of his 80th Birthday (to be). It amazes me that some charter airlines can equate a single plastic flute of champagne alone with the designation Business Class; I complained but Derek just chuckled to

himself. He was, as always, energetically engaged in academic pursuits and avidly reading. He was disappointed that I chose to sleep since he had brought a book for me to read as well; it was a night flight. On a regular basis as I passed from fitful sleep to aching wakefulness, the book on the history of organic chemistry was thrust in my direction. Had I foreseen that Derek's allocation of time was almost over I would have accepted the loan with more grace. How could I have known at that time? "Prof", the "the old man" and "DHRB" seemed immortal.

In 1973, I started a 3rd year undergraduate project with Sir Derek on nitrene chemistry. This entailed research work overseen by one of his senior postdoctoral research assistants, Richard Haynes, and a weekly meeting with Sir Derek to describe my failings and occasional successes at the bench. A research meeting was a show and tell session where the coworker stood in front of the small chalk board, in the corner of Sir Derek's office. He was seated on the diagonal at his desk, Jocelyn Thorpe's former desk, and alternatively writing, reading, listening and watching in an order that seemed, to me at that time, somewhat random. He asked probing questions, made suggestions to overcome problems and showed the importance of mechanistic analysis. I soon realised that he had a prodigious memory for details of experiments: the order of the addition of reagents, the range of solvents examined, the melting points of key compounds, yields and so on. I also learned that it was not wise to forget any such details. It was also ill advised to belabour failings in attempts to repeat well established chemistry. On one occasion I was told that when I grew up I should be able to do chemistry properly: it was chastisement for my tardiness in repeating a classic Bamberger preparation. However this incident notwithstanding, I then found Sir Derek very fair: inspiring albeit rather daunting.

I was delighted that he accepted me to join his research group to start work on my Ph.D. degree and I duly arrived in the Hofmann Laboratory in mid September 1973. I was escorted to my new bench by the technician, Alf Coleman, met the tea lady, Elsie, and was introduced to Richard Russell, an Australian postdoctoral charged with my laboratory welfare. Indeed at that time the Hofmann

Laboratory was largely Australian. David Widdowson was then one of Sir Derek's research lieutenants and I was assigned to his care. Sir Derek believed in the restorative properties of tea taken twice a day at 10.30 and 4. He was the proud owner of one of the largest tea cups I have ever seen. Tea rituals were not intended for idle chat or social banter but as adjuncts to work at the bench or, in his case, at Thorpe's desk. Sir Derek asked me which area of organic chemistry I wanted to work in; I mentioned alkaloid synthesis. I was charged with the structural elucidation of the toxisterols; minor over-irradiation products formed in the synthesis of vitamin D₂ from ergosterol. Sir Derek told me that this was the only remaining problem in the steroid arena worthy of attention. Richard Russell had already started work on the project and I joined him in the quest.

On a weekly basis and along with others in the group entrusted to David Widdowson, I was summoned to Sir Derek's office. In turn, we each performed at the chalk board. The ritual was similar to my prior experiences earlier in the year but the audience was larger and everyone performed in turn. Some blushed, particularly when they failed to recall details, some trembled, others seemed confident, even blasé. Besides probing questions and discussions of mechanisms and the approaches to be adopted to defeat barriers to progress there were take home messages for each and every one of us. "Very good," even "Excellent" were received with pleasure; "Is that all?" with pain.

Every Christmas Sir Derek organised a party for his whole group and the inhabitants of the Hofmann Laboratory were joined by those in the Wiffen Laboratory and other laboratories at Imperial and Chelsea Colleges. "The Old Man" served the drinks, Norwegian Lager and Sherry: he was a gracious host. Invariably the group continued the festivities at a local hostelry when we had consumed the large quantities of refreshments that Sir Derek provided. One year he gave out cigars which some of us had considerable difficulty smoking. He himself at that time was an avid smoker of fine Davidoff Château Yquen and Portagas cigars and in consequence all his coworkers were aware of when he was patrolling the laboratories to ask "Do we have anything new to report?"

In due course and following medical advice, Sir Derek suddenly quit smoking and the Hofmann early warning system failed massively. On one occasion I was performing my imitation of the “Old Man” in front of an appreciative audience of colleagues in the laboratory. I became puzzled as the raucous laughter turned to gray silence. This only encouraged me to redouble my theatrical efforts but to no avail. One looked ill, there a sad face, another terrified, on my left one sought to appear disapproving. I was confused. All the time Sir Derek watched standing just behind me. Needless to say, on turning, my own complexion changed to ashes. Nothing was said, he smiled ever so slightly and walked on. It was then I discovered his tolerance and sense of humor.

Many considered Sir Derek to be a brutal, hard task master, aloof, demanding and taking pleasure in overwhelming any scientist he disagreed with. Yet in my own experiences he was kind, considerate, supportive and generous. He was true a bon-vivant and was a delight to be with. Yet in the early 70’s I had only a glimpse or two of these qualities; many more came later. On occasions late in the evening, Sir Derek would patrol to meet his group in the Hofmann laboratory. He was always enthusiastic to hear the latest results. Yet more than once he instructed me to go home. I was married and he told me I had other responsibilities besides the laboratory.

In 1978, Sir Derek left Imperial College for the CNRS in Gif sur Yvette in Paris. By that time Steven Ley and myself had been appointed as lecturers and were his last two lieutenants in London. Both of us were treated with excellent generosity when Derek visited or when we were each invited to Paris. On one occasion it was shared smoked oysters washed down with 1942 Otard Cognac on the occasion of Charles Rees and Sir Derek meeting to discuss the affairs of Imperial College as Charles took over the mantle of Hofmann Professor of Chemistry. On another, a Chinese banquet with 3 bottles of Moutai, one for me, one for Steve Ley and the other for Sir Derek and the ladies. “I stopped you dead in your tracks” he commented to me years later. Sir Derek introduced me to legions of culinary delights: globe artichokes, sashimi, foie gras, oysters, sea bass, Haut Brion, Bollinger and other pleasures of the table. On one occasion he ventured

“Earl Grey is a tea for ladies,” he liked more robust flavours. I protested that I liked Earl Grey. Smiling almost imperceptibly he corrected himself “Earl Grey is a tea for ladies.....and gentlemen of distinction.” The same slight smile glinted.

Derek’s loneliness was forgotten when he married Judy Cobb in August of 1993. As well as a new wife, friend and confidant, he acquired two splendid dogs that he soon doted on. In March 1996, I visited him in College Station. It was a happy occasion unlike my previous visit on the occasion of Christianne’s, his beloved second wife, memorial service. Derek was proud of his new wife, he was proud of College Station and his association with the State of Texas and he delighted in his venerated position in Texas A & M University. Earlier in London, at an excellent dinner party hosted by John Taylor, Derek challenged me to guess, from a photograph he carried in his wallet, his new wife’s age. He was not dissuaded from his quest by my answer that it was impolite to comment on a lady’s age and I was forced to give an opinion. Both my answer and the truth delighted him.

In Texas that March he showed me blue bonnets, the State flower, which were growing in profusion. I sampled various Texan Cabernet Sauvignon and was taken to see Washington on the Brazos to understand the former Republic of Texas more accurately. All of these things I had done before on my several trips to visit College Station. But on that day everything seemed brighter and better and larger. Nothing had changed but Derek’s mood. We talked chemistry at length. Lunch was a simple meal at the local Red Lobster and at the end of the meal Derek pocketed all the remaining bread rolls. A waiter was summoned and more bread requested. It arrived, I was instructed to take it since Derek’s pockets were full. I offered to buy him any quantity or type of bread he needed in any store in town but he was not to be dissuaded. We left the restaurant Judy, Derek and I, two of us with bulging pockets, jackets and pants. Shortly thereafter I understood. The dogs loved Red Lobster rolls. I was awarded the honour of feeding them. I held the bread aloft as Derek released the hounds. They liked the game; I was less sure. He smiled slightly.

On February 23, 1998 Derek and I arrived in Male in the Maldives Islands. Steve and Rose Ley were there, Dave and Marie Widdowson and many other former Barton students and postdoctorals. The organising committee for the conference escorted Derek by sea plane to Kureda Island. Others in the party arrived some hours later by ferry. The conference was modelled on a Gordon Conference with morning and evening lectures with the afternoons free for less serious pursuits. Five years earlier we had the first conference in the series in the Caneel Bay, St. John, USAVI. Derek told me he greatly enjoyed the occasion but that there was need for more questioning. I had thought that there was plenty of time for discussions after each lecture. However, when Sir Derek invited us to an extra afternoon session for each to give an informal additional presentation, all attended. Scuba, sailing and other diversions were forgotten. On the wall a small white board whilst not for chalk reminded many of their first encounters with "DHRB." Ted Cohen, Derek's very first postdoctoral research associate, was there as were recent graduates from Texas A & M. All performed, all sought to pay attention to detail, all were familiar with the need for clear presentation of their results and all were quizzed at length. Derek, for his part gave an overview of Gif Go-Agg oxidation and invited a hearty discussion of mechanism. Derek arose at 3 am each day or at least he did on the day I checked. He was writing a story book on dogs and also composing poetry. On the journey back to London he talked enthusiastically about his current research in Texas, we joked, drank gin and tonic, and he and I were allowed to join the crew in the cockpit during the flight. He asked my opinions about heaven; this bothered me but I could not help in illuminating his thoughts on the matter. That was March 2, 1998, my birthday.

Derek Harold Richard Barton was born on September 8, 1918 and died on March 16, 1998. I remember him as a mentor and close friend. Indeed in all the ways that matter "Prof", "the old man" and "DHRB" was indeed immortal. We all miss him but cherish his stellar contributions to science, his sound advice, his absolute loyalty and his friendship.



Professor Sir Derek Barton at the “Perspectives on the 21st Century-I” conference, Caneel Bay, St. John, US Virgin Islands, June 1993.

People pictured with Sir Derek (from the left): Dr. B. J. Willis, Prof. L. Gunatilaka, Dr. D. A. Widdowson, Dr. D. Doller.



Professor Sir Derek Barton at the “Perspectives on the 21st Century-II” conference, Kureda Island, Maldives, February 1998.

People pictured (standing from left): Dr. P. A. Procopiou, Dr. A. Brewster, Dr. C. Meerholz, Dr. D. Crich, Prof. S. Rozen, Prof. S. V. Ley, Prof. Sir Derek Barton, Prof. A. G. M. Barrett, Prof. D. Ferreira, Dr. C. R. A. Godfrey, Prof. W. Steglich, Dr. R. D. G. Cooper; (kneeling from left): Prof. T. Shioiri, Prof. M. Silva, Prof. D. L. J. Clive, Dr. R. S. Topgi, Dr. D. K. Taylor, Prof. I. Ninomiya, Dr. D. H. Hunter, Dr. R. W. Read.