

## Introduction

### In Celebration of the Sixty-fifth Birthday of Professor Ken Wade



It is my great pleasure to write an introduction to this special issue of the *Journal of Organometallic Chemistry* which is dedicated to Ken Wade. Nominally, the milestone prompting this volume is Ken's 65th birthday which fell on the 13th October of last year. In reality, this prompt serves merely as an excuse for so many of us to record our thanks and our tribute to him for all he has done to further and to promote our subject.

Deliberately, many of my remarks are personal in

that they chart my own relations and contacts with Ken. However, this approach allows me to give a resumé of Ken's career. I first met him in 1965 when he interviewed me for an undergraduate place to read Chemistry at Durham University. Ken himself had arrived in Durham in 1961. He had taken his B.Sc. and Ph.D. (with Norman Greenwood as his research supervisor) at Nottingham University, researching for the latter degree on Group 3/13 coordination chemistry. There had then

followed post-doctoral positions with Harry Emeléus in Cambridge, working on the reactions of diborane, and with Professor Laubengayer at Cornell, looking at organonitrogen-aluminium species. After a brief sojourn (1960–1961) at Derby College of Technology he was appointed to a lectureship at Durham, and there he was in 1965, quizzing this callow youth. Somehow or other I was given a place. Over the next 3 years I ‘interacted’ with Ken only sporadically. In part, these contacts concerned Ken’s role as a College Tutor. Durham is, of course, a collegiate university and we undergraduates all had a pastoral/moral tutor, Ken being mine. In theory, these were the ‘swinging sixties’, epitomised by the music of the Beatles and flower-power groups, by the use of so-called, ‘soft’ drugs, and by ‘free love’. In practice, mostly this passed us by. In those days still, we had to sign out of College and obtain an entry key if we proposed to return after 11 p.m., and women guests had to leave all-male Colleges by 10.30 p.m. and certainly must not have been found there before 9 a.m. I, of course, strived to comply with these Cromwellian strictures, but just occasionally (not as many times as I’d have liked) I failed and was summoned before Ken. He was great, dealing with my lapses very typically in a liberal and humoured way while still managing to follow the collegiate line. In the Chemistry Department itself we met from time to time for tutorials and Ken gave a couple of undergraduate lecture courses. Now, a prominent characteristic of Ken has always been his excessive modesty and, with that, a tendency to extreme self-criticism. If you’ll listen, he’ll tell you how unhappy he was with this or that lecture/lecture course. All I can record, looking back now on 30 years, is that his undergraduate lectures were by far the most interesting. They had ideas in them, different ways of looking at a problem, intuitive approaches: in short they were really quite radical. Such radicalism, born of a wish and an ability to consider matters over a broad swathe of chemistry, has been to my mind a key underpinning feature of Ken’s research. Indeed, it is telling that Ken’s ‘Who’s Who’ entry lists his recreations as, to quote, ‘(a) musing, (b) musing, (c) walking’. He probably means, for the last, walking *and* musing.

Not surprisingly, I decided to do my Ph.D. under Ken’s supervision, starting in 1968. These were still pre-Wade’s Rules days and the group worked mainly on attaching organonitrogen ligands to Main Group elements such as Li, B, Al, Si, P. At this time organometallic chemistry in the broadest sense seemed to be Ken’s major interest. Indeed, the year previous had seen the publication of a new edition of that classic text, titled formally as ‘Organometallic Compounds’. It is interesting that many of the truly great chemical tomes are referred to not by their actual titles but rather by citing their authors: Cotton and Wilkinson, Greenwood and Earnshaw and, here, Coates, Green and Wade. Leaving

that thought aside, I worked with Ken over 1968–1971 and these were happy years. He was a marvellous Ph.D. supervisor, keen and interested without being a slave driver, and always very kind and very supportive. The research itself was, I believe, of very high quality and it was certainly stimulating to do. In the aftermath of the famous Rules, it is sometimes easy to forget that Ken has made massive contributions to synthetic and structural work on Main Group element (metal and non-metal) chemistry in general.

I finished my Ph.D. in 1971, the year in which Ken was, very belatedly, advanced to Senior Lecturer. These events apart, it was a significant year in Ken’s career. In the late 1960’s he’d intensified his interest in the (apparently) peculiar problems posed by the structures of, and the bonding within, boron hydrides. The year 1971 saw publication of his ‘Electron Deficient Compounds’, a typically wide-ranging and prophetic text covering early Main Group metal (Li, Be, Al, etc.) species, boranes themselves and the related carboranes, and carbocations. It saw also the beginning of a series of truly seminal papers whose central theme was and remains the distinctive relationship between the number of skeletal (or core, or cluster) electron pairs available to a species (including transition metal ones) and the structure which that species actually adopts: in short, Wade’s Rules, now a central feature of chemistry courses world-wide.

For most of the 1970’s our contacts were sporadic. By now I was teaching in a local Durham state school. Ken and I collaborated on one or two reviews and papers, but our main link came from the fact that I was teaching Chemistry to a series of clever children called Wade. The irony of a situation tends to hit you retrospectively, but there I’d be on parent’s evenings, sat behind a desk with mark books at the ready, and there too would be a familiar face in the parental queue, edging ever-closer. The irony might have got to me more had I known that Ken was at long last getting a modicum of deserved recognition: visiting professorships at the Technical University of Warsaw, the Free University of Amsterdam and UCLA, and, in 1977, a long-overdue Readership at Durham.

As the 1970’s closed, Ken sensed that I was becoming stale and a bit disillusioned with school teaching. He cajoled and encouraged me into applying for University lectureships, a seemingly hopeless task since I’d been out of research for 8 years and had amassed about six publications. Nonetheless, thanks solely to Ken’s strong backing, I managed to get a post at the University of Strathclyde in Glasgow. As I set out merely to learn the game, his career was more than taking off: winning the R.S.C.’s Main Group Award in 1982, a richly-merited Personal Chair in 1983, and yet more visiting professorships in the US and in Canada. In this period his research interests were becoming more ap-

plied while still being backed by electron-counting rules: the construction and catalytic uses of rigid macrocyclic ligands composed of linked carborane polyhedra, and the syntheses of highly stable carborane polymers for use as ceramic materials.

The late 1980's saw true recognition: the prestigious Royal Society of Chemistry's Tilden Lectureship in 1987/1988 and then, in 1989, the ultimate accolade for a British scientist, election to a Fellowship of the Royal Society. I know him: even Ken was well pleased, and all of his then current and former research students were delirious, as we showed at a celebratory dinner held in his honour in Durham. In the 1990's Ken has continued his tireless efforts: countless invited and plenary lectureships and external examinerships, authorship of several more books and many more research reviews, membership of Science Research Council panels, and faithful service to the R.S.C. Indeed, on the last score, Ken has ever been a keen supporter of the R.S.C. and of its pivotal role in forwarding our subject in the UK and beyond. It is fitting that for the past 2 years he has been President of the Dalton Division. And yet, notwithstanding the F.R.S. and the other national and international honours that have come his way, it is most appropriate to end this account of Ken's 'chemical' history at home, in Durham. The University there is top class and world-rated, and so in particular is its Chemistry Department. Noone has done more than Ken Wade to establish and to secure this reputation. In perhaps a neat twist to end and to cyclise this personal tale, the last comments show why I'm delighted that my son is in his first year at Durham. The reader will never guess which

subject he is taking and who interviewed him for his undergraduate place there!

In closing this tribute, I can predict and forestall Ken's reaction to it and, indeed, to this dedicated volume overall. He will likely be embarrassed by all the supposed fuss. As noted earlier, despite his high standing and fame in our chemical circles, Ken remains doggedly self-effacing. Well, just for once, he will have to lay this modesty aside! It is clear from my personal comments above that Ken has been by far the major mover in my professional life: his encouragement and support have been absolutely crucial to me, and it is a debt that I acknowledge with thanks and with affection. More widely, Ken should be made aware of the response when this dedicated volume was proposed. Many chemists, in many countries and over many areas of the subject, were approached and asked to contribute their work to this issue. Their response has been as one. Many know Ken as a friend, and have likely experienced his kindness and hospitality when visiting Durham. All recognise him as a truly outstanding chemist, and all were delighted to have the chance to record their tribute to him and, with it, their thanks for his major contributions to Chemistry. All of us hope that his intuition, his expertise and his efforts will be harnessed after the formality of 'retirement', and that they will be apparent and marked for many more years to come.

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