

Personal summary/biography

Richard Compton was born on the 10th March 1955 in Scunthorpe on the East coast of England but lived there for only a few months. His father's work in local government took his family around the country, first to Gloucestershire, second to Suffolk and finally, in Richard's teen years, to Frome in East Somerset. On arrival was the particularly horrific discovery that this was rugby country and that playing rugby was not only mandatory at the local school but that the local kids actually appeared to enjoy the game whilst caring nothing for the joys of soccer either as participants or as observers of the professional game. Farewell Ipswich Town FC!

The English have an expression that 'every cloud has a silver lining'. Part of the reason for the curious choice of sports activities was the fact that the local school was a 'grammar school' characterised by selection of its pupils on the basis of academic merit. Frome was behind the educational times of the rest of the country where the state education mostly came, as it does today, in the form of a one size fits all so-called 'comprehensive' system pioneered by the UK Labour governments of the 1960s and 1970s (most notably of Prime Minister Harold Wilson, one time Fellow and Bursar of University College, Oxford: 'Univ' re-enters the story below). Without doubting the excellent intentions of the underlying socialist principles the practical differences and consequences were huge. Richard now, in his mid-teens, encountered for the first time knowledgeable, motivated teachers who were interested and interesting and who taught in classes of modest sizes; they communicated and they enthused. Suddenly science and maths and geography all become really exciting, history lessons tolerable and Richard was even able to pass an O-Level in French! Hello Chemistry!

With teachers such as Sue Buckells (Biology), Anton Walden (Maths) and Clive Stott (Chemistry) a hitherto mediocre, struggling student was transformed and all subsequent progress rapid. Within two years at the then Frome Grammar School it was proposed Richard should consider applying for admission to either Oxford or Cambridge seen as the acknowledged elite of the UK universities. Luckily both had just dropped the previously obligatory requirement of a knowledge of Latin – indeed had Richard been applying a year earlier there would have been no possibility of entry to Oxford as, unsurprisingly, few state schools provided tuition in this dead language. Further, as today, the universities contrast in the manner in which they teach science. At Oxford it was, and is, possible to immediately specialise in one science or another, whereas Cambridge taught 'Natural Sciences' giving a broad scientific and mathematical training before some limited amount of specialisation in the latter stages of the undergraduate programme.

At the time Richard was seriously considering reading any of Maths, Chemistry or Geology so an application to Cambridge initially seemed obvious. Two factors mitigated against. First the centrality of Chemistry as a science already stood out, so by studying Chemistry to a great depth he realised he could maintain a real and long term interest in the others. Indeed Richard's present group are, amongst other diverse interests, active in the theory of electrochemistry and electroanalysis and this involves solving mathematical complex systems of partial differential equations representing coupled mass transport, electron transfer and often chemical reaction; a current student Sarah Ward-Jones is developing a full quantitative theory of anodic stripping voltammetry for example. Equally his group over the years have applied voltammetric methods and surface imaging methods for the study of chemistry at mineral surfaces. Most notably the work of Patrick Unwin (now a Professor at Warwick University) as a research student in the group made the first rigorous

measurements of the dissolution kinetics of the mineral calcite (calcium carbonate) and emphasised the role of particle size in controlling rates of acid induced dissolution. The latter point is subtle for the non-electrochemist to appreciate; as the particle shrinks in size the diffusion changes from approximately linear to convergent (as with macro- and micro-electrodes), the rate of mass transport increases and so the rate determining step can change from transport control to surface chemistry control. Patrick and Richard showed that this happened for calcite particles of size around some tens of microns in size, an observation that had significant implications for the practise of 'lake-liming' – the addition of calcium carbonate as solid particles to aquifer systems to alleviate the influence of acid rain.

Second in response to some initial exploratory letters one reply stood out for its clarity, warmth and strength of encouragement. Whilst the Tutors for Admissions for some of the Oxbridge colleges (the University of Oxford is comprised of 39 colleges each independent and self-governing, and forming a core element of the University, to which they are related in a federal system, not unlike the United States. Each college is granted a charter approved by the Privy Council, under which it is governed by a Head of House and a Governing Body comprising of a number of Fellows, most of whom also hold University posts. Every graduate and undergraduate student must belong to one college.) he contacted for whatever reason failed to respond the reply from a Dr W J Albery of University College, Oxford secured the application. Many readers will recognise the name of Albery as an eminent electrochemist/analyst with seminal contributions in hydrodynamic voltammetry, energy conversion and enzyme kinetics. However it is a feature of academic life in Oxford that College Fellows not only teach and research but also regularly take on humble but essential administrative roles within their college from time to time (for example Richard is presently 'Tutor for Graduates' at St John's College, Oxford). It is fair to say that at the time of Richard's application Albery as Tutor for Admissions at 'Univ' was rapidly transforming the College into an academic powerhouse. His initiatives had an across the board impact which lasted more than a decade. At the time entry to either Oxford or Cambridge was by competitive written examination. This is now long gone with Colleges making their selections based on school reports and interview alone with the genuine wish to offer 'open access' to all based on merit rather than school (Richard believes that the 'state' versus 'private' education divide deeply influences and blights English society and culture to this day). Albery was ahead of his time in devising a pioneering and revolutionary scheme by which Univ would guarantee a place to a very few students before the entrance examinations simply on the basis of track record, reports and interview. In the long term this was the thin end of a large wedge ultimately leading to the University wide abolition of the entrance exams but at the time the encouragement offered to Richard to apply through this scheme from a school with negligible experience of successful Oxbridge applications, was considerable and pivotal.

Richard subsequently won a pre-examination place at Oxford and went on to take the entrance examination some months later, including a practical examination (of several hundred candidates in one giant lab surrounded by broken glassware and awash with coloured seas of permanganate and dichromate) taken by all Chemistry applicants and held at the university, winning an Open Scholarship which he took up in October 1973.

Timeline

1976 Gibb's Prize for the top 1st in Chemistry at Oxford University (class of ca 200 candidates).

1980 Doctorate in Electrochemistry under the supervision of Dr later Professor W John Albery, first at Oxford for one year and then at Imperial College, London for two years after Albery was elected to the Chair of Physical Chemistry at the latter

1980-1981 Junior research fellow, The Queen's College, Oxford and SERC Post-doctoral Fellow

1981-1985 Lecturer in Physical Chemistry, Liverpool University

1985-1996 Lecturer in Physical Chemistry, Oxford University

1985-present Tutorial Fellow in Chemistry, St John's College

1994 RSC Medal in Electrochemistry. Cited as 'distinguished for his fundamental work ion electrode reactions, especially under flow conditions as well as with photo-excitation and including the application of this knowledge to practical problems'.

1996-present Professor of Chemistry, Oxford University

1998 Research Medal of the Worshipful Company of Dyers awarded for the 'application of the channel flow cell to the investigation of dyeing kinetics and mechanisms: new perspectives on dyeing processes'.

1998 Received Honorary Doctorate from the Estonian Agricultural University, Tartu, Estonia

1999 Fellow of the Royal Society of Chemistry

1999 RSC Medal in Electroanalytical Chemistry. Cited as 'distinguished for his contributions to electroanalytical chemistry, especially the development of electrode surface activation mechanisms, which are very relevant to industrial electroanalytical measurements in complex and demanding media'.. (The first and only recipient of both RSC medals in the area of electrochemistry/analysis).

2003 Visiting Professor, University of Sao Paulo, Brasil

2004 Elected lifelong Honorary Professor, Sichuan University, Chengdu, China

2004 Awarded the Alexandro Volta Medal of the European Section of The Electrochemical Society

2005/6 Tilden Lecturer (Physical Chemistry) of the RSC.

2006 Breyer Medalist of the Royal Australian Chemical Institute (to be presented Perth, September, 2006).